Analyzing the effect of social support and community factors on customer engagement and its impact on loyalty behaviors toward social commerce websites

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Abstract

While research into customer engagement receives much attention, few studies have examined why consumers engage in social commerce and the resulting consequences for companies. This study explores the influence of social support and community factors on customer engagement and the subsequent effects on customer loyalty toward social commerce websites. We propose a model to investigate the differences between the influence of social support and three community factors (community drivenness, community identification and community trust) on customer engagement, and the impact of customer engagement on four customer loyalty dimensions, one transactional (repurchase intention) and three non-transactional (willingness to co-create, stickiness intention and positive eWOM intention). We conducted a survey and collected data from 437 users of Facebook social commerce websites. The findings show that customer engagement is a key predictor of the four dimensions of customer loyalty toward social commerce websites. In addition, the results indicate that social support and two community factors significantly affect customer engagement. We discuss theoretical and managerial implications.

Keywords

Social commerce, customer engagement, customer loyalty, social support, community identification, community trust.

1. Introduction

Social commerce is a new, rapidly increasing, online method of buying and selling (BI Intelligence, 2018). Although there is still some debate about its definition (Baghdadi, 2016), the present study defines it as the use of web 2.0 technologies for conducting commercial activities through social interactions between buyers and sellers. Web 2.0 technologies (e.g., forums, chats, recommendation systems, social networks) are based on systems that allow users to interact, cooperate, generate and share content, which adds value to commercial services (Huang & Benyoucef, 2013). A key social commerce success factor is customer engagement (Sashi, 2012), understood as a psychological state produced as a result of interactive experiences in specific service relationships (Brodie, Hollebeek , Juric, & Illic, 2011). The term "engagement" has developed recently in a variety of disciplines. In marketing, some authors highlight its central role in the creation of positive relationships and loyal customer behavior toward organizations and brands (e.g., Islam & Rahman, 2017; Kumar & Pansari, 2016; Zhang, Guo, Hu, & Liu, 2017). This study contributes to the

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literature by examining empirically the role and implications of customer engagement in social commerce.

Few studies empirically analyze the antecedents and consequences of customer engagement in social commerce. Some recent studies have found that antecedents such as trust, subjective norms, information quality, social information, perceived value, community involvement and IT capabilities influence customer engagement. In turn, engagement impacts on consumer purchase decisions, behavioral intention, value co-creation and company performance, among other outcomes (Braojos, Benitez & Llorens, 2019; Shen, Li, Sun, Chen & Wang, 2019; Wongkitrungrueng & Assarut, 2018; Yu, Tsai, Wang, Lai, & Tajvidi, 2018).

Social support and community factors are very important for social networks because the social interactions involved strengthen the bonds between participants, leading to the creation of seller and customer communities (Xiao, Huang, & Barnes, 2015). In fact, these factors have recently been found to be critical drivers of customer engagement in online brand communities (Martínez-López, Anaya-Sánchez, Molinillo, & Aguilar-Illescas, 2017). Social commerce websites share many of the characteristics of online brand communities (e.g., they use social networks, promote social interaction, and encourage participants to create a community identity); however, in contrast to participants in brand communities, social commerce users make purchases on social commerce websites. Therefore, there may be differences between the causes and consequences of customer engagement on both types of site.

These arguments raise several research questions: do community and social aspects influence customer engagement in social commerce websites? These aspects are important; the community members are strangers, which reduces their relationships to sporadic online interactions. What are the consequences, if any, of customer engagement for the transactional and non-transactional aspects of customer loyalty? Social commerce studies often focus on the transactional variables (i.e., purchase intention). Evaluating the influence on both types of behavior jointly will provide a better understanding of the value of customer engagement in social commerce and the consequences for companies. By answering these questions, this study responds to Busalim and Hussin's (2016), and Han, Xu and Chen's (2018) calls for an empirical examination of the antecedents and outcomes of customer engagement in social commerce.

