The effect of social commerce attributes on customer engagement: an empirical investigation

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Abstract

Purpose – Social commerce (s-commerce) offers community-based platforms that facilitate customer-to-customer interactions and the development of customers' social shopping-based experience. While prior research has addressed the role of customer engagement (CE) in boosting s-commerce-based sales and performance, insight into the effect of s-commerce attributes on CE remains tenuous. Addressing this gap, this study examines the role of specific s-commerce attributes (i.e. community, collaboration, interactivity and social dynamics) on CE, which is, in turn, proposed to impact customers' repurchase- and electronic word of mouth (eWOM) intention.

Design/methodology/approach – A web-based survey was deployed to target users of a popular s-commerce platform, Etsy.com. Partial least squares structural equation modeling (PLS-SEM) was, then, used to analyze the survey data collected from 390 users.

Findings – The results reveal that the four examined attributes positively affect CE. The findings also demonstrate CE's positive effect on customers' repurchase- and eWOM intention.

Originality/value – Though CE has been identified as a key s-commerce performance indicator, little remains known about the role of specific s-commerce attributes in driving CE, as, therefore, explored in this research. Specifically, the authors examine the role of s-commerce-based community, collaboration, interactivity and social dynamics on CE. Their analyses also corroborate that CE, in turn, drives customers' post-purchase (i.e. repurchase/eWOM) intention. Managerially, our findings can be used to develop more engaging s-commerce platforms.

Keywords S-commerce, Customer engagement (CE), Electronic word of mouth (eWOM), Repurchase intention, Stimulus-organism-response framework

Paper type Research paper

1. Introduction

In recent years, the CE concept has emerged as a key business performance metric (Hollebeek *et al.*, 2019). Prior research suggests that engaged customers can dramatically increase business performance by stimulating sales, referrals and customer loyalty (Brodie *et al.*, 2011;

Eigenraam *et al.*, 2018). Unsurprisingly, many firms have sought to foster customers' engagement with their products or brands, including through online (e.g. social media) and offline platforms (e.g. retail stores) (De Vries and Carlson, 2014). Of these, social media platforms are particularly beneficial, given their wide (e.g. global) reach and relatively low-cost for content dissemination (Hollebeek *et al.*, 2014).

Social commerce (s-commerce) refers to the addition of social networking tools to traditional e-commerce websites to facilitate social interaction among current and/or prospective customers, and social networking sites integrating commercial features to enable user communications, promotions and transactions (Pöyry *et al.*, 2013; Zhang and Benyoucef, 2016; Hu *et al.*, 2022). While prior research has addressed CE on social media platforms (e.g. Ajiboye *et al.*, 2019), most s-commerce studies have limited their focus to the effect of social factors on consumers' (e.g. purchase) intention (Hajli, 2014a, 2015; Hu *et al.*, 2022; Liang *et al.*, 2011; Lin *et al.*, 2018), behavior (Bai *et al.*, 2015; Huang and Benyoucef, 2017), or s-commerce design issues (Baghdadi, 2013; Gonçalves Curty and Zhang, 2013; Han and Trimi, 2017; Huang and Benyoucef, 2013). As such, important gaps remain in the integrative area of s-commerce/CE. In particular, little remains known regarding the role and effects of s-commerce-based ambience- or environmental characteristics on CE and its downstream consequences (Kang *et al.*, 2021), thus warranting further investigation.

Previous studies also suggest that community, and collaboration, are among the main attributes that distinguish s-commerce from traditional e-commerce (Busalim *et al.*, 2016; Huang and Benyoucef, 2013). However, despite reported s-commerce interaction and communication challenges (Jami Pour *et al.*, 2022), the role of community and collaboration in engaging customers and building positive customer experiences with s-commerce platforms remains nebulous, thus also meriting further scrutiny.

Adopting the stimulus-organism-response (S-O-R) model, the main objective of this study is to investigate the effect of key s-commerce attributes, including collaboration, community, interactivity and social dynamics, on CE (Busalim *et al.*, 2016; Huang and Benyoucef, 2013), which we suggest to, in turn, impact customers' repurchase- and eWOM intention. Specifically, this study seeks answers to the following research questions:

RQ1. How do key s-commerce attributes affect CE?

RQ2. What is the effect of s-commerce-based CE on customers' repurchase intention?

RQ3. What is the effect of s-commerce-based CE on customers' eWOM intention?

This study makes the following primary contribution to s-commerce and CE literature. The ultimate goal for s-commerce is to build, and/or maintain, CE over time, in turn fostering customers' repeat purchases and lifetime value (Hu *et al.*, 2022). Though prior research has shed light on the factors affecting s-commerce-based CE (Busalim *et al.*, 2021; Liu *et al.*, 2021), the role of specific s-commerce attributes on CE, and its downstream effects on repurchase- and eWOM intention, remains unclear. Our findings show that s-commerce attributes, indeed, affect CE, in turn, boosting customers' post-purchase (i.e. repurchase/eWOM) intentions, thus exposing significant insight for s-commerce practitioners. The findings, broadly, extend existing consumer behavior-based s-commerce research on the key role of consumer behavior variables (e.g. trust, subjective norms and perceived value) on s-commerce effectiveness (Nadeem *et al.*, 2021; Wongkitrungrueng and Assarut, 2018; Yu *et al.*, 2020; Liu *et al.*, 2022; Molinillo *et al.*, 2020).

The remainder of the study is organized as follows. Section 2 reviews key literature on s-commerce, CE and the S-O-R model, followed by an overview of the proposed model and the hypotheses in Section 3. Section 4 outlines the deployed methodology, followed by a synthesis of the results in Section 5. Section 6 discusses the findings and the key implications that arise from our analyses. Section 7 highlights key limitations inherent in this study, and Section 8 concludes the study.

2. Literature review

2.1 Social commerce

The interaction between content, community and commerce has revolutionized the online business environment by allowing customers to play a more proactive role in the e-commerce process (Hajli and Sims, 2015). Based on a recent survey, 78% of social community platform (e.g. social networking site) users spend time interacting with other consumers and/or brands (WARC, 2021). Therefore, reaching customers, and engaging with them, on these community-based platforms is expected to boost firms' competitive advantage (Shen *et al.*, 2019).

S-commerce has been defined as the "use of Internet-based media that allow people to participate in the marketing, selling, comparing, curating, buying, and sharing of products and services in online marketplaces and communities" (Zhou *et al.*, 2013, p. 61). It can, therefore, be used to connect buyers and sellers by allowing them to seek, and share, information about products and services (Xiao *et al.*, 2015). For example, members of s-commerce platforms, such as Etsy.com, Taobao.com, and Facebook are able to join any community of their interest, after which they are able to interact with other members, follow buyers/sellers of interest, seek product-related information and/or share their purchase-related experiences (Huang and Benyoucef, 2013; Xiao *et al.*, 2015). The literature suggests that *community* represents a key component of s-commerce design, thus distinguishing s-commerce (vs. traditional e-commerce) platforms, and also enabling s-commerce to harness the power of customer-to-customer interactions to a greater extent (Hajli, 2013; Huang and Benyoucef, 2013). The growing importance of s-commerce should, therefore, not be underestimated. According to Accenture, the global s-commerce market is expected to grow three times as fast as that of traditional e-commerce, to US$1.2 trillion by 2025 (Murdoch *et al.*, 2022).

2.2 Social commerce attributes

S-commerce attributes refer to the built-in features of an s-commerce website, or service, that allow customers to rate, review, comment, share and participate in a community (e.g. a forum/blog) to provide, or receive, product-related support, referrals and recommendations (Hajli, 2013; Rashid *et al.*, 2022). Given their social nature, s-commerce attributes can be used to enhance customers' social (e.g. online) experiences (Zhang *et al.*, 2014).

