ANALYZING THE EFFECT OF SOCIAL SUPPORT AND CUSTOMER ENGAGEMENT ON STICKINESS AND REPURCHASE INTENTION IN SOCIAL COMMERCE: A TRUST TRANSFER PERSPECTIVE

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ABSTRACT

Consumer engagement is increasingly gaining popularity among practitioners and academics as a prominent consumer-social platform relationship construct. However, few studies have examined why consumers engage in social commerce and the resulting consequences for social platforms. The Stimulus-Organism-Response model is solicited to justify the theoretical background of this study. Based on Stimulus-Organism- Response model, we develop and empirically test a three-dimensional model of customer engagement, examining relevant antecedents and outcomes for social platforms. More importantly, we propose a research model to investigate the differences between the influence of social support and community trust on customer engagement, and the impact of customer engagement on its two consequences, one transactional (repurchase intention) and one non-transactional (stickiness) aspects. An online survey of 417 participants who had purchased products from social commerce websites conducted to empirically examine the proposed research model. The results indicate that social support has a significant, positive effect on member trust and customer engagement, whereas member trust has a positive effect on community trust; community trust and customer engagement positively affect repurchase intention. In addition, customer engagement positively affects stickiness, whereas customer engagement positively affects consumers' repurchase intention. The findings provide an understanding of the antecedents and consequences of customer engagement and contribute knowledge to the field of social commerce that can help website administrators, marketers, and social commerce retailers develop marketing policies and communication strategies.

Keywords: Social commerce; Customer engagement; Trust transfer; Stickiness; Repurchase intention

1. Introduction

The rapid development of information technology has increased the popularity of e-commerce usage. According to eMarketer (2021), in 2021, e-commerce sales will increase to US$4.921 trillion, accounting for 16.8% of the global retailing industry. It also predicts that global retailing e-commerce sales will reach $7.385 trillion in 2025, accounting

for 24.5% of total retail sales. Moreover, there are now 4.20 billion social media users around the world. This number has increased by 490 million over the past 12 months in 2021, resulting in an annual increase of more than 13%. Social media users constitute more than 53% of the global population (We Are Social and Hootsuite, 2021). According to a survey by the Taiwan Digital Media and Marketing Association (2019), the number of Internet users in Taiwan is estimated to approach 16.27 million, and the overall Internet access rate has reached 76.9%. Moreover, ComScore MMX (2015) revealed that Taiwan ranks 12th in the global e-commerce market at 80.4%, and the average time netizens spend browsing web pages is higher than that in other parts of Asia. This indicates that Taiwan's e-commerce industry is highly mature. However, with the changing times, traditional e-commerce can no longer satisfy the needs of consumers. With the rapid development of information communication technology, message transmission rates are increasing, as is communication speed in general, accelerating the development of social media platforms such as Facebook, Instagram, LINE, and WeChat. Social media users can create groups or fan pages based on common interests to share shopping experiences and promote products; these activities develop social commerce. Unlike traditional e-commerce, social commerce relies more on the strength of interpersonal relationships than on transactions and can add value to the flows of people and money (Digitimes, 2013). In addition, social commerce has the transmission channel of the social media environment that e-commerce lacks, as well as the user's sense of communication, interaction and personalized participation (Liang et al., 2011). Social commerce integrates the sale of products and services with consumers through social websites by creating a coordinate relationship among sellers, consumers, and these websites (Liang and Turban, 2011). Thus, to respond to the increasing popularity of social commerce, retailers must incorporate social commerce into their marketing strategies to attract customers who shop through social media.

As consumers increasingly rely on social websites to acquire information regarding products or services they intend to purchase, customer engagement plays a growing role in purchase decisions (Hollebeek, 2011). Therefore, customer engagement is a key factor in social commerce context because it facilitates the development of relationships among consumers and between consumers and social commerce websites (Vohra and Bhardwaj, 2019). In an era of rich media information, increasing consumer engagement is vital to the success of social commerce. Increasing consumer engagement with regard to vigor, absorption, and dedication can attract users to social commerce platform, which is pivotal to the success of social commerce (Molinillo et al., 2020). Each of the dimensions of vigor, dedication and absorption correspond to behavioral, emotional and cognitive aspects (Dwivedi, 2015; Hollebeek, 2011). Very few social commerce studies have measured customer engagement multidimensionality; for example, Liu et al. (2018), Shen et al. (2019), Dabbous and Barakat (2020), and Wongkitrungrueng and Assarut (2020) employ one-dimensional measures of customer engagement. In this study, we propose and test empirically a holistic measure of consumer engagement for use in our research. In the context of social commerce, consumer engagement incorporates the interactive element whereby the consumers may willingly invest effort in maintaining a degree of interaction (i.e., vigor) with members in social platform, be happily engrossed in such interactions (i.e., absorption) and feel enthusiastic and inspired in doing so (i.e., dedication) (Molinillo et al., 2020). Given that we offer a second-order conceptualization of consumer engagement; we conceive consumer engagement as measured reflectively by the three first-order dimensions of vigor, dedication and absorption. This advocate is in line with those of Cheung et al. (2015) and Molinillo et al. (2020).

Identifying the antecedents and consequences that affect customer engagement in social commerce platforms is integral. However, few previous studies have empirically analyzed the antecedents and consequences of customer engagement in the context of social commerce. Therefore, exploring this issue will provide a better understanding of the value of customer engagement in social commerce context, as well as implications for social commerce platform providers. In terms of antecedent factors, social support is very important for social commerce websites because social interactions strengthen bonds among participants (members), leading to the formation of social commerce communities (Chen and Shen, 2015; Liang et al., 2011; Molinillo et al., 2020). According to the social support theory (Shumaker and Brownell, 1984), users experience social support when they feel cared for and helped by other members of the community (Doha et al., 2019; Han et al., 2018). This contributes to consumers' well-being by assuaging their fears of making mistakes and by encouraging them to make more efficient choices, which generates positive emotions (Liang et al., 2011). Moreover, trust is crucial in online shopping environment because of the unpredictability associated with online behavior on social platforms. Chen and Shen (2015) noted that if consumers trust the members of a community on a social platform, they are more likely to trust that social platform. In addition, Lal (2017), Cheng et al. (2019), and Liu et al. (2019) indicated that if social platform users trust the behavior of other members, they may also trust the platform itself; that is, the trust transfer from member-member to member-community. However, previous studies on trust transfer usually focused on the link between social support and subsequent purchase intention, with few studies investigating consumer engagement. Therefore, this study identified

four antecedents of customer engagement in four dimensions: (1) emotional support, (2) information support, (3) member trust, (4) community trust.

