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Social commerce as social networking

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ABSTRACT

Behavioral intention toward social commerce has been explained mainly by consumers' pursuit of utilitarian and economic value. However, in this paper, we show that consumers can be drawn to social commerce primarily for the pursuit of social value. Based on quantitative data from 193 university students, we found the pursuit of socialization, not usefulness or value, was the main driver for consumers' behavioral intention toward social commerce services. The results of this study demonstrate social commerce as a vehicle for social value in the form of social capital gains and social engagement. This presents a new use of social commerce and shifts away from understanding it solely as a vehicle for functional or economic value.

1. Introduction

Research on social commerce has exponentially increased over the past 10 years, reflecting the widespread adoption of social commerce strategies and practices (Lin et al., 2017; Ng, 2013). Social commerce is a broad multi-faceted concept. Recent literature reviews (Busalim and Hussain, 2016; Lin et al., 2017) enumerate the several facets of social commerce. One facet that this paper focuses on is the activities by which people shop or intentionally explore shopping opportunities by participating and/or engaging in a collaborative online environment (Curry and Zhang, 2011). In this paper, we adopt one of the many definitions of social commerce as the use of Web 2.0 applications and social media to facilitate the interactions of individuals on the Internet to support consumers' acquisition of products and services (Liang et al., 2011). Several social commerce models fall under this definition, including social shopping (Stephen and Toubia, 2010), social bundling (Doha et al., 2017), group buying (Hu et al., 2013),¹ and collaborative consumption (Belk, 2014).²

This paper investigates the factors that influence individuals' behavioral intention toward social commerce. In doing so, we build on the established social commerce literature, where the predominant view has focused on utilitarian and economic factors as the key determinants of behavioral intention toward social commerce (Anderson et al., 2017; Chen et al., 2014; Davis et al., 2014; De Vries and Carlson, 2014; Harris and Dennis, 2011). In this paper, building on the consumer motivation theory, we go beyond the utilitarian/economic drivers to investigate

the role of social hedonic drivers in determining behavioral intention toward social commerce. We argue that, aside from the utility and economy of social commerce, socialization plays a significant role in determining individuals' behavioral intention toward that type of commercial activity. This is a gap in the social commerce literature that this paper aims to fill. Testing the social factors in explaining users' behavioral intention toward social commerce is plausible because of the inherent social nature of social commerce activity. Accordingly, the framework we use in this paper categorizes the determinants of individuals' behavioral intention toward social commerce into three major categories; utilitarian, economic, and social. To test the main hypotheses in this paper concerning the social drivers, we establish control for the other two types of drivers (i.e., the utilitarian and economic factors). Accordingly, it is necessary that our research model includes the three types of drivers in trying to explain behavioral intention toward social commerce.

This research is important because it departs from the focus of the current literature on utilitarian/economic-based motivations to socialization-based motivations in explaining behavioral intention toward social commerce. If our argument holds, then this paper would mark a new use for social commerce—one wherein individuals use social commerce to enhance their social life. This would be an interesting non-intuitive explanation of individuals' behavioral intention toward social commerce. This would be particularly interesting when considering the younger generation (16–24 years of age), which represents a considerable proportion (about 25%) of social media users (Statista, 2014).

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¹ Groupon Inc. is a typical example of group buying business models.

² www.collaborativeconsumption.com is a database referencing hundreds of businesses with various collaborative consumption business models.

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This population is also the heaviest users of social media (i.e., Facebook, Twitter, etc.), which is a free vehicle for socialization. For this population to be willing to pay in social commerce arrangements for more socialization raises interesting questions for future work.

Our empirical investigation in this paper is based on original quantitative survey data that we collected from a sample of 193 university students following a priming experience of an online live social commerce platform. Demographically, university students are appropriately representative of the target population in age and economics. The social commerce platform we used as the empirical setting for this study follows a reverse auction model. Auctions have been dubbed “reverse” because in those dynamic biddable events, sellers bid instead of buyers, and prices are bid down instead of up (Jap, 2007), or until the best offer is reached (Schoenherr and Mabert, 2007). A reverse auction model has especially useful features for the procurement of services. First, it enables consumers to dictate their custom requirements in the scope of needed services. Unlike in product settings, services entail a high degree of customization, which is consumer-specific. In that sense, a reverse auction model enables service innovation—creating a need for services that are not readily available. Second, reverse auctions leverage the buying power and perpetuate a power-based bargaining relationship (Emiliani and Stec, 2005). We extend this notion of reverse auction to consumers in a service setting. Because of the importance of sharing for the economics of services, we further consider the buying side to comprise groups, not individuals. In this model, an individual perceives the need for a given service, which would require a group for the service to be delivered economically.

This paper is organized as follows. Section 2 presents a review of the literature on the factors that explain consumers’ behavioral intention toward social commerce. Section 3 introduces the theoretical development of the hypotheses. Section 4 details the methodological design of the study, explains the data, and presents the results. Finally, Section 5 provides a discussion of the results.

2. Literature review

The increasingly growing use and practice of social commerce has resulted in an exponential increase in research literature aiming to understand determinants of consumers’ behavioral intention toward social commerce. The extant social commerce literature can be depicted in a five-stage process that explains the main activities involved in consumer decision making: need recognition, search, evaluation, purchase, and post-purchase (Engel and Blackwell, 1973). Notably, the preponderance of research studies has focused on investigating the antecedents of consumer purchase decision—the stage that this paper is interested in. A plethora of antecedents to the purchase decision has been investigated in this literature, some of which are summarized in Zhang and Benyoucef (2016). However, among these antecedents, we found that utilitarian and economic factors are most widely examined given their important roles in the purchase stage. For example, in a collaborative consumption context, Hamari and Ukkonen (2016) find that people’s interest in social commerce is mainly driven by their pursuit of utilitarian value (in terms of seeking to fulfill their consumption needs), combined with economic value (in terms of cost and time savings).

Utilitarianism represents a general theme for factors that capture consumers’ perception of utility resulting from considering social commerce transactions. Chief among these factors are consumers’ perceptions of usefulness and ease of use. These two factors flow directly from the technology acceptance model (TAM) (Davis, 1989), which is widely used in the quest to explain consumers’ behavioral intention toward social commerce (Chen et al., 2014; Harris and Dennis, 2011; Kumar et al., 2015; Lee et al., 2012; Shin, 2013). Firstly, usefulness refers to the functionality that can be drawn from the social commerce experience (Anderson et al., 2017). It stems from the desire for efficient, rational, task-oriented efforts relevant to purchasing products and/or

services (Anderson et al., 2017; Babin, Darden, and Griffin, 1994). Usefulness can come in different forms, such as convenience (Childers et al., 2001; Kwon and Jain, 2009), time saving (Childers et al., 2001; Kwon and Jain, 2009), resolving uncertainties/doubts regarding buying products/services (Chen et al., 2015), access to unique products and/or services (Chen et al., 2015), and access to information (Childers et al., 2001; Kwon and Jain, 2009; To et al., 2007). Traditionally, functional usefulness is presumed to be the principal driver of consumer choice. This assumption is based on Stigler’s economic utility theory (1950) and is popularly expressed in terms of the rational economic man (Kim et al., 2011). Usefulness positively affects users’ intentions to use e-commerce (Gefen and Straub, 2000) and social commerce (Hajji, 2014). More generally, utilitarian values motivate purchases in traditional formats (Babin et al., 1994) as well as for online channels (Childers et al., 2001; To et al., 2007). Secondly, ease of use refers to “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989: p. 320). Ease of use is widely established as a significant predictor of consumers’ behavioral intention toward social commerce (Akman et al., 2017). The practical utility of ease of use is that web users are considerably influenced by this variable because enjoyment is coupled with the ease of engaging in the mechanisms of the technology (Ramayah and Ignatius, 2005).

Economy, on the other hand, represents a theme for factors that capture value and innovativeness. Firstly, perceived value “... is the consumers’ overall assessment of the utility of a product based on perceptions of what is received and what is given” (Zeithaml, 1988: p. 14). Perceived value is derived from the perceived efficient use of money, which contributes positively to total customer value (Kim et al., 2011). According to transaction utility theory, the more favorable the price of a product or service to customers, the greater its perceived value. Previous research finds that cost savings that can stem from social commerce motivates search and purchase intention (Childers et al., 2001; To et al., 2007). For example, in the context of peer-to-peer networks, Luchs et al. (2011) find that sharing serves as an incentive for saving economic resources. In a collaborative consumption context, Belk’s (2014) analysis using the beer example relies entirely on the potential savings that two people, who happen to be in the same place but may not necessarily know one another, would attain if they shared in a pitcher rather than bought individual glasses. Ultimately, customers perceive greater efficient use of their money as a valuable transaction: the greater the price utility to the customer, the higher the customer’s purchase intention (Kim et al., 2011). Secondly, innovativeness can be a characteristic of the artifact (e.g., service innovativeness) or the consumer (e.g., user innovativeness). User innovativeness reflects the extent to which an individual is willing to try out new artifacts such as information technology (Agarwal and Prasa, 1998). On the other hand, product/service innovativeness reflects their degree of newness (Garcia and Calantone, 2002). Social commerce creates myriad opportunities for consumers to discover innovative products/services (Chen et al., 2015). Innovativeness from either perspective positively influences consumers’ adoption of information technology and e-commerce (Citrin et al., 2001; Dai et al., 2015; Venkatraman, 1991; Wells et al., 2010).