The purpose of this research is twofold: 1) to study how community factors and social support influence customer engagement in social commerce; 2) to explore the impact of customer engagement on customer loyalty through transactional and non-transactional dimensions.

This study draws on social support theory, social identity theory, loyalty theory and the customer engagement literature to posit that customer engagement is a three-dimensional construct that explains how social support and community factors lead to customer loyalty. The research model and hypotheses were analyzed using data from a survey of 437 social commerce users and structural equation modeling (SEM). This work contributes to the literature on social commerce theory in two ways: (1) by identifying that social support and two community factors (i.e., community identification and community trust) are antecedents of customer engagement; and (2) by determining that customer engagement plays a key role as a predictor of four dimensions of customer loyalty (willingness to co-create, stickiness intention, positive eWOM intention and repurchase intention). Managerial implications are provided to help practitioners increase customer engagement.

2. Literature review

2.1. Social support and community factors

We examine four antecedents of customer engagement that are identified in the literature as important for interactive experiences in social commerce communities: social support, community drivenness, community identification and community trust.

2.1.1 Social support

In social commerce community members share information and advice that help them solve problems and make good decisions; they also share messages about emotional concerns, such as understanding and caring (Liang, Ho, Li, & Turban, 2011). Therefore, in accordance with social support theory (Shumaker & Brownell, 1984), they experience social support when they feel cared for and helped by other members of the community (Doha, Elnahla, & McShane, 2019; Han *et al.*, 2018). The support that users perceive may positively affect their self-efficacy (the personal judgment of how well one is able to perform actions required to produce certain outcomes) (Bandura, 1977, 1993). This produces a feeling of well-being in the form of reduction in the fear of making errors, more efficient choices, self-confidence, sense of social integration and enhanced positive mood state, among other outcomes. When users benefit from social support it is very likely that they will develop a sense of mutual obligation that will lead them to provide support to other community members (Shumaker & Brownell, 1984). However, this obligation should be interpreted as positive, not negative, because the

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users do not feel an obligation to any one other user in particular, rather they are motivated to help other users in general (see Li & Ku, 2018).

2.1.2. Community drivenness

Social networks offer a wide variety of avenues to facilitate user interactivity and collaboration; however, they are not equally available in all social commerce sites. The deployment of the technical characteristics of the web, as well as the content of the interactions between the users, is controlled by the community manager, which affects the relationships (Wirtz *et al.*, 2013). Community drivenness measures the degree to which customers perceive that a website allows them to connect with their friends, make new friends with similar interests, and communicate with each other during the purchase process (Ellahi & Bokhari, 2013). We posit that effective community drivenness facilitates user participation and interaction in social commerce (see Yang, Li, Kim, & Kim, 2015).

2.1.3. Community identification

Drawing on social identity theory, we posit that social commerce participants feel part of a group or community (Han *et al.*, 2018). The sense of belonging to a group, together with the cognitive and affective significance of this belonging, gives rise to social identity as part of an individual's self-concept (Tajfel, 1974). An individual will remain a member of a group as long as it contributes to the positive aspects of his/her social identity, from which they obtain satisfaction. Ren, Kraut and Kiesler (2007) suggest that people belong to groups because they like the group as a whole or because they like individuals in the group.

In our opinion, social commerce can produce a common identity and common bonds between members. Community identification is manifested through a wide variety of behaviors, such as commitment to the community's purpose, acceptance of the participation rules, generalized reciprocity, welcoming new members, the achievement of objectives, and satisfaction of common needs. In addition, common bonds between members can be produced by continuous contact between those who participate more frequently in the community, and among the less experienced, who value the free advice provided by the more experienced users, to whom they feel emotionally connected through gratitude. In fact, sometimes online platforms allow private communication between participants, which might strengthen the common bonds. Community identification, therefore, is a reflection of the strength of the relationships within the community (Algesheimer, Dholakia, & Herrmann, 2005).