What are the consequences of customer engagement? In previous social commerce studies often focus on transactional variables (i.e., purchase intention). However, the transactional aspect only is not enough to predict the outcome of customer engagement in the context of social commerce, the transactional and non-transactional aspects both need to be considered (Molinillo et al., 2020). Hence, it is necessary to mention the consequences of customer engagement that stickiness (non-transactional factor) and repurchase intention (transactional factor) are different in the context of social commerce websites (Molinillo et al., 2020. Stickiness is defined as "a website's popularity and the likelihood of customers conducting transactions" (Wang and Liu, 2016), has attracted the attention of researchers studying e-commerce usage behavior in recent years. According to the Market Intelligence and Consulting Institute (MIC; 2020), 80% of consumers search for information regarding products through online social websites, and 70% use social websites that have stickiness. Consumers collect information regarding products and hear their friend comments before making purchases rather than immediately purchasing a product (Cheung et al., 2015). Engaged customers directly contribute to enterprises' profit through repurchase (Molinillo et al., 2020). On another side, repurchase is the product of consumers' positive experiences; when customers develop strong emotional connections with company or brand communities, they become engaged and are more likely to display a positive behavioral response such as repurchase. Therefore, we identified two consequences of customer engagement in two aspects: stickiness and repurchase intention.

The environmental stimulation is one of the factors to catalyze consumers' purchase decision; thus, environmental psychology is often used to explain consumer's purchase intention. In environmental psychology, marketing researchers widely use the stimulus- organism-response (S-O-R) model proposed by Mehrabian & Russell (1974). The S-O-R model can assist investigators to control consumer's emotional conditions induced by the environment and to understand the formation of individual values and behaviors induced by an emotional response (Fiore & Kim, 2007). Due to social platforms have become an important element of consumers' lives around the worldwide and exert various influences on the way consumers' behavior. In an attempt to understand how individuals, react to the social media environment, the stimulus-organism-response (S-O-R) model (Mehrabian and Russell, 1974) is used as the base for this study. It posits that environmental stimuli (S) generate an emotional reaction (O) which, in turn, drives consumers' behavioral response (R). Within our study, social support, member trust and community trust are considered to be the stimuli (S). Their impact on a three-dimension of customer engagement is then examined and considered as the consumer's emotional state (O). The latter in turn affect the consumer and lead to a reaction (R) which is divided two aspects: stickiness and repurchase intention.

Based on S-O-R model, this study draws on social support theory, trust transfer process, stickiness, repurchase intention, and customer engagement literature to posit that customer engagement is a three-dimensional construct and that explains how social support and trust transfer process lead to the outcomes of customer engagement. This study applied a structural equation model (SEM) to assess the empirical strength of the relationships in the proposed model. This work contributes to the literature on social commerce theory in four ways: (1) we are the pioneer to integrate social support and trust transfer, as two most important and complementary components to exploring the impacts on customer engagement; (2) by identifying two forms of social support (i.e., emotional support and information support) and two aspects of trust transfer process (i.e., member trust and community trust) as antecedents of customer engagement; (3) by taking consumer engagement (O) as measured reflectively by the three first-order dimensions of vigor, dedication and absorption in social commerce context; and (4) by determining that customer engagement plays a key role as a predictor of two aspects of customer engagement outcomes (stickiness and repurchase intention).

The remainder of the paper is organized as follows. Section 2 reviews relevant literature. This is followed by our research framework and hypotheses in Section 3. Section 4 describes the empirical study conducted to test the hypotheses. Section 5 discusses the results, their implications, and suggestions for future studies.

2. Literature Review

2.1. Social Commerce

The increased popularity of social media sites, such as, Facebook, Instagram, YouTube, and Twitter, has opened opportunities for new business models of electronic commerce, often referred to as social commerce (Liang and Turban, 2011). Social commerce can be considered a subset of e-commerce that involves using social media to assist in e-commerce transactions and activities (Hajli, 2014). Lim et al. (2019) indicated that social commerce is a business concept which combines social websites (e.g. Facebook, Twitter, and YouTube) and commercial activities (e.g. marketing, advertising and word of mouth). Social commerce aims to connect e-commerce with Web2.0 so that it can plan customer-oriented business, and introduce new transaction models based on virtual communities (Hajli, 2015). Companies can hold commercial activities by social commerce websites to recommend products or services to

customers (Stephen and Toubia, 2010). Given that putting social media into an e-commerce platform accelerates the development of social commerce, social commerce integrates e-commerce elements with social media and social network elements on one platform. Additionally, users can utilize social websites to share their daily lives, images, and emotions on the platform anytime, which indirectly attracts groups with same interests gather around to do relevant information searching (Hajli, 2015). Thus, social websites have become an important daily gadget for mankind all around the world because people can contact with others and share information by it (Ahmad et al., 2016). According to Statista (2020), the amount of social website users worldwide of 2020 are ranked as followed: Facebook, YouTube, WhatsApp, Messenger, WeChat, and Instagram. Among them, Facebook is the leader and Instagram has been growing rapidly in user numbers in recent years.

2.2. S-O-R (Stimulus-Organism-Response) Model

The Stimulus-Organism-Response (S-O-R) model (Mehrabian and Russell, 1974) is employed as a theoretical base to support an integrative model proposed by the current study. This model describes the influence of environmental stimuli on individual behavioral responses. The S-O-R model includes three aspects: the environment or stimulus (S) that triggers consumer behaviors and responses, the organism (O) that responds, and the actual response (R). Donovan and Rossiter (1982) reported the first study regarding the use of S-O-R model in retail environments, and this study integrated several factors for this model. Eroglu et al. (2001) modified this model for investigating online purchase environments and showed that the ambiance of an online store affects the emotional and cognitive status of consumers, triggering consumer behaviors. Adopting the S-O-R model in studying consumer behaviors helps differentiate environmental stimuli and consumers' internal and external behaviors. The stimulus element is ''the influence that arouses the individual'' (Eroglu et al., 2001). In the online environment, stimulus is the characteristics of a social commerce websites that influence the users' internal perception (Islam and Rahman, 2017). This study considers the characteristics (emotional support, information support, member trust, and community trust) of a social commerce website to be the stimuli. The present study proposed that these characteristics exert significant effect on customer engagement with social commerce websites.

Organism acts as a bridge for connecting stimulus and behavior, and an organism regulates the final behavior in response to stimulus (Fiore and Kim, 2007). Customer engagement is referred as a dynamic and repetitive emotional state; once exposed to the stimuli, users process the stimuli into information meaningful and helpful to them in making a decision. Therefore, this study posits that customers' engagement (an organism state) with the social commerce websites will be influenced by the effect environmental factors have on the users' interceding emotional states. In line with the S–O–R model, responses represent the final outcomes and decisions of users based on emotional reactions and include approach or avoidance behavior (Donovan and Rositer, 1982). In the context of social commerce, the response has two aspects, namely, the repurchase intention (transactional factor) and stickiness (non-transactional factor) (Molinillo et al., 2020). In the following section, parts of S-O-R model is explained in detail.

2.3. Stimuli (Antecedents of Customer Engagement)

We examined four antecedents of customer engagement identified in the literature as crucial to the interactive experience of social commerce websites: social support in two forms, namely emotional support and information support, as well as member trust and community trust.