Previous studies suggest that s-commerce attributes (e.g. interactivity, community, social interaction/support, collaboration, information quality, reputation and rewards/recognition) are conducive to fostering enhanced customer-to-customer interactivity and cocreation (Busalim *et al.*, 2016; Kim and Park, 2013; Molinillo *et al.*, 2021). For example, Li (2019) found that s-commerce attributes, including ratings, reviews, recommendations and referrals, positively impact customers' social interactions, in turn significantly affecting their trust in product recommendations. Liu *et al.* (2021) also examined technical s-commerce attributes (interactivity, stickiness, personalization and sociability) and found that these increase customers' purchase intention by raising their customer-to-customer interactivity and perceived value. Furthermore, several studies have shown that the social aspect of s-commerce platforms is a core characteristic in satisfying customer socialization needs, which is often underserved by, or absent from, traditional e-commerce platforms (Hu *et al.*, 2022; Lin *et al.*, 2018; Liu *et al.*, 2021; Osatuyi and Turel, 2019). Overall, our review suggests that most prior studies highlight the role of customer interactivity, community, collaboration and social dynamics in influencing customer behavior on s-commerce platforms (see Table 1).

2.2.1 Social commerce collaboration. Prior e-commerce, and collaborative shopping, studies also suggest the essential role of collaboration in enhancing customers' shopping experience, online presence and engagement (Kim *et al.*, 2013; Wagner and Majchrzak, 2007). For example, Zhu *et al.* (2010) reported that collaborative tools (e.g. shared navigation/voice chat) can play a significant role in driving customer responses and shopping experiences.

Study	Community	Collaboration	Interactivity	Social dynamics
		S-commerce attributes		
Hajli (2013)	✔	✔		
Huang and Benyoucef (2013)	✔	✔	✔	✔
Kim and Park (2013)				✔
Pöyry et al. (2013)	✔			
Hajli (2014b)	✔	✔		
Hajli et al. (2014)	✔	✔		
Seedorf et al. (2014)		✔		
Zhang et al. (2014)			✔	✔
Hajli and Sims (2015)	✔	✔		
Hajli (2015)	✔	✔		✔
Bryant and Thompson (2016)		✔		✔
Friedrich et al. (2016)				✔
Zhang and Benyoucef (2016)			✔	✔
Huang and Benyoucef (2017)			✔	
Carlson et al. (2018)	✔			✔
Li (2019)				✔
Alalwan et al. (2019)				✔
Molinillo et al. (2020)	✔			✔
Kang et al. (2021)			✔	
Liu et al. (2021)	✔			✔
Hu et al. (2022)				✔
Rashid et al. (2022)	✔	✔		✔

Source(s): Author's own creation/work

Table 1.
Social commerce attributes addressed in prior research

In s-commerce, *collaboration* refers to the customer's ability to shop at an s-commerce website, or service, with remotely located peers, including friends or family members (Kim et al., 2013). S-commerce, therefore, represents a paradigm-shift in customers' online consumption-related thought processes (i.e. by transitioning from an inefficient individual consumption journey to a collaborative, shared and social shopping experience (Chen and Shen, 2015).

Compared to traditional e-commerce, s-commerce allows customers to generate content, exchange information and build collaborative knowledge (Hu et al., 2022; Huang and Benyoucef, 2017). In this environment, customers are able to acquire valuable information, yielding their improved shopping and decision-making experiences (Hu et al., 2022; Kim and Park, 2013). The richness of the content shared on s-commerce platforms, and customers' interpersonal networks, can also drive more efficient and effective, purchase-related content sharing (Liu et al., 2021). Moreover, the real-time support, detailed product information and other customers' shopping experiences shared on s-commerce platforms can foster customers' heightened engagement with the platform (Hollebeek and Macky, 2019). This can, in turn, boost their repurchase intention (Huang and Benyoucef, 2017; Liu et al., 2021; Seedorf et al., 2014).

2.2.2 Social commerce-based community. *S-commerce-based community* implies a customer's perceived degree to which an s-commerce platform enables them to connect with, follow, or communicate with other customers during the shopping process (Molinillo et al., 2020). The community aspect, therefore, distinguishes s-commerce from traditional e-commerce (Liang and Turban, 2011; Qin et al., 2023). In e-commerce, customers mainly rely on providers' (sellers') advice to make their purchase decisions (Guo et al., 2021; Hajli and Sims, 2015). However, s-commerce-based communities allow customers to communicate with one another (Molinillo et al., 2020), revealing a greater social aspect. According to Liang and Turban (2011), s-commerce platforms have three major attributes: social media technologies,

community and commercial activities. Relatedly, Molinillo *et al.* (2020) suggested that s-commerce communities can help produce a common identity, and ties, between customers, yielding a sense of belongingness (Lin *et al.*, 2018) and community engagement (Wang *et al.*, 2020). Existing studies also emphasize the role of community attributes in stimulating customers' community-based responses. For example, Islam and Rahman (2017) found that s-commerce communities can stimulate CE if they provide high-quality information, on-demand systems, a virtual interactive environment, and reward systems. Moreover, Qin *et al.* (2023) highlighted the combined technological/social features of s-commerce that provide dynamic interactive communities in which customers are able to engage with stakeholders including streamers, sellers, or fellow customers (Clark *et al.*, 2020), thus improving their shopping experience.

2.2.3 S-commerce-based interactivity. S-commerce-based interactivity refers to the degree to which an s-commerce site's technical characteristics, and design, facilitate customers' real-time interaction and information exchange (Liu *et al.*, 2021). From a customer perspective, *s-commerce-based interactivity* refers to "the extent to which consumers participate in social shopping activities, and, as a result, generate and share information to reach a consensus within a social networking environment" (Tajvidi *et al.*, 2021, p. 3). Previous social shopping, and online consumption, research has conceptualized interactivity as a stimulus (Mollen and Wilson, 2010; Ric and Benazić, 2022), acknowledging its capacity to physiologically stimulate customers and, in turn, affect their purchase behavior (Liu *et al.*, 2021). Given the community-based, dynamic nature of s-commerce, interactivity is a key s-commerce metric, like for CE (Hollebeek *et al.*, 2022).

Prior research suggests that interactivity has three core dimensions: perceived responsiveness, perceived user control and two-way communication (McMillan and Hwang, 2002; Mollen and Wilson, 2010; Song and Zinkhan, 2008), which, collectively, articulate users' online interactivity (Tajvidi *et al.*, 2021). Moreover, Ric and Benazić (2022) asserted that elevated virtual community-based interactivity (e.g. on s-commerce websites) can create perceived autonomy, allowing customers to feel in control, in turn raising their engagement and potentially, flow.

2.2.4 Social dynamics. S-commerce (vs. traditional e-commerce) platforms reveal an important social aspect, thus suggesting the expected role of social dynamics on these platforms (Liang *et al.*, 2011; Xue *et al.*, 2020). Extant research suggests that social interaction, and social support, are the most common social facilitators of s-commerce sociability (Hajli, 2014a; Hajli and Sims, 2015; Huang and Benyoucef, 2013; Liang *et al.*, 2011; Liang and Turban, 2011).