2.1.4. Community trust

Maintaining long term relationships requires trust in the community. Trust is defined as a feeling of reliability and integrity in the exchange partner's behavior (Morgan & Hunt, 1994). In the online context, trust is even more necessary for interactions and transactions, since consumers perceive greater risk and uncertainty online than offline, due to the lack of physical contact between the parties. In this study, community trust refers to the transactions and interactions among all community members, including buyers and sellers (Cheng, Gu, & Shen, 2019). Community trust is formed through a process of repeated positive experiences; and it shapes the consumer's intentions toward participation in the community (Chen & Shen, 2015; Hajli, 2014).

2.2. Customer engagement

Customer engagement with an organization is defined as a dynamic, iterative psychological state, derived from a satisfactory interactive relationship with the organization (Brodie, Ilic, Juric, & Hollebeek, 2013; Pansari & Kumar, 2017; Van Doorn *et al.*, 2010). It is manifested by interaction and cooperation with other users, which create communities in which participants generate content and value to better satisfy their needs (Sashi, 2012). Consumers exhibit non-transactional behaviors in the hope that they will gain benefits, such as more extensive knowledge, higher reputations and social and economic returns (Jaakkola & Alexander, 2014). Therefore, customer engagement is very important in social commerce, as the interactive nature of social media facilitates relationships between customers and between customers and companies.

The literature on customer engagement in a series of disciplines shows different approaches to its measurement. In the field of social commerce, most studies measure customer engagement as a one-dimensional construct (e.g., Sharma & Crossler, 2014; Shen *et al.*, 2019; Wongkitrungrueng & Assarut, 2018). However, a significant number of works in the marketing field instrumentalize customer engagement through three dimensions: cognitive, emotional and behavioral (Brodie *et al.*, 2011; Hollebeek, Glynn & Brodie, 2014; Vivek, Beatty, & Morgan, 2012). As a psychological state generated when a consumer interacts in and experiences social commerce, the concept should broadly reflect the nature of the relationships that develop through these interactions. This argument, which is consistent with service-dominant logic (Vargo, 2009), implies that customer engagement is more than a mere cognitive exercise; it requires positive affect and energy (time / effort) for satisfactory interaction to take place (Hollebeek, 2011). In the field of social commerce, the customer is willing to engage cognitively,

emotionally and behaviorally on the sites due to his/her community identification, the result of the common identity that (s)he shares with all other users and the ties that bind him/her to some particular members of the community through their repeated interactions. In addition, this engagement is fostered by the sense of returning to the community what has been received through social support.

Therefore, as outlined above, this study takes a more comprehensive approach to the conceptualization of customer engagement. Accordingly, it is operationalized as a second-order construct based on the scale of Cheung, Lee, and Jin (2011), related to the aforementioned aspects and developed for online social platforms, with three dimensions: absorption (i.e., cognitive), dedication (i.e., emotional) and vigor (i.e., behavioral). Absorption is being fully concentrated, immersed and engrossed when using the social commerce website. Dedication is the sense of enthusiasm, interest and pride in using the platform. Vigor is the level of energy and mental resilience that the customer experiences while using social media and his/her willingness to invest time and effort in said use. Hence, in this study, we postulate that customer engagement will manifest itself in positive behaviors and attitudes toward the social commerce site.

2.3. Customer loyalty behaviors

Previous studies conceptualize customer loyalty as one of the most important outcomes of customer engagement (e.g., Brodie *et al.*, 2013; Casaló, Flavián, & Guinalíu, 2010; Islam & Rahman, 2017; So, King, Sparks, & Wang, 2016; Wirtz *et al.*, 2013). The engaged individual develops a strong psychological connection with the company, or brand, which increases the likelihood of a loyal response to it and its products (Islam & Rahman, 2017).

Loyalty has traditionally been considered to be a construct reflecting two types of behaviors: repurchase intention and recommendation intention. In our opinion, these two components are not enough to analyze loyalty in the context of social commerce, due to the characteristics of its relationships and interactions. Previous studies suggest that loyalty is associated with repurchase, recommendation (eWOM) and other activities that strengthen the seller/buyer relationship, such as value co-creation (Hajli, Shanmugam, Papagiannidis, Zahay, & Richard, 2017; Tajvidi, Richard, Wang, & Hajli, 2018) and stickiness (Wu, Chen, & Chung, 2010; Zhang *et al.*, 2017).