2.3.1. Social Support

Social support is vital for social platforms because social interaction strengthens bonds among participants (members), leading to the formation of social communities (Liang et al., 2011; Molinillo et al., 2020); for example, Facebook is an import resource of social support. Social support is often considered as a multi-dimensional construct, including informational support and emotional support. Members of social communities share information and advice to solve problems and make good decisions. They also share their emotional concerns by displaying understanding and concern for one another (Liang and Turban, 2011; Liang et al., 2011). Online social support is usually intangible and can take the form of information support and emotional support (Coulson, 2005). Information support refers to the perception that the messages received from friends on a social networking site provide the needed assistance (Liang et al., 2011). Emotional support refers to the perception that the messages received from friends on a social networking site include emotional concerns such as caring, understanding and empathy (Liang et al., 2011). When community members feel concerned and helped, they will feel social support as well (Doha et al., 2019; Han et al., 2018). Chen and Shen (2015) and Li (2019) used social support to explore consumer decision-making in social commerce. Makmor and Alam (2017) used social support to evaluate consumer attitudes toward social commerce. Molinillo et al. (2020) used social support to explore models of social commerce and customer engagement. Liang et al. (2011) indicated that the mechanism of social communication on social websites comprises emotional support and information support. Therefore, we have chosen informational and emotional supports as the two dominant types of social support to explore the impact on customer engagement in this study.

2.3.2. Trust Transfer Process

With the advancement of technology, trust has been widely discussed and studied. Because transactions in e-commerce and social commerce are conducted through online platforms and are commerce oriented (Liang et al., 2011), trustworthiness is fundamental in the relationship between the customer and the seller. Ng (2013) indicated that the transfer of trust toward social commerce websites can be attributed to the interaction among its users and noted that trust transfer is helpful for clarifying purchase intention in social commerce context. The goal of social commerce is profit, and strong trust can increase purchase and repurchase intention (Liu et al., 2019; Molinillo et al., 2020). Trust facilitates information sharing and reduces costs; these constitute competitive advantages in social commerce (Rodgers, 2010). Users' trust in social commerce platforms can also be established through trust transfer (Lal, 2017; Liu et al., 2019). Therefore, to help social commerce platforms achieve their goals, whether the trust among social commerce platform users can be transferred to users' trust in platforms must be determined.

In order to better understand the interplay between different levels of trust in the social commerce community. This study uses trust transfer as the basis, referring to the definition of Chen and Shen (2015), and defines the phenomenon of trust transfer process as the degree to which social commerce members are willing to believe the review comments of other members in the social commerce websites (member trust) then to believe a reliable transaction community (community trust), which is the generation of trust transfer.

2.3.2.1. Member Trust

Member trust refers to the degree of individuals' trust in the words, actions, and decisions of other members of a social commerce community (Chen and Shen, 2015). Prior studies have found that people tend to help each other and further engage in shared social activities in a trusting environment (Shen et al., 2014; Chen and Shen, 2015). In particular, information obtained from credible sources is usually regarded as more useful, and thus will be used as decision aid (Sussman, and Siegal, 2003) In the context of social commerce, the social platform is an intermediary for members to interact with each other and connect as sellers and customers (Parker et al., 2005). Lal (2017) and Liu et al. (2019) stated that trust in social commerce websites is a prerequisite for customers to conduct transactions with sellers. Chen and Shen (2015) asserted that member trust positively affects community trust. Lal (2017) demonstrated that member trust affects an individual's engagement in social commerce websites. Therefore, we explored the impact of member trust on customer engagement and community trust.

2.3.2.2. Community trust

Community trust refers to an individual's perception of a community as a reliable setting for social interaction (Chen and Shen, 2015). In online communities, members may be mistrustful of each other, cancel transactions, or reduce the number of transactions they conduct because of a lack of face-to-face interaction. Therefore, community trust influences the relationship between sellers and customers and is critical to the success of product promotion in social commerce (Chen et al., 2015; Hajli, 2014; Liu et al., 2019; Lu et al., 2010). A loss of consumers' trust in social commerce websites can reduce consumers' willingness to continue using a website (Liu and Zheng, 2019). Therefore, community trust is required for e-commerce (Dussart, 2001) and constitutes a positive emotion that can encourage consumers to engage with social commerce websites (Chen and Shen, 2015; Hajli, 2014). Therefore, this study explores the effect of community trust on customer engagement.

2.4. Organism (Customer Engagement)

Customer engagement is defined as a dynamic and repetitive emotional state, derived from satisfactory interactions with an organization (Brodie et al., 2013; Pansari and Kumar, 2017; Van Doorn et al., 2010). It refers to the interaction between cooperation and customers in which users generate content and values to satisfy their needs (Molinillo et al., 2020). Consumers perform no transactional behaviors to expand their knowledge, obtain a more favorable reputation, and receive social and economic returns (Vohra and Bhardwaj, 2019). Therefore, customer engagement is vital to social commerce, and social websites facilitate the development of relationships among consumers and between consumers and social communities. Cheung et al. (2015) developed a model to explain customer engagement with online social platforms using three dimensions of customer engagement. These were vigor, which refers to the users' enthusiasm to use online social platforms and platforms' willingness to invest time and energy in customers (Molinillo et al., 2020); absorption, which refers to users' immersion in a social commerce website (Molinillo et al., 2020); and dedication, which refers to the meaning, excitement, inspiration, and pride users derive from online social commerce websites and the challenges they encounter during their use (Molinillo et al., 2020).

2.5. Response (Consequences of Customer Engagement)

2.5.1. Stickiness

In the context of online shopping, stickiness refers to users' willingness to return to a website and increase the amount of time spent on that website or the frequency of their visits (Lin, 2007). It also refers to a website's ability to attract and retain customers (Wang et al., 2016; Zhang et al., 2018). With the increasing popularity of social commerce, stickiness in the context of social communities has been increasingly studied. Wang et al. (2016) noted that users

spending large amounts of time on social commerce websites and returning frequently indicate stickiness. According to Zhang et al. (2017), customer engagement on Weibo has a positive impact on stickiness. Herein, we explored the effect of customer engagement on stickiness.

2.5.2.   Repurchase Intention

Repurchase intention, which refers to consumers' willingness to repeatedly purchase a product through a social website (Ou et al., 2014), is commonly used by behavioral researchers as a standard for predict certain shopping behaviors (Molinillo et al., 2020). Repurchase is a positive outcome of a shopping experience; customers who are satisfied and create a strong emotional connection with a company or brand become engaged customers. This benefits businesses by increasing transaction volume through customers' exchange of information on products or services. Lim et al. (2019) explored the influence of customer engagement on repurchase intention in social commerce for apparel retail. Lee et al. (2019) and Molinillo et al. (2020) reported that customer engagement affects repurchase intention. Therefore, we used repurchase intention in the context of social commerce as an outcome of customer engagement.

3.   Research Model and Hypothesis Development

Figure 1 and Table 1respectively provide construct definitions and illustrate the network of relationships in the model, while the following section explains the rationale for the proposed relationships.
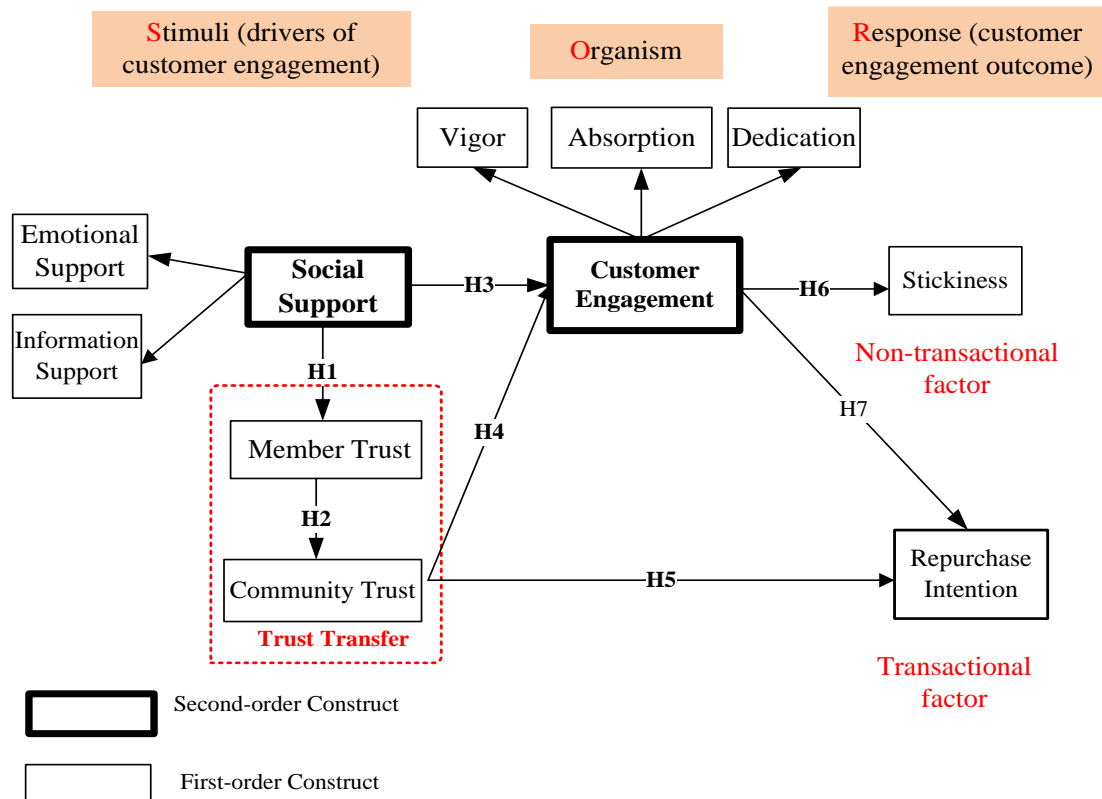

Figure 1: Research Framework

Table 1: Summarized Definition of Constructs

Construct	Definition	Adapted source
Emotional Support	The perception that the messages received from friends on a social networking site include emotional concerns such as caring, understanding and empathy	Liang et al. (2011)
Information Support	The perception that the messages received from friends on a social networking site provide the needed assistance	Liang et al. (2011)

Member Trust	An individual's willingness to trust on the words, actions, and decisions of other members in social commerce community	Chen and Shen (2015)
Community Trust	An individual's perception of the community as a reliable and predictable place for social interaction	Chen and Shen (2015)
Vigor	The degree of users' enthusiasm to use online social platforms and platforms' willingness to invest time and effort in his/her role as a members	Molinillo et al. (2020)
Absorption	The user concentrating fully, being happy, and being deeply engrossed in a social commerce website, whereby time passes quickly	Molinillo et al. (2020)
Dedication	The customer's sense of significance, enthusiasm, inspiration, pride, and challenge towards a social commerce website	Molinillo et al. (2020)
Stickiness	The user's willingness to return to a website and increase the amount of time spent on that website or the frequency of their visits	Lin (2007)
Repurchase Intention	The degree of consumers' willingness to repeatedly purchase a product through a social website	Ou et al. (2014)

3.1. Social Support and Member Trust

Social website users receive intangible social support from others, such as information support and emotional support (Maier et al., 2015). Users trust other users who provide useful information and demonstrate understanding and concern (Leong et al., 2020). Sheikh et al. (2017) indicated that the frequent sharing of emotional support and information support can increase trust among social members; this may in turn strengthen their intention to conduct business activities. Lal (2017) researched social commerce websites, discovering that emotional support and information support affect member trust. Studies have also indicated that social support (information support and emotional support) positively affects member trust (Fan et al., 2018; Zhao et al., 2019). Therefore, the following hypothesis is advanced.

H1: Social support positively affects member trust.

3.2. Member Trust to Community Trust

In social commerce, the social media is an intermediary that provides members with an interactive platform (Parker et al., 2005), where members interact with each other and connect as sellers and customers. Lal (2017) and Liu et al. (2019) believe that trusting the social is a necessary condition for customers to conduct transactions with sellers. Shi and Chow (2015) investigated how customers' transaction experiences affect the development of trust and the trust transfer process in social commerce. Chen et al. (2009) demonstrated that member trust transfers to trust in a social community. Chen and Shen (2015) and Lal (2017) noted that member trust can be transferred to trust in social commerce communities. In addition, Farivar et al. (2017), Cao et al. (2018), Fu et al. (2018), Cheng et al. (2019), Liu et al. (2019), and Wu et al. (2019) asserted that member trust positively affects community trust. Therefore, this study advances the following hypothesis.

H2: Member trust has a positive influence on the community trust.

3.3. Social Support and Customer Engagement

Interaction with other users affects individuals' desire to purchase products, and social support makes them feel welcome, heard, and cared for. Therefore, social support, encompassing information and emotional support, affects an individual's psychological state and customer engagement (Hajli et al., 2015). Since people can look for relationships with others and receive interests of others from their profiles on social websites, customers then engage in social websites (Phua et al., 2017). Social websites allow users to increase support, and social commerce can connect websites and customers with each other, which generates customer engagement (Kietzmann, 2011). Aladwani (2018) discovered that emotional support and information support affect customer engagement in social commerce. Hajli et al. (2015), Yusuf et al. (2018) and Molinillo et al. (2020) noted that managers of social commerce websites can increase customer engagement through social support. Thus, the following hypothesis is advanced.

H3: Social support positively affects customer engagement.

3.4. Community Trust and Customer Engagement

The community trust is an influencing factor for the relationship between buyers and sellers, and it is also an important factor in the successful promotion of products under social commerce websites (Chen et al., 2014; Hajli, 2014; Liu et al., 2019). Community trust, developed through repeated positive experiences, increases consumer engagement with social websites (Chen and Shen, 2015). Previous studies have demonstrated that community trust is necessary factor to establish relationships with customers (Hollebeek, 2011; Liu et al., 2018). Molinillo et al. (2020)

and Vohra and Bhardwaj (2019) reported that community trust positively affects customer engagement with social websites. Therefore, it is hypothesized that:

H4: Community trust has a positive impact on customer engagement.

3.5. Community Trust and Repurchase Intention

Consumers develop community trust by reducing the perceived risk and uncertainty of social websites (Kim et al., 2008), and community trust can create a positive relationship between consumers and enterprises (Chang and Chen, 2008). Senecal and Nantel (2004) noted that consumers are more likely to select products promoted by communities they trust. Thus, consumers who trust websites may be more willing to purchase the products or services they promote (Chiu et al., 2009). Xiao et al. (2019) and Fan et al. (2019) recommended that social commerce practitioners provide consumers with a friendly and supportive platform on which to exchange information, thereby establishing a mutual trust mechanism that can reinforce repurchase intention. Therefore, the following hypothesis is advanced.

H5: Community trust positively affects repurchases intention.

3.6. Customer Engagement and Stickiness

According to Wang et al. (2016) and Lin (2017), stickiness refers to users spending large amounts of time browsing social commerce websites and making frequent revisits. Molinillo et al. (2020) indicated that customer engagement involves increasing consumers' devotion, enthusiasm, interest (dedication), and attention (absorption) toward social websites, as well as the amount of time they spend on those websites (vigor). Positive experiences with social websites can increase customer engagement, encouraging customers to spend more time on websites and revisit (stickiness). Moreover, previous research demonstrated that customer engagement is directly and positively related to the stickiness of companies' social websites (Zhang et al., 2017). Therefore, the following hypothesis is advanced.

H6: Customer engagement has a positive effect on stickiness.

3.7. Customer Engagement and Repurchase Intention

Customer engagement is a cognitive process that requires positive emotions and time to interact satisfactorily (Hollebeek, 2011) so that customers to feel enthusiastic about a social platform, become immersed in a platform (absorption), and develop a preference for a platform (dedication). On the other hand, repurchase is the result of a positive consumer experience. Although satisfaction alone is insufficient to generate repurchase behavior, highly engaged customers are usually satisfied with their strong emotional connection with a company, and positive behavioral responses may generate repurchase intention (Van Doorn et al., 2010; Vivek et al., 2012). Lim et al. (2019) explored the influence of customer engagement on repurchase intention in social commerce for apparel retail. Previous studies have revealed the positive effects of customer engagement and repurchase intentions in various contexts, including the manufacturing and service industries (Pansari and Kumar, 2017). In the context of online social commerce, customers become engaged by interacting with websites, and other users positively influence repurchase intention (Blasco-Arcas et al., 2016). In addition, customer engagement helps customers to make better repurchase intention (Molinillo et al., 2020). Based on the above explanations, we propose the following hypothesis:

H7: Customer engagement has a positive effect on repurchase intention.

4. Research Methods and Analysis Results

To test the hypotheses and assess the proposed model, an empirical study conducted through an online survey.

4.1. Measurement Development

We developed a questionnaire to collect the data. The measurement scales for the constructs in the research model were adapted from previous, related literatures. A group of five experts (professionals in information management) reviewed the methodology and the measurement scales to ensure content validity and the appropriateness of the item wording. A preliminary list of measurement items was prepared through a review of the literature on social support (Huang, 2016; Lin et al., 2016; Wu et al., 2019; Zhang et al., 2018), customer engagement (Cheung et al., 2015; Huang et al., 2017; Molinillo et al., 2020), member trust and community trust (Cheng et al., 2019; Fu et al., 2018; Molinillo et al., 2020), stickiness (Gao et al., 2018; Hu et al., 2020; Molinillo et al., 2020; Shao et al., 2020; Zhang et al., 2017), and repurchase intention (Chen et al., 2015; Fan et al., 2019; Lee et al., 2019) (see Appendix). The respondents were requested to answer each questionnaire item using a 7-point Likert-type scale to measure the construct items. The Likert scale is widely used to allow the individual to express how much they agree or disagree (1 = *strongly disagree*; 7 = *strongly agree*) with a questionnaire item.

4.2. Data Collection

The instruments measuring the constructs were adapted from the previous literatures; three professors in e-commerce field were invited in the pre-test step, they provided suggestions while eliminating redundant or unrelated words/sentences. And a pilot-tested with 86 undergraduate and postgraduate students is invited who having purchase experience users to validate the content. After that, this online survey was conducted for a period of June and July,

2020, following a convenience sampling method. The questionnaire began with a screening question to ensure that respondents had experience purchasing products from social commerce websites; then the respondents were asked to answer on the basis of their experience with the social website they most frequently used. All participants are voluntary for this survey and 525 responses are received in total. Of these, 108 were deleted due to lack of purchase experience on social commerce platforms or incomplete questionnaires, resulting in a valid sample size of 417 (79.4% completion rate). This sample is considered sufficient to evaluate the research model, since the ratio of sample size to number of parameters to be estimated, 10.24, exceeds the most conservative threshold (10:1) (Bentler and Chou, 1987), with almost all factor loadings being higher than 0.70. Table 2 presents the demographic characteristics of the sample.

Table 2: Demographics of Respondents

Measure	Items	Frequency	Percentage (%)
Gender	Male	175	42.0
	Female	242	58.0
Age	Under 18	4	1.0
	19-24	86	20.6
	25-35	109	26.1
	36-45	106	25.4
	Over 45	112	26.9
Occupation	Service industry	93	22.3
	Full-time student	78	18.5
	Manufacturing industry	57	13.7
	Specialist(doctors, lawyers, engineers)	37	8.7
	Military, public service, and education	36	8.6
	Freelancer	29	7.0
	Communication industry	26	6.2
	Information technology	26	6.2
	Finance industry	23	5.5
	Homemaker	11	2.6
	Construction industry	6	1.4
	Other	14	3.3
Educational level	Junior high school or under	2	0.5
	High school	17	4.1
	University	223	53.5
	Graduate school	160	38.4
	Ph.D.	15	3.6
Frequency of visiting social commerce websites	At least once each hour	143	34.3
	At least once per day	235	60.7
	At least once per week	16	3.8
	At least once per three months	5	1.2
Average time for per visiting social commerce websites	< 30 minutes	155	37.2
	30~60 minutes	182	43.6
	1~3 hours	65	15.6
	Over 3 hours	15	3.6

4.3. Demographic Information

The majority of the respondents were women (n = 242, 58.0%). Men constituted 42.0% of the total (n = 175). Approximately 26.1% (n = 109) of the respondents were aged between 25 and 35 years. Approximately 25.4% (n =

106) were aged between 36 and 45 years, and approximately 26.9% ($n = 112$) were aged older than 45 years. The greatest proportion of the participants were in the service industry ($n = 93$, 22.3%). This was followed by full-time students ($n = 78$, 18.5%). Approximately 53.5% ($n = 223$) held a bachelor's degree and 42.0% ($n = 175$) held a graduate degree or a doctorate. The majority visited social commerce websites at least once a day (60.7%), followed those who made such visits at least once an hour (34.3%). For 43.66% of the respondents, each visit lasted 30 minutes to 1 hour, and for 37.2%, each visit lasted less than 30 minutes. To assess the representativeness of the sample, we collected and compared the sociodemographic characteristics of the respondents with those reported in a survey of electronic commerce use in Taiwan conducted by the Market Intelligence and Consulting Institute (MIC) (2020), a leader in research on consultancy on information and communications technology. The MIC provides abundant and professional information on Internet demographics and trends. The comparison revealed a close match between the two sample pools.