Social interaction denotes any actions users engage in that may affect their product- or service-related decision-making (Godes *et al.*, 2005). S-commerce research shows that customers tend to seek social interaction when they join s-commerce communities to fulfill their social desires and build social ties, in turn shaping their predicted future purchase decision-making behavior (Hajli, 2014a; Wang and Yu, 2017). Prior studies indicate that social interaction represents a core s-commerce element that permits different types of user communication and provides a crucial information source to them (Hu *et al.*, 2022; Huang and Benyoucef, 2013; Liang *et al.*, 2011; Lin *et al.*, 2018). Interactivity is also conducive to the establishment of social support mechanisms (Hajli, 2015). According to Hajli (2013), customers' social interactions on s-commerce platforms are facilitated by ratings and reviews, forums and communities and recommendations and referrals. Collectively, these contribute to building platform trust, while also fostering CE (Busalim *et al.*, 2021; Hajli, 2015).

Social support refers to "socially supportive communication by means of information sharing, so that consumers feel that they are being helped and responded to by others when they are seeking information in a social group" (Wang *et al.*, 2020, p. 4). The literature suggests that the rise of social computing, and Web 2.0 applications (e.g. social media), has

revolutionized online environments making by rendering them more conducive to information/knowledge sharing (Hajli, 2014a). Liang *et al.* (2011) proposed that s-commerce-based social support can bring warmth, thus satisfying the individual's psychological needs, boosting the customer experience and raising perceived relationship quality and loyalty. Prior studies suggest that s-commerce customers, who experience elevated social interaction, and social support, are more likely to engage with the platform (Hajli *et al.*, 2015; Tajvidi *et al.*, 2021; Wang *et al.*, 2020).

2.3 S-commerce-based customer engagement

CE has received substantial attention among academics and practitioners in the last decade (Brodie *et al.*, 2013; Dessart *et al.*, 2016; Gligor *et al.*, 2019). CE has been defined as "the level of an individual customer's motivational, brand-related and context-dependent state of mind characterized by specific levels of cognitive, emotional and behavioral activity in direct brand interactions" (Hollebeek, 2011b, p. 790). As such, CE implies the customer's psychological state that transpires through his/her brand-related interactions (Brodie *et al.*, 2011).

Most CE studies advocate a three-dimensional (i.e. cognitive, emotional and behavioral) perspective of CE (Brodie *et al.*, 2011; Dessart *et al.*, 2016; Hollebeek, 2011a, 2014). However, some authors limit their view of CE to behavioral CE, or engagement behavior. For example, Van Doorn *et al.* (2010) defined CE as "the customer's behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers."

In s-commerce, non-transactional CE may help consumers find the required product-related information, yielding expected social and economic benefits (Molinillo *et al.*, 2020). Prior s-commerce research highlights that when customers engage in commercial activities, these can generate positive customer (e.g. co-creation/positive eWOM) responses (Molinillo *et al.*, 2020; Tajvidi *et al.*, 2021; Wang and Hajli, 2014; Zhang *et al.*, 2017a). For example, Molinillo *et al.* (2020) reported that owing to s-commerce-based community and social support, customers tend to be more willing to engage with the platform, in turn driving desirable (e.g. eWOM) behaviors (Zhang *et al.*, 2017b). Moreover, s-commerce-based CE enables firms to build strong customer relationships by facilitating multiple ways for customers to provide their feedback (Liu *et al.*, 2022). Correspondingly, Wang and Hajli (2014) documented that s-commerce attributes (e.g. online communities/fora, ratings, reviews and recommendations) are likely to strengthen customers' interactions both with other customers, and the brand.

Recently, CE has gained traction in s-commerce research, including studies from different (e.g. platform or customer) perspectives (Algharabat and Rana, 2021; Busalim *et al.*, 2021; Liu *et al.*, 2022; Molinillo *et al.*, 2020; Xue *et al.*, 2020). For example, Kang *et al.* (2021) examined the effect of s-commerce-based website interactivity on CE. Using real-time data, the authors found that s-commerce responsiveness and personalization, positively affect customer tie strength, in turn raising CE. Molinillo *et al.* (2021) found that s-commerce website attributes (i.e. information/service quality) are key drivers of perceived value, in turn boosting CE. In an earlier study, Molinillo *et al.* (2020) suggested that s-commerce community drivenness, identification and trust are key drivers of s-commerce-based CE. From a customer perspective, Nadeem *et al.* (2021) showed that customers' experiential values (i.e. social, cognitive, ethical and hedonic) have a positive effect on CE. Relatedly, Wang *et al.* (2020) highlighted that s-commerce customers' social support (i.e. information/emotional support) favorably affects CE, while Algharabat and Rana (2021) showed that s-commerce support increases community members' trust, and as a result boosts CE. Finally, Busalim *et al.* (2021) proposed a key role of customers' social, technological and motivational factors in driving s-commerce-based CE. An overview of key studies addressing s-commerce-based CE is provided in Table 2.

Studies	CE dimension	Antecedents to customer engagement in s-commerce	Consequences of customer engagement	Key findings
Shen *et al.* (2019)	Unidimensional: Behavioral	Technology attractiveness and community involvement	–	Technology attractiveness (i.e. task, social and physical attractiveness) has a positive effect on community involvement, which has a positive influence on s-commerce engagement
Molinillo *et al.* (2020)	Multidimensional: Vigor, dedication and absorption	Social support, community drivenness, community identification and community trust	Willingness to co-create, stickiness Intention, positive eWOM intention, repurchase intention	Community factors including community trust and community identification, along with social support, have a positive effect on CE. Thus, CE can lead to positive outcomes such as customer stickiness and repurchase intention
Wang *et al.* (2020)	Unidimensional: Behavioral	Social support (i.e. emotional and informational support)	–	Social support has a positive effect on s-commerce engagement
Algharabat and Rana (2021)	Multidimensional: Cognitive, affective and behavioral	Social support, social presence, trust in community members and flow	–	S-commerce constructs and social factors have a positive effect on community trust, which has a positive influence on customer engagement within s-commerce communities
Guo *et al.* (2021)	Unidimensional: Behavioral	Trust in community members, broadcasters and products	–	Trust in live streaming (i.e. trust in product, trust in community members and broadcasters) has a positive effect on CE
Kang *et al.* (2021)	Unidimensional: Behavioral	Interactivity and tie strength	–	Both interactivity and tie strength have a positive effect on CE
Nadeem *et al.* (2021)	Multidimensional: Cognitive, affective and activation	Experiential value (i.e. cognitive, hedonic, social and ethical values)	Brand relationship performance (i.e. brand loyalty, satisfaction) and co-creation	Experiential value has a positive impact on CE, which in-turn has a positive effect on brand performance and value co-creation

Source(s): Author's own creation/work

2.4 Stimulus-organism-response framework

Consumer behavior studies that used the stimulus-response framework are well-documented in the marketing literature (e.g. Jacoby, 2002). However, to address the shortcomings of the stimulus-response framework, Mehrabian and Russell (1974) added the *organism* concept,

yielding the related stimulus-organism-response (S-O-R) model. In these authors' model, individuals' internal cognitive and emotional (affective) states are thought to be influenced by environmental cues (stimuli) that, in turn, impact their behavioral responses. In the consumer behavior context, Bagozzi (1983) noted the high applicability of the S-O-R model, leading to its adoption in this study.

In the S-O-R model, *stimuli* are viewed as being external to the consumer. Stimuli may include managerially controllable factors (e.g. marketing mix/environmental factors). The *organism* comprises the consumer's internal processes (Mehrabian and Russell, 1974), including the affective (e.g. arousal/motivation) and cognitive processes (e.g. perceived risk, evaluation, decision rules) that regulate consumer choice (Bagozzi, 1983). Finally, *response* includes the individual's choice-related behavior, including his/her intentions, or conations, to act, activities leading to choice, actual choices and outcomes and reactions to choice. While the S-O-R model, traditionally, was presented as a process (i.e. Stimulus, Organism and Response), Jacoby (2002) noted that this approach, while not intellectually incorrect, may overlook the nonlinear, interactive nature of consumers' behavioral processes.
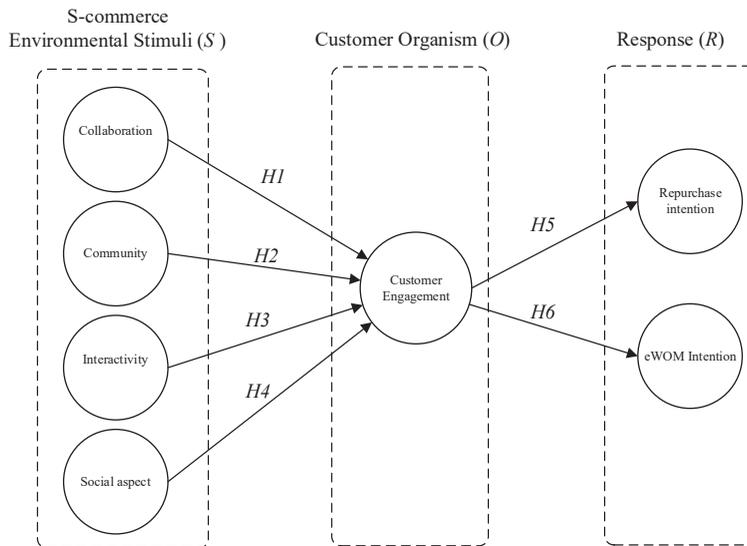
The S-O-R model has been applied in a range of online marketing contexts, including consumer experiential responses to websites (Mollen and Wilson, 2010), e-commerce (Chen and Yao, 2018; Rose *et al.*, 2012), online reviews (Bigne *et al.*, 2020) and social media-based brand communities (Islam and Rahman, 2017; Kamboj *et al.*, 2018), among others. S-commerce has also been explored through an S-O-R lens. In a study of 1,009 RenRen and Sina Weibo users, Zhang *et al.* (2014) found that s-commerce intention (i.e. response) is determined by consumers' (i.e. the organism's) virtual experiences (i.e. social support, social presence, flow), which are in turn influenced by technological features, or stimuli (e.g. interactivity, stimulus personalization, sociability). Likewise, Zhou (2019) found that support and service quality (i.e. stimuli), affect consumer-perceived (i.e. the organism's) community, consequently affecting their information sharing, participation and intention (i.e. response). Wu and Li (2018) developed an s-commerce marketing mix (SCMM) based on s-commerce needs, risk, convenience, social capital, social identification and social influence. Their findings suggested that all SCMM components (i.e. stimuli) significantly impact consumer-perceived (i.e. the organism's) s-commerce value, in turn influencing s-commerce loyalty (i.e. response). Moreover, Li (2019) explored the impact of s-commerce attributes that connect consumers and enable them to discover, share, recommend, rate and purchase products, on their social shopping intention. Here, the environmental stimuli included ratings, reviews, recommendations and referrals; the customer's experience represented the organism; and the focal response was their social shopping intention.

3. Hypothesis development
This study investigates the effect of s-commerce attributes on CE and its downstream consequences on eWOM and repurchase intention. Based on the literature review, the proposed model incorporates s-commerce-based collaboration, community, interactivity and social dynamics as relevant stimuli, which we expect to impact customers' engagement (i.e. organism). CE, is, in turn, proposed to impact the customer's repurchase- and eWOM intention (i.e. response), as shown in Figure 1.

3.1 Collaboration
With the rise of s-commerce, customers have become more proactive in their shopping behavior, given the former's collaborative environment that permits content creation and sharing (Hajli and Sims, 2015), value co-creation in new product development processes (Wang and Hajli, 2014; Yu *et al.*, 2020), the provision of feedback (Hsiao and Wang, 2015) and

S-commerce
Environmental Stimuli (*S*) Customer Organism (*O*) Response (*R*)

Collaboration

Community

Interactivity

Social aspect

Customer Engagement

Repurchase intention

eWOM Intention

H1

H2

H3

H4

H5

H6

Source(s): Author's own creation/work

the ability to influence other customers' purchase decisions (Huang and Benyoucef, 2017). S-commerce customers are, therefore, exposed to social, collaborative experiences (Huang and Benyoucef, 2017). Previous s-commerce, and social shopping, studies confirm the close relationship of collaboration and CE (Huang and Benyoucef, 2013). For instance, Seedorf *et al.* (2014) highlighted that while collaborative (e.g. social co-browsing/instant chat) tools are still developing, customers, who have experienced this type of collaboration in social shopping, tend to experience greater social presence and engagement. Accordingly, this study proposes:

H1. The s-commerce collaborative environment has a positive effect on customer engagement.

3.2 Community
S-commerce is a community-based environment (Hajli, 2013; Stephen and Toubia, 2010) that connects buyers/sellers and allows them to share product-related information (Xiao *et al.*, 2015). S-commerce customers are able to freely interact with other customers to seek advice on products before, during and after their purchases (Molinillo *et al.*, 2020), raising their platform-based engagement intensity. Previous s-commerce, and online brand community, research empirically demonstrates the strong relationship between s-commerce community and CE (Brodie *et al.*, 2013; Shen *et al.*, 2019; Molinillo *et al.*, 2020). For example, Shen *et al.* (2019) corroborated the positive effect of community involvement on users' s-commerce engagement. Pöyry *et al.* (2013) suggested that customers participate in s-commerce brand communities (e.g. on Facebook) because these provide a sense of enjoyment, fantasy, pleasure and relevant content. Further, Molinillo *et al.* (2020) identified a significant, positive effect of community factors (e.g. community drivenness, identification and trust) on CE on Facebook fan pages. Thus, the following hypothesis is proposed:

H2. S-commerce community has a positive effect on customer engagement.

3.3 Interactivity

S-commerce-based interactivity has been identified as a crucial facilitator of social interaction (Zhang *et al.*, 2014). Customers engage in s-commerce platforms based on their high perceived interactivity, leading them to feel in control (e.g. by creating/sharing brand-related content) and prolonging their platform engagement. Prior s-commerce research shows that interactivity positively impacts CE (Busalim *et al.*, 2021; Kang *et al.*, 2021), customer experiences (Carlson *et al.*, 2018) and interpersonal interaction (Liu *et al.*, 2021). For example, Kang *et al.* (2021) found that s-commerce-based interactivity (i.e. responsiveness/personalization), boosts CE. We, therefore, argue that the more customers create, and share, product-related information, the greater their engagement. Thus, the following hypotheses is proposed:

H3. S-commerce-based interactivity has a positive effect on customer engagement.

3.4 Social dynamics

As s-commerce is, by definition, built on specific social media features to support its social functioning, its social dynamics are a key characteristic of these platforms (Liang *et al.*, 2011; Huang and Benyoucef, 2013). Prior s-commerce studies indicate that social support and social interaction, are the most influential social s-commerce attributes (Hajli, 2013, 2014a, b, 2015; Bai *et al.*, 2015; Hajli and Sims, 2015). As discussed, s-commerce platforms provide customers with multiple ways to communicate with one another and form social ties using specific tools and functions (Kim and Park, 2013; Tajvidi *et al.*, 2021). These social functions are defining s-commerce hallmarks that enable customer-to-customer interactions, in turn helping to satisfy customers' social needs and boosting their engagement (Vries and Carlson, 2014). Previous studies demonstrate the intricate association between social interactions and CE (Bitter *et al.*, 2014; Busalim *et al.*, 2021; Jahn and Kunz, 2012). For example, Jahn and Kunz (2012), and Bitter *et al.* (2014) found that social interaction on Facebook-based brand-fan pages positively influenced user engagement.

Social support comprises two main elements, including information- and emotional support (Tajvidi *et al.*, 2021; Wang *et al.*, 2020). Prior s-commerce research shows that social support positively affects CE on s-commerce platforms (Busalim *et al.*, 2021; Molinillo *et al.*, 2020; Wang *et al.*, 2020; Yusuf *et al.*, 2018). For example, Molinillo *et al.* (2020) suggested that when s-commerce customers receive social support from another customer, this raises their self-efficacy, in turn boosting their engagement. Thus, this study proposes:

H4. Social s-commerce dynamics have a positive effect on customer engagement.

3.5 Customer engagement

S-commerce-based CE has been associated with several consequences, including increased customer satisfaction, loyalty, cocreation, eWOM, repurchase intention, feedback and collaboration and website stickiness (Carlson *et al.*, 2018; Molinillo *et al.*, 2020; Nadeem *et al.*, 2021; Zhang *et al.*, 2017b). One such positive outcome is *repurchase intention*, which refers to a customer's intention to rebuy a product/service from an s-commerce supplier (Kim *et al.*, 2013). While repurchase intention directly affects firm performance (Pansari and Kumar, 2017), engaged s-commerce customers are also likely to develop a positive platform-related sentiment, and/or a belief that other customers will help improve their repurchase decisions (Lim *et al.*, 2020). Prior research suggests that CE positively affects s-commerce customers' repurchase intention (Lim *et al.*, 2020; Molinillo *et al.*, 2020).

eWOM is another positive CE consequence. As customers become more engaged with others in real-time dialogue and product-related information sharing, they may feel emotionally attached to and empowered by, the brand (Brodie *et al.*, 2013; Yusuf *et al.*, 2018),

contributing to their positive brand-related eWOM. For example, Chu and Kim (2011) reported that social relationship factors, including tie strength, informational influences and trust positively impact eWOM engagement on s-commerce platforms. Previous studies also show that engaged customers are more likely to spread eWOM (Molinillo *et al.*, 2020; Yang *et al.*, 2015; Zhang *et al.*, 2017b). This study, therefore, hypothesizes:

H5. Customer engagement with s-commerce platforms has a positive effect on repurchase intention.

H6. Customer engagement with s-commerce platforms has a positive effect on eWOM intention.

4. Methodology
4.1 Empirical research context
The empirical context for this study is Etsy.com, one of the most popular s-commerce marketplaces for small businesses (Price and Robinson, 2021). As a dynamic, global marketplace for unique art and craft goods, Etsy.com has over 31.7 million users (Etsy.com, 2022). In the third quarter of 2022, Etsy.com had almost 95 million active buyers, generating US$3 billion in revenue (Etsy.com, 2023). It is a community commerce platform that enables users to connect and engage in social interactions (e.g. by liking content, following other users, or providing product-related feedback (Sun, 2011). Users are also able to create their own profile and join different (e.g. interest) groups. This study selected Etsy.com, given its understudied nature (vs. traditional e-commerce sites) to date, and its ability to generate social interactivity among users (Zhang *et al.*, 2014). While most prior research has focused on s-commerce attributes inherent in social network sites that introduce commercial activities, this study examines consumer behavior dynamics in the less studied s-commerce context (Mamonov and Benbunan-Fich, 2017; Park *et al.*, 2014; Zhang *et al.*, 2014). Therefore, given the social features and functionality of Etsy.com, it is an appropriate s-commerce community to explore our research questions.

4.2 Measurement
This study employed survey methodology to collect the data. The deployed measurement items were acquired from prior research and were adapted to fit the s-commerce context, after which they were validated by an academic expert panel. To ensure item reliability and validity, a pilot test was conducted with 30 Etsy.com users. Based on the feedback from the experts and the pilot test, the survey instrument was refined. The final online survey comprised seven items to measure community, adapted from Gummerus *et al.* (2012) and Wang and Hajli (2014), and five items gauging interactivity adapted from Wu and Wu (2006), Kim and Park (2013) and Tajvidi *et al.* (2021). Moreover, three items measuring collaboration were adapted from Seedorf *et al.* (2014). Social dynamics, comprising social support and social interaction, were measured using items adapted from Hajli (2014a) and Huang and Benyoucef (2015). CE was measured using items adapted from Dessart *et al.* (2016) and Algharabat and Rana (2021). Repurchase intention was measured using three items adapted from Lin *et al.* (2017) and Meilatinova (2021) (see Appendix). All the items were measured on seven-point Likert-type scales ranging from "strongly disagree" (1) to "strongly agree" (7).

4.3 Sampling and data collection
This study used non-probability, purposive sampling to collect the data (Wang and Huang, 2023), which is commonly used to determine samples based on particular criteria or similar sets of characteristics (Sekaran and Bougie, 2013). The data was collected from users who

have an Etsy.com account and have engaged in several buying/selling activities on the platform. The data was collected using Qualtrics, yielding a total of 410 completed responses. After deleting ineligible responses, including those featuring questionable response patterns (e.g. straight line answers) and outliers, 390 valid responses were retained, as shown in Table 3. The male respondents were 76% ($n = 296$) and the female were 24% ($n = 94$). The respondents who are aged 26–35 years were 44% ($n = 171$), followed by those who are between 18 and 25 (29%, $n = 112$), 36 and 45 (18%, $n = 71$) and the remainder (9%, $n = 36$) were over 45. Most of the respondents had used Etsy.com for 1–three years (58%, $n = 226$), for 3–5 years (21%, $n = 81$), and for less than one year (13%, $n = 51$). The remaining respondents had used Etsy.com for over five years 8% ($n = 32$). Moreover, the respondents who had shopped at Etsy.com once every few weeks were 55% ($n = 215$), followed by those who had shopped at the platform several times a month (31%, $n = 121$). The remaining respondents bought there several times a week (9%, $n = 35$), or almost every day (5%, $n = 19$).

4.4 Common method bias

The Harman's one-factor test was used to ensure that the data is free from common method bias (CMB), which is a serious issue if a single factor explains over 50% of the observed variance (Podsakoff *et al.*, 2003). The Harman's one-factor test results revealed that the highest single factor accounted for 34.5% of the observed variance, thus remaining well under the 50% threshold. Therefore, CMB is not a significant issue in our data.

5. Data analysis and results

5.1 Measurement model assessment

Partial least squares structural equation modeling (PLS-SEM) was used to analyze the data, a widely used approach, given its elevated predictive validity (Hair *et al.*, 2016). To estimate the modeled higher-order constructs (i.e. social dynamics), the disjoint two-stage approach was applied (Becker *et al.*, 2012; Hair *et al.*, 2016), which examines the lower-order constructs comprised in the higher-order constructs by linking them to all other constructs that the higher-order constructs are theoretically related to (Sarstedt *et al.*, 2019). To perform the disjoint two-stage approach, the lower-order constructs, social support (SSP) and social

Profile of respondents ($n = 390$)		Frequency	Percentage
Gender	Male	296	76%
	Female	94	24%
Age	18–25	112	29%
	26–35	171	44%
	36–45	71	18%
	>45	36	9%
Length of time using Etsy.com	Less than a year	51	13%
	1–3 years	226	58%
	3–5 years	81	21%
	>5 years	32	8%
Frequency of shopping on Etsy.com	Once every few weeks	215	55%
	Several times a month	121	31%
	Several times a week	35	9%
	Almost every day	19	5%
Source(s): Author's own creation/work			

Table 3.
Sample's demographic characteristics

interaction (SI) were connected to CE, along with the other constructs (i.e. collaboration, community and interactivity).

Then, the reflective measurement model was examined by testing the reliability and convergent and discriminant, validity of all constructs (Hair *et al.*, 2016). Internal reliability was examined by testing Cronbach's alpha (α) and composite reliability (CR), both of which should exceed 0.7 (Hair *et al.*, 2019). The results in Table 4 show that the Cronbach's alpha of all constructs ranged from 0.700 to 0.873 and the CR results ranged from 0.83 to 0.901, thus demonstrating satisfactory reliability. The convergent validity was also assessed by examining the factor loadings and the Average Variance Extracted (AVE). As shown in Table 4, all factor loadings exceeded 0.50, except for two items, CE1 and CE4. Therefore, following the best PLS-SEM practice, these items were deleted. Furthermore, the AVEs of all items ranged from 0.50 to 0.694, indicating good convergent validity (Benitez *et al.*, 2020; Hair *et al.*, 2016). In Stage Two, the latent variable scores (LVS) of SSP and SI obtained from Stage One were used. The LVS were added to the dataset as new items. Then, the second-order construct (social dynamics) was added to the model and assigned LVS of SSP and SI, as reflective items to it. As shown in Table 4, the results show that the loadings of SSP and SI are 0.904 and 0.921, respectively, with an AVE of 0.832, indicating high indicator reliability. Moreover, the Cronbach's alpha (0.799) and CR (0.908) of the social aspect are at a satisfactory level.

Discriminant validity was examined using Fornell and Larcker's (1981) criterion and the heterotrait-monotrait ratio of correlations (HTMT). The Fornell-Larcker test compares the square root of each construct's AVE values with the other modeled constructs correlations. As shown in Table 5, the square root of the AVE of each construct exceeds its correlation with each of the other constructs. Second, the HTMT was assessed, which is proposed as an alternative discriminant validity measure (Henseler *et al.*, 2015). HTMT is defined as "the average of the correlation indicators across constructs measuring different phenomena, relative to the average of the correlations of indicators within the same construct" (Henseler *et al.*, 2015). The HTMT value of the variables should remain under 0.90 (Benitez *et al.*, 2020; Henseler *et al.*, 2015). Table 6 shows that all HTMT ratios are less than 0.90, indicating adequate discriminant validity.

5.2 Structural model assessment

The structural model was assessed based on the path coefficients and the variance explained (R^2) by the dependent variables. PLS-SEM was, again, used to generate the estimates using bootstrapping with 5,000 subsamples and a two-tailed test (Hair *et al.*, 2016). The hypothesis results are shown in Table 7 and Figure 2. The R^2 values in Figure 2 show that the explained variance of CE, repurchase intention and eWOM intention are 64.1%, 18.9% and 38.3%, respectively, demonstrating satisfactory predictive power (Hair *et al.*, 2019). Moreover, as shown in Figure 2, the hypotheses are supported. According to the path coefficients, collaboration (β = 0.115, t = 2.217), community (β = 0.221, t = 4.604), interactivity (β = 0.134, t = 2.225) and social aspects (β = 0.532, t = 8.926) positively affect customer engagement, supporting H1, H2, H3 and H4. Furthermore, as hypothesized, the results reveal that CE positively impacts repurchase intention (β = 0.435, t = 8.987) and eWOM intention (β = 0.618, t = 15.471), supporting H5 and H6.

6. Discussion and implications

This study examined the role of particular s-commerce attributes in fostering CE. Specifically, the findings provide empirical support for the impact of s-commerce attributes on CE and its outcomes of repurchase- and eWOM intention. Specifically, based

Construct	Items	Loading	Cronbach's alpha	Composite reliability	AVE
Collaboration	COL1	0.735	0.700	0.830	0.620
	COL2	0.834			
	COL3	0.790			
Community	COM1	0.731	0.873	0.901	0.567
	COM2	0.806			
	COM3	0.771			
	COM4	0.798			
	COM5	0.724			
	COM6	0.706			
	COM7	0.728			
Interactivity	INT1	0.686	0.788	0.863	0.612
	INT2	0.717			
	INT3	0.830			
	INT4	0.806			
	INT5	0.772			
Repurchase intention	RPI1	0.788	0.780	0.872	0.694
	RPI2	0.845			
	RPI3	0.865			
Customer engagement	CE2	0.706	0.866	0.894	0.500
	CE3	0.713			
	CE5	0.671			
	CE6	0.620			
	CE7	0.644			
	CE8	0.724			
	CE9	0.786			
	CE10	0.754			
	CE11	0.764			
	CE12	0.655			
Social interaction	SI1	0.793	0.760	0.847	0.581
	SI2	0.684			
	SI3	0.804			
	SI4	0.762			
Social support	SSP1	0.708	0.836	0.880	0.551
	SSP2	0.743			
	SSP3	0.810			
	SSP4	0.758			
	SSP5	0.712			
	SSP6	0.717			
eWOM intention	eWOM1	0.712	0.795	0.859	0.549
	eWOM2	0.782			
	eWOM3	0.756			
	eWOM4	0.718			
	eWOM5	0.735			
Higher-order construct					
Social aspect	Social support	0.904	0.799	0.908	0.832
	Social interaction	0.921			
Source(s): Author's own creation/work					

on the attained R^2 result, a substantial amount of the variance (64.1%) observed in CE is explained by the four studied s-commerce attributes.

This study also unveils additional findings that are of scholarly, and practitioner, interest. First, the results reveal that the s-commerce-based collaborative environment has a significant positive effect on customer engagement. When a customer interacts with others

	COL	COM	INT	RPI	CE	SI	SSP	eWOM intention
COL	0.786							
COM	0.561	0.754						
INT	0.677	0.674	0.753					
RPI	0.532	0.337	0.535	0.833				
CE	0.563	0.639	0.657	0.435	0.700			
SI	0.628	0.530	0.677	0.530	0.667	0.762		
SSP	0.566	0.586	0.646	0.405	0.690	0.665	0.742	
eWOM Intention	0.601	0.455	0.619	0.666	0.619	0.624	0.530	0.740

Note(s): COL=Collaboration; COM= Community; INT= Interactivity; RPI= Repurchase intention; CE= Customer engagement; SI= Social interaction; SSP= Social support; eWOM = Electronic word of mouth
Italic values = the square root of construct's AVE
Source(s): Author's own creation/work

Table 5.
Fornell–Larcker
criterion results

	COL	COM	INT	RPI	CE	SI	SSP	eWOM intention
COL								
COM	0.705							
INT	0.871	0.793						
RPI	0.739	0.401	0.700					
CE	0.692	0.723	0.757	0.512				
SI	0.874	0.639	0.868	0.698	0.800			
SSP	0.732	0.679	0.777	0.501	0.844	0.823		
eWOM intention	0.811	0.531	0.779	0.854	0.722	0.796	0.640	

Note(s): COL=Collaboration; COM= Community; INT= Interactivity; RPI= Repurchase intention; CE= Customer engagement; SI= Social interaction; SSP= Social support; eWOM = Electronic word of mouth
Source(s): Author's own creation/work

Table 6.
HTMT results ratio of
first-order constructs

	Coefficient	t-value	p-values
COL → CE	0.115	2.217	0.027
COM → CE	0.221	4.604	0.000
INT → CE	0.134	2.225	0.026
SA → CE	0.532	8.926	0.000
CE → RPI	0.435	8.987	0.000
CE → eWOM intention	0.618	15.471	0.000

Note(s): COL=Collaboration; COM= Community; INT= Interactivity; SA= Social aspect; CE= Customer engagement; RPI= Repurchase intention; eWOM = Electronic word of mouth
Source(s): Author's own creation/work

Table 7.
Hypothesis testing
results

on an s-commerce platform, (s)he tends to feel connected to those others, thus adding value to sellers and customers, in line with prior collaborative online shopping studies (Zhu *et al.*, 2010; Kim *et al.*, 2013; Seedorf *et al.*, 2014).

S-commerce platforms offer collaborative environments that enable customers to share information, experience, or knowledge, in turn affecting other customers' purchase decision-making processes (Huang and Benyoucef, 2013). Boon *et al.* (2015) noted that Etsy.com, unlike traditional e-commerce platforms, offers its members multiple ways to communicate and collaborate (e.g. including through blog posts, video seminars, webinars, or the ability to set
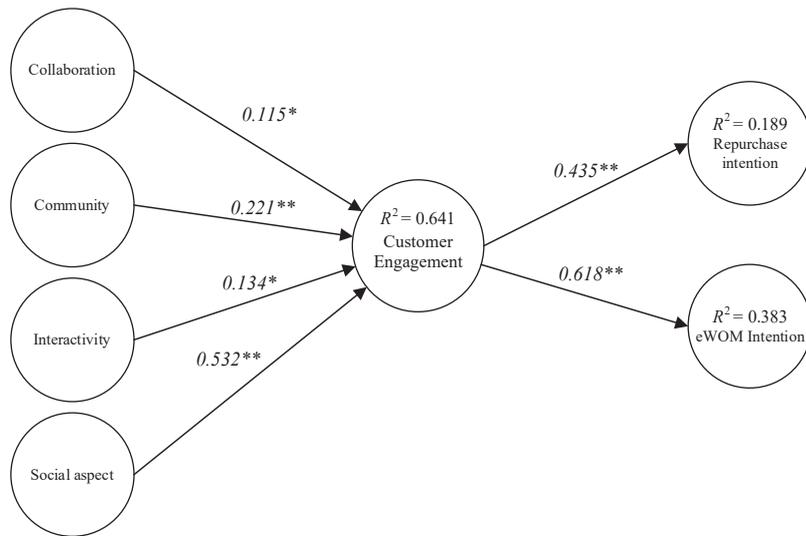
Note(s): *p < 0.05, **p < 0.01
Source(s): Author's own creation/work

up, and communicate in, relevant (e.g. interest) groups), thus stimulating their interactivity and CE (Hollebeek and Macky, 2019).

Second, the results reveal a positive effect of s-commerce community attributes on CE, consistent with prior studies that highlight the role of s-commerce-based community and its effect on customer behavior (Algharabat and Rana, 2021; Molinillo *et al.*, 2020; Shen *et al.*, 2019). This finding is of particular relevance in a (*post-*)pandemic environment, in which consumers are expected to display elevated health/safety concerns, while maintaining their social needs (Hollebeek *et al.*, 2022). Therefore, the more consumers feel comfortable with, trust in and engage with s-commerce platforms (Qin *et al.*, 2023), the greater the expected uptake and continued use, of these platforms, offering important insight for s-commerce providers.

Third, consistent with Kang *et al.* (2021), our results show that s-commerce interactivity has a positive influence on CE. Similarly, Zhang *et al.* (2014) suggested that interactivity is one of the technological features that positively affect customers' virtual s-commerce experience, implying that customer-to-customer and customer-to-seller, interactions significantly shape CE on Etsy.com. For example, with over 250,000 followers, CaitlynMinimalist is among Etsy. com's top ten most popular sellers. This seller provides several customer interaction avenues, including detailed product descriptions, order procedures, payments and return policies. Customers are also easily able to view the latest product reviews and ratings on its homepage and to reply to other customers' reviews, demonstrating the close link between s-commerce-based interactivity and CE. While it is important to note that the majority of the deployed sample were male consumers, the attained finding is consistent with prior research, suggesting that male consumers primarily respond to functional, or utilitarian, features (Chen *et al.*, 2018).

Fourth, the findings show that social s-commerce dynamics, including social support and social interaction, positively affect CE, consistent with prior s-commerce studies (Bai *et al.*, 2015; Hu *et al.*, 2022; Lin *et al.*, 2018; Zhang *et al.*, 2014). Our findings support Ling and

Husain's (2013) rationale that when a customer is able to access other customers' comments and reviews, and to interact with them before they buy a product, they will tend to exhibit elevated engagement and more informed decision-making. Moreover, once s-commerce customers receive information and emotional support, from other customers, this supportive climate encourages them to continue their relationship with fellow customers, and with the platform (Busalim *et al.*, 2021; Liang *et al.*, 2011), in turn also raising their engagement (Molinillo *et al.*, 2020; Wang *et al.*, 2020). Prior studies highlight the role of gender in consumers' social interaction on s-commerce. The results of this study are consistent with those of prior research in that the impact of social dynamics on s-commerce is significantly stronger for male (vs. female) consumers (Bitter *et al.*, 2014). The outcomes of H1, H2, H3 and H4 offer an empirical answer to RQ1 of this study.

Finally, our results reveal CE as a positive predictor of customers' repurchase- and eWOM intention, emphasizing CE's key role in building customers' transactional and non-transactional behavior. These findings are in line with previous literature (Doha *et al.*, 2019; Molinillo *et al.*, 2020; Rahman *et al.*, 2018; Zhang *et al.*, 2017b). For example, Molinillo *et al.* (2020) suggested that CE is a central s-commerce factor and a key predictor of customer loyalty. In addition, the results of H5 and H6 provide a response RQ2 and RQ3 of this study.

6.1 Theoretical implications
This study raises important implications for future s-commerce and CE research. First, despite the growing popularity of CE in s-commerce, little remains known regarding the role of specific s-commerce attributes on CE in the s-commerce context. This study finds that the four studied social s-commerce attributes (i.e. community, collaboration, interactivity and social dynamics), indeed, positively shape customers' s-commerce-based engagement. These findings have pertinent implications for further theory building, and development, in this topic area.

First, debate surrounds the nature, and role, of specific dimensions characterizing social interactions (e.g. Polley, 1987). For example, some authors propose a key role of micro (vs. macro)-interactions (e.g. Kemper and Collins, 1990). Tse and Bond (2001) proposed the social interaction dimensions of active participation, active non-participation, passive participation and passive non-participation. While this study deployed the s-commerce interactivity facets of social interaction and social support, alternate models may be used that may yield novel, or different, insights into s-commerce-based dynamics, yielding important theory verification or refinement opportunities. For example, to what extent do s-commerce platforms boost CE for different social interaction models?

Second, this study investigated the role of social s-commerce attributes on CE, other (i.e. non-social) attributes may also impact CE and/or other consumer behavior variables (e.g. consumer involvement, brand love, brand attachment, or self-brand connection; e.g. Hollebeek *et al.*, 2014). For example, high-involvement products may see a greater relevance of cognitive (vs. social) CE (Brodie *et al.*, 2013), or hedonic (vs. utilitarian) offerings may be more prominently characterized by emotional CE. As another example, for some product categories (e.g. sensitive purchases), consumers may be more reserved in terms of engaging in social purchase-related interactions, or purchases (e.g. financial, legal, or counseling services; adult products). In these cases, s-commerce may offer a sub-optimal selling platform, thus warranting further investigation. For example, how might the addition, or removal, of specific social interaction features affect CE with offerings in these categories? Should, or can, s-commerce platforms be used to sell products in these categories, or are marketers advised to abstain from using these platforms for these products? To what extent, and how, do social s-commerce-based attributes interact with other s-commerce attributes to produce, and sustain, CE for specific categories?

Third, this study deployed the S-O-R model to investigate the research objectives, which assumes that a particular stimulus (e.g. s-commerce website) will generate a focal organism's (i.e. customer's) particular (e.g. purchase) response (e.g. Zhang *et al.*, 2014; Li, 2019). While the S-O-R model has been shown to have elevated validity, it is worthwhile ascertaining the sequence of the predicted s-commerce events in further studies conducted in (a) different context(s). Specifically, through (e.g. selection) bias, a customer may seek out particular stimuli while discounting, overlooking, or ignoring others. In such cases, a revised sequence of the traditional S-O-R model may apply, meriting further scrutiny.

6.2 Practical implications
This study also offers important implications for s-commerce suppliers, sellers and managers. First, the pandemic has changed the face of retailing, including on s-commerce platforms, while also raising customers' caution regarding being physically present in service environments. Here, s-commerce, which is still at an early stage, offers an important growth opportunity in the coming years. Our results show that s-commerce-based community, collaboration, interactivity and social dynamics significantly shape CE, offering a concrete starting point for sellers in building, or improving, their s-commerce platforms. Overall, the findings indicate that managers should incorporate social features in their customers' s-commerce experiences (e.g. by allowing customers to interact, share with, and offer support to each other). This may be accomplished by enabling customers to like, comment on, or share relevant product-related content (e.g. product reviews) online, or by establishing relevant interest groups.

Second, the results show that s-commerce-based interactivity boosts CE. The results, therefore, suggest that firms should prioritize customer interactivity by making it center stage in their s-commerce operations. Correspondingly, managers are advised to pay particular attention to interactive s-commerce attributes, including personalization and customer commenting facilities, fora and/or blogs that enable customers to generate, and share, content, in turn encouraging real-time customer-to-customer interactivity.

7. Limitations and future research
This study has several limitations that offer additional avenues for further research. First, the data was collected from a single s-commerce website, Etsy.com, representing merely one s-commerce category. Future research may, thus, focus on other s-commerce types, including social media platforms, group buying marketplaces, multi-user gaming platforms, or virtual reality environments. An exploration of what factors, and functions, encourage customers to engage with these platforms may be a fruitful area of research. Further research may also account for other relevant consumer, platform, brand-related, or situational factors that may influence CE (Hollebeek *et al.*, 2019).

Second and relatedly, this study examined only two positive outcomes of s-commerce-based CE (i.e. repurchase intention/eWOM). Therefore, future research could examine other outcomes (e.g. brand performance or loyalty). Relatedly, while this study assessed customers' intent to repurchase the brand and to disseminate positive brand-related word of mouth, intentions do not lead to behavior *per se*. Therefore, future research may wish to examine consumers' actual purchase data, whether cross-sectionally or longitudinally. Overall, further insight into CE's s-commerce-based nomological network is expected to be of value.

Third, the deployed sample comprised of predominantly male Etsy.com customers. As women, likewise, represent a significant s-commerce-based user segment, future research could consider the role of gender and examine the existence of potential differences across (e.g. male/female, or non-binary) s-commerce customers. Moreover, examination of other

demographic customer variables (e.g. age, income, or education level) could further enhance scholarly understanding of s-commerce-based CE.

8. Conclusion

Despite the recent rise of s-commerce, the dynamics characterizing customers' engagement with, or on, s-commerce platforms (e.g. based on specific s-commerce attributes) remains nebulous, exposing an important literature-based gap. Drawing on the S-O-R model, this study developed a model proposing that s-commerce-based collaboration, community, interactivity and social dynamics drive CE, which we, in turn, predict to raise customers' repurchase- and eWOM intent. To explore the hypothesized associations, survey data was collected from 390 Etsy.com users. The PLS-SEM results indicate that the four studied s-commerce attributes significantly boost CE. In other words, when these s-commerce attributes are well-developed and -implemented on the platform, customers are more likely to actively engage with the platform. The results also corroborate that CE, in turn, raise customers' repurchase- and eWOM intent. Overall, the results shed much-needed light on the importance of s-commerce attributes in driving CE. By fostering collaboration, building strong communities, encouraging interactivity and providing social support and interaction opportunities, s-commerce providers are able to strategically raise their customers' engagement, in turn boosting platform performance.

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Appendix

Construct	Item	Contents of items
Collaboration	COL1	I am willing to recommend a product that is worth buying to other customers on Etsy
	COL2	I found the collaboration with other customers is useful in achieving my shopping tasks on Etsy
	COL3	Etsy provides a collaborative environment
Community		I join Etsy forums/community to
	COM1	Get to know other Etsy customers/sellers
	COM2	To ask Etsy members to provide me with their suggestions before I buy product/service
	COM3	To get information about sales and coupons
	COM4	To get fast responses for my inquiries
	COM5	To be informed about new products and services
	COM6	Using Etsy forums/community, I could start a discussion and share my ideas about products to other community members
	COM7	Using Etsy forums/community, I could express my opinion about product/seller
Interactivity	INT1	On Etsy, I could send an instant message to seller to ask for further inquiries about the product I want to buy
	INT2	On Etsy, I could share my own shopping experience with other customers through ratings and reviews
	INT3	Etsy keeps me informed of new developments
	INT4	Etsy listens to my feedback on its service
	INT5	Etsy provides me with timely information
Repurchase	RPI1	I would consider buying products from Etsy in the near future
intention	RPI2	I will repurchase other products at Etsy
	RPI3	Given the opportunity, I intend to place an order from Etsy again
Customer	CE1	Etsy makes me feel enthusiastic
engagement	CE2	Interacting with Etsy community gives me a treat
	CE3	Etsy makes me feel happy when I interact with other customers
	CE4	I found Etsy.com interesting
	CE5	Time flies when I am interacting with Etsy community members/customers
	CE6	When I am interacting with Etsy I get carried away
	CE7	I spend time thinking about Etsy.com
	CE8	I share my thoughts with Etsy community
	CE9	I share exciting content (reviews, product/service experience) with Etsy community
	CE10	I seek ideas or information from Etsy community
	CE11	I try to get other interested in Etsy.com
	CE12	I am an active member in Etsy.com
Social interaction	SI1	Etsy allows me to respond to comments made by other customers
	SI2	On Etsy, I could follow sellers to see their products offers
	SI3	On Etsy, I could follow other customers and see their favorite items
	SI4	Etsy allows me to chat with other customers/sellers

(*continued*)

Table A1.

Construct	Item	Contents of items
Social support	SSP1	When faced with difficulties, some customers on Etsy comforted and encouraged me
	SSP2	When faced with difficulties, some customers on Etsy listened to me talk about my feelings
	SSP3	When faced with difficulties, some customers on Etsy expressed interest and concern in my well-being
	SSP4	On Etsy, some customers would offer suggestions when I needed help
	SSP5	When I encountered a problem, some customers on Etsy would give me information to help me overcome the problem
	SSP6	When faced with difficulties, some customers on Etsy would help me discover the cause and provide me with suggestions
eWOM	eWOM1	I would provide others with information on Etsy
	eWOM2	I will tell others the positive aspects of Etsy
	eWOM3	I am likely to encourage others to consider Etsy
	eWOM4	I will recommend Etsy to friends/someone who seeks my advice
	eWOM5	I will speak favorably about Etsy to others

Table A1.   **Source(s):** Author's own creation/work

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