A third perspective—socialization—that this paper introduces to explain consumers’ behavioral intention toward social commerce has received little attention in the literature. In the context of social commerce, four constructs can be grouped under the socialization theme, including social capital, engagement, homophily, and group fill. Social capital refers to the relationship network possessed by an individual or a social network and the set of resources embedded within it (Nahapiet and Ghoshal, 1998). Engagement in an online shopping context refers to the interaction with others, such as by sharing information, helping, validating information, and discussing (Baldus et al., 2015). Several studies have identified the enjoyment which the social interaction provides as one of the main reasons why consumers go shopping (Mikalef et al., 2013). For example, engaging in online conversations

during browsing could provide users with pleasure, and motivate them to purchase in the future (Wolfinger and Gilly, 2001). Homophily refers to the similarity of group members' characteristics that are attached to individuals externally (e.g., gender, race, or age) or internally (e.g., values, beliefs, or norms) (Lazarsfeld and Robert, 1954). The basic tenet of homophily is that the level of interaction among members of a group is directly related to the degree of their similarity along socio-demographic characteristics (Mark, 2003; Park et al., 2014). People associate with similar individuals because of ease of communication and shared cultural tastes, which smooths the coordination of activity (Mark, 1998; Miller et al., 2001). The similarity of individuals leads to a greater level of interpersonal attraction, trust, and understanding, and consequently, greater levels of social affiliation than what would be expected among dissimilar individuals (Ruef et al., 2003). Lastly, group fill refers to the extent to which the group is full of signed-up members with respect to its intended size.

To the best of our knowledge, the socialization perspective has not been examined as a determinant of consumers' behavioral intention toward social commerce, particularly in social commerce settings involving group buying activities. Thus, in this paper, we investigate the hypothesis that, in social commerce settings, people make purchases for the socialization that occurs with others (which is a part of social commerce activity), not just for the utility or economy of the products or services purchased.

3. Hypotheses development

Our research model in Fig. 1 builds on previous research, which has used multiple theoretic perspectives in trying to understand consumers' behavioral intention toward social commerce. This research model employs three theoretic perspectives to explain consumers' intentions toward social commerce. First, we use the TAM theory to capture the utilitarian perspective. TAM has been one of the dominant theories used in the social commerce literature to explain consumers' behavioral intention (Chen et al., 2014; Harris and Dennis, 2011). The basic tenet of

the TAM theory is that it owes users' attitudes and intentions toward information systems to two primary determinants: perceived usefulness and perceived ease of use (Davis, 1989; Venkatesh et al., 2003). Second, we use the consumer value theory (Cronin et al., 2000; Zeithaml, 1988) to capture the economic perspective. Consumer value theory has been extensively used in the social commerce literature to explain consumers' behavioral intention (Anderson et al., 2017; Davis et al., 2014; De Vries and Carlson, 2014). Economic value can stem from consumers' perceived value, which pertains to what they pay vs. what they get Zeithaml (1988), and can also stem from their perceived innovativeness (e.g., user innovativeness and service innovativeness), which pertains to productivity (Cronin et al., 2000). The innovativeness and value constructs complement one another in explaining behavioral intention to the extent that testing one dimension necessitates control for the other dimension. For example, while user and/or service innovativeness might be necessary for favorable behavioral intention outcomes, a user's perceived value of the service might be critical for unlocking that outcome. Conversely, a user may perceive a service to be of high value, yet behavioral intention might still hinge on the user's willingness to try something new or on the service having some degree of innovativeness. Lastly, we use the consumer motivation theory (Hirschman and Holbrook, 1982; Tauber, 1972), which is emerging in the social commerce literature, to explain consumers' behavioral intention (Heinonen, 2011; Mikalef et al., 2013; Pöyry et al., 2013). Motivation theory posits that consumers' behavioral intention may be determined not only by utilitarian/economic factors but also by hedonic factors (e.g., perceived enjoyment). One hedonic motivation that we argue in this paper is socialization. We capture socialization in four highly intertwined constructs, including social capital, engagement, homophily, and group fill. These factors have been known to motivate individuals' involvement in social activity in general (Backstrom et al., 2006; Chen et al., 2015; Lin and Lu, 2011; Ruef et al., 2003).

In this section, we derive theoretical explanation for the hypotheses that are drawn from the literature (namely, the utilitarian and economic perspectives), and the hypotheses that we contribute (namely, the social perspective) to explain the behavioral intention toward social commerce. We summarize these hypotheses in the research model in Fig. 1.

3.1. Utilitarian determinants

3.1.1. Perceived usefulness

Usefulness is defined as the degree to which a person believes that using a particular service would enhance his or her life in general (Davis, 1989: p. 320). Usefulness is one of the two main determinants of adoption in the widely accepted TAM theory (Davis, 1989; Komiak and Benbasat, 2006; Venkatesh et al., 2003). Usefulness relates to perceived need, which focuses on the current need or relevance of adoption, and perceived benefit, which deals with the future outcome or benefit from adoption (Dimitrova and Chen, 2006). Through a uses and gratifications theory lens, Zhu and He (2002) find a positive relationship between an individual's perceived need and benefit for the Internet and the likelihood of adopting and using it. In an e-government services setting, Bretschneider et al. (2003) found empirical support for perceived benefit as a main driver of adoption. Thus, we hypothesize that H1. Perceived usefulness is positively related to an individual's intention to purchase into social commerce transactions.

3.1.2. Perceived ease of use

Ease of use is the other main determinant of adoption in the TAM theory (Davis, 1989; Komiak and Benbasat, 2006; Venkatesh et al., 2003). Social commerce was coined in the early 1990s and has been in exponentially growing practice since the widespread adoption of social networks in the early 2000s. However, it is still considered a nascent business model—at least not a dominant model for online transactions.

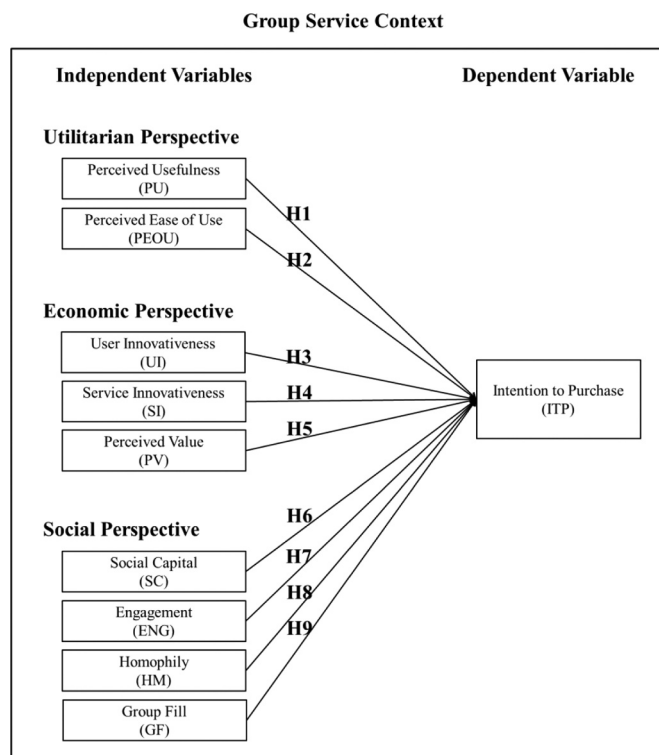


Fig. 1. Research model.

Therefore, as an innovative e-commerce approach, the adoption of social commerce is likely to depend on the ease of its use. Ease of use can be manifested in the ease of learning to use social commerce, the ease of interacting with social commerce, the ease of getting social commerce to work as expected, and to be flexible to interact with (Venkatesh et al., 2003). In a service setting, the time and effort involved in making a decision to purchase, in accessing the service, in starting and completing a purchase transaction, and in experiencing the service's core benefits can influence users' evaluation of the service (Berry et al., 2002). The combination of these dimensions directly influence not only consumers' behavioral intention toward a service, but also their re-purchase visits and spending (Seiders et al., 2007). Thus, we hypothesize that

H2. Perceived ease of use is positively related to an individual's intention to purchase into social commerce transactions.

3.2. Economic determinants

3.2.1. User innovativeness

Personal innovativeness has been established as one of the key determinants of users' behavioral intention in the TAM theory (Dai et al., 2015). It is defined as an individual's willingness of to try out any new information technology (Agarwal and Prasa, 1998). In that sense, innovativeness is considered a personal trait that is consistent across different situations and encounters. This innate trait compels individuals to seek information about new ideas and ways to experiment with them, and try associated products and/or services (Agarwal and Prasa, 1998). It also entails risk-taking behavior and tolerance for uncertainty and imprecision (Kirton, 1976; Rogers, 1995). Thus, highly innovative individuals are more likely to seek information about and even try new ideas regardless of the value they seem to accrue. Innovativeness generally predicts consumer innovative tendencies to adopt various technological innovations (Dai et al., 2015). For instance, user innovativeness predicts their adoption of Internet shopping (Citrin et al., 2001). It affects their evaluation and triggers their decision making for service adoption (Hung et al., 2003). Thus, we hypothesize that

H3. User innovativeness is positively related to an individual's intention to purchase into social commerce transactions.

3.2.2. Service innovativeness

As noted earlier, a key feature of the reverse auction type model is that it enables the creation of demand for creative and innovative services that may not have existed before. A fundamental characteristic of any innovation is its newness, which can be perceived as a reward/risk by users (Wells et al., 2010). Service innovativeness is defined here as the degree of newness of the service, which is a widely accepted definition (Garcia and Calantone, 2002). While there can be multiple perspectives toward newness (e.g., firm, industry, and market), we consider the perspective of consumers (Atuahene-Gima, 1995). From a reward perspective, marketing research has argued that the novelty of an innovation or product can foster positive affective reactions, such as excitement (Cox and Locander, 1987) and interest (Mukherjee and Hoyer, 2001). Seminal psychology literature asserts that the essence of novelty stimulates affective reactions—be it positive or negative. Based on earlier work that studied reactions to novel stimuli (Berlyne et al., 1963), Mandler (1982) found that novel stimuli causes strong arousal or emotion, which are highly affective reactions. Such affective reactions were explained by individuals' perceptions of novel stimuli as either something they have never experienced before or as previously experienced attributes that are presented in unfamiliar combinations (Berlyne, 1971). Accordingly, innovativeness (newness) has been established in the adoption literature as a significant predictor of adoption (Venkatraman, 1991; Wells et al., 2010). In the context of group

service social commerce, we build on these earlier empirical findings in predicting that higher levels of service innovativeness are positively related to an individual's intention to join a group to try a service. Therefore, we hypothesize that

H4. Service innovativeness is positively related to an individual's intention to purchase into social commerce transactions.

3.2.3. Perceived value

Perceived value here represents consumers' overall economic assessment of their purchase based on their perceptions of what they receive compared to what they give or pay (Zeithaml, 1988). Karmarkar et al. (2015) assert that price is a key factor in most purchase decisions. However, price alone may not be adequate for explaining behavioral intention because price lacks a benchmark of benefit against which a purchase decision is made. In contrast, perceived value addresses this problem by juxtaposing the price paid against the benefit/return obtained, which is, in this case, the benchmark.

In her classical modeling of the relationship between price, quality, and value on the one hand and purchasing decision on the other, Zeithaml (1988) showed price and quality to be low-level attributes that together form consumers' perceptions of value, and that value is a high-level attribute that ultimately determines consumers' behavioral intention toward purchasing. This model was empirically confirmed by Sweeney et al. (1997), who found no support for the price-willingness to buy hypothesis. This model is also congruent with Porter's (1991) depiction of value as a balance between buyer's cost and obtained performance, which ultimately drive behavior.

In an online reverse auction group service model, buyers can enforce better terms in general to get more and pay less. This purchasing model enables consumers to negotiate better value than in traditional purchasing models because, in a reverse auction model, sellers rather than buyers bid, and the goal of the auction is to get better value (Jap, 2007). Perceiving better value in a transaction positively influences consumers' behavioral intention (Chang and Wildt, 1994). Therefore, we hypothesize that

H5. Perceived value is positively related to an individual's intention to purchase into social commerce transactions.

3.3. Social determinants

3.3.1. Social capital

Social capital allows a person to draw on resources from other members of the networks to which he or she belongs. These resources can take the form of useful information, personal relationships, or the capacity to organize groups (Ellison et al., 2007). In an online group buying setting, Chen et al. (2015) find that social capital among group members drive their active participation. They reason that, in an online group buying setting, social interaction creates intensive and sophisticated channels for information and resource flows, which result in active participation triggered by an individual experiencing a generalized mood state characterized by positive social interactions (Tsai and Pai, 2013). This is consistent with other findings that link various forms of social capital—including ties with friends and neighbors—to indices of psychological well-being, such as self-esteem and satisfaction with life (Bargh and McKenna, 2004). In a service retail setting, interaction and participation engender social influence among group members, which, in turn, positively influences consumer intentions to adopt retail service innovations (Chiu and Hofer, 2015). In a service group setting, joining a group for a service can be motivated by individuals' desire to gain social capital with members of the service group. Social capital can be structural, relational, and/or cognitive in nature (Chiu et al., 2006). Joining groups for services can be a way for individuals interested in gaining structural social capital, such as spending time communicating and interacting with and getting to know members of the group on a

personal level. This can be reinforced by relational social capital when individuals perceive the group and its members as sharing values in a community of people who are reliable, truthful, consistent, trustworthy, helpful, and caring. This can also be reinforced by the group's cognitive social capital in terms of shared language and vision for helping one another and learning from each other. Thus, we hypothesize that

H6. Social capital with members of a social commerce group is positively related to an individual's intention to purchase into corresponding social commerce transactions.

3.3.2. Engagement

In an online group service setting, engagement can take several forms of interacting with group members by commenting, sharing audio/visual information, helping, validating one's and others' information, ensuring group members' preferences are incorporated in the service scope, influencing decision making, actively engaging with other group members in discussing existing bids, inviting new bids, and selecting the best service provider (Baldus et al., 2015). From a social presence theory lens, engagement while performing a task in a given medium allows users to establish personal connections with others involved in performing that task, experience others as being psychologically present, and feel a sense of human contact via that medium, which ultimately results in increased use of that medium (Xu et al., 2012). Lin and Lu (2011) find that ties related to social interaction, shared values, and trust play important roles in users' continued intention to use Facebook fan pages. Such interactive ties influence the perceptions of trust and reliability which end up influencing the use of social networks. In making adoption decisions, users who are socially related tend to rely on one another to organize the complex information on the web and to make similar choices, which is evident from the abundant amount of user-generated content, such as tags, ratings, and reviews, all of which collectively aim to allow items to be more easily discovered by other users (Chua et al., 2013). Also, engaging with group members helps users make better online purchase decisions (Chua et al., 2013). By the same token, in an online group service setting, we expect that group members' engagement would create a web of rich social activity that is likely to attract more members to join. Thus, we hypothesize that

H7. Engagement with members of a social commerce group is positively related to an individual's intention to purchase into corresponding social commerce transactions.

3.3.3. Homophily

Homophily, in sociology, reflects an individual's tendency to form connections with others based on similarities in characteristics, such as socio-economic status, values, beliefs, or attitudes (McCroskey et al., 2006). Studying organizational founding teams in an entrepreneurial setting, Ruef et al. (2003) argue that the mechanism of homophily explains group composition in terms of the similarity of members' characteristics, mainly ascriptive characteristics, or social identities that are attached externally to individuals, such as gender, ethnicity, race, or age. Thus, all-male and all-female teams will be more common than will gender-mixed teams, and ethnically homogeneous teams will be more common than will mixed-ethnicity teams. Other issues affecting the growth of networking groups include the cultural identities and hierarchies, tolerance, and anonymity of organization members (Lai and Turban, 2008). Focusing on task-oriented groups in organizational settings, Arrow et al. (2000) and Ruef et al. (2003) describe the act of being drawn together based on shared identity as a cognitive integration that is driven by similarity, or interacting with others who share their opinions, beliefs and/or values, and reinforce their interpretation of issues. Homophily, therefore, implies that individuals sharing a common identity also tend to share values, beliefs, or norms. Accordingly, we hypothesize that

H8. Homophily with members of a social commerce group is positively related to an individual's intention to purchase into corresponding social commerce transactions.

3.3.4. Group fill

In studying group formation and how groups develop and evolve in large-scale social networks, Backstrom et al. (2006) conclude that people's tendency to come together and form groups is inherent in the structure of society, and that the probability of joining a new community depends on the number of friends already in that community. Under diffusion growth, a group attracts new members through the friendship ties of its current members to outsiders (i.e., users may be influenced to join due to the behavior of their friends). In non-diffusion growth, individuals without pre-existing ties to any group members join a group (i.e., user may join because there is a feature of the group itself, such as a common interest, which appeals to them) (Kairam et al., 2012). Extending this logic to a group service e-commerce, we expect that group membership will be more likely as the group size increases. Accordingly, we hypothesize that

H9. Group fill in a social commerce group is positively related to an individual's intention to purchase into corresponding social commerce transactions.

4. Methodology

4.1. Empirical setting

Our empirical setting is a live online social commerce platform for services following a reverse auction model. We developed this original and fully functional social commerce web platform to prime the respondents to trigger their perceptions and responses about the phenomena of interest. Our aim was to create a real environment for data collection and hence to generate valid and reliable results. This real environment is considered an improvement over a dominant convenience-based research approach, which uses virtual hypothetical environments such as mock-ups or presentations to present priming phenomena of interest to research subjects.

This web platform is equipped with capabilities to enable grouping for service following a reverse auction model. Using the platform, a user can create posts for their needed group service. A service post includes a description of the service needed, the target size of the group, the target price of the service, and profiles (picture, bio, etc.) of the members who joined the group. Also, a user can seek other users to join the service group to grow its membership to the target size through social sharing of the service utilities via email, Facebook, and Twitter, which we seamlessly integrated into the platform. Other users who come by the service post can join the group voluntarily at a mouse click. As such, the group is self-organized in the sense that new members join the group without being assigned to it. The initiator of the service plays the role of the group administrator. The platform is also open for service providers who can electronically submit bids with a description of the service and the corresponding price. With the coordination of the service initiator, the service group deliberate the received bids and award the service to the provider with the bid deemed to be the best by the group. Besides joining groups for service, the platform also supports payments for users to pay the bidding service providers to offer them their needed services. It is important to note that, while actual transactions are fully supported on the platforms, we were interested only in respondents' perceptions about their social commerce experience.

In addition to the platform infrastructure, and in a continued effort to ensure the realism of the priming environment, we endeavored to populate the platform with real group services that are of relevance to the study sample. To do that, we introduced the platform to students on campus to use for their day-to-day needs. As a result, students

organically populated the platform with their needed group services. Using the platform, a user (student in the case of our sample) could create a post for a group service they need with the aim of attracting other students to join in the group. Because the service posts on the platform were initiated by students on campus, these posts for group services were highly relevant to the respondents' day-to-day needs. As an interesting indicator of the platform's relevance to the respondents, we noticed that some students assumed the role of service providers and started bidding to offer some of the needed services on the platform, such as personal training and learning ethnic cuisines.

The reverse auction group service model we use in this web platform falls under the collaborative consumption and social shopping realms, which are two branches of social commerce given established definitions of the term. For example, Belk (2014) defines collaborative consumption as a group of people coordinating the acquisition and distribution of resources for a fee or other compensation. Also, Stephen and Toubia (2010) define social shopping as connecting customers so they participate actively in the marketing and selling of products and services in an online environment. In reverse auctions, sellers bid instead of buyers, and prices are bid down instead of up (Jap, 2007), or until the best offer is reached (Schoenherr and Mabert, 2007) for the purpose of leveraging buying power and perpetuating a power-based bargaining relationship. As such, the platform is an Internet-based auction that brings the buyers and sellers together in a shared online medium, where the buyer controls the market because the buyer triggers competition among a number of sellers (McAfee and McMillan, 1987). In this setting, the price offered by the sellers continues to decrease until a theoretical rational market price is reached (Smeltzer and Carr, 2003). A group reverse auction is particularly suitable for services owing to two key distinguishing characteristics of service supply chains (Fitzsimmons and Fitzsimmons, 2011): shareability (i.e., that unlike products, services can be shared by multiple users simultaneously) and customizability (i.e., that unlike products, services entail a relatively high degree of customization). That said, the platform we used as our empirical setting enables shareability. It creates a social setting that connects potential consumers of a given service and enables them to form a buying union (i.e., group) to shop for a service to share. Groups of consumers on the platform have declared the need for a wilderness survival skills class, laser tagging game, and computer gaming tournament, which are examples of shareable services. On the other hand, the platform also enables customizability. It enables consumers to dictate their custom requirements in the scope of needed services, thereby enabling service innovation and creating a need for services that are not readily available. Groups of consumers on the platform have declared the need for watching the Scarface movie in a theatre, road-blocked long-boarding in town, and a private late night aqua park experience, which are examples of highly innovative services.

In pilot interviews with students who used the platform, the researchers learned that their motivations stem primarily from two types of empowerment. First, the empowerment to create demand for innovative services they need that are not otherwise available; and second, the empowerment to negotiate a better price for the services the group gets. As such, in a group service reverse auction setting, utilitarian value can be the result of service innovativeness. This would facilitate the production and consumption of creative and innovative services driven by consumers that are otherwise difficult to come by. Furthermore, in a group service reverse auction setting, economic value can be the result of the increased bargaining power of the service consumer group compared to that of the service providers.

4.2. Research design

Our methodology comprises two stages in pursuit of collecting relevant data to use in testing the hypotheses under study. First, we prime the study sample made of potential e-commerce users with a live commercial grade e-commerce platform that embodies the business

model characteristics of the reverse auction group service model of social commerce. Second, immediately following this priming, we collect original quantitative survey data from the sample to investigate the research model in Fig. 1. We chose to prime the sample with a live e-commerce platform (i) to introduce the relatively novel group e-commerce for service business model to the research participants; and (ii) to increase the realism of our study. Other research that surveys users regarding novel business models and applications usually does so through describing a scenario or showing a video clip, which often suffers a host of validity and reliability threats. In contrast, in our research design, we engage participants in a live and real e-commerce experience and, consequently, survey them based on their experience. We deemed the survey method appropriate for collecting quantitative data because it is a practical method that helps maintain the anonymity of participants.

We distributed the study online where we provided a URL to the group services e-commerce platform and asked participants to first browse the platform to get familiar with the service group purchase model, the nature of services they can get through that model, and to develop views on their likelihood to participate in this activity in the future by joining and buying into groups for services. Upon returning to the study page, we asked participants to fill out an online survey to collect information on their perceptions about their experience with the reverse auction groups for services model and their views on the factors leading to group formation.

4.3. Sample

The sample was drawn from second-year university students in two business marketing classes. We deemed university students to be an appropriate population to study because of their continuous need for services both on and off campus. Furthermore, students' concern for cost would enable them to appreciate the potential price advantage they can draw out of a reverse auction purchasing model. Additionally, students can appreciate online tools that would enable them to pursue innovative services that suit their dynamic lifestyles and to consume them in a group of their friends or peers. We emailed the students in both classes (404 students in total), asking them to participate in the study on a voluntary basis, which would give them bonus credit toward these courses. We made the study available for three weeks. One week from opening the study, we followed up with an email reminder. Two weeks after, we terminated the study, at which point, we received 268 responses representing a 66% response rate, which is relatively high compared to a threshold of 20% in relatively recent online survey studies (Reynolds et al., 2007). We excluded incomplete responses in 54 cases. We also excluded responses in 21 cases where participants indicated that they did not browse the social commerce platform prior to filling out the survey. The responses in the remaining 193 cases were included in the analysis. The sample size we obtained exceeds the minimum required by power analysis for the statistical significance of a medium effect. Cohen (1988) described a medium effect size as one "large enough to be visible to the naked eye" (p. 26), and suggested that a typical study in the behavioral sciences would have a medium effect size. Our sample size exceeds $n = 78$ needed for a statistical power of 0.8 to detect a medium effect size ($f = 0.25$) (Cohen, 1988). Participants averaged 20 years in age, and were 29% male, 42% female, and 29% unidentified. Out of all participants, 50% used the Internet for more than five hours a day. Of these, 47% used it for one to five hours a day, and 3% used it for less than one hour a day.

4.4. Measurement

Given the above details, we believe that our choice of the constructs in the research model, shown in Fig. 1, was highly relevant to this empirical context of the study. Social capital, homophily, engagement, and group fit are constructs that capture the social motivation for

joining group services. User innovativeness, service innovativeness, and perceived value capture the economic motivations. Perceived usefulness and perceived ease of use capture the utilitarian motivations. Furthermore, all measurement items for the study's principal constructs were adopted from existing measures and were slightly adapted to suit the context of the study. Appendix A shows the measurement items and their sources. We use Likert scales of 1 (strongly disagree, very unlikely) to 5 (strongly agree, very likely) to measure the constructs.

Intention to Purchase: different branches of the management literature use different scales to measure the behavioral intention construct. However, since the theoretical foundations of this paper are drawn from the TAM theory literature, we adopted the dominant measurement scale used in that literature. This three-item scale is well established in the TAM literature, and the dimensions we are using are ones that have been used in classical and more recent studies (Doha et al., 2017; Pavlou et al., 2007; Venkatesh et al., 2003, 2012; Wixom and Todd, 2005). **Perceived Usefulness and Perceived Ease of Use:** these constructs are deeply rooted in the TAM literature and we adopt its classic measurement scale following Davis (1989) and Venkatesh et al. (2003). **User Innovativeness:** we adopt the user innovativeness measurement scale developed by Agarwal and Prasa (1998) in their study of the link between user innovativeness and information technology adoption. **Service Innovativeness:** we use the innovativeness scale used by Fang (2008) to measure the degree of the service novelty. This is a highly cited study, and this measurement scale is widely adopted. **Perceived Value:** we measure the Perceived Value construct using Burton and Lichtenstein (1988) operationalization, which follow from Zeithaml's (1988) exploratory findings that consumers evaluate value in terms of four dimensions: (1) value is low price; (2) value is whatever I want in a product; (3) value is the quality I get for the price I pay; and (4) value is what I get for what I give. These dimensions were also adopted by Dodds (1991) and used by Sweeney et al. (1997) to measure Perceived Value. **Social Capital:** we use the social capital scale developed by Chiu et al. (2006). Social capital is a two-level construct comprising three latent dimensions that include structural, relational, and cognitive social capital. The structural dimension measures social interaction with a focus on close relationships, time spent in interacting, and frequent communication with other members. The relational dimension uses items related to an individual's beliefs in other members' non-opportunistic behavior, promise keeping, behavior consistency, truthfulness, sense of belonging, feeling of togetherness, and positive feeling toward the virtual community. Finally, the cognitive dimension uses items that focus on common terms, meaningful communication patterns, and message understandability. **Homophily:** we adopt the scale that McCroskey et al. (2006) developed for the homophily construct. This is a dedicated empirical study for the improvement and development of the homophily scale and is highly cited. Homophily is a two-level construct with two latent dimensions that include background and attitude homophily. The background dimension uses items that measure resemblance based on socioeconomic and demographic factors. In contrast, the attitude background uses items that measure resemblance based on behavioral and value system-related factors. **Engagement:** we employ the engagement scale developed by Baldus et al. (2015), which is widely used in the subsequent literature. This is a two-level construct that comprises the latent dimensions of interaction, rewards, keeping informed, and validation. **Group Fill:** this is a three-item construct that we adopt from Backstrom (2006) to measure the group's size, level of fill, and demand for membership.

4.5. Data and results

We conducted an exploratory factor analysis (EFA) to examine the unidimensionality, convergent validity, and reliability of the constructs, as previously done by Squire et al. (2009). EFA was also used to assess how the items group together and how the resulting factors correspond to the constructs we drew from the literature. Table 1 shows the EFA

results with the item loadings on the constructs and their measurement properties.³ We took an iterative approach in evaluating the cross-loadings and assessing the differences between the indicator loading and the next highest loading (Barclay et al., 1995). Each of the resulting factors has an eigenvalue above 1.0 and all the factor loadings exceed the minimum value of 0.5, which meet the commonly accepted criteria for unidimensionality and convergent validity (Meyers et al., 2006). Furthermore, the item groupings do agree with the constructs' content in the cited literature. As shown in Tables 1 and 2, all constructs but the Homophily construct are acceptably reliable, achieving Cronbach's alpha measure of reliability above the 0.7 threshold. By this threshold, the Homophily construct ($\alpha = 0.65$) can be considered slightly weak. However, there is no strict threshold for high reliability (Ahire and Devaraj, 2001) although a range of 0.5–0.7 has been traditionally acceptable depending on the maturity of the construct (Nunnally, 1967, 1978; Squire et al., 2009). We also assess potential threats of common methods bias, which may arise when collecting data on the independent and dependent variables from the same respondent in the same survey. In line with Squire et al. (2009), we use Harman's one-factor test in examining common methods bias. The resulting factors explain 70% of the variance with the first factor accounting for only 15% of the variance. No single factor emerges, nor does one general factor account for most of the variance; therefore, we conclude that common methods bias may not be a serious problem in the data. While no pretest has been carried out, which is a limitation, the content validity of the constructs is established from the literature they are drawn from. However, the content validity could have been strengthened by seeking expert opinions in a pretest. Nonetheless, the constructs exhibit acceptable levels of reliability and convergent validity.

We also conducted a confirmatory factor analysis (CFA) to assess goodness of fit of the individual constructs and of the overall research model, and to also assess the constructs' discriminant validity. Table 2 reports five measures of goodness of fit, including the ratio between χ^2 (likelihood ratio test of model vs. saturated) and the model's degrees of freedom (df), goodness of fit indicator (GFI), comparative fit index (CFI), Tucker-Lewis index (TLI), and the root mean squared error of approximation (RMSEA). Where applicable, for each construct and for the overall model, all measures fall within the acceptable criteria of goodness of fit. Tests for discriminant validity are performed to determine whether two or more sets of scales are measuring the same construct (Stanley and Wisner, 2001). We address discriminant validity by using structural equation modeling. We compare two scenarios on each pair of the scales. The first is with free covariance of the two scales, and the second is with the covariance between the two scales set to one. The later scenario hypothesizes a lack of discriminant validity between the two factors. Comparing the model fit of the two scenarios enables a sound judgment on the discriminant validity of the two scales (Bagozzi, Yi, and Phillips, 1991). In all cases, the fit of the model in the second scenario was worse than the fit in the first scenario, providing evidence of discriminant validity. Finally, tests of regression analysis assumptions of linearity, normality, and homoscedasticity show no violations. Multicollinearity (i.e., high correlations among the latent exogenous constructs) (Venkatesh et al., 2012) is also tested. Given that the correlations between the predictor scales are below 0.8, the variance inflation ratio of the scales are less than a threshold of 10, and their tolerances are less than a threshold of 1, we conclude that the predictor scales do not suffer from multicollinearity (Meyers et al., 2006).

Table 3 shows summary statistics and correlations for the constructs under study. Some correlations are above 0.6, which is not too high. However, as shown in Table 2, all constructs have VIF and tolerance scores below the established cut-offs, which rules out threats of multicollinearity.

³ Items' abbreviations are unpacked in Appendix A.

Table 1
EFA factor loadings and factor reliability.

Item ID	ITP	SSC	RSC	CSCSL	BH	AH	IE	RE	KIE	VE	GF	SI	PU	PEOU	PV	UI
Cronbach Alpha	0.9	0.87	0.92	0.83	0.87	0.85	0.92	0.90	0.89	0.92	0.92	0.88	0.93	0.94	0.95	0.81
ITP1	0.91															
ITP2	0.84															
ITP3	0.78															
SSC1		0.92														
SSC2		0.76														
SSC3		0.63														
SSC4		0.50														
RSC1			0.95													
RSC2			0.80													
RSC3			0.76													
RSC4			0.72													
RSC5			0.72													
RSC6			0.71													
RSC7			0.65													
RSC8			0.63													
RSC9			0.60													
CSC1				0.70												
CSC2				0.69												
CSC3				0.65												
BH1					0.80											
BH2					0.78											
BH3					0.72											
BH4					0.69											
BH5					0.65											
AH1						0.84										
AH2						0.84										
AH3						0.80										
AH4						0.72										
AH5						0.71										
AH6						0.70										
AH7						0.65										
AH8						0.63										
AH9						0.63										
AH10						0.58										
AH11						0.55										
IE1							0.80									
IE2							0.80									
IE3							0.72									
IE4							0.85									
RE1								0.86								
RE2								0.80								
RE3								0.62								
RE4								0.62								
KIE1									0.82							
KIE2									0.77							
KIE3									0.74							
VE1										0.60						
VE2										0.66						
VE3										0.94						
VE4										0.82						
GF1											0.99					
GF2											0.81					
GF3											0.69					
SI1												0.80				
SI2												0.76				
SI3												0.71				
SI4												0.64				
PU1													0.87			
PU2													0.82			
PU3													0.71			
PU4													0.70			
PEOU1														0.89		
PEOU2														0.80		
PEOU3														0.80		
PEOU4														0.77		
PEOU5														0.74		
PEOU6														0.66		
PV1															0.85	
PV2															0.82	
PV3															0.82	
PV4															0.78	
UI1																0.88
UI2																0.84
UI3																0.50

Table 2
CFA results and construct reliability.

	Chi ² /df	GFI	CFI	TLI	RMSEA	Composite reliability	VIF	Tolerance
Goodness of Fit Threshold	≤ 3	≥ 0.95	≥ 0.95	≥ 0.95	< 0.1	≥ 0.7	< 10	< 1
Intention to Purchase	0.00	1.00	1.00	1.00	0.07	0.90	N/A	N/A
Social Capital	1.45	0.92	0.98	0.97	0.05	0.70	2.35	0.45
Engagement	1.23	0.94	0.99	0.99	0.03	0.83	3.07	0.33
Homophily	1.92	0.91	0.96	0.94	0.07	0.65	1.58	0.63
Group Fill	0.00	1.00	1.00	1.00	0.00	0.90	1.35	0.74
User Innovativeness	1.47	0.99	0.99	0.99	0.05	0.81	1.36	0.74
Service Innovativeness	1.62	0.99	0.99	0.99	0.06	0.88	2.66	0.38
Perceived Value	0.01	1.00	1.00	1.00	0.00	0.95	1.78	0.56
Perceived Usefulness	1.23	0.99	1.00	0.99	0.03	0.93	2.48	0.40
Perceived Ease of Use	2.25	0.97	0.99	0.98	0.08	0.94	2.29	0.44
Overall Model	2.3	0.95	0.97	0.89	0.08	N/A	N/A	N/A

See Appendix B for a brief explanation of the following measures of model fit.

Chi²: Likelihood ratio test of model vs. saturated.

df: Model's degrees of freedom.

GFI: Goodness of fit indicator.

CFI: Comparative fit index.

TLI: Tucker-Lewis index.

RMSEA: Root mean squared error of approximation.

VIF: Variance inflation factor.

Table 3
Summary statistics and correlations.

Construct	Count	Mean	SD	Min	Max	ITP	Age	IU	SC	ENG	HM	GF	UI	SI	PV	PU
Intention to Purchase (ITP)	193	3.33	0.99	1.00	5.00	1										
Age	193	20.58	5.58	0.00	37.00	-0.12	1									
Internet Use (IU)	193	2.49	0.53	1.00	3.00	-0.03	0.08	1								
Social Capital (SC)	193	3.58	0.69	1.00	5.00	0.53***	-0.03	0.05	1							
Engagement (ENG)	193	3.11	0.64	1.00	5.00	0.36***	0.11	-0.09	0.5***	1						
Homophily (HM)	193	3.71	0.74	1.00	5.00	0.56***	-0.13	0.07	0.69***	0.42***	1					
Group Fill (GF)	193	3.41	1.04	1.00	5.00	0.3***	-0.03	-0.02	0.36***	0.32***	0.45***	1				
User Innovativeness (UI)	193	3.42	0.90	1.00	5.00	0.28***	0.04	0.08	0.42***	0.32***	0.37***	0.27***	1			
Service Innovativeness (SI)	193	3.93	0.78	1.00	5.00	0.51***	-0.1	0.13	0.56***	0.44***	0.66***	0.37***	0.41***	1		
Perceived Value (PV)	193	4.05	0.88	1.00	5.00	0.31***	-0.1	0.1	0.46***	0.18*	0.53***	0.34***	0.29***	0.54***	1	
Perceived Usefulness (PU)	193	3.81	0.94	1.00	5.00	0.38***	-0.03	0.06	0.59***	0.35***	0.69***	0.33***	0.39***	0.63***	0.57***	1
Perceived Ease of Use (PEOU)	193	3.90	0.83	1.00	5.00	0.49***	-0.1	0.12	0.53***	0.31***	0.62***	0.37***	0.26***	0.68***	0.56***	0.6***

**p ≤ 0.01.

* p ≤ 0.05.

*** p ≤ 0.001.

We used ordinary least squares (OLS) regression to estimate our research model in Fig. 1. Table 4 shows the regression results, where model (1) is the base model with three control variables, including users' age, gender, and intensity of their Internet use. Regression models (2)–(5) enter the constructs representing the social perspective, including social capital, engagement, homophily, and group fill. Regression models (6)–(8) enter the constructs representing the economic perspective, including user innovativeness, service innovativeness, and perceived value. Finally, regression models (9)–(10) enter the constructs representing the utilitarian perspective, including perceived usefulness and perceived ease of use. We use model (10), which is the complete model, for interpreting the results.

The results in model (10) partially support the social, economic, and utilitarian perspectives. In the social perspective, H6 (social capita) and H7 (engagement) are supported as determinants of users' behavioral intention toward social commerce. However, H8 (homophily) and H9 (group fill) are rejected. In the economic perspective, H4 (service innovativeness) is supported as a determinant of users' behavioral intention toward social commerce. However, H3 (user innovativeness) and H5 (perceived value) are rejected. In the utilitarian perspective, H2 (perceived ease of use) is supported as a determinant of users' behavioral intention toward social commerce. However, H1 (perceived usefulness) is rejected.

5. Discussion

Social commerce is growing in research and in practice. There is a burgeoning literature that aims to understand the factors that govern individuals' behavioral intention toward social commerce (Akman et al., 2017; Busalim and Hussain, 2016; Childers et al., 2001; Hamari and Ukkonen, 2016). This literature primarily focuses on economic and utilitarian factors to explain individuals' participation in social commerce transactions. From a utilitarian perspective, individuals seek functional utility that are collaboration- and/or group-based obtained following rational and task-oriented efforts relevant to purchasing useful and easy-to-use artifacts (Chen et al., 2014; Harris and Dennis, 2011; Kumar et al., 2015; Lee et al., 2012; Shin, 2013). From an economic perspective, individuals seek the time and cost saving advantages associated with social commerce in acquiring the products and services they need (Belk, 2014; Childers et al., 2001; Kim et al., 2011; To et al., 2007; Zeithaml, 1988). A third emerging perspective explains behavioral intention toward e-commerce in general using hedonic factors (Anderson et al., 2017; Babin et al., 1994). Unlike utilitarian and economic factors, hedonic factors are more subjective and personal and result more from fun and playfulness than from task completion (Babin et al., 1994). Hedonic factors may include enjoyment of the shopping process and experience (Akman et al., 2017; Anderson et al., 2017) and

Table 4
OLS regression results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Gender	0.01 (0.14)	- 0.07 (0.12)	- 0.04 (0.12)	- 0.05 (0.12)	- 0.04 (0.12)	- 0.04 (0.12)	- 0.06 (0.12)	- 0.06 (0.12)	- 0.05 (0.11)	- 0.05 (0.11)
Age	- 0.02 (0.01)	- 0.02 (0.01)	- 0.01 (0.01)	- 0.01 (0.01)	- 0.01 (0.01)	- 0.01 (0.01)	- 0.01 (0.01)	- 0.01 (0.01)	- 0.01 (0.01)	- 0.01 (0.01)
Internet Use	- 0.04 (0.13)	- 0.08 (0.11)	- 0.11 (0.11)	- 0.09 (0.11)	- 0.09 (0.11)	- 0.09 (0.11)	- 0.13 (0.11)	- 0.13 (0.11)	- 0.13 (0.11)	- 0.15 (0.11)
Social Capital		0.72*** (0.08)	0.39*** (0.11)	0.34** (0.11)	0.34** (0.12)	0.33** (0.12)	0.31** (0.12)	0.32** (0.12)	0.34** (0.12)	0.32** (0.12)
Engagement			0.43*** (0.10)	0.41*** (0.10)	0.40*** (0.11)	0.39*** (0.11)	0.28* (0.11)	0.29* (0.12)	0.35** (0.12)	0.33** (0.12)
Homophily				0.12 (0.09)	0.11 (0.09)	0.11 (0.09)	0.06 (0.09)	0.05 (0.09)	0.05 (0.09)	0.05 (0.09)
Group Fill					0.03 (0.06)	0.03 (0.06)	0.02 (0.06)	0.03 (0.06)	0.02 (0.06)	0.01 (0.06)
User Innovativeness						0.03 (0.07)	0.00 (0.07)	0.00 (0.07)	0.02 (0.07)	0.04 (0.07)
Service Innovativeness							0.21* (0.08)	0.23** (0.09)	0.26** (0.09)	0.18* (0.09)
Perceived Value								- 0.06 (0.07)	- 0.04 (0.07)	- 0.07 (0.08)
Perceived Usefulness									- 0.13 (0.09)	- 0.16 (0.09)
Perceived Ease of Use										0.19* (0.08)
Constant	0.48 (0.48)	0.69 (0.41)	0.55 (0.39)	0.56 (0.39)	0.55 (0.39)	0.56 (0.40)	0.65 (0.39)	0.65 (0.39)	0.62 (0.39)	0.64 (0.39)
N	193	193	193	193	193	193	193	193	193	193
R ²	0.01	0.30	0.36	0.37	0.37	0.37	0.39	0.39	0.40	0.42
Adjusted R ²	- 0.01	0.28	0.34	0.35	0.35	0.35	0.36	0.36	0.36	0.38
F	0.89	20.00***	21.16***	17.99***	15.40***	13.44***	13.00***	12.09***	11.63***	10.71***

* p ≤ 0.05.
** p ≤ 0.01.
*** p ≤ 0.001.

entertainment and escapism (To et al., 2007).

The results in this paper contribute to this literature by advancing a social view, which is hedonic in nature, that complements the utilitarian and economic views in explaining users' behavioral intention toward social commerce. From a social standpoint, we argued that people can be interested in the social experience that is obtainable through the acquisition of products and services following a social commerce model. Our results confirm all three perspectives; the study sample's behavioral intention toward social commerce is explained by their pursuit of utilitarian, economic, and social value. Nonetheless, at least in our study sample, the primary factors driving behavioral intention toward social commerce are social in nature. The results of this study make important theoretical and managerial contributions to the theory and practice of social commerce. In this section, we outline the theoretical and practical implications of the study, highlight its limitations and future work, and summarize our conclusions.

5.1. Theoretical implications

The results of this study partially support the utilitarian, economic, and social perspectives in explaining individuals' behavioral intention toward social commerce. Besides service innovativeness and ease of use, we found that the primary drivers of behavioral intention toward social commerce in our study sample are social capital and engagement. That is, our study sample was willing to purchase into social commerce service transactions mainly to extract social value in terms of networking with others for gaining social capital and engaging in social activities that potentially enhance their social life. These results show social commerce as a mechanism that users pursue for social networking to potentially enhance individuals' social life. This is a key finding that marks socialization as a new type of use of social

commerce, which has been traditionally thought of as being uniquely suited for collaboration-dependent transactions (i.e., utilitarian view) (Shin, 2013) and for time/cost savings (i.e., economic view) (Belk, 2014; Hamari and Ukkonen, 2016). This is especially interesting in a student population that heavily uses social media where they can socialize for free (Venkatesh et al., 2012). Our student sample was willing to buy social commerce services, not for their use or their value, but for their underlying socialization.

Additionally, we found service innovativeness to be a significant predictor of the sample's behavioral intention toward social commerce, which is consistent with the economic perspective (Venkatraman, 1991; Wells et al., 2010). Noticeably, under a reverse auction model, students' full control over the scope and description of the services they create resulted in highly innovative services that seem to have attracted the attention and attitudes of their fellow students. Also, consistent with the utilitarian perspective (Berry et al., 2002), we found ease of use to be a significant predictor of users' behavioral intention toward social commerce.

However, contrary to existing findings in the economic perspective (Chang and Wildt, 1994), consumers' perceived value of the service did not play a significant role in determining the sample's behavioral intention to purchase in social commerce. Similarly, contrary to the current TAM-based understanding in the utilitarian perspective (Davis, 1989; Gefen and Straub, 2000; Hajli, 2014; Komiak and Benbasat, 2006; Venkatesh et al., 2003), consumers' perceived usefulness of the service did not influence the sample's behavioral intention to purchase in social commerce. To explain why socialization (hedonic factor) and not the perceived usefulness (utilitarian factor) or the perceived value of the service (economic factor) explain the study sample's behavioral intention toward social commerce, it is important to note that the study sample represented university students, who in turn represent the

younger population (16–24 years of age). This population is known for its systematic differences from older populations in values, preferences, and behavior in their use of social media (Venkatesh et al., 2012). For university students, social life is of pivotal importance to their quality of life—it is where friendships are made, maintained, broken, and perhaps revived (Barkhuus and Tashiro, 2010). Students' strong inclination toward socialization (i.e., hedonic) could dominate their rational (i.e., economic and utilitarian) decision-making criteria when contemplating purchase decisions of group services. As such, for students, purchasing into social services could be largely determined by their pursuit of gaining social capital and engagement with fellow students in their community, not by their perceived usefulness or value of those services.

The significance of these results is that they mark a considerable shift in the way the younger population's use social commerce, from being a vehicle for utilitarian and economic gains to a vehicle for social networking. University students are among the heaviest users of social media (Statista, 2014), so why are they willing to pay to socialize by buying into services offered through a social commerce model when they socialize for free on social media? One possible explanation is that those social commerce type services act as an institution for the organization of social, albeit commercial, activity. Having this organization done by someone else—the initiator of the group service—can be a valuable convenience, which is not readily available in social media networks.

Accordingly, to summarize the motivations at play, our sample of university students were drawn to the innovativeness of the services they have experienced through the social commerce platform, and their willingness to buy into those services was mainly driven by the socialization potential those services could offer rather than by the usefulness or value of those services. These unprecedented results reinforce Venkatesh et al.'s (2012) assertion about the systematic differences between the younger and older generations in values, preferences, and behavior that govern their use of social media. Therefore, age represents a crucial sampling criterion for researchers to consider. Accordingly, at least in social commerce, it is necessary to compare research models across younger and older subsamples when the study sample spans younger and older age groups.

5.2. Managerial implications

Social commerce and social networking, as we know them in recent years, have been pioneered in practitioner circles through several ventures. Facebook, Twitter, Pinterest, Groupon, LivingSocial, and Kickstarter are examples of social commerce and social networking platforms that have largely shaped our current understanding and practice of the two fields. What we learned through this paper, which focuses on the younger generation, can yield valuable prescriptions for the practice of social commerce.

First, social commerce platforms should emphasize socialization as a key design criterion to enhance users' social capital gains and engagement with other users. The social value that consumers can extract from their social commerce experience seems to be the leading driver of their behavioral intention to purchase. Accordingly, social commerce platforms are encouraged to design online mechanisms and processes that would enhance socialization best practices. This includes, but is not limited to, spending time interacting, maintaining frequent communication, having fun and enjoying entertainment with other members, and creating a safe space based on support, helpfulness, and understanding (Baldus et al., 2015; Chiu et al., 2006).

Second, based on our results, social commerce platforms should also emphasize service innovativeness as another key design criteria. Innovativeness of the services offered in a social commerce setting also drives consumers' behavioral intention to purchase. In a reverse auction setting, demand for innovative services rise as consumers dictate their specific desires in the services they need. Innovative services can be rewarding for consumers to purchase, as innovation triggers consumers'

excitement (Cox and Locander, 1987) and interest (Mukherjee and Hoyer, 2001). Innovative services can also attract other consumers with similar unique service needs. This is evident from the demand attracted in our empirical investigation for highly innovative services like watching the Scarface movie in a theatre, road-blocked long-boarding in town, and a private late night aqua park experience. By following a reverse auction model, social commerce platforms would enable their users to create demand for highly customizable services (i.e., in content, time, location, and price) that are not readily available.

Finally, consistent with the gold standard in information technology and e-commerce practices, the results suggest that, by enhancing the ease of using their systems, social commerce platforms can drive their users' behavioral intention to purchase.

In summary, three key design criteria should be emphasized in the social commerce business model and technology: socialization, service innovativeness, and ease of use. Design for socialization, which emerges in this study, would enable features and capabilities that enhance users' social experience. This requires engineering the social commerce experience to expand the outcome from merely acquiring products and/or services to creating sustainable social capital and engagement for members of a social commerce transaction. This is an uncommon practice given today's leading social commerce outlets such as Groupon and Kickstarter. Design for socialization involves enhancing users' social capital and engagement with other members, which entails much more than just leveraging the social elements in a social commerce setting, like sourcing reviews or opinions on potential purchases.

5.3. Limitations and future work

This study is not without limitations, which suggest productive paths for future research. First, the results in this study are not readily generalizable outside the younger population of interest in this study, which is represented by university students. The younger population (16–24 years of age) does have systematic differences from higher age groups in values, preferences, and behavior when it comes to social media use. So, it was not our objective to generalize beyond the population of interest. Hence, it is prudent for future research to consider different populations in seeking to understand the balance between utilitarian and economic motivations on the one hand and social motivations on the other in determining users' behavioral intention toward social commerce. Second, this study employed only one form of social commerce—reverse auction group purchasing—as its empirical setting. However, there are many other forms of social commerce with distinct purchasing and production flows. As such, future research may investigate if the form of social commerce model does have any contingency on the utilitarian, economic, and social determinants of social commerce adoption.

5.4. Conclusions

In this paper, we revisited the question of what drives individuals' adoption of social commerce. Studying a sample of university students, we found that their purchasing into social commerce transactions was driven not only by their pursuit of utilitarian and economic value, but also by their pursuit of social value. This hedonic social value came in the form of social networking aiming to engage with fellow students and to gain social capital. Interestingly, we found that social value was the primary driver of the sample's adoption of social commerce, not the utility or the economy that may result from social commerce as was previously understood. This is especially interesting because while students can and do socialize on social media at no cost, they were willing to pay in social commerce services, not so much for the utility or economy social commerce may bring about, but more for the underlying socialization they may experience. These results emphasize the importance of socialization as a key design criterion for social commerce outlets to enhance users' social capital gains and

engagement with other users. Besides socialization, service innovativeness and ease of use also emerged as important design criteria for social commerce outlets. Together, the results in this study capture a

picture of our sample users' adoption of social commerce owing to associated socialization opportunities around innovative services that are easy to use.

Appendix A. Constructs and measurement items

Constructs	Factors	Item ID	Measurement Items
Intention to Purchase (ITP) (Venkatesh et al., 2003)	Intention to Purchase (ITP)	ITP1	In the future, I think I would buy into similar group services.
		ITP2	In the future, I would like to buy into similar group services.
		ITP3	In the future, I would be interested in buying into similar group services.
Social Capital (SC) (Chiu et al., 2006)	Structural Social Capital (SSC)	SSC1	The desire to develop close social relationships with some of the other group members.
		SSC2	The desire to spend time interacting with some members in the service group.
		SSC3	The desire to have frequent communication with some members in the service group.
		SSC4	Knowing some members in the group on a personal level.
		RSC1	Members in a service group would not take advantage of others even when the opportunity arises.
	Relational Social Capital (RSC)	RSC2	I would feel a sense of belonging towards the service group that I joined.
		RSC3	Members of the service group would help me if I needed it.
		RSC4	Members in a service group would always keep the promises they make to one another.
		RSC5	I would be proud to be a member of the service group that I joined.
		RSC6	Members in a service group would not knowingly do anything to disrupt the conversation.
		RSC7	I would have strong positive feelings toward the service group that I joined.
		RSC8	I would have the feeling of togetherness or closeness in the service group that I joined.
		RSC9	Members in a service group would behave in a consistent manner.
		CSC1	Members in the service group use understandable communication patterns during the discussion.
	Cognitive Social Capital (CSC)	CSC2	Members in the service group use common terms or jargon
CSC3		Members in the service group use understandable narrative forms to post messages or articles.	
Homophily (HM) (McCroskey et al., 2006)	Background Homophily (BH)	BH1	Members of the service group are from a social class different from mine.
		BH2	The status of members of the service group is different from mine.
		BH3	Members of the service group are from an economic situation different from mine.
		BH4	The background of members of the group for service is similar to mine.
		BH5	The status of the members of the service group is like mine.
	Attitude Homophily (AH)	AH1	Members of the service group are similar to me.
		AH2	Members of the service group are like me.
		AH3	Members of the service group behave like me.
		AH4	Members of the service group express attitudes different from mine.
		AH5	Members of the service group don't share my values.
		AH6	Members of the service group are unlike me.
		AH7	Members of the service group don't treat people like I do.
		AH8	Members of the service group share my values.
		AH9	Members of the service group don't think like me.
		AH10	Members of the service group have a lot in common with me.
		AH11	Members of the service group have thoughts and ideas that are similar to mine.
		Engagement (ENG) (Baldus et al., 2015)	Interaction Engagement (IE)
IE2	Knowing that my comments and suggestions can influence the group and the service.		
IE3	Having influence on the group and the service.		
IE4	Being able to improve the group and the service through my participation and expression in this group.		
Reward Engagement (RE)	RE1		Having fun would be my main reason for participating in a service group.
	RE2		I would participate in a service group because I think it would be fun.
	RE3		I would like to participate in a service group because it would be entertaining.
	RE4		I would find participating in a service group to be very entertaining.
Keeping Informed Engagement (KIE)	KIE1		When I would want up-to-date information about the service, I would look to this service group.
	KIE2		I would expect the group to keep me on the leading edge of information about the service.
	KIE3		I would perceive that the group is the best way to stay informed about new developments with this service.
Validation Engagement (VE)	VE1		Receiving more affirmation of the value of my comments would make me want to participate more in the service group.
	VE2		I would feel good about myself when other group members shared my ideas.
	VE3		I would appreciate when others agreed with the ideas I expressed in this service group.
	VE4		I would feel better about myself when others supported my ideas and opinions in this service group.
Group Fill (GF) Backstrom et al. (2006)	Group Fill (GF)		GF1
		GF2	The fuller a group for a service, the more likely I am to join that group.
		GF3	The greater the demand for a group for a service, the more likely I am to join that group.
Service Innovativeness (SI) (Fang, 2008)	Service Innovativeness (SI)	SI1	The service is interesting.
		SI2	The service is creative.
		SI3	The service offers new ideas to its category.
		SI4	The service is capable of generating ideas for other products and/or services.
		PU1	Using the service would enhance my effectiveness.
Perceived Usefulness (PU) (Venkatesh et al., 2003)	Perceived Usefulness (PU)	PU2	Using the service would improve my performance.
		PU3	Using the service would enable me to accomplish tasks more quickly.
		PU4	Using the service would make things easier for me.

Perceived Ease of Use (PEOU) (Venkatesh et al., 2003)	Perceived Ease of Use (PEOU)	PEOU1	I would find the service easy to use.
		PEOU2	My interaction with the service would be clear and understandable.
		PEOU3	Learning to use the service would be easy.
		PEOU4	I would find it easy to get the service to do what I want it to do.
		PEOU5	It would be easy for me to become skillful at using the service.
		PEOU6	I would find the service to be flexible to interact with.
Perceived Value (PV) (Burton and Lichtenstein, 1988)	Perceived Value (PV)	PV1	The service has a good value for the money.
		PV2	The service is worth the money.
		PV3	The service price is fair.
		PV4	Purchasing the service comes with good savings.
User Innovativeness (UI) (Agarwal and Parasuraman, 1998)	User Innovativeness (UI)	UI1	If I heard about a new product and/or service, I would look for ways to experiment with it.
		UI2	Among my peers, I am usually the first to try out new products and/or services.
		UI3	I like to experiment with new products and/or services.

Appendix B. Evaluation of multicollinearity and model fit

B.1. Evaluation of multicollinearity

B.1.1. Variance Inflation Factor (VIF) and tolerance

The Variance Inflation Factor (VIF) and tolerance are both widely used measures of the degree of multi-collinearity of a given independent variable with the other independent variables in a regression model. The VIF (and tolerance) represents the proportion of variance a given independent variable shares with the other independent variables in the model. There is a wide agreement that VIF values below 10 correspond to cases where multicollinearity is not a threat (O'Brien, 2007).

B.2. Evaluation of model fit

It is necessary to take multiple criteria into consideration and to evaluate model fit on the basis of various measures simultaneously (Schermelleh-Engel and Moosbrugger, 2003). That is because there is no single statistical significance test that identifies a correct model given the sample data. Generally, the fit criteria of a regression model indicate to what extent the specified model fits the empirical data. Only one goodness-of-fit measure (i.e., the χ^2 test statistic) has an associated significance test, while all other measures are descriptive (Schermelleh-Engel and Moosbrugger, 2003).

B.2.1. Statistical test of significance
B.2.1.1. χ^2 . The χ^2 test statistic is used for hypothesis testing to evaluate the appropriateness of a model (Schermelleh-Engel and Moosbrugger, 2003). It evaluates whether the population covariance matrix is equal to the model-implied covariance matrix. There are several shortcomings associated with the χ^2 test statistic. This includes violation of assumptions, model complexity, and dependence on sample size.

B.2.2. Descriptive measures of overall model fit

Because the χ^2 statistic is sensitive to sample size, alternative goodness-of-fit measures have been developed. Measures of overall model fit indicate to which extent a structural equation model corresponds to the empirical data. These criteria are based on the difference between the sample covariance matrix and the model-implied covariance matrix.
B.2.2.1. Root Mean Square Error of Approximation (RMSEA). RMSEA assesses whether a model fits approximately well in the population (Kaplan, 2000). The RMSEA is bounded below by zero. According to Browne and Cudeck (1993), RMSEA values ≤ 0.05 can be considered as a good fit, values between 0.05 and 0.08 as an adequate fit, and values between 0.08 and 0.10 as a mediocre fit, whereas values > 0.10 are not acceptable.

B.2.3. Descriptive Measures Based on Model Comparisons

Comparison indices rely on comparing the fit of a model of interest to the fit of a baseline model. Commonly used measures based on model comparisons include Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and the Goodness-of-Fit Index (GFI).

B.2.3.1. Tucker-Lewis Index

TLI compares the difference between χ^2 of the independence model (baseline model) and χ^2 of the target model with respect to the latter. The values of TLI ranges in general from zero to one. As the independence model almost always has a large χ^2 , TLI values are often very close to one, so that a value of 0.97 seems to be more reasonable as an indication of a good model fit than the often-stated cut-off value of 0.95 (Jöreskog and Sörbom, 1993).

B.2.3.2. Comparative Fit Index

CFI avoids the underestimation of fit often noted in small samples. The CFI ranges from zero to one with higher values indicating better fit (Bentler, 1990). Typically, a value of 0.97 is indicative of good fit relative to the independence model, while values greater than 0.95 may be interpreted as an acceptable fit (Hu and Bentler, 1999).

B.2.3.3. Goodness-of-Fit-Index

GFI measures the relative amount of the variances and covariances in the empirical covariance matrix that is predicted by the model-implied covariance matrix (Jöreskog and Sörbom, 1989). The GFI typically ranges between zero and one with higher values indicating better fit. The usual rule of thumb for this index is that 0.95 is indicative of good fit relative to the baseline model, while values greater than 0.90 are usually interpreted as indicating an acceptable fit (Schumacker and Lomax, 1996).

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