4.4. Measurement Items

To test our research hypotheses, we performed partial least squares (PLS) analysis using the Smart PLS software. The partial least squares (PLS) approach allows researchers to simultaneously assess measurement model parameters and structural path coefficients (Chin 1998). This study uses a two-step approach for data analysis. First, we tested the measurement model by performing a confirmatory factor analysis (CFA) to evaluate the discriminant and convergent validity of the constructs. Second, a structural model analysis is performed to empirically test the significance of the hypotheses.

The Cronbach's alpha and composite reliabilities (CR) of the constructs were computed to determine the construct reliability. In Table 3, the composite reliability values ranged from 0.909 to 0.983, well exceeding the 0.70 threshold; the Cronbach's alpha of the nine constructs is higher than 0.70, exceeding the threshold values suggested by Fornell and Larcker (1981). To validate the measurement model, we assessed three types of validity: content validity, convergent validity, and discriminant validity. The instruments measuring the constructs were adapted from the previous studies; the pre-test involved five participants, comprising two professors in the information management field and three social commerce consumers, who were familiar with social commerce websites. They were asked to provide comments on the survey items and eliminate redundant or irrelevant words and sentences. The pilot test invited 65 respondents from the population of the social commerce websites to participate, and several minor modifications of the content and structure of the items were solicited before the formal survey. As presented in Table 3, the factor loading values exceeded the accepted threshold of 0.70, and all the average variance extracted (AVE) values, ranging from 0.697 to 0.918, exceed the minimum value of 0.50 (Fornell and Larcker, 1981). Thus, the results demonstrate good convergent validity. Discriminant validity was examined through the estimation of the correlation between the constructs using the variance extraction measure (Fornell and Larcker, 1981). As displayed in Table 4, the square roots of the AVE values for each construct as shown on the diagonal being were higher than the inter-construct correlations, thus demonstrating good discriminant validity (Chin, 1998). In sum, the analysis revealed that the measurement models were satisfactory in terms of content, convergent, and discriminant validity. The problem of multicollinearity was dismissed based on the VIF of below 10 (1.45~ 4.26) and tolerance greater than 0.1 (Sim et al., 2014). Besides that, the largest correlation coefficient is smaller than 0.90 confirming no multicollinearity issue (Hair et al., 2014). Thus, our data has shown no multicollinearity problem.

Table 3: Reliability and Validity

Constructs	Factor Loading	Cronbach's Alpha	Average Variance Extracted (AVE)	Composition Reliability
Emotional Support (**ES**)	0.819~0.924	0.930	0.782	0.947
Information Support (**IS**)	0.797~0.913	0.924	0.766	0.943
Member Trust (**MT**)	0.841~0.876	0.918	0.753	0.939
Community Trust (**CT**)	0.755~0.897	0.890	0.697	0.920
Vigor (**VI**)	0.736~0.879	0.901	0.771	0.931
Absorption (**AB**)	0.785~0.871	0.905	0.778	0.933
Dedication (**DE**)	0.857~0.885	0.941	0.849	0.958
Stickiness (**STI**)	0.783~0.859	0.866	0.714	0.909
Repurchase intention (**REP**)	0.950~0.965	0.978	0.918	0.983

Table 4: Discriminant Validity

Construct (model 1)	ES	IS	MT	CT	VI	AB	DE	STI	REP
Emotional Support (**ES**)	**0.884**								
Information Support (**IS**)	0.761	**0.876**							
Member Trust (**MT**)	0.725	0.74	**0.868**						
Community Trust (**CT**)	0.625	0.64	0.767	**0.835**					
Vigor (**VI**)	0.623	0.581	0.63	0.736	**0.878**				
Absorption (**AB**)	0.598	0.575	0.632	0.731	0.839	**0.922**			
Dedication (**DE**)	0.575	0.53	0.574	0.684	0.822	0.864	**0.882**		
Stickiness (**STI**)	0.536	0.515	0.564	0.655	0.785	0.829	0.802	**0.845**	
Repurchase intention (**REP**)	0.476	0.432	0.525	0.702	0.67	0.664	0.69	0.655	**0.958**

Note: The bold numbers in the diagonal row are square roots of the average variance extracted.

4.5. Analysis of Structural Model

The study used Smart PLS software to validate the goodness-of-fit for structural model. The results of the structural path analysis are presented in Table 5 and Figure 2. The R^2 value refers to the percentage with which the exogenous variables explain the variation in the endogenous variables, which is used as an indicator of the overall predictive power of the model. Falk and Miller (1992) recommended that the value of R^2 for exogenous variables exceed 0.10 to ensure statistical viability. Figure 2 displays the path coefficients between the exogenous and endogenous variables of the model, the R^2 values, and the path coefficients. The explained variance was 61.2% for member trust, 58.8% for community trust, 63.3% for customer engagement, 72.2% for stickiness, and 57.0% for repurchase intention (Figure 2). All the R^2 values, except for that of return intention, exceed the minimum criteria of 0.10 (Falk and Miller, 1992).

As shown in Table 5 and Figure 2, social support significantly affected member trust and customer engagement; thus, H1 and H3 are supported ($\beta = 0.783$ and 0.273; $t = 26.250$ and 5.094, respectively). Member trust significantly affected community trust ($\beta = 0.767$, $t = 30.422$); thus, H2 is supported. Community trust significantly affected customer engagement and repurchase intention; thus, H4 and H5 are supported ($\beta = 0.585$ and 0.368, respectively; $t = 11.875$ and 5.676, respectively). Moreover, customer engagement significantly affects stickiness and repurchase intention; thus, H6 and H7 are supported ($\beta = 0.850$ and 0.437, respectively; $t = 50.935$ and 6.501, respectively).

Table 5: Research Hypothesis Verification

Relationships		Path Coefficient	t-value	Decision
Social support	→ Member trust	0.783***	26.250	H1 (supported)
Member trust	→ Community trust	0.767***	30.422	H2 (supported)
Social support	→ Customer engagement	0.273***	5.094	H3 (supported)
Community trust	→ Customer engagement	0.585***	11.875	H4 (supported)
Community trust	→ Repurchase intention	0.368***	5.676	H5 (supported)
Customer engagement → Stickiness		0.850***	50.935	H6 (supported)
Customer engagement → Repurchase intention		0.434***	6.501	H7 (supported)

Notes: *** P＜0.001, ** P＜0.01, * P＜0.05.
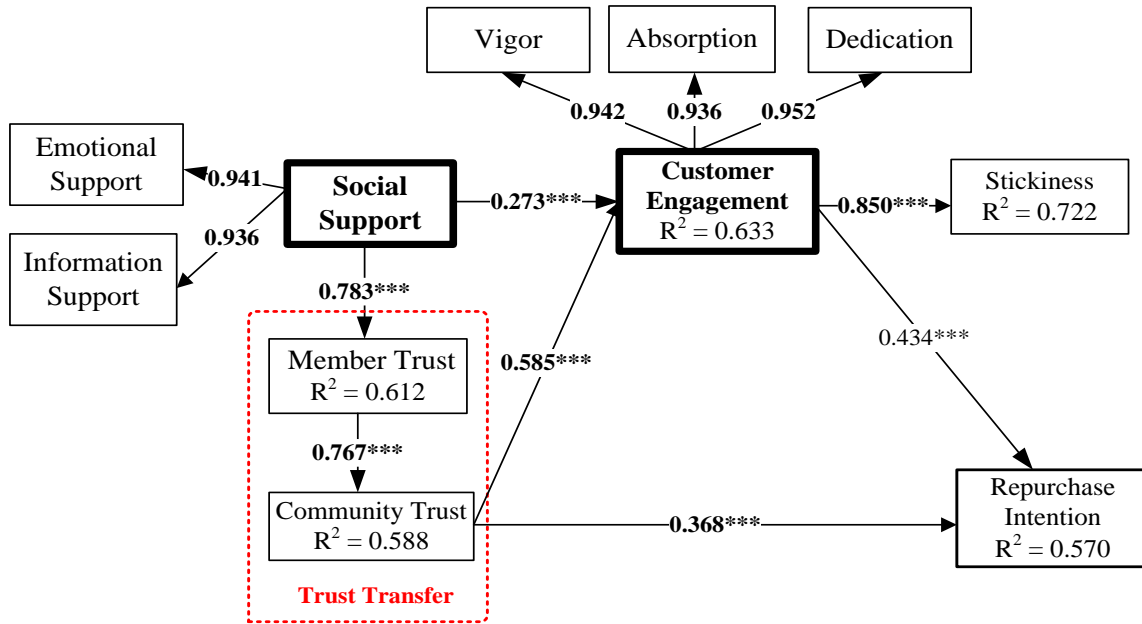
Figure 2. The Results for Hypothesis Test. (*** P＜0.001, ** P＜0.01, * P＜0.05)

5. Conclusion and Discussion

In this study, we combined social support (emotional support and information support), two forms of trust (member trust and community trust), and customer engagement in investigating stickiness and repurchase intention with regard to customers' use of social commerce websites. We recruited consumers who had made purchases on social commerce websites as participants. On the basis of the results, the following conclusions can be drawn.

1. Social support positively affects member trust (H1), indicating that when consumers receive support and assistance from other members, it increases their trust in them; that is, social support can elicit positive emotions (Liang et al., 2011) because consumers trust social website users who provide useful information or understand and display concern for them (Leong et al., 2020; Sheikh et al., 2017). Social support positively affects customer engagement (H3), which means when the consumers receive support and assistance from social members, the higher the customer engagement in the social websites (Molinillo et al., 2020; Vohra and Bhardwaj, 2019). Therefore, managers of social websites should provide a convenient platform that enables easy communication among users.

2. Member trust significantly affects community trust (H2). This indicates that consumers' trust in others can be transformed into trust toward a social commerce community. This result is consistent with that of Chen and Shen (2015), Lal (2017), and Liu et al. (2019). Managers of social commerce platforms should strengthen relationships between community members and provide a convenient channel for communication and interaction. If users trust other users, they are more likely to trust the social commerce website itself.

3. Community trust positively affects customer engagement (H4), indicating that consumers' trust in social websites promotes their engagement in social websites by increasing devotion, time spent on the website (vigor), enthusiasm, interest (dedication), and immersion (absorption) in the community (Molinillo et al., 2020). Community trust positively affects repurchase intention (H5); when consumers trust a social website, they may be more willing to repeatedly purchase products or services therefrom (Molinillo et al., 2020; Ou et al., 2014; Xiao et al., 2019).

4. Customer engagement positively affects stickiness (H6); this result is consistent with the previous (Molinillo et al., 2020). This indicates that when consumers are highly engaged with social websites, they visit the websites frequently and for long periods of time. Customer engagement positively affects repurchase intention (H7); this result is in line with those of Blasco-Arcas et al. (2016) and Molinillo et al. (2020). Specifically, when consumers are highly engaged with social websites, they are more willing to repurchase products or services.

5.1. Implications for Research

This study makes several academic contributions on the increasingly crucial role of social commerce. First, based on S-O-R model, our assessment and validation of a model featuring social support (emotional support and information support) and trust transfer process as antecedents of customer engagement and customer response behaviors (one transactional factor (repurchase intention) and one non-transactional factor (stickiness)) as consequences extend the literature. This work, one of the few studies to empirically investigate customer engagement, enriches our understanding of consumer behavior in the context of social commerce.

Second, our study expands on the studies on online trust that have been limited to an examination of a single dimension of trust, usually trust in an online platform or product brand. By differentiating member trust from community trust, we demonstrate that member trust affects customer engagement with social commerce websites through community trust; this is referred to as the trust transfer process.

Third, this study advances the understanding of the effect of social support and community trust on customer engagement (β = 0.273 and 0.585, respectively; t = 5.094 and 11.875, respectively) in social commerce context. Community trust is more crucial than social support; this result is contrary to the Molinillo et al.'s (2020) research. This is because community trust increases the perceived trustworthiness of social commerce websites, which increases consumers' willingness to engage rather than causing them to rely on other highly engaged members. This contribution, although limited, is important because it highlights the importance of the community trust of the social commerce context.

Fourth, customer engagement in the context of social commerce is important. The more engaged a customer is, the more they participate and help other members and the higher their willingness is to stick to social commerce websites and repurchase products therefrom. Few studies on social commerce have measured engagement multidimensionality; Liu et al. (2018), Shen et al. (2019), Dabbous and Barakat (2020), and Wongkitrungrueng and Assarut (2020), for example, all employed one-dimensional measures of customer engagement. Our study contributes to the research on social commerce context by thoroughly conceptualizing customer engagement as a second-order construct with three dimensions: absorption, dedication, and vigor.

Finally, customer engagement in social commerce context was determined to be a key predictor of stickiness and repurchase intention. Highly engaged customers spend more time on these websites (stickiness, non-transactional behavior), and repurchase products (transactional behavior) through them. Therefore, this study use stickiness and repurchase intentions as the users' response behavior intention construct rather than purchase intention or brand loyalty in previous studies (Dabbous and Barakat, 2020; Islam and Rahman, 2017).