Interactions among customers, and between customers and sellers, contribute to the process of value creation through the exchange of information, recommendations, the development of new ideas, functions, uses and other product

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innovation related aspects. Furthermore, we consider that engaged customers will have a positive attitude toward the content, features, products and services that they encounter on the social commerce websites, which will result in their visits being more frequent and prolonged.

Based on the above, this study conceptualizes loyalty intention as an consequence of customer engagement with four dimensions: (1) willingness to co-create; the customer's intention to co-create value and co-construct unique experiences through the exchange of information and knowledge with other social commerce participants; (2) stickiness; the amount of time a customer spends on a social commerce website, either during one visit or over the course of several visits; (3) positive eWOM; the dissemination of favorable information about products, organizations, brands, etc., that customers share over the Internet; and (4) repurchase intention; an individual's judgment about whether he or she will again purchase products from the same social commerce website, in the light of his or her personal circumstances.

3. Research model and hypotheses development

This study, based on the above discussion, argues that the social support received by a social commerce site user, allied to community drivenness, community identification and community trust, influences customer engagement, which, in turn, positively impacts on loyalty to the site, manifested in willingness to co-create, stickiness intention, positive eWOM intention and repurchase intention. Fig. 1 shows the proposed research model. The relationships / hypotheses between the model variables are developed below.

[Please, insert Figure 1 about here]

3.1. Customer engagement antecedents

As indicated above, the social support that users receive from other members of the social commerce community provides them with cognitive information that may positively affect their individual self-efficacy, which, in turn, is related to psychological well-being and functioning (Bandura, 1977, 1993). Interaction with other users increases the likelihood that an individual will feel satisfied with his or her purchase decision, whether to buy or otherwise, and generates social relationships that make them feel welcome, listened to and cared for. Previous studies have shown that the

help received through social interaction improves perceived value, consumer trust, satisfaction with and commitment to social commerce (Hajli, 2014; Liang *et al.*, 2011). In addition, a reliable, friendly exchange of information is likely to lead to greater dedication to the community (Hsu, Chang, & Chen, 2012). Social support, therefore, has a significant, positive effect on the individual's psychological state and, consequently, customers feel engaged and connected (Hajli, Shanmugam, Powell, & Love, 2015). In this vein, Aladwani (2018) found that the quality of social support significantly influences customer engagement in social commerce. Consequently, we hypothesize:

H1. Social support has a positive impact on customer engagement in social commerce websites.

The psychological state of participants in social commerce websites is also affected by community drivenness. The easier it is for users to interact with other users, before, during and after purchase, freely express their opinions, receive advice and establish social relationships, the higher is their engagement with the website. That is, in those social commerce websites that use appropriate technological tools (e.g., forums, reviews, product ratings, visitor posts, blogs, proposals for new products), and where the community managers encourage interactions, users feel internally more satisfied and motivated to participate. Previous studies have shown that community drivenness is a characteristic that positively affects the perception of the quality of social networking sites (Ellahi & Bokhari, 2013) and promotes participation and purchasing behaviors (Yang *et al.*, 2015). In addition, the perception of the individual that he or she can control the social activity factors that influence their behavioral performance motivates them to take part in social and commercial undertakings on social commerce websites (Ko, 2018). Thus, we hypothesize:

H2. Community drivenness has a positive impact on customer engagement in social commerce websites.

The identification of the user with the community is an important success factor for social commerce websites. Identification with the community makes users consider their participation consistent with their personality and values (Bhattacharya & Sen, 2003). Therefore, the higher the level of identification with the group, the more motivated the user will be to participate and actively engage, through helping other users, generating content or establishing relationships (Casaló *et al.*, 2010; Valck, van

Bruggen, & Wierenga 2009). Previous studies in the field of online brand communities have shown that community identