Electronic Commerce Research and Applications 40 (2020) 100907

Contents lists available at ScienceDirect

Electronic Commerce Research and Applications

journal homepage: www.elsevier.com/locate/elerap

Leveraging sociability for trust building on social commerce sites

Yu-Hui Fang[a], Chia-Ying Li[b,*]

[a] Department of Accounting, Tamkang University, Taiwan
[b] National Taichung University of Science and Technology, Taiwan

ARTICLE INFO

Keywords:
Sociability
People
Policies
Purposes
Trust in product recommendations

ABSTRACT

With the increasing popularity of social media, consumers are increasingly generating and sharing content, facilitating the growth of social commerce sites. Studies have explored the factors driving consumers' adoption of social commerce, but relatively few of them have investigated the role of sociability. Because sociability determines how users interact and the conceptualization of sociability remains unclear, this study extended the research of Preece by identifying seven elements of three subdimensions of sociability through focus-group discussions. The partial-least-squares analysis results suggested that the purposes, policies, and people aspects of sociability positively affect trust in product recommendations. In addition, the results from fuzzy set qualitative comparative analysis revealed that all the elements of the subdimensions of sociability appear as conditions in one or more paths, and none of the conditions is present in all the causal paths identified. The results provide valuable information for academics and practitioners seeking to increase consumer trust through sociability.

1. Introduction

With the growing popularity of social media such as Facebook and Twitter, consumers are increasingly producing and sharing content (Ko, 2018). Traditional e-commerce, which once focused on one-way browsing, has transformed into social commerce, which offers a consumer-oriented environment. Social commerce is a subset of e-commerce that combines social networking with shopping or transactions (Alshibly, 2014; Shen, 2012). With the aid of social networking capabilities, social commerce sites offer "user-generated content" mechanisms such as comments, feedbacks, reviews, and tags that help customers share their purchasing experiences (Li and Ku, 2018). In contrast with the recommendations of merchants, recommendations by friends or indirect acquaintances are considered more accurate and trustworthy (Bai et al., 2015). Social commerce sites can be distinguished from e-commerce sites in the following three aspects. First, customers interact with e-commerce platforms as individuals, whereas social commerce sites encourage conversations and interactions between customers (Huang and Benyoucef, 2013). Second, customers have little control on e-commerce sites, which provide only one-way browsing, whereas customers on social commerce sites are empowered to create collaborative and interactive online experiences (Huang and Benyoucef, 2015). Third, the design of e-commerce sites is product- or catalog-centered to maximize shopping efficiency, but social commerce sites provide user- or customer- centered interfaces to motivate social activities (Huang and Benyoucef, 2015; Shadkam and O'Hara, 2013). More specifically, social commerce sites facilitate social interaction by encouraging consumer participation (Huang and Benyoucef, 2013). Because customer participation leads to enrichment of consumer-generated content, social commerce sites attract more consumers, who share their experiences and leverage other customers' expertise (Yang et al., 2015).

User participation can be determined on the basis of the usability and sociability of a social–technical system (Phang et al., 2009). A social–technical system represents a technology-mediated space that supports interpersonal communication (Lu et al., 2011). A social commerce site can be a social–technical system because it combines online shopping with social networking for information sharing and product acquisition. In particular, usability and sociability are paramount for social commerce sites' success. Usability is the capability of a technical system to help users easily and effectively complete tasks, whereas sociability is the degree to which the system supports user interaction for shared purposes (Phang et al., 2009). Usability focuses on interaction across a human–computer interface, whereas sociability emphasizes human–human interaction supported by technology (Preece, 2001). Because usability and sociability are both multidimensional constructs, incorporating these two multifaceted constructs renders a research framework complex and thus less focused. Furthermore, some studies have already investigated usability and sociability in the context of virtual communities (Chen and Qi, 2015; Kim et al., 2008; Lu et al.,

* Corresponding author at: No. 129, Sec. 3, Sanmin Rd., North Dist. Taichung City 404, Taiwan.
E-mail addresses: yhfang@mail.tku.edu.tw (Y.-H. Fang), cyli@nutc.edu.tw (C.-Y. Li).

https://doi.org/10.1016/j.elerap.2019.100907
Received 7 November 2018; Received in revised form 13 October 2019; Accepted 30 October 2019
Available online 24 December 2019
1567-4223/

Table 1
Sociability relevant studies.

Author(s)	Research context	Method	Dimensionality	Research findings
Kreijns et al. (2007)	Computer-supported collaborative learning	Questionnaire survey	Unidimensional	The greater the sociability of an environment, the more likely it is that social interaction will occur.
Kim et al. (2008)	Virtual communities	Questionnaire survey	Multidimensional (people, purposes, and policies)	Online community attributes, in terms of sociability and usability, that are hosted by retailers or national brand companies generate positive outcomes for consumers.
Phang et al. (2009)	Learning-focused community system	Questionnaire survey	Multidimensional (social interactivity, and perception of the moderator)	Moderator perception is more important for sociability when individuals seek knowledge, whereas social interactivity is more important for sociability when they contribute knowledge.
Brandtzaeg et al. (2010)	Facebook users	In-depth interviews	–	Sociability is crucial for enabling control in the content-sharing process and restricting visibility on the network.
Gao et al. (2010)	Social software	Questionnaire survey	Unidimensional	Sociability is influenced by social climate, benefits and purposes, people, interaction richness, self-presentation, and support for formal interaction.
Animesh et al. (2011)	Virtual product purchasing	Questionnaire survey	Unidimensional	Sociability has a positive influence on social presence.
Lu et al. (2011)	Virtual communities	Questionnaire survey	Multidimensional (incentive policy, event organization, and leaders' involvement)	The effects of usability and sociability on members' continuous participation occur through the motivational beliefs of perceived usefulness, perceived enjoyment, and sense of belonging.
Yeh et al. (2011)	Virtual world website	Questionnaire survey	Unidimensional	Social presence and enjoyment are influenced by platform-based and sociability-based interactive quality.
Currás-Pérez et al. (2013)	Social networking sites (SNSs)	Questionnaire survey	Unidimensional	Sociability is among the main drivers of user attitude toward SNSs.
Junglas et al. (2013)	Second Life	Questionnaire survey	Unidimensional	The effects of activity support, context support, representation support, and insight support on enjoyment are mediated by sociability.
Lee et al. (2013)	Educational massively multiplayer online role-playing games	Fuzzy analytic hierarchy process	–	Cooperation, team-based reward, discussion of strategy, reputation, and social navigation are the five most vital factors affecting sociability.
Author(s)	Research context	Method	Dimensionality	Research findings
Lu et al. (2013)	Online learning	Questionnaire survey	Unidimensional	Community membership, development of trust, sociability, and smoothing of communication are elements of social capital.
Sánchez-Navarro and Aranda (2013)	Internet use	Group discussion	–	The Internet, messaging services, and SNSs are primarily tools for the leisure and sociability of young people.
Wang and Chang (2014)	Virtual product purchasing	Questionnaire survey	Unidimensional	Outcome expectations and perceived quality have indirect effects on customer satisfaction through perceived customization and perceived sociability.
Zhang et al. (2014)	Social commerce environment	Questionnaire survey	Unidimensional	The effect of perceived sociability on customers' virtual experiences (social support, social presence, and flow) is confirmed.
Chen and Qi (2015)	Academic virtual communities	Questionnaire survey	Multidimensional (shared vision and shared language)	Both sociability and usability are vital for improving members' satisfaction with knowledge sharing in academic virtual communities.
Pinho and Soares (2015)	Online social networks	Questionnaire survey	Unidimensional	Social capital has a positive impact on social status and sociability, which affect response to advertising.
Shin and Kim (2015)	Social TV	Questionnaire survey	Unidimensional	Users' perceptions of sociability and usability are determined by multiple heterogeneous factors, such as utility and social interaction.
Wang et al. (2015)	Branded blogs	Case study	–	Brands should increase the sociability of their branded social media sites for brand lovers.
Hajiheydari et al. (2017)	Mobile social network	Questionnaire survey	Unidimensional	Sociability is one of the primary drivers of attitude toward a mobile social network.
Jin et al. (2017)	Virtual product purchasing	Questionnaire survey	Unidimensional	Sociability affects social presence.
Wu et al. (2018)	SNS game applications	Questionnaire survey	Unidimensional	Symbolic physicality and inherent sociability affect users' perceived curiosity and perceived enjoyment toward playing games.
Lee (2018)	Location-based advertising and social-local-mobile advertising	Experimental design	Unidimensional	Social-local-mobile advertising ads differ somewhat from location-based advertising in how they offer interpersonal connectivity, intimacy, and sociability.

2011), community systems (Phang et al., 2009), and social TV (Shin and Kim, 2015). Therefore, this study investigated only the role of sociability on social commerce sites.

The definitions of sociability vary across different technology-mediated contexts (Jin et al., 2017). For example, Kreijns et al. (2007) defined sociability as the degree to which a collaborative learning environment is perceived to facilitate the emergence of a social space, whereas Wang and Chang (2014) argued that sociability is the extent to which a virtual product is perceived to be able to support consumers' social interactions. The definition proposed by Kreijns et al. (2007) is limited to social spaces in a task-oriented context, whereas that of Wang and Chang (2014) focuses on social interactions during virtual product purchases. Furthermore, as Table 1 indicates, several studies have explored sociability in the context of virtual communities (Chen and Qi, 2015; Kim et al., 2008), learning (Kreijns et al., 2007; Lu et al., 2013; Phang et al., 2009), social network sites (Brandtzaeg et al., 2010; Currás-Pérez et al., 2013; Hajiheydari et al., 2017; Pinho and Soares, 2015), games (Lee et al., 2013; Wu et al., 2018), and virtual product purchases (Animesh et al., 2011; Jin et al., 2017; Wang and Chang, 2014). Sociability has been mainly discussed in the context of virtual communities and social network sites, but relatively few studies have investigated the role of sociability in the context of social commerce sites. Social commerce combines social networking and shopping to enhance consumer engagement and maximize sales performance. Social commerce, virtual communities, and social network sites provide social networking functions to users. However, compared with virtual communities and social network sites, social commerce sites include transaction- and shopping-related information sharing. The operation or governance of a social commerce site should be more complicated than that of virtual communities and social network sites. For instance, social commerce sites provide incentives and rewards for product recommendations, but virtual communities and social network sites may not. Gao et al. (2010) proposed that the inadequate conceptualization of sociability leads to difficulty in deriving an accurate measurement. Thus, adapting measurement scales used for virtual communities and social network sites may be inappropriate for social commerce.

Moreover, most studies have defined sociability as unidimensional, with relatively few exploring sociability as a multifaceted construct. Because of sociability's complex nature, it should be considered as a multidimensional construct (Kim et al., 2008; Phang et al., 2009). Some studies have regarded sociability as multidimensional but used inconsistent conceptualization for sociability. For instance, similar to the context of virtual communities, Kim et al. (2008) used people, purposes, and policies to represent sociability, whereas Lu et al. (2011) used incentives, event organization, and leader involvement as the three components of sociability. Gao et al. (2010) suggested that different functions or representations of sociability should be developed and selected under various contexts. Therefore, sociability on social commerce sites deserves further exploration.

Risk and uncertainty resulting from a lack of face-to-face interaction in the online context can be reduced by trust; therefore, trust is the foundation of online transactions and one of the most crucial prerequisites of social commerce success (Hajli et al., 2017; Hsu et al., 2017). Trust enhances consumer behavior intention in social commerce contexts (Akman and Mishra, 2017; Farivar et al., 2017; Gibreel et al., 2017; Shin, 2013). Trust refers to a consumer's perception of the reliability of a social commerce site and the site's ability to provide high-quality services (Chen and Shen, 2015). Studies have discussed the antecedents of trust, including social commerce characteristics and attributes (Kim and Park, 2013; Mortazavi et al., 2014), social support (Chen and Shen, 2015; Shanmugam et al., 2016), social presence (Lu et al., 2016; Lu et al., 2016; Weisberg et al., 2011), product price (Lee et al., 2016; Lu et al., 2016), and perceived value or benefit (Chang et al., 2016; Lin and Wu, 2015); however, few studies have investigated the impact of sociability on trust. In a social commerce context, consumers seek accurate suggestions from trustworthy consumers to aid their decision-making. Therefore, this study considers trust a consequence of sociability on social commerce sites.

The present study adopted three subdimensions of sociability based on Preece (2001): purposes, policies, and people. This study attempted to recognize the unique factors affecting the elements in each subdimension by complementing the theoretical framework with focus-group discussions. By integrating focus-group results with relevant literature, this study developed a theoretical framework and empirically investigated the effects of sociability on consumer trust in product recommendations. The results provide valuable information for academics and practitioners on how consumer trust can be increased through sociability.

2. Theoretical background

2.1. Sociability

Definitions of sociability depend on the research context. For instance, Spake and Megehee (2010) defined sociability as consumers' tendency to affiliate with others and examined its impact on service relationship success, whereas Brandtzaeg et al. (2010) referred to sociability as an individual's ability to interact with others and explored how it affects users' privacy experiences and usage behavior. Furthermore, Banerjee et al. (2017) employed "number of friends" to represent sociability, which influences the credibility of the reviewer, whereas Chen and Qi (2015) indicated that sociability is synonymous with social capital.

Because this study explored the effect of sociability on consumer trust in product recommendations, it followed the definition of Preece (2000) for the following two reasons: First, Preece (2000) proposed the most well-known definition of sociability (Gao et al., 2010), and various studies have adopted it, including Kim et al. (2008), Lu et al. (2011), Junglas et al. (2013), Wang et al. (2015), and Shin and Kim (2015). Second, Preece (2000) used virtual communities as the research context, comparable to this study's context: information sharing on social commerce sites. On social commerce sites, consumers can read other users' comments on and reviews of products before making purchasing decisions. Therefore, in this study, sociability represents the characteristics of a social commerce site that supports a state of being sociable, for sites on which consumers can interact for personal or shared purposes.

Preece (2001) investigated the success of online virtual communities and discovered that purposes, people, and policies are the three key components of sociability. Kim et al. (2008) proposed that sociability is characterized by keeping discussions on topic; encouraging reciprocity, empathy, and trust; supporting shared understanding; and developing online identities while protecting members' privacy. Phang et al. (2009) conceptualized sociability by using two themes: the nature of member interaction in the technology-enabled space, which identifies horizontal interaction among users (social interactivity), and the governance of member interaction in accordance with the community's policies and rules, which represent the vertical governance of users for the attainment of shared targets (perception of moderators).

Gao et al. (2010) indicated that the features of sociability are social climate, benefits and purposes, people, interaction richness, self-presentation, and support for formal interaction. Chen and Qi (2015) argued that sociability is cognitive capital in terms of a shared language and vision. Because Preece (2000) referred to sociability as both social policies and technical structures designed for a shared purpose, the author's definition of sociability is more comprehensive than those found in other research. Several studies, such as Kim et al. (2008) and Phang et al. (2009), have adopted Preece's (2000) classification. Furthermore, Gao et al. (2010) argued that Preece (2000) describes not only the users but also the designers and developers of online environments. Thus, this study adopted Preece's (2001) classification of sociability. "Purpose" refers to consumers' focus on the information,

support, and services that provide a reason to use a social commerce site. “People” refers to the users who interact within the community for the fulfilment of their personal or social needs (Preece, 2001). “Policies” represent the languages and protocols providing directions to the people and form rituals and folklore (Preece, 2001).

Preece (2000) proposed that sociability determinants include the number of participants, messages sent, errors, and users joining per month, in addition to member satisfaction, retention, trustworthiness, productivity, and other quantitative measures. The author further argued that examples of sociability serve as a starting point for work on new topics and more complex measures can be devised. Following Preece (2000) argument, this study posited that purposes, people, and policies are the three key subdimensions of sociability. The elements of each subdimension were extracted from a focus-group discussion.

2.2. Social exchange theory

Homans (1958) posited that social interactions constitute social behavior based on an exchange of resources. Expanding on Homans' (1958) viewpoint, Blau (1964) proposed the social exchange theory (SET) to elucidate exchange structure and behaviors between individuals, between individuals and groups, and between groups. Furthermore, in the SET, the exchanged objectives can be both tangible and intangible; main characteristic of SET is interdependency, implying bidirectional interaction between individuals. A key assumption underlying the SET is that individuals become involved in exchange relationships or transactions to maximize benefits and minimize costs (Molm, 1997). Individuals cease to interact when compensations are lower than social behavior costs. By contrast, if individuals receive benefits from other people, they feel obligated to reciprocate (Emerson, 1981). Individuals engaging in social exchange activities facilitate reciprocity, mutual obligations, and psychological contracts (Colquitt et al., 2013). In particular, social exchange between individuals constructs long-term social patterns (Cropanzano and Mitchell, 2005). In contrast to the economic exchange theory, which sheds lights on extrinsic benefits or one-off exchanges, the SET emphasizes intrinsic rewards, trust, and commitment (Blau, 1964).

Several studies have applied the SET to explore individuals' behavior in various domains, including consumer behavior (Shiau and Luo, 2012; Sierra and McQuitty, 2005), crowdfunding (Zhao et al., 2017), information sharing (Chang et al., 2015; Hall et al., 2010; Zhao et al., 2017), and behavior within online communities (Jin et al., 2010; Ye et al., 2015). In the context of social commerce, consumers share purchasing experiences by offering comments, feedback, reviews, and ratings related to products. According to the SET, individuals engaging in social interaction expect to obtain social rewards, such as recognition and respect. Consumers can acquire benefits, such as social support and self-presentation, from information sharing (Li and Ku, 2018). Information sharing or obtaining can be considered a type of exchange behavior (Yan et al., 2016). Furthermore, the SET deciphers the rules and norms shaping transactions and exchanges (Oparaocha, 2016). For instance, Ye et al. (2015) argued that prosharing norms lead to a feeling of reciprocity, by which individuals are likely to share knowledge and expect others to contribute knowledge. Preece (2000) argued that each community develops its values and norms on the basis of users' needs. Social commerce is not exceptional because it is a type of community where consumers must accept and follow the norms of the website for effective functioning. Moreover, the SET states that social exchange behaviors are contingent on the reactions of others (Cropanzano and Mitchell, 2005). The relationship between exchange partners affects the social exchange process (Blau, 1964). Consumers on social networks come together to develop friendships and share common interests (Lee et al., 2013). Accordingly, this study used the SET as the theoretical foundation to explain how sociability on a social commerce site, such as the purposes, policies, and people of sociability, would increase consumer trust in product recommendations.

3. Study 1: Qualitative study

3.1. Sample and procedures

Few studies have systematically addressed the elements of sociability; thus, this study conducted a focus-group discussion to identify the elements of sociability's three subdimensions: purpose, people, and policies. To identify participants who were particularly knowledgeable on this topic, snowball sampling was employed (Babbie, 2004). Snowball sampling is a nonprobability sampling method relying on recommendations of people with access to members with the required features of the sampling population (Salganik and Heckathorn, 2004). This method is particularly useful when sampling populations are difficult to reach because it enables researchers to reach members of the hidden population through initially sampled individuals (Frank and Snijders, 1994). Snowball sampling has been applied in the context of social science research, such as Sheng et al. (2011) and Matook et al. (2015). Although experienced consumers of social commerce sites are not hidden populations, they are not readily identifiable through publicly available sampling lists or frames and are difficult to reach by using standard methods, such as those involving telephonic, mail, or personal intervention. Thus, this study initially invited two friends of the researchers who are experienced shoppers on social commerce sites to participate in this study and recommend other qualified potential respondents based on the distribution of their interpersonal relationships, such as friends. Furthermore, the researchers recruited 10 additional qualified participants with more than 4 years of shopping experience on social commerce sites. Participants' heterogeneity was preserved to ensure the validity of qualitative research (Galeazzo and Furlan, 2018). To ensure heterogeneity in the participants' backgrounds, a total of 12 consumers of varying ages, sexes, occupations, and educational levels—all of whom had used social commerce sites for more than 4 years—participated in a 2-hour-long discussion; 55%, 45%, 75%, and 80% of the participants were women, men, university graduates, and with more than 10 years of online shopping experience, respectively, and their age range was 18–52 years; they were from various industrial sectors, including finance, education, software development, tourism, and manufacturing sectors.

One researcher and one assistant moderated the focus-group discussion. A structured set of open-ended questions regarding the features of sociability was employed to guide the participants. Because sociability in this study refers to social interaction among consumers through social commerce sites, the focus-group concentrated on how purposes, people, and policies contribute to social interaction. The participants were also asked to express their thoughts on the following questions, among others: “How do moderators facilitate social interaction on social commerce sites?” “Why did you join this specific social commerce site?” “How do moderators govern [a specific social commerce site]?” “Do you personally know the consumers with whom you interact on specific social commerce sites?”

The discussions were then transcribed into a 22,316-word documents for content analysis. Based on the study of Ryan and Bernard (2000), a preliminary set of categories with regard to the subdimensions of sociability were derived on the basis of Preece (2000) study, and additional subcategories were determined from the focus-group transcripts. Two experienced coders—a professor with research interest is electronic commerce and a manager responsible for online marketing at a well-known shopping mall—performed a qualitative data analysis through open coding. Finally, 182 keywords were assigned to the same subdimensions by both coders. Table 2 presents the identified categories with the relevant codebook definitions.

3.2. Findings

This study extracted several elements for each subdimension of sociability. To identify the purposes of sociability, the results indicated

Table 2
Results of the focus group coding procedure.

Category name	Definition
Purposes	*Purposes refers to consumers' focus on the information, support, and service that provide a reason for using social commerce sites*
Informational support	The extent to which a consumer can receive helpful information.
Reputation building	The extent to which a consumer is recognized by others as being reliable.
Information learning*	The extent to which a consumer can learn about products.
Policies	*Policies represent the language and rules that direct consumers and form rituals and folklore*
Rewards	Currency or currency-equivalent rewards that consumers receive.
Shared norms	Values and expectations of consumers about what is appropriate or inappropriate behavior.
Authenticity	A consumer's subjective judgement of the genuineness of messages, people, or products.
People	*People refer to the roles or characteristics of consumers who interact on social commerce sites*
Intimacy	The feeling of closeness and emotional bonding.
Common interests	Consumers share similar interests and activities.
Scale of social commerce site*	Numbers of consumers registered on social commerce sites.

that reputation building and informational support were extracted. Informational support was found to be critical in persuading consumers to use social commerce sites: "I can obtain useful information from friends, and sometimes those opinions are different from the messages received from retailers or spokespeople" and "I always respond to others because I have previously received help from them." The other element relevant to the purpose of sociability is reputation building: "I gain recognition from my friends when they like my posts" and "Information sharing regarding my purchasing experiences establishes me as an expert." The participants also suggested other elements, such as information learning. Although information learning is the purpose of sociability, it strongly correlates with informational support because consumers learn from other members' shared information and informational support may result from responses to the receipt of information. Thus, information learning and reciprocity are not considered elements for sociability purposes.

Regarding policies, the results revealed that when social commerce sites provide rewards, shared norms, and authenticity, consumers are willing to interact through the sites. Rewards refer to monetary compensation provided by an online retailer for users' information sharing. One of the participants said, "Posting reviews to save money is a benefit for consumers." Another noteworthy comment during the discussion was as follows: "Although the monetary reward is not that much, it motivates me to keep on posting." Shared norms also represent an informal principle that connects a diverse group of consumers to a common logic system. Although two consumers may have contradictory viewpoints on a single product, shared norms direct consumers to respect each other and search for harmony on social commerce sites. Furthermore, authenticity contributes to consumers' social interaction. As one participant noted, "If the posting is paid for, it should not be shown here. It must, at least, be marked." In particular, a salesperson disguised as a consumer may exaggerate their argument with regard to the effectiveness of a product.

For the people subdimension, intimacy and common interests were also extracted from the discussions: "I like this social commerce site because it is a large family filled with warmth and care; I am very familiar with my friends on this social commerce site; our friendships stretch from online to offline." Common interests represented the second most crucial element. One participant stated, "I enjoy flocking together like birds of a feather," and another participant remarked, "I enjoy discussing how to make smart purchases with my online friends." Although the participants suggested that the scale of a social commerce site influences the level of social interaction, this study did not consider this topic because it was assumed that contact with friends is not necessarily equal to the scale of the social commerce site. In particular, the scale of a social commerce site does not necessarily increase a consumer's contact with their friends. Furthermore, familiarity was also not considered because of its high correlation with closeness.

4. Study 2: Quantitative study

After identifying the elements of each subdimension of sociability on the basis of the results of the focus-group discussion conducted in Study 1, this study formulated its research hypotheses and designed its quantitative methodology in Study 2.

4.1. Hypotheses development

4.1.1. The purposes subdimension of sociability and trust in product recommendations

According to social exchange theory (Blau, 1964), benefits or costs resulting from a social exchange relationship affect the trust that one individual has in another. For example, a government that creates policies that satisfy citizens' needs may receive trust from these citizens in return. Kim et al. (2009) and Loureiro (2013) proposed that the benefits provided by online banking, such as convenience and ease of use, enhance consumers' trust. Nunkoo and Smith (2013) confirmed the positive relationship between perceptions of the benefits and residents' trust in government actors. Reputation can be regarded as a social identity judged by others and helps an individual achieve or maintain a certain status within a group (Cho et al., 2010). Reputation building can be regarded as a benefit by which consumers are recognized by others. In the context of this study, posting reviews and comments helps consumers gain recognition and respect from others, building their reputation. When reputation can be enhanced by a social commerce site, consumers tend to trust the services provided by the site. According to trust transfer theory (Stewart, 2003), trust in a known entity or person is transferable to another unknown entity or person. More specifically, trust in a service can transfer to product recommendations on a social commerce site. Furthermore, reputation building stimulates an individual to increase their contributions in community activities (Oh and Syn, 2015). As the level of consumer participation in the community increases, the chance to interact with others also increases. Social interaction facilitates the formation of trust in members and the platform (Lin and Wu, 2015). Accordingly, reputation building exerts a positive influence on trust in product recommendations.

Social commerce sites provide virtual spaces where consumers browse and share information. Customers can obtain solutions, plans, or interpretations from their interactions. Informational support is messages used to solve problems in the form of recommendations, customer reviews, and ratings (Zhang et al., 2014). Supportive information facilitates friendships and enhances trust among members (Brodie et al., 2013; Liang et al., 2011/2012). Hajli (2013) found that social support had a positive influence on consumer trust. Chen and Shen (2015) mentioned that consumers receiving informational support from online friends create trust. Shanmugam et al. (2016) argued that strong support makes consumers feel connected with others and, thus, generates trust among friends. Hence, consumers tend to trust a recommended product when they receive valuable advice or suggestions.

A social commerce site provides a technology-mediated space in which consumers can interact through a shared focus on information or services. Consumers feel content when interacting with others and organizing social practices with shared purposes (Preece, 2000). Zhang et al. (2014) suggested that social interactions provide opportunities for consumers to reduce the amount of false information and thus accumulate trust in other members and websites. Ou et al. (2014) proposed that trust is an outcome of interactivity and presence. When customers can interact with others through a shared focus on information or services, they tend to trust product recommendations made on the social commerce site. Therefore, this study proposed the following hypothesis:

H_1 The purposes subdimension of sociability have a positive effect on consumers' trust in product recommendations.

4.1.2. The policies subdimension of sociability and trust in product recommendations

A monetary reward is an extrinsic motivational component that simulates consumer participation on social commerce sites. Monetary rewards comprise currency or currency-equivalent rewards, such as coupons (Lee, 1998). Perceived tangible returns stemming from information sharing enhance consumer participation (Lee et al., 2015). Consumers usually rationally perform utilitarian cost–benefit calculations. Monetary savings reflect the tangible attributes of the utilitarian benefits consumers receive (Wu et al., 2010). Monetary rewards have a salutary influence on trust because consumers consider perceived benefits as relationship investments made by a firm (Blanchard and Markus, 2004). In social commerce contexts, when consumers receive monetary rewards from online retailers, they can, for example, save money on their next purchase. Such benefits reveal that online retailers' promote relationship building to increase consumer trust. Koh and Kim (2003) found that providing more rewards than costs enhances the longevity of mutual trust and attraction. Lee et al. (2013) indicated that monetary rewards improve trust and reciprocity between individuals in a community. Based on trust transfer theory (Stewart, 2003), trust in a social commerce site transfers to the site's products. Therefore, monetary rewards provided by social commerce sites enhance trust in product recommendations.

Every consumer has values and expectations based on their personal backgrounds and beliefs. A set of principles acceptable to consumers can establish a shared norm. Shared norms represent values and expectations between two partners about what is appropriate or inappropriate behavior (Ilicic and Webster, 2014; Peng and Ke, 2015). In this study, a shared norm is the extent to which consumers on social commerce sites have beliefs in common about what behaviors are right and wrong. Shared norms fulfil community members' emotional needs for belonging and recognition (Brodie et al., 2013). When consumers have similar experiences or values in terms of behavioral logic, they develop a sense of responsibility and trust in the community (Lee et al., 2013). Rothaermel and Sugiyama (2001) argued that rules and norms affect trust. Han et al. (2015) found that shared norms and conventions support trust formation. When consumers have higher levels of shared norms, such perceptions lead to increased trust in the products recommended by others.

Authenticity refers to what is genuine, real, and true (Tolstedt and Stokes, 1983). Marketing researchers have defined authenticity as a consumer–brand relationship or consumer evaluation of a specific brand or experience. Houkamau and Sibley (2015) argued that authenticity can exist in commercial objects and spaces. Lai (2009) suggested that authenticity should be discussed only in specific fields because it has different definitions based on the target or context. This study defines authenticity as a consumer's subjective judgement of the genuineness of messages, people, or products on a social commerce site. van Dierendonck and Patterson (2015) proposed that brand authenticity is a brand's promise, which is the nexus of trust. Lai (2009) indicated that consumers' perceptions of authenticity have significant influences on their trust perceptions toward virtual world prototypes and services. When online retailers provide a platform that encourages a consumer to be open about their thoughts and experiences, transparent and legitimate discussions decrease uncertainty and information asymmetry and thus support trust building. Therefore, as consumers judge information on a social commerce site to be genuine, they may trust the products, information, and people on that social commerce site.

Social policies and technical structures support social interaction among members (Shin and Kim, 2015). Policies relating to sociability govern users' interactions on the basis of a set of rules (Preece, 2000). Rules or regulations are implemented to deter uncivil behavior and facilitate intended behaviors (Phang et al., 2009). In other words, rules define what consumers are encouraged to do and what they should not do and thus provide guidance for customers to follow. Kim et al. (2008) ascertained that policy defines unintended behavior and thus generates trust. Kim et al. (2009) indicated that trust can be strengthened by regulations and agreements. When policies enhance social interaction using civil behaviors, consumers are inclined to trust in people or product recommendations on social commerce sites. Thus, the following hypothesis is proposed:

H_2 The policies of subdimension sociability have a positive effect on consumers' trust in product recommendations.

4.1.3. The people subdimension of sociability and trust in product recommendations

Relationships with others influence user participation (Gao et al., 2010). Intimacy, which refers to the feeling of closeness and emotional bonding, can be employed to assess the degree of emotional closeness in relationships (Tolstedt and Stokes, 1983). As a relationship grows closer, the intensity of affection and ability to tolerate flaws increases. Lee and Kwon (2011) suggested that intimacy reduces the distance between customers and, thus, solidifies human relationships. Mutz (2009) argued that trust increases when social distance effectively decreases. An enhanced relationship promotes trust (Brodie et al., 2013). More specifically, intimacy strengthens an emotional bond by making consumers feel understood and cared for by others, which in turn decreases social risk and increases consumer trust. In addition, Dong and Siu (2013) found that feelings of closeness lead to trust in the community. Hajli (2014) indicated that relationships between users determine the level of trust on social networking sites. Thus, intimacy affects consumer trust in product recommendations.

Consumers with similar interests and activities tend to communicate and share information on social networking sites and online communities (Harris and Lyon, 2013). Consumers, typically aggregated by their mutual interests, share information and recommend products on social commerce sites. Shared interests pertain to products, topics, affiliations, or demographic attributes (Mukherjee and Nath, 2003). Degree of interest similarity determines the intimacy of a friendship (Pinjani and Palvia, 2013). Shared interests help community users to develop social attachments and bond with others (Laroche et al., 2012; Lee et al., 2013). Common interests provide a basis for consumers to maintain and enhance enduring relationships.

Brodie et al. (2013) argued that long-term interaction and close relationship developments facilitate the formation of trust. More specifically, individuals with common interests have an inclination to build relationships based on trust. Furthermore, Pinjani and Palvia (2013) suggested that users with similar interests may provide positive evaluations and put trust in others. Consumers who interact with those engaging in similar tasks or undergoing similar experiences tend to develop enduring relationships with and trust in those people.

The people subdimension of sociability is characterized by different roles and relationships in social interaction (Preece, 2001). Various types of participants exist and are differentiated by their involvement or personal characteristics (Kim et al., 2008). When customers have

similar interests, sociability in social commerce occurs through mutual interactions (Zhang et al., 2014). More specifically, consumers on a social commerce site tend to interact with consumers who have similar interests or close relationships with them. Animesh et al. (2011) indicated that increased social interactions create trust beliefs. Accordingly, when customers can freely interact with other customers with common interests and form close relationships, they tend to trust in such customers and their product recommendations.

H_3 The people subdimension of sociability has a positive effect on consumers' trust in product recommendations.

4.1.4. Subdimensions of sociability and consumer trust in product recommendations

According to the configuration theory, asymmetric relationships exist between variables (Woodside, 2013). The relationship between two variables can be complex or nonlinear. For example, satisfied customers may repurchase products, but customers who decide not to repurchase are not necessarily unsatisfied. Because phenomena in real world is clusters of interconnected variables, a result could be equally explained by alternative sets of causal conditions (Fiss, 2007). Relationships among factors are dependent on how these factors are combined (Pappas et al., 2017). The same outcome may come from different configurations (Liu et al., 2017). For instance, customers may trust product recommendations if they receive informational support regardless of a lack of closeness among customers. Additionally, customers may trust product recommendations because of the richness of authentic information on a social commerce site, suggesting that a combination of factors is a sufficient condition for trust in product recommendations.

Trust in virtual community is dynamic and can be built upon economic benefit, community infrastructure and governance (Hsiao et al., 2010). On social commerce sites, consumers interact with others through exchanging ideas, posting questions, and offering answers and help. Sociability features a virtual environment for social interaction in which members' interactions are governed for shared purposes on the basis of policies and rules (Phang et al., 2009). The interplay among the multiple subdimensions of sociability leads to trust in recommendations. More specifically, trust may not be formed by one single subdimension—purposes, people, or policies—but multiple subdimensions of sociability acting together can engender consumer trust. This study posits that synergy among multiple subdimensions of sociability explains trust in product recommendations. In particular, this paper argues that no single, optimal configuration of such values exists. Instead, multiple casual factors exist that may include multiple subdimensions of sociability. Therefore, this study proposed that high consumer trust in product recommendations may be achieved by the combinations of subdimensions of purpose, people, and policies.

H_4 Synergies or substitutions among the purpose, policy, and people subdimensions of sociability are sufficient to enhance consumer trust in product recommendations.

Fig. 1 displays the research model of this study.

4.2. Quantitative methodology

4.2.1. Measurement development

A questionnaire survey was adopted in this study. Measures were adapted primarily and whenever possible from previously validated questionnaires, which were completed using a 7-point Likert scale with the anchors (1) strongly disagree to (7) strongly agree. Because the original scales were developed in English, a back-translation process was employed (Brislin, 1986). One bilingual management scholar compared the English and Chinese versions of the survey instrument and made revisions to resolve the minor discrepancies identified. Additionally, the designed questionnaire was pretested by eight PhD students to evaluate the appropriateness of the questionnaire's design and face validity of the survey instruments. The received comments and feedback were considered as a basis for modifying the language in the questionnaire. Accordingly, the questionnaire was then revised for a pilot test. A total of 40 questionnaires were collected before the ultimate refinement of the questionnaire. The Appendix A lists the measurement items of each construct and their sources.

4.2.2. Survey administration

An online survey was conducted from January to February of 2016. The target population was consumers who had ever shopped on Kidshome, a social commerce site that provides a transaction mechanism accompanied by a Facebook forum for social interaction. Consumers can exchange and share information on the forum and then purchase Kidshome products through a hyperlink. By October 2017, Kidshome had more than 65,000 registered members. To recruit appropriate respondents, a banner with a hyperlink to our online survey was published on their Facebook forum. A total of 350 consumers participated in the survey: 23 responses were invalid, resulting in 327 usable questionnaires. The sample of respondents consisted of 60% women and 40% men: nearly 61% had a university education; approximately 42% were between 25 and 34 years of age; more than 68% had less than 3 years of experience using social commerce sites; and 58% reported spending an average of US$100–$150 each time they made purchases on social commerce sites.

Multiple tests were performed to examine the validity of the collected data. To test for nonresponse bias, the respondents were divided into early and late respondents and the *t* test was applied to determine the differences between the mean scores of these two groups (Armstrong and Overton, 1977). The findings showed that the response differences were nonsignificant with a confidence level of 99%. To test for common method variance bias, the following three analyses were adopted. First, Harman's one-factor test (Harman, 1976) was employed to ensure that no systematic bias influenced the survey data. The results revealed that the principal component of one fixed factor explained less than 50% of the variance. Second, this study adopted an analysis outlined by Liang et al. (2007) to detect common method bias. The results demonstrated that the average substantively explained variance of the indicators is 0.76, whereas the average method-based variance is 0.015. As indicated in Appendix B, the ratio of substantive variance to method variance is approximately 51:1. Third, following Ragin and Davey (2014), the highest correlation between constructs was less than 0.9 (Table 4), indicating no common method bias in the collected data.

4.2.3. Measurement model assessment

The purposes, policies, and people of sociability were conceptualized as second order formative-measured constructs, whereas reputation building, informational support, reward, shared norms, authenticity, intimacy, common interests, and trust were conceptualized as first-order reflective-measured constructs. For the formative-measured constructs, this study tested potential multicollinearity among the subconstructs and analyzed their weights to avoid unstable estimates (Diamantopoulos and Siguaw, 2006). The maximum variance inflation factor of 2.41 was less than the cutoff of 3.3. As shown in Fig. 2, the weight of informational support (weight = 0.60, $p < 0.001$) for purposes of sociability was greater than that of reputation building (weight = 0.56, $p < 0.001$). The weight of rewards (weight = 0.49, $p < 0.001$) showed that rewards was the largest component of policies of sociability, followed by shared norms (weight = 0.36, $p < 0.001$) and authenticity (weight = 0.29, $p < 0.001$). The weight of common interests of people of sociability (weight = 0.72, $p < 0.001$) was stronger than that of intimacy (weight = 0.43, $p < 0.001$). All the weights of the indicators for the reflective-measured constructs were significant to at least the 0.05 level, indicating that the formative measures were relevant for the construction of the composite latent

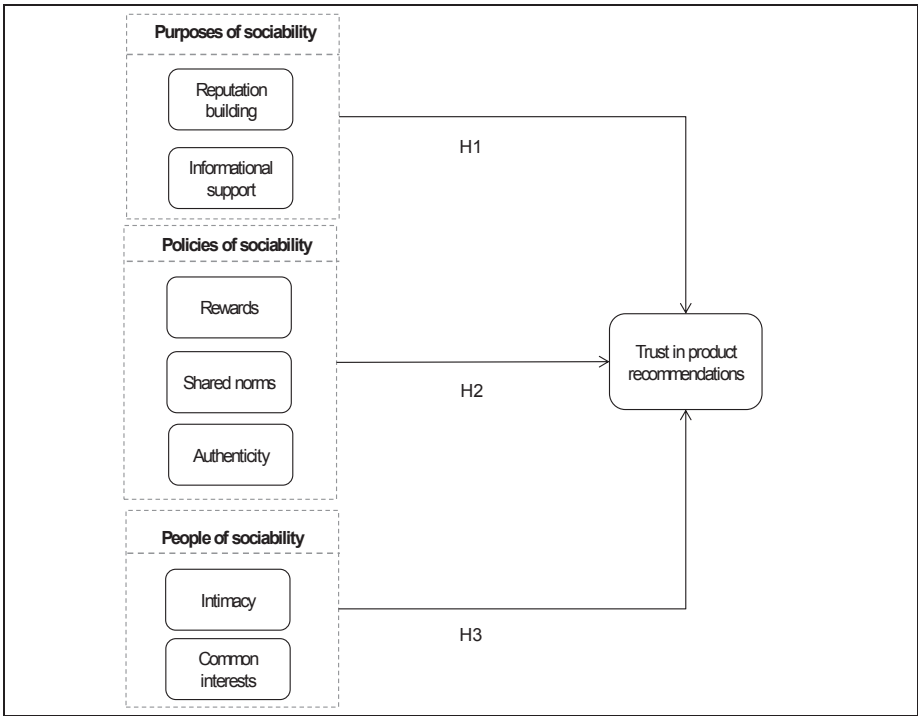


Fig. 1. Research Framework of this Study.

construct.

For the reflective-measured constructs, this study examined the reliability and validity of the measurement scales. The composite reliability (CR) of each construct exceeded the cutoff of 0.7, suggesting a high level of consistency reliability, whereas the average variances extracted (AVEs) were greater than 0.5, indicating the convergent validity of the latent constructs (Table 3). Discriminant validity was assessed using the following two methods. First, the Fornell–Larker criterion and heterotrait–monotrait (HTMT) criterion were adopted. The HTMT values obtained for each construct were less than the predefined threshold of 0.9 (Table 4) (Torres et al., 2017). Second, a matrix of loadings and cross-loadings was constructed. This study compared the loadings of an item with its associated construct to its cross-loadings and ascertained that all items were more highly on their respective construct than on any other (Table 5). Therefore, discriminant validity was confirmed.

5. Hypotheses testing

To test hypotheses 1–3, this study used partial-least-squares structural equation modeling (PLS-SEM) (implemented in SmartPLS 3.2.3), a nonparametric approach based on ordinary least squares regression that is designed to maximize the explained variance (Ordanini et al., 2014). This study also adopted fuzzy set qualitative comparative analysis

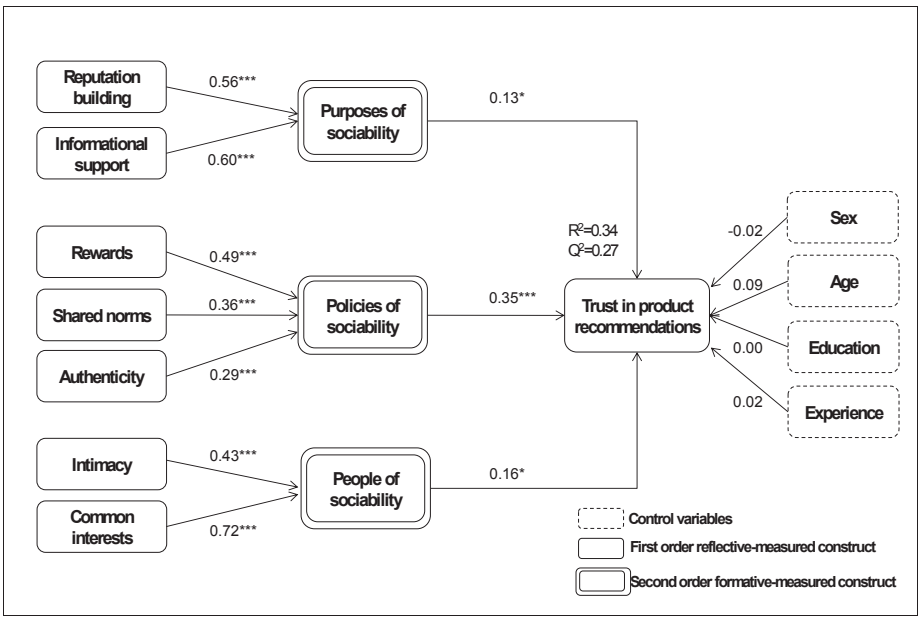


Fig. 2. PLS Results for the Proposed Model.

Table 3
Factor Loadings and Reliability.

Construct	Loading/ weights	T Statistics	CR[a]	AVE[b]
First order reflective construct				
Reputation building			0.90	0.70
RB1	0.84	43.58		
RB2	0.87	56.46		
RB3	0.85	55.70		
RB4	0.78	24.34		
Informational support			0.89	0.66
IS1	0.85	53.90		
IS2	0.85	50.90		
IS2	0.83	38.22		
IS3	0.72	47.73		
Rewards			0.95	0.72
RE1	0.84	30.52		
RE2	0.91	87.97		
RE3	0.93	113.48		
RE4	0.93	134.39		
Shared norms			0.95	0.85
SN1	0.89	38.03		
SN2	0.94	40.11		
SN3	0.94	30.26		
Authenticity			0.88	0.71
AU1	0.82	50.96		
AU2	0.83	58.01		
AU3	0.87	58.89		
Intimacy			0.88	0.70
IN1	0.91	64.45		
IN2	0.93	107.38		
IN3	0.66	16.91		
Common interests			0.94	0.80
CI1	0.88	48.63		
CI2	0.90	69.25		
CI3	0.89	69.72		
CI4	0.91	82.36		
Trust in product recommendations			0.96	0.86
TR1	0.93	116.89		
TR2	0.93	112.30		
TR3	0.90	79.52		
TR4	0.94	117.35		
Second-order formative construct				
Purposes			N.A.[c]	N.A [c]
Reputation building	0.56	26.56		
Informational support	0.60	23.62		
Policies			N.A.[c]	N.A [c]
Rewards	0.49	38.98		
Shared norms	0.36	35.47		
Authenticity	0.29	25.54		
People			N.A.[c]	N.A [c]
Intimacy	0.43	24.88		
Common interests	0.72	33.69		

Note: [a]CR, composite reliability; [b]AVE, average variance extracted; [c] N.A., not available.

Table 4
Correlations among Major Constructs.

Variable	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
(a) Reputation building	**0.84**	0.55	0.51	0.53	0.49	0.50	0.41	0.33
(b) Informational support	0.47	**0.81**	0.74	0.74	0.84	0.75	0.54	0.58
(c) Rewards	0.45	0.64	**0.85**	0.72	0.81	0.82	0.53	0.52
(d) Shared norms	0.47	0.64	0.65	**0.92**	0.67	0.75	0.63	0.53
(e) Authenticity	0.41	0.68	0.69	0.58	**0.84**	0.75	0.46	0.54
(f) Intimacy	0.40	0.60	0.68	0.62	0.59	**0.84**	0.56	0.55
(g) Common interests	0.36	0.47	0.49	0.58	0.40	0.47	**0.89**	0.41
(h) Trust in product recommendations	0.29	0.51	0.49	0.50	0.47	0.47	0.39	**0.93**

Note: Diagonal elements are the square root of average variance extracted (AVE) of the reflective scales. Off-diagonal elements are correlations between construct. Above the diagonal element are the HTMT values.

(fsQCA) 2.5 (Ragin and Davey, 2014) to test hypothesis 4. fsQCA is a set-theoretic analysis that can be used to examine how causal configurations of elements contribute to a specific outcome (Fiss, 2007). Instead of correlating antecedent determinants with the outcome, fsQCA identifies patterns of causal conditions that produce the outcome (Stroe et al., 2018). fsQCA can be used to analyze complex causality by considering limited diversity and asymmetric relations (Woodside, 2013). It identifies the necessary and sufficient components of particular conditions (Ragin, 2008). If the outcome is present, the condition will occur. Necessary conditions are required for the outcome. A sufficient condition is one in which if the condition is present, then the outcome will occur. Sufficient conditions are unnecessary for the outcome. fsQCA considers the conditions that lead to an outcome; however, other causes may have an effect (Kraus et al., 2017).

In addition to confirming the effect of the subdimensions of sociability on trust in product recommendations, this study explored how the purposes, policies, and people of sociability work together effectively to affect trust in product recommendations. Because fsQCA investigates the manner in which antecedent determinants interact to result in an outcome, it can be applied to configure several elements of sociability to achieve trust in product recommendations. More specifically, the fsQCA approach is complementary to PLS-SEM because it enables the examination of holistic interplay between elements with a chaotic, nonlinear nature (Bagozzi et al., 1991). Therefore, both SmartPLS and fsQCA were employed to test the hypotheses.

5.1. PLS-SEm

Several control variables, including sex, age, educational background, and experience of using social commerce sites, were added to the research model to explain results that were caused by extraneous factors. The hypotheses were tested through the results of bootstrapping with 5,000 resamples (Wu et al., 2014). The coefficient of determination (R^2) was used to assess the quality of a model. The endogenous constructs achieved an R^2 of 0.33 for trust. The predictive relevance of the structural model was assessed using the cross-validated redundancy index (Q^2) for endogenous constructs. Given that the Q^2 of 0.26 was greater than 0, this study found evidence of the predictive relevance of the structural model (Ragin, 2000). As shown in Fig. 2, the purposes ($\gamma = 0.13$, $p < 0.05$), polices ($\gamma = 0.35$, $p < 0.001$), and people ($\gamma = 0.16$, $p < 0.05$) of sociability positively influenced on trust in product recommendations. Thus, hypotheses 1–3 were supported.

5.2. fsQCA

Before performing fsQCA, this study converted the ordinary data into fuzzy sets based on the procedures of Woodside (2013) and Ragin (2008). Each construct was multiplied to obtain a construct score. Next, the data were transformed into calibrated sets by setting three meaningful thresholds. Three original values of 6.0, 4.0, and 2.0 from the 7-point Likert scales were set to correspond to full membership (95%), cross-over anchors (50%), and full nonmembership (5%), respectively (Fiss, 2011). Subsequently, the fsQCA software automatically transformed the original values into fuzzy set scores.

Once the calibration was completed, the truth table algorithm was applied to generate a truth table of 2^k rows (k = number of outcomes), producing different combinations of causal conditions sufficient for achieving trust in product recommendations. Liu et al. (2017) proposed that samples with cases more than 150 should result in a cutoff higher than 1. In this study, the cutoff point was 3 and the consistency threshold was set at 0.8, higher than the recommended value. Because intermediate solutions retain necessary conditions and are thus superior to both complex and parsimonious solutions (Ragin, 2008), this study provided the intermediate solution.

Table 6 presents the findings of the configuration analysis obtained using fsQCA for trust in product recommendations. Black circles denote

Table 5
Matrix of Loadings and Cross-loadings.

	Reputation building	Information sharing	Reward	Shared norm	Authenticity	Intimacy	Common interests	Trust
RB1	**0.835**	0.412	0.360	0.377	0.320	0.359	0.252	0.195
RB2	**0.873**	0.401	0.383	0.393	0.362	0.319	0.286	0.270
RB3	**0.849**	0.414	0.340	0.400	0.375	0.294	0.325	0.290
RB4	**0.780**	0.332	0.441	0.382	0.320	0.382	0.349	0.225
IS1	0.397	**0.847**	0.438	0.453	0.567	0.485	0.351	0.422
IS2	0.398	**0.847**	0.563	0.530	0.592	0.552	0.435	0.472
IS3	0.415	**0.831**	0.592	0.585	0.628	0.456	0.442	0.375
IS4	0.305	**0.722**	0.495	0.528	0.449	0.449	0.307	0.404
RE1	0.410	0.569	**0.836**	0.614	0.617	0.624	0.391	0.454
RE2	0.466	0.542	**0.911**	0.614	0.599	0.608	0.505	0.388
RE3	0.356	0.587	**0.927**	0.544	0.630	0.606	0.420	0.419
RE4	0.405	0.617	**0.932**	0.602	0.669	0.638	0.441	0.510
SN1	0.486	0.555	0.571	**0.894**	0.526	0.546	0.549	0.406
SN2	0.386	0.613	0.594	**0.935**	0.525	0.560	0.515	0.457
SN3	0.417	0.608	0.653	**0.940**	0.545	0.618	0.546	0.509
AU1	0.428	0.606	0.643	0.583	**0.823**	0.541	0.396	0.389
AU2	0.247	0.512	0.514	0.381	**0.830**	0.436	0.228	0.349
AU3	0.349	0.507	0.589	0.471	**0.868**	0.510	0.367	0.434
IN1	0.368	0.510	0.543	0.543	0.522	**0.905**	0.405	0.350
IN2	0.360	0.516	0.618	0.527	0.567	**0.926**	0.423	0.415
IN3	0.279	0.480	0.472	0.302	0.392	**0.661**	0.351	0.419
CI1	0.369	0.415	0.413	0.480	0.342	0.394	**0.875**	0.273
CI2	0.268	0.382	0.359	0.459	0.298	0.328	**0.902**	0.288
CI3	0.419	0.510	0.597	0.669	0.490	0.528	**0.891**	0.502
CI4	0.232	0.386	0.364	0.461	0.292	0.422	**0.913**	0.317
TR1	0.315	0.517	0.503	0.467	0.461	0.429	0.368	**0.930**
TR2	0.236	0.458	0.452	0.435	0.426	0.414	0.391	**0.931**
TR3	0.274	0.471	0.462	0.473	0.447	0.453	0.342	**0.902**
TR4	0.261	0.453	0.396	0.464	0.393	0.430	0.340	**0.942**

Table 6
Configurations that Lead to Trust in Product Recommendations.

Configuration	Solution						
	1	2	3	4	5	6	7
Purposes							
Reputation building	●	●		●	○	○	○
Informational support	●	●	●	●	●	○	●
Policies							
Rewards	●	●	●	●	○	○	●
Shared norms	●	●	●		○	○	○
Authenticity	●			●	○	○	●
People							
Intimacy		●	●	○	○	○	○
Common interests			●	○	○	●	●
Consistency	0.870	0.835	0.847	0.896	0.864	0.810	0.944
Raw coverage	0.512	0.473	0.460	0.261	0.212	0.174	0.178
Unique coverage	0.035	0.008	0.054	0.009	0.038	0.031	0.009
Overall solution consistency	0.810						
Overall solution coverage	0.723						

Note: Black circles (●) indicate the presence of a condition, and open ones (○) indicate its absence. Blank cells indicate a "do not care" condition.

the presence of a condition, and open circles indicate its absence. Blank cells indicate a "do not care" condition, where a condition has no effect on the dependent variable. In addition, two indices were employed to assess the strength of the configurations in terms of consistency and coverage. Consistency describes the degree to which the cases support the sufficient conditions of the outcome and resembles the significance metrics in statistical models, whereas solution coverage evaluates how much the outcome is explained by each configuration, an analogous measure of the coefficient of determination in regression analysis (Liu et al., 2017).

Unique coverage measures the proportion of membership in the outcome interpreted solely by a configuration, whereas raw coverage represents the joining of the configuration and outcome normalized by the sum of the membership values for the outcome variable (Fiss, 2007). As showed in Table 6, all consistency values exceeded 0.8, indicating that these configurations are conditions sufficient to lead to trust. The overall solution coverage was greater than 0.72, indicating that these configurations explain a large proportion of the trust in product recommendations. Regarding raw coverage, the solutions explain a large amount of trust in product recommendations, ranging from 17% to 51% of cases associated with the outcome.

Seven causal configurations were found to be sufficient for enhancing trust in product recommendations (Table 6). Because the unique coverage value was greater than zero, each configuration made a unique contribution to the explanation of trust in product recommendations. Solution 1 presented a combination of reputation building, informational support, rewards, shared norms, and authenticity for trust in product recommendations. A comparison of solutions 1 and 2 revealed that authenticity and intimacy can substitute for each other. Solution 3 combined informational support, rewards, shared norms, intimacy, and common interests. Based on the comparison of solutions 2 and 3, reputation building can substitute for common interests. Solution 4 suggests that for consumers with low intimacy and few common interests, social commerce sites should focus on reputation building, informational support, rewards, and authenticity for trust enhancement. Informational support alone led to high trust in product recommendations if reputation building, rewards, shared norms, authenticity, intimacy, and common interests were low (solution 5).

When social commerce sites lacked reputation building, informational support, rewards, shared norms, authenticity, and intimacy, common interests alone increased trust in product recommendations (solution 6). Finally, when reputation building, shared norms, and intimacy were low, a combination of high informational support, rewards, authenticity, and common interests led to high trust in product recommendations (solution 7). Hypothesis 4 predicts that multiple configurations, involving a synergistic and substitutive relationship among the subdimensions of sociability, are equally effective for achieving trust in product recommendations. This study determined seven causal combinations yielding consumer trust in

Table 7
Complex configurations indicating high trust for subsamples.

Models from subsample 1	Raw coverage	Unique coverage	consistency
1. IS*SN*RE*IN*CI	0.410	0.064	0.860
2. ~RB*~IS*~SN*RE*~AU*~CI	0.199	0.017	0.778
3. RB*IS* SN*AU*RE*IN	0.389	0.048	0.862
4. RB*IS* SN*AU*RE*CI	0.358	0.024	0.869
5. RB*~IS*~SN*~RE*~AU*~IN*~CI	0.212	0.032	0.918
6. ~RB*IS*~SN*~RE*~AU*~IN*~CI	0.220	0.034	0.904
7. ~RB*IS*~SN*RE*AU*~IN*CI	0.177	0.013	0.948
Overall solution consistency	0.818		
Overall solution coverage	0.662		

Note: RB: Reputation building; IS: Informational support; SN: Shared norms; RE: Rewards; AU: Authenticity; IN: Intimacy; CI: Common interests; ~ represents the absence of a condition; * symbolizes the logical operator AND.

recommendations. This validates the equifinality principle that multiple configurations of the subdimensions of sociability are equally effective in enhancing trust in recommendations. Thus, hypothesis 4 was supported.

According to Wu et al. (2014), a favorable model fit does not necessarily guarantee the high predictive power of the model. Model validation using an entire sample may encounter aggregation bias (Torres et al., 2017). Thus, the sample was divided into two equal subsamples, a modeling subsample (subsample 1) and a holdout sample (subsample 2), through random selection to test the model's predictive validity (Wu et al., 2014). This study used predictive validity to determine whether the model obtained from subsample 1 had high predictive ability for subsample 2. In particular, the models obtained from each subsample could have similar configurations, consistency, and coverage. Table 7 presents the solutions of the subsample modeling analysis. Similar to the previous analysis for consumer trust, when the models obtained from a subsample were applied to the other sample, the changes in levels of consistency and coverage were minimal, providing support for the model's predictive validity (Fig. 3).

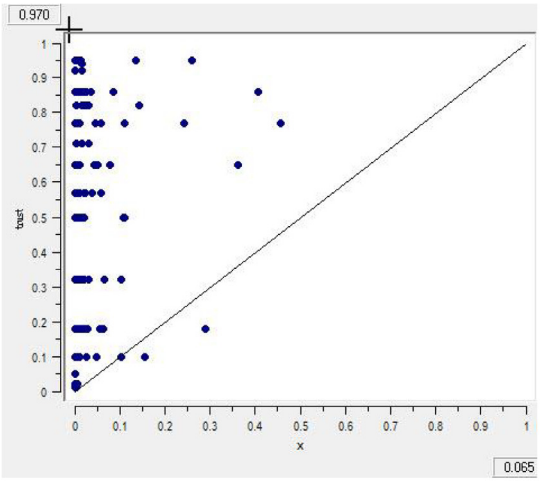
6. Discussion

6.1. Theoretical implications

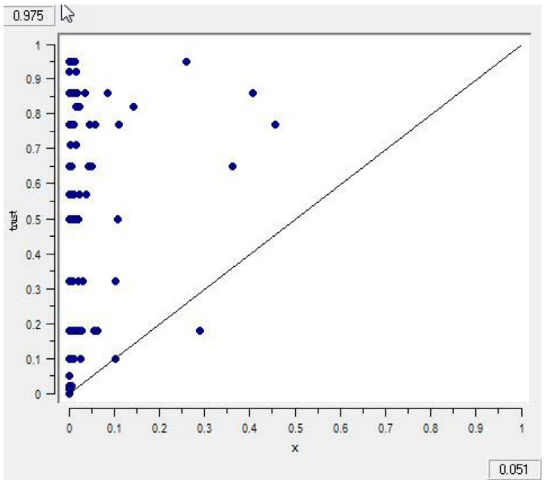
This study differed from previous research in four ways. First, several studies have explored sociability in various contexts—such as online games (Jin et al., 2017; Lee et al., 2013), social networks (Hajiheydari et al., 2017; Lee and Ge, 2010; Pinho and Soares, 2015), social TV (Shin and Kim, 2015), virtual communities (Chen and Qi, 2015; Kim et al., 2008; Phang et al., 2009), learning environments (Kreijns et al., 2007), and social software (Gao et al., 2010)—but few have considered the critical role of sociability in social commerce sites. High sociability facilitates social interaction and enhances social connectivity (Gao et al., 2010). Because consumers on social commerce sites share information and create online experiences collaboratively, the exploration of sociability in this study provided insights into how mechanisms could be developed that support the state of being sociable on social commerce sites.

Second, most studies have treated sociability as a unidimensional construct (Pinho and Soares, 2015; Zhang et al., 2014) rather than a multidimensional construct. The composition of sociability in the context of social commerce sites is complex because this construct represents the interplay between users, the technology, and social factors (Mamonov and Benbunan-Fich, 2017). However, these studies have used various components to represent sociability. In extending the research of Preece (2001), the present study conducted a focus-group discussion to extract elements of the subdimensions of sociability with regard to social commerce sites. Based on the qualitative study, seven elements of three subdimensions of sociability were identified: reputation building, informational support, rewards, shared norms, authenticity, intimacy, and common interests. This extension responds to the statement of Gao et al. (2010) that developing a general framework of sociability can be meaningful. In particular, this study provides a comprehensive conceptualization of sociability for facilitating social interaction on social commerce sites.

Third, after the qualitative study, this study conducted quantitative research to empirically explore the effects of the purposes, policies, and people subdimensions of sociability on trust in product recommendations. The findings indicated that the purpose aspects of sociability, reputation building, and informational support, have positive effects on trust in product recommendations. Consumers are more willing to interact with others and have greater trust in product recommendations when on a social commerce site that satisfies consumer needs for reputation building and provides useful information. This finding is consistent with those of previous studies. Shiau and Chau (2015) reported that reputation is a type of recognition that increases the informational interaction among users. Junglas et al. (2013) reported that



(a) Test of model 1 from subsample using data from subsample 1



(b) Test of model 1 from subsample using data from subsample 2

Fig. 3. Results of Predictive Validity.

informational support is the main type of social value that consumers receive from social interactions.

Furthermore, site policies govern social commerce sites. When a social commerce site encourages information contributions through financial rewards, provides a platform that attracts consumers with similar values, and ensures the authenticity of relevant information, consumers tend to trust the product recommendations on the site. This finding concurs with that of Lee et al. (2013), who demonstrated that monetary rewards improve mutual trust, interaction, and reciprocity among users. Mislove et al. (2007) indicated that acceptable social norms guide people's interactions and contribute to the development of rituals, which in turn influence trust. Lai (2009) suggested that perceptions of authenticity positively affect trust in a virtual service. Thus, policies can induce civil behavior and further generate trust among users (Kim et al., 2008).

Moreover, regarding the people aspect of sociability, intimacy and common interests were discovered to positively influence trust in product recommendations. The findings suggest that when consumers have close relationships and share similar interests, they tend to trust each other's product recommendations. These results are consistent with those of previous research, in which intimacy was discovered to strengthen relationships and enhance trust in a community (Dong and Siu, 2013; Lee and Kwon, 2011) and interest similarity was found to affect user trust in product evaluations (Pinjani and Palvia, 2013).

Finally, most studies have examined sociability by almost uniformly employing variance-based statistical approaches, such as SEM, indicating that the explanation of trust perceptions by using a single configuration of these antecedents is possible. However, these approaches provide only one solution—considered the optimal solution—to explain the outcome, leaving a significant proportion of the outcome unexplained (Fiss, 2011). The present study furthered the previous research by employing configurational analysis using fsQCA. fsQCA can reveal the complex associations between independent and dependent variables (Woodside, 2013). The joint presence of purposes, policies, and people was discovered to be relevant to enhancing trust in product recommendations. This result is consistent with that of Fiss (2011), who determined that a result can be equally explained by alternative sets of causal conditions. The configurations comprise different combinations of the factors of sociability, with each configuration describing a unique combination in which customers' trust in product recommendations is enhanced. This study provides more useful perspectives on addressing the possible combinations of the antecedents of trust from the viewpoint of sociability.

6.2. Managerial implications

In terms of practical applications, this paper provides important insights for practitioners wanting to enhance sociability on social commerce sites from the perspectives of purposes, policies, and people. First, including a variety of features to facilitate sociability is an important task for managers who wish to enhance social interaction on social commerce sites. The results of the PLS analysis suggest that the purposes of sociability (i.e., reputation building and informational support), policies of sociability (i.e., rewards, shared norms, and authenticity), and people of sociability (i.e., intimacy and shared interests) have positive influences on trust in product recommendations. The results also demonstrate that policies exert a stronger effect (0.35) on trust than people (0.16) or purposes of sociability (0.13). When firms have limited time and resources with which to increase sociability, managers may first consider providing incentives, creating an environment with shared norms, and ensuring the authenticity of product information. Then, firms may set up clear position strategies that attract and target consumers with similar interests and provide a user-friendly platform that encourages consumer interaction to enable the building of relationships.

Second, when consumers can build their reputation, receive informational support and rewards, and share norms with others on social commerce sites, authenticity and intimacy are substitutable (solutions 1 and 2). This finding indicates that when consumers have a close relationship, the authenticity of information is unimportant. In other words, intimacy enhances a consumer's ability to tolerate flaws or false information. Furthermore, when consumers receive informational support and rewards, share norms, and have a close relationship with others on social commerce sites, reputation building is a substitute for common interests (solutions 2 and 3). This finding indicates that consumers obtain social benefits from either building a personal identity through recognition from others or finding friends with similar interests. Moreover, when consumers cannot build reputation, receive rewards, and authenticate information, then sharing norms, having a close relationship with others on social commerce sites, informational support, and common interests are substitutable (solutions 5 and 6). This finding reveals that trust in product recommendations may result either from receiving informational support or having friends with similar interests. Therefore, managers of social commerce sites must understand the substitutable relationship among the elements of the subdimensions to enhance trust.

Third, a noteworthy finding was obtained regarding the significance of informational support on social commerce sites. Informational support was a necessary condition for enhancing trust in product recommendations in all but one of the configurational paths (solution 6). More specifically, informational support is a main reason why consumers shop on social commerce sites. Thus, managers must empower consumers to generate content, rather than simply relying on employees or an automated system to respond to consumers' questions.

Finally, social commerce facilitates intercustomer interaction by allowing for social affordances (Zhang et al., 2014). The findings indicate that the policies and purposes of sociability can compensate for the lack of the people aspect of sociability (solution 4). In particular, when consumers on social commerce sites lack intimacy and common interests, trust in product recommendations is facilitated by providing reputation building, informational support, rewards, and authentic information. Therefore, when intimacy and common interests are scarce on social commerce sites, managers can offer monetary rewards and validate the authenticity of information, as well as encourage social interaction among consumers.

6.3 Research lsimitations, future directions, and conclusion

This study has several limitations. First, this study extended the research of Preece (2001) to extract the elements of subdimensions for sociability on social commerce sites. However, other subdimensions may exist under different research contexts. Future research aiming at replicating this study's results should examine the model obtained for using different types of social software (e.g., instant messaging services). Second, this study explored the effect of the subdimensions of sociability on consumer trust in product recommendations using social commerce sites. In addition to trust, other variables, such as purchasing intention, are critical for online retailers. Future studies should explore the effects of sociability on other variables of consequence. Third, 12 participants in a focus-group discussion might be insufficient for generating all the elements in each subdimension. Fern (1982) revealed that the management activities of large groups are more vital than those of small ones and that additional information can be acquired from two groups of four individuals than from one group of eight individuals. In particular, increasing the number of groups by reducing the size of the groups may enhance idea generation effectiveness. Therefore, future studies should invite more participants and increase the number of group discussions. Finally, both the usability and sociability of social commerce design influence the consumer purchase decision-making process (Huang and Benyoucef, 2017). Researchers may include usability factors in their research models and compare the effects of these models on consumer behaviors with sociability factors.

Social commerce sites enable customers to engage in mutual interactions, such as recommending and commenting on various products or services, with customers who have similar interests. Sociability can be considered a feature of social commerce sites, which considers social policies and structures that support a state of being sociable in computer-mediated contexts. Understanding the composition of sociability can be crucial for exercising marketing strategies on social commerce sites. The findings revealed that the purpose, policy, and people aspects of sociability positively affect trust in product recommendations. Multiple configurations involving a synergistic and substitutive relationship among the subdimensions of sociability achieve trust in product recommendations. These results may assist the managers of social commerce sites or virtual communities to increase consumer trust through sociability.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

This research was supported by the Ministry of Science and Technology (MOST), Taiwan, R.O.C., under grant number 104-2410-H-025-024 -MY2 and 105-2410-H-032-054-MY2.

Appendix. A: Questionnaire items

Research construct	Source
Purposes of sociability	
Reputation building	Cho et al. (2010)
(1) I earn respect from others by participating on Kidshome.	
(2) I feel that my participation improves my status on Kidshome.	
(3) My participation enhances my reputation on Kidshome.	
(4) My participation improves my ranking on Kidshome.	
Informational support	Liang et al. (2011/2012)
(1) Friends on Kidshome give me information to help me overcome problems.	
(2) Friends on Kidshome provide suggestions when I need help.	
(3) Friends on Kidshome help me discover the causes of difficulties and offer suggestions.	
(4) *Friends on Kidshome do not provide advice and information.	
Policies of sociability	
Rewards	Mimouni-Chaabane and Volle (2010)
(1) Consumers can receive “feedback money” for sharing information on Kidshome.	
(2) Consumers are rewarded with lower prices when they participate on Kidshome.	
(3) Consumers spend less money if they participate on Kidshome.	
(4) Overall, consumers save money if they participate on Kidshome.	
Shared norms	Wu et al. (2010) and Heide and John (1992)
(1) On Kidshome, consumers are generally willing to help others.	
(2) On Kidshome, consumers are generally willing to share personal experiences.	
(3) On Kidshome, consumers generally exchange information frequently and informally.	
Authenticity	Kowalczyk and Pounders (2016)
(1) Information, such as ratings and recommendations, from friends is authentic on Kidshome.	
(2) Information on Kidshome is genuine (not manipulated by a manufacturer or brand).	
(3) Information on Kidshome seems real to me.	
People of sociability	
Intimacy	Dong and Siu (2013)
(1) I feel a sense of closeness with my friends on Kidshome.	
(2) I feel a sense of intimacy with my friends on Kidshome.	
(3) My friends’ product reviews and recommendations on Kidshome are a very important part of my shopping.	
Common interests	Zhao et al. (2012)
(1) I have preferences similar to those of my friends on Kidshome.	
(2) I have interests similar to those of my friends on Kidshome.	
(3) I have values similar to those of my friends on Kidshome.	
(4) I have experiences similar to those of my friends on Kidshome.	
Trust in product recommendations	Shi and Chow (2015)
(1) I think that product recommendations on Kidshome are sincere.	
(2) I think that product recommendations on Kidshome are honest.	
(3) Kidshome does not make false product recommendations.	
(4) I think that product recommendations on Kidshome are trustworthy.	

Note: * represents a reversed item.

Appendix B:. Common method bias analysis

Construct	Indicator	Substantive factor loading (R1)	$R1^2$	Method factor loading (R2)	$R2^2$
Reputation building	RB1	0.986***	0.972	−0.170	0.029
	RB2	0.783***	0.613	0.077	0.006
	RB3	0.771***	0.594	0.071	0.005
	RB4	0.704***	0.496	0.028	0.001
Informational support	IS1	0.856***	0.733	−0.038	0.001
	IS2	0.846***	0.716	0.002	0.000
	IS2	0.881***	0.776	−0.013	0.000
	IS3	0.751***	0.564	0.054	0.003

Rewards	RE1	0.703***	0.494	0.153	0.023
	RE2	0.944***	0.891	−0.037	0.001
	RE3	0.945***	0.893	−0.138	0.019
	RE4	0.904***	0.817	0.035	0.001
Shared norms	SN1	0.896***	0.803	−0.004	0.000
	SN2	0.973***	0.947	−0.050	0.003
	SN3	0.906***	0.821	0.046	0.002
Authenticity	AU1	0.607***	0.368	0.253**	0.064
	AU2	0.901***	0.812	−0.212**	0.045
	AU3	0.903***	0.815	−0.038	0.001
Intimacy	IN1	0.908***	0.824	−0.124	0.015
	IN2	0.983***	0.966	−0.067	0.004
	IN3	0.541***	0.293	0.262*	0.069
Common interests	CI1	0.905***	0.819	−0.042	0.002
	CI2	0.999***	0.998	−0.138	0.019
	CI3	0.684***	0.468	0.298*	0.089
	CI4	0.993***	0.986	−0.118	0.014
Trust in product recommendations	TR1	0.887***	0.787	0.058	0.003
	TR2	0.957***	0.916	−0.034	0.001
	TR3	0.861***	0.741	0.054	0.003
	TR4	0.999***	0.998	−0.075	0.006
Average		0.861***	0.756	0.003	0.015
Ratio			51		1

References

Akman, I., Mishra, A., 2017. Factors influencing consumer intention in social commerce adoption. Inf. Technol. People 30 (2), 356–370.

Alshibly, H.H., 2014. A free simulation experiment to examine the effects of social commerce website quality and customer psychological empowerment on customers' satisfaction. J. Bus. Stud. Q. 5 (4), 21–40.

Animesh, A., Pinsonneault, A., Yang, S.-B., Oh, W., 2011. An odyssey into virtual worlds: exploring the impacts of technological and spatial environments on intention to purchase virtual products. MIS Quarterly 35 (3), 789–810.

Armstrong, J.S., Overton, T.S., 1977. Estimating nonresponse bias in mail surveys. J. Mark. Res. 14, 396–402.

Babbie, E., 2004. The practice of social research. Wadsworth Publishing Company, Belmont, CA.

Bagozzi, R.P., Yi, Y., Phillips, L.W., 1991. Assessing construct validity in organizational research. Adm. Sci. Q. 36 (3), 421–458.

Bai, Y., Yao, Z., Dou, Y.-F., 2015. Effect of social commerce factors on user purchase behavior: An empirical investigation from renren.com. Int. J. Inf. Manage. 35, 538–550.

Banerjee, S., Bhattacharyya, S., Bose, I., 2017. Whose online reviews to trust? Understanding reviewer trustworthiness and its impact on business. Decis. Support Syst. 96, 17.

Blanchard, A.L., Markus, M.L., 2004. The experienced sense of a virtual community: Characteristics and processes. ACM Sigmis Database 35 (1), 64–79.

Blau, P., 1964. Exchange and Power in Social Life. John Wiley & Sons, New York.

Brandtzaeg, P.B., Lüders, M., Skjetne, J.H., 2010. Too many Facebook “friends”? Content sharing and sociability versus the need for privacy in social network sites. Int. J. Human – Comput. Interact. 26 (11/12), 1006–1030.

Brislin, R.W., 1986. The wording and translation of research instruments. In: Lonner, W., Berry, J. (Eds.), Field methods in cross-cultural research. Sage, Beverly Hills, pp. 137–164.

Brodie, R.J., Ilic, A., Juric, B., Hollebeek, L., 2013. Consumer engagement in a virtual brand community: an exploratory analysis. J. Bus. Res. 66 (1), 105–114.

Chang, H.H., Tsai, Y.-C., Chen, S.-H., Huang, G.-H., Tseng, Y.H., 2015. Building long-term partnerships by certificate implementation: a social exchange theory perspective. J. Bus. Ind. Marketing 30 (7), 867–879.

Chang, S.E., Shen, W.-C., Liu, A.Y., 2016. Why mobile users trust smartphone social networking services? A PLS-SEM approach. J. Bus. Res. 69 (11), 4890–4895.

Chen, J., Shen, X.-L., 2015. Consumers' decisions in social commerce context: An empirical investigation. Decis. Support Syst. 79, 55–64.

Chen, M., Qi, X., 2015. Members' satisfaction and continuance intention: a socio-technical perspective. Ind. Manage. Data Syst. 115 (6), 1132–1150.

Cho, H., Chen, M., Chung, S., 2010. Testing an integrative theoretical model of knowledge-sharing behavior in the context of Wikipedia. J. Assoc. Inf. Sci. Technol. 61 (6), 1198–1212.

Colquitt, J.A., Scott, B.A., Rodell, J.B., Long, D.M., Zapata, C.P., Conlon, D.E., Wesson, M.J., 2013. Justice at the millennium, a decade later: a meta-analytic test of social exchange and affect-based perspectives. J. Appl. Psychol. 98 (2), 199–239.

Cropanzano, R., Mitchell, M.S., 2005. Social exchange theory: An interdisciplinary review. J. Manage. 31 (6), 874–900.

Currás-Pérez, R., Ruiz-Mafé, C., Sanz-Blas, S., 2013. Social network loyalty: evaluating the role of attitude, perceived risk and satisfaction. Online Inf. Rev. 37 (1), 61–82. https://doi.org/10.1108/14684521311311630.

Diamantopoulos, A., Siguaw, J.A., 2006. Formative versus reflective indicators in organizational measure development: a comparison and empirical illustration. Br. J. Manag. 17 (4), 263–282.

Dong, P., Siu, N.Y.M., 2013. Servicescape elements, customer predispositions and service experience: the case of theme park visitors. Tourism Manage. 36, 541–551.

Emerson, R.M., 1981. Social Psychology: Sociological Perspectives. Basic Books, New York, NY.

Farivar, S., Turel, O., Yuan, Y., 2017. A trust-risk perspective on social commerce use: an examination of the biasing role of habit. Int. Res. 27 (3), 586–607.

Fern, E.F., 1982. The use of focus groups for idea generation: the effects of group size, acquaintanceship, and moderator on response quantity and quality. J. Mark. Res. 19 (1), 1–13.

Fiss, P.C., 2007. A set-theoretic approach to organizational configurations. Acad. Manag. Rev. 32 (4), 1180–1198.

Fiss, P.C., 2011. Building better causal theories: A fuzzy set approach to typologies in organization research. Acad. Manag. J. 54 (2), 393–420.

Frank, O., Snijders, T., 1994. Estimating the size of hidden populations using snowball sampling. J. Off. Stat.-Stockholm 10 (1), 53–67.

Galeazzo, A., Furlan, A., 2018. Lean bundles and configurations: a fsQCA approach. Int. J. Oper. Prod. Manage. 38 (2), 513–533.

Gao, Q., Dai, Y., Fan, Z., Kang, R., 2010. Understanding factors affecting perceived sociability of social software. Comput. Hum. Behav. 26, 1846–1861.

Gibreel, O., AlOtaibi, D.A., Altmann, J., 2017. Social commerce development in emerging markets. Electron. Commer. Res. Appl. 27, 152–162.

Hajiheydari, N., Maskan, B.H.H., Ashkani, M., 2017. Factors affecting loyalty of mobile social networks' users. Int. J. E-Bus. Res. 13 (1), 66–81.

Hajli, M., 2013. A research framework for social commerce adoption. Inf. Manage. Comput. Secur. 21 (3), 144–154.

Hajli, M.N., 2014. The role of social support on relationship quality and social commerce. Technol. Forecast. Soc. Chang. 87, 17–27. https://doi.org/10.1016/j.techfore.2014.05.012.

Hajli, N., Sims, J., Zadeh, A.H., Richard, M.-O., 2017. A social commerce investigation of the role of trust in a social networking site on purchase intentions. J. Bus. Res. 71, 133–141. https://doi.org/10.1016/j.jbusres.2016.10.004.

Hall, H., Widen, G., Paterson, L., 2010. Not what you know, nor who you know, but who you know already: examining online information sharing behaviours in a blogging environment through the lens of social exchange theory. Libri 60 (2), 117–128.

Han, X. W., L., Crespi, N., Park, S., & Cuevas, Á. (2015). Alike people, alike interests? Inferring interest similarity in online social networks. Decision Support Systems, 69, 92-106.

Harman, H.H., 1976. Modern factor analysis. University of Chicago Press, Chicago, USA.

Harris, F., Lyon, F., 2013. Transdisciplinary environmental research: Building trust across professional cultures. Environ. Sci. Policy 31, 109–119.

Heide, J.B., John, G., 1992. Do norms matter in marketing relationships? J. Marketing 56 (2), 32–44.

Homans, G.C., 1958. Social behavior as exchange. Am. J. Sociol. 63 (6), 597–606.

Houkamau, C.A., Sibley, C.G., 2015. The revised multidimensional model of Māori identity and cultural engagement (MMM-ICE2). Soc. Indic. Res. 122 (1), 279–296.

Hsiao, K.-L., Lin, J.C.-C., Wang, X.-Y., Lu, H.-P., Yu, H., 2010. Antecedents and consequences of trust in online product recommendations. Online Inf. Rev. 34 (6), 935–953.

Hsu, C.-L., Chen, M.-C., Kikuchi, K., Machida, I., 2017. Elucidating the determinants of purchase intention toward social shopping sites: a comparative study of Taiwan and Japan. Telematics Inform. 34 (4), 326–338. https://doi.org/10.1016/j.tele.2016.04.016.

Huang, Z., Benyoucef, M., 2013. From e-commerce to social commerce: A close look at design features. Electron. Commer. Res. Appl. 12 (4), 246–259.

Huang, Z., Benyoucef, M., 2015. User preferences of social features on social commerce websites: An empirical study. Technol. Forecast. Soc. Chang. 95, 57–72. https://doi.org/10.1016/j.techfore.2014.03.005.

Huang, Z., Benyoucef, M., 2017. The effects of social commerce design on consumer purchase decision-making: an empirical study. Electron. Commer. Res. Appl. 25,

40–58.
Ilicic, J., Webster, C.M., 2014. Investigating consumer–brand relational authenticity. J. Brand Manage. 21 (4), 342–363.
Jin, B., Park, J.Y., Kim, H.S., 2010. What makes online community members commit? A social exchange perspective. Behav. Inf. Technol. 29 (6), 587–599.
Jin, W., Sun, Y., Wang, N., Zhang, X., 2017. Why users purchase virtual products in MMORPG? An integrative perspective of social presence and user engagement. Int. Res. 27 (2), 408–427.
Junglas, I., Goel, L., Abraham, C., Ives, B., 2013. The social component of information systems-How sociability contributes to technology acceptance. J. Assoc. Inf. Sys. 14 (10), 585–616.
Kim, D.J., Ferrin, D.L., Rao, H.R., 2008a. A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. Decis. Support Syst. 44 (2), 544–564.
Kim, G., Shin, B., Lee, H.G., 2009. Understanding dynamics between initial trust and usage intentions of mobile banking. Inf. Syst. J. 19 (3), 283–311.
Kim, H.-S., Park, J.Y., Jin, B., 2008b. Dimensions of online community attributes. Int. J. Retail Distrib. Manage. 36 (10), 812–830. https://doi.org/10.1108/09590550810901008.
Kim, S., Park, H., 2013. Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance. Int. J. Inf. Manage. 33 (2), 318–332.
Ko, H.C., 2018. Social desire or commercial desire? The factors driving social sharing and shopping intentions on social sommerce platforms. Electron. Commer. Res. Appl. 28, 1–15.
Koh, J., Kim, Y.-G., 2003. Sense of virtual community: A conceptual framework and empirical validation. Int. J. Electron. Commerce 8 (2), 75–94.
Kowalczyk, C.M., Pounders, K.R., 2016. Transforming celebrities through social media: The role of authenticity and emotional attachment. J. Prod. Brand Manage. 25 (4), 345–356.
Kraus, S., Ribeiro-Soriano, D., Schüssler, M., 2017. Fuzzy-set qualitative comparative analysis (fsQCA) in entrepreneurship and innovation research–the rise of a method. Int. Entrepreneurship Manage. J. 1–19.
Kreijns, K., Kirschner, P.A., Jochems, W., Van Buuren, H., 2007. Measuring perceived sociability of computer-supported collaborative learning environments. Comput. Educ. 49 (2), 176–192.
Lai, C.S., 2009. The use of influence strategies in interdependent relationship: The moderating role of shared norms and values. Ind. Mark. Manage. 38 (4), 426–432.
Laroche, M., Habibi, M.R., Richard, M.O., Sankaranarayanan, R., 2012. The effects of social media based brand communities on brand community markers, value creation practices, brand trust and brand loyalty. Comput. Hum. Behav. 28 (5), 1755–1767.
Lee, B., Ge, S., 2010. Personalisation and sociability of open knowledge management based on social tagging. Online Inf. Rev. 34 (4), 618–625. https://doi.org/10.1108/14684521011073016.
Lee, C.-C., Hsu, S.H., Chang, J.-W., 2013. Factors influencing sociability in educational MMORPGs – a fuzzy AHP approach. Int. Res. 23 (3), 298–315. https://doi.org/10.1108/10662241311331745.
Lee, K., 1998. The net as a foraging society: flexible communities. Inf. Soc. 14 (2), 97–106.
Lee, L., Reinicke, B., Sarkar, R., Anderson, R., 2015. Learning through interactions: improving project management through communities of practice. Project Manage. J. 46 (1), 40–52.
Lee, Y.-C., 2018. Comparing factors affecting attitudes toward LBA and SoLoMo advertising. Inf. Syst. eBus. Manage. 16 (2), 357–381. https://doi.org/10.1007/s10257-017-0364-9.
Lee, Y.-K., Kim, S.Y., Chung, N., Ahn, K., Lee, J.-W., 2016. When social media met commerce: a model of perceived customer value in group-buying. J. Serv. Marketing 30 (4), 398–410.
Lee, Y., Kwon, O., 2011. Intimacy, familiarity and continuance intention: An extended expectation–confirmation model in web-based services. Electron. Commer. Res. Appl. 10, 342–357.
Li, C.Y., Ku, Y.C., 2018. The power of a thumbs-up: Will e-commerce switch to social commerce? Inf. Manage. 55 (3), 340–357.
Liang, H., Saraf, N., Hu, Q., Xue, Y., 2007. Assimilation of enterprise systems: The effect of institutional pressures and the mediating role of top management. MIS Quarterly 31, 59–87.
Liang, T.-P., Ho, Y.-T., Li, Y.-W., & Turban, E. (2011/2012). What drives social commerce: The role of social support and relationship quality. International Journal of Electronic Commerce, 16(2), 69-90.
Lin, C.S., Wu, S., 2015. Exploring antecedents of online group-buying: Social commerce perspective. Hum. Syst. Manage. 34 (2), 133–147.
Liu, Y., Mezei, J., Kostakos, V., Li, H., 2017. Applying configurational analysis to IS behavioural research: a methodological alternative for modelling combinatorial complexities. Inf. Syst. J. 27 (1), 59–89.
Loureiro, S.M.C., 2013. The effect of perceived benefits, trust, quality, brand awareness/associations and brand loyalty on internet banking brand equity. Int. J. Electron. Commerce Studies 2, 139–158.
Lu, B., Fan, W., Zhou, M., 2016a. Social presence, trust, and social commerce purchase intention: an empirical research. Comput. Hum. Behav. 56, 225–237.
Lu, B., Zeng, Q., Fan, W., 2016b. Examining macro-sources of institution-based trust in social commerce marketplaces: an empirical study. Electron. Commer. Res. Appl. 20, 116–131. https://doi.org/10.1016/j.elerap.2016.10.004.
Lu, J., Yang, J., Yu, C.-S., 2013. Is social capital effective for online learning? Inf. Manage. 50 (7), 507–522.
Lu, X., Phang, C.W., Yu, J., 2011. Encouraging participation in virtual communities through usability and sociability development:an empirical investigation. Database Adv. Inf. Syst. 42 (3), 96–225.
Mamonov, S., Benbunan-Fich, R., 2017. Exploring factors affecting social e-commerce service adoption: the case of Facebook Gifts. Int. J. Inf. Manage. 37 (6), 590–600. https://doi.org/10.1016/j.ijinfomgt.2017.05.005.
Matook, S., Brown, S.A., Rolf, J., 2015. Forming an intention to act on recommendations given via online social networks. Eur. J. Inf. Syst. 24 (1), 76–92.
Mimouni-Chaabane, A., Volle, P., 2010. Perceived benefits of loyalty programs: Scale development and implications for relational strategies. J. Bus. Res. 63 (1), 32–37.
Mislove, A., Marcon, M., Gummadi, K. P., Druschel, P., & Bhattacharjee, B. (2007). Measurement and analysis of online social networks. Paper presented at the 7th ACM SIGCOMM conference on Internet measurement.
Molm, L.D., 1997. Coercive Power in Social Exchange. Cambridge University Press, New York.
Mortazavi, M., Rahim Esfidani, M., Shaemi Barzoki, A., 2014. Influencing VSN users' purchase intentions. J. Res. Interact. Marketing 8 (2), 102–123.
Mukherjee, A., Nath, P., 2003. A model of trust in online relationship banking. Int. J. Bank Marketing 21 (1), 5–15.
Mutz, D.C., 2009. Effects of Internet commerce on social trust. Public Opin. Q. 73 (3), 439–461.
Nunkoo, R., Smith, S.L., 2013. Political economy of tourism: Trust in government actors, political support, and their determinants. Tourism Manage. 36, 120–132.
Oh, S., Syn, S.Y., 2015. Motivations for sharing information and social support in social media: A comparative analysis of Facebook, Twitter, Delicious, YouTube, and Flickr. J. Assoc. Inf. Sci. Technol. 66 (10), 2045–2060.
Oparaocha, G.O., 2016. Towards building internal social network architecture that drives innovation: a social exchange theory perspective. J. Knowledge Manage. 20 (3), 534–556.
Ordanini, A., Parasuraman, A., Rubera, G., 2014. When the recipe is more important than the ingredients: A qualitative comparative analysis (QCA) of service innovation configurations. J. Serv. Res. 17 (2), 134–149.
Ou, C.X., Pavlou, P.A., Davison, R.M., 2014. Swift guanxi in online marketplaces: the role of computer-mediated communication technologies. MIS Quarterly 38 (1), 209–230.
Pappas, I., Mikalef, P., Giannakos, M., & Pavlou, P. (2017). Value co-creation and trust in social commerce: An fsQca approach. Paper presented at the roceedings of the 25th European Conference on Information Systems (ECIS), Guimarães, Portugal.
Peng, Y., Ke, D., 2015. Consumer trust in 3D virtual worlds and its impact on real world purchase intention. Nankai Business Review International 6 (4), 381–400.
Phang, C.W., Kankanhalli, A., Sabherwal, R., 2009. Usability and sociability in online communities: a comparative study of knowledge seeking and contribution. J. Assoc. Inf. Sys. 10 (10), 721–747.
Pinho, J.C., Soares, A.M., 2015. Response to advertising on online social networks: the role of social capital. Int. J. Consum. Stud. 39 (3), 239–248. https://doi.org/10.1111/ijcs.12172.
Pinjani, P., Palvia, P., 2013. Trust and knowledge sharing in diverse global virtual teams. Inf. Manage. 50 (4), 144–153.
Preece, J., 2000. Online communities: Designing usability and supporting sociability. John Wiley and Sons, New York, USA.
Preece, J., 2001. Sociability and usability in online communities: Determining and measuring success. Behav. Inf. Technol. 20 (5), 347–356.
Ragin, C.C., 2000. Fuzzy-set social science. University of Chicago Press.
Ragin, C.C., 2008. Redesigning social inquiry: Fuzzy sets and beyond. Chicago: University of Chicago Press.
Ragin, C.C., Davey, S., 2014. fs/QCA [Computer Programme], version 2.5. University of California, Irvine, CA.
Rothaermel, F.T., Sugiyama, S., 2001. Virtual internet communities and commercial success: individual and community-level theory grounded in the atypical case of TimeZone. com. J. Manage. 27 (3), 297–312.
Ryan, G.W., Bernard, H.R., 2000. Data management and analysis methods. In: Denzin, N.K., Lincoln, Y.S. (Eds.), Handbook of qualitative research, 2nd ed. Sage, Thousand Oaks, CA, pp. 769–802.
Salganik, M.J., Heckathorn, D.D., 2004. Sampling and estimation in hidden populations using respondent-driven sampling. Sociol. Methodol. 34 (1), 193–240.
Shadkam, M., O'Hara, J., 2013. Social commerce dimensions: The potential leverage for marketers. J. Int. Banking Commerce 18 (1), 1–14.
Shanmugam, M., Sun, S., Amidi, A., Khani, F., Khani, F., 2016. The applications of social commerce constructs. Int. J. Inf. Manage. 36 (3), 425–432.
Shen, J., 2012. Social comparison, social presence, and enjoyment in the acceptance of social shopping websites. J. Electron. Commerce Res. 13 (3), 198–212.
Sheng, M.L., Hsu, C.L., Wu, C.C., 2011. The asymmetric effect of online social networking attribute-level performance. Ind. Manage. Data Syst. 111 (7), 1065–1086.
Shi, S., Chow, W.S., 2015. Trust development and transfer in social commerce: prior experience as moderator. Ind. Manage. Data Syst. 115 (7), 1182–1203.
Shiau, W.-L., Chau, P.Y.K., 2015. Does altruism matter on online group buying? Perspectives from egotistic and altruistic motivation. Inf. Technol. People 28 (3), 677–698.
Shiau, W.L., Luo, M.M., 2012. Factors affecting online group buying intention and satisfaction: a social exchange theory perspective. Comput. Hum. Behav. 28 (6), 2431–2444.
Shin, D.-H., 2013. User experience in social commerce: In friends we trust. Behav. Inf. Technol. 32 (1), 52–67.
Shin, D.-H., Kim, J., 2015. Social viewing behavior in social TV: proposing a new concept of socio-usability. Online Inf. Rev. 39 (3), 416–434.
Sierra, J.J., McQuitty, S., 2005. Service providers and customers: social exchange theory and service loyalty. J. Serv. Mark. 19 (6), 392–400.
Sánchez-Navarro, J., Aranda, D., 2013. Messenger and social network sites as tools for sociability, leisure and informal learning for Spanish young people. Eur. J. Commun.

28 (1), 67–75.
Spake, D.F., Megehee, C.M., 2010. Consumer sociability and service provider expertise influence on service relationship success. J. Serv. Marketing 24 (4), 314–324. https://doi.org/10.1108/08876041011053024.
Stewart, K.J., 2003. Trust transfer on the world wide web. Organ. Sci. 14 (1), 5–17.
Stroe, S., Parida, V., Wincent, J., 2018. Effectuation or causation: An fsQCA analysis of entrepreneurial passion, risk perception, and self-efficacy. J. Bus. Res. 89, 265–272.
Tolstedt, B.E., Stokes, J.P., 1983. Relation of verbal, affective, and physical intimacy to marital satisfaction. J. Couns. Psychol. 30, 573–580.
Torres, P., Augusto, M., Godinho, P., 2017. Predicting high consumer-brand identification and high repurchase: necessary and sufficient conditions. J. Bus. Res. 79, 52–65.
van Dierendonck, D., Patterson, K., 2015. Compassionate love as a cornerstone of servant leadership: an integration of previous theorizing and research. J. Bus. Ethics 128 (1), 119–131.
Wang, W.-T., Chang, W.-H., 2014. A study of virtual product consumption from the expectancy disconfirmation and symbolic consumption perspectives. Inf. Syst. Front. 16 (5), 887–908. https://doi.org/10.1007/s10796-012-9389-2.
Wang, Y., Qiao, F., Peng, W., 2015. Is the size or the valence of proactive engagement associated with purchase intention? A case study of branded blogs of Starbucks. Int. J. Strategic Commun. 9 (3), 197–216.
Weisberg, J., Te'eni, D., Arman, L., 2011. Past purchase and intention to purchase in e-commerce. Int. Res. 21 (1), 82–96.
Woodside, A.G., 2013. Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory. J. Bus. Res. 66, 463–472.
Wu, J.J., Chen, Y.H., Chung, Y.S., 2010. Trust factors influencing virtual community members: a study of transaction communities. J. Bus. Res. 63 (9), 1025–1032.
Wu, P.L., Yeh, S.S., Woodside, A.G., 2014. Applying complexity theory to deepen service dominant logic: Configural analysis of customer experience-and-outcome assessments of professional services for personal transformations. J. Bus. Res. 67 (8), 1647–1670.
Wu, Y., Cui, T., Liu, N., Deng, Y., Guo, J., 2018. Demystifying continuous participation in game applications at social networking sites. Int. Res. 28 (2), 374–392.
Yan, Z., Wang, T., Chen, Y., Zhang, H., 2016. Knowledge sharing in online health communities: a social exchange theory perspective. Inf. Manage. 53 (3), 643–653.
Yang, K., Li, X., Kim, H., Kim, Y.H., 2015. Social shopping website quality attributes increasing consumer participation, positive eWOM, and co-shopping: the reciprocating role of participation. J. Retailing Consum. Serv. 24, 1–9. https://doi.org/10.1016/j.jretconser.2015.01.008.
Ye, H.J., Feng, Y., Choi, B.C., 2015. Understanding knowledge contribution in online knowledge communities: a model of community support and forum leader support. Electron. Commer. Res. Appl. 14 (1), 34–45.
Yeh, N.-C., Lin, J.C.-C., Hsi-Peng, L., 2011. The moderating effect of social roles on user behaviour in virtual worlds. Online Inf. Rev. 35 (5), 747–769. https://doi.org/10.1108/14684521111176480.
Zhang, H., Lu, Y., Gao, P., Chen, Z., 2014a. Social shopping communities as an emerging business model of youth entrepreneurship: exploring the effects of website characteristics. Int. J. Technol. Manage. 66 (4), 319–345.
Zhang, H., Lu, Y., Gupta, S., Zhao, L., 2014b. What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences. Inf. Manage. 51 (8), 1017–1030. https://doi.org/10.1016/j.im.2014.07.005.
Zhao, L., Lu, Y., Wang, B., Chau, P.Y., Zhang, L., 2012. Cultivating the sense of belonging and motivating user participation in virtual communities: A social capital perspective. Int. J. Inf. Manage. 32 (6), 574–588.
Zhao, Q., Chen, C.D., Wang, J.L., Chen, P.C., 2017. Determinants of backers' funding intention in crowdfunding: Social exchange theory and regulatory focus. Telematics Inform. 34 (1), 370–384.