5.2. Practical Implications

We combined social support and the trust transfer process to investigate customer engagement and subsequent stickiness and repurchase intention and examined consumer behavior to synthesize the discussion of social commerce user behaviors, and hoping to have better understanding of customer engagement on social websites. The findings serve as a reference for marketing strategy development by managers of social commerce websites. On the basis of our results, several practical suggestions for the design and operational policies of social commerce websites are presented as follows.

First, customer engagement is shown to be a key factor in the success of social commerce websites. Highly engaged customers are likely to spend more time on websites and repurchase products and services therefrom. Managers of social commerce websites can promote customer engagement by increasing social support and community trust. Managers should provide a convenient platform on which users can communicate with each other, thereby increasing their long-term trust in the social platform.

Second, the findings demonstrate that increasing trust among members can create trust in social commerce websites. Therefore, managers can strengthen member's trust in their websites by adding new functions that increase trust among users. For example, managers can allow users to invite their friends to use the website to increase member's familiarity with other users and develop member trust. In addition, managers can establish a safe transaction environment and offer quality-assured information to facilitate purchases, thereby facilitating the transfer of member trust to the websites themselves.

Finally, the analytical results indicate that customer engagement significantly affects stickiness and repurchase intention. Therefore, managers of social commerce websites should consider the relationship between community members and social websites and maintain the quality of products and services (and by extension website reliability) to maintain consumers' trust. Moreover, sellers should nurture their relationships with consumers to ensure that they are engaged, because engagement encourages consumers to spend more time on websites. In addition, sellers should develop and maintain relationships with individual members to increase repurchase intention. This increases sales and creates a social commerce community around shared interests, facilitating the efficient selection and purchase of desired products and services.

5.3. Limitations and Future Directions

Based on the research results, several new possibilities are revealed for future exploration:

First, customer engagement in this study was based on social support and the trust transfer process. However, customer engagement has several antecedents, including use and gratification (Huang et al., 2017), brand engagement (Dwivedi, 2015), and social interaction (Cheung et al., 2015). In the future, researchers might expand the model to include these variables to explore these antecedents. Similarly, given the social platform differences shown in the model as a moderator. Future work might analyze the moderating effect of different social platforms.

Second, some consequences of customer engagement can be extended, such as word of mouth and value (Vivek, 2012), creation (Rather, 2019). Hence, we would like to investigate our research model with different implications on customer engagement behavior in social commerce websites.

Third, only Facebook and Instagram were examined in the present study. The effects of other social commerce websites or of different types of virtual communities (e.g., health or financial management communities) can be explored in the future.

Finally, because this study was conducted at a single point in time, the results may vary from those of studies conducted over an extended period of time. Therefore, a longitudinal study is highly recommended in the future.

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Appendix A: Measurement Scales

Construct		Measure	Adapted source
Emotional Support	ES1	When faced with difficulties, some "Friends" on the social commerce websites are on my side.	Huang (2016); Lin et al. (2016); Zhang et al. (2018); Wu et al. (2019)
	ES2	When faced with difficulties, some "Friends" on the social commerce websites comforted and encouraged me.	
	ES3	When faced with difficulties, some people on the social commerce websites expressed interest in and concern for my well-being.	
	ES4	When faced with difficulties, some people on the social commerce websites listened to me talk about my private feelings.	
	ES5	There is someone (on the social commerce websites) I can get emotional support from.	
Information Support	IS1	When I encountered a problem, some people on the social commerce websites would give me information to help me overcome the problem.	Huang (2016); Lin et al. (2016); Zhang et al. (2018); Wu et al. (2019)
	IS 2	Some "Friends" on the social commerce websites would offer suggestions when I needed help.	
	IS 3	When faced with difficulties, some people on the social commerce websites would help me discover the cause and provide me with suggestions	
	IS 4	When faced with difficulties, People on the social commerce websites will tell me where to solve the problems.	
	IS 5	I obtained sufficient assistance from my "Friends" on the SNS.	
Member Trust	MT1	Members in the social commerce websites will always try and help me out if I get into difficulties.	Chen and Shen (2015); Cheng et al. (2019); Fu et al. (2018)
	MT2	Members in the social commerce websites will always keep the promises that they make to one another.	
	MT3	Members in the social commerce websites are truthful in dealing with one another.	
	MT4	Members of this social commerce websites are in general trustworthy.	
	MT5	I trust the information provided by member of social commerce websites.	
Community Trust	CT1	The performance of this social commerce websites always meets my expectations.	Chen and Shen (2015); Cheng et al. (2019); Fu et al. (2018)
	CT2	This platform I often use can be counted on as a good social commerce websites.	
	CT3	Social commerce websites community is reliable.	
	CT4	I believe that the social commerce websites have the skills and expertise to provide quality service to buyers and sellers.	
	CT5	Social commerce websites is trustworthy.	
Vigor	VI1	I can continue using this social commerce websites for very long periods at a time.	Cheung et al. (2015); Huang et al. (2017); Molinillo et al. (2020)
	VI2	I feel strong and vigorous when using the social commerce websites.	
	VI3	I feel very resilient, mentally, as far as this social commerce websites is concerned.	
	*VI4	In this social commerce websites, I always persevere, even when things do not go well.	
	VI5	I devote a lot of energy to this social commerce websites.	
Absorption	*AB1	Time flies when I am participating in this social commerce websites.	Cheung et al. (2015); Huang et al. (2017); Molinillo et al. (2020)
	AB2	Using this social commerce websites is so absorbing that I forget about everything else.	
	AB3	I am rarely distracted when using this social commerce websites.	
	AB4	I am immersed in this social commerce websites.	
	AB5	I pay a lot of attention to this social commerce websites.	
Dedication	DE1	I am enthusiastic in this social commerce websites.	Cheung et al. (2015); Huang et al. (2017); (2017); Molinillo et al. (2020)
	DE2	I am excited when using this social commerce websites.	
	DE3	This social commerce websites inspires me.	
	DE4	I am passionate about this social commerce websites.	
	*DE5	I am proud of the social commerce websites I use.	
Stickiness	STI1	I intend to prolong my staying on this social commerce websites.	Zhang et al. (2017); Gao et al. (2018); Hu et al. (2020); Molinillo
	*STI2	I would visit this social commerce websites as often as I can.	
	STI3	I would stay a longer time on this social commerce websites than other websites.	
	STI4	I spend more time on this social commerce websites than others	

	STI5	I would stay longer in the social commerce websites than any alternative means.	et al. (2020); Shao et al. (2020)
	REP1	Given the chance, I predict that I would consider buying products on social commerce websites in the future.	
Repurchase Intention	REP2	I would like to buy products continuously from this social commerce websites.	Chen et al. (2015); Fan et al. (2019); Lee et al. (2019); Molinillo et al. (2019)
	REP3	I will buy similar products from this social commerce websites again.	
	REP4	Given the opportunity, I intend to place an order from this seller on this social commerce websites.	
	REP5	I intend to continue purchasing products from the social commerce websites in the future.	

*VI4, AB1, DE5, STI2 were dropped due to low factor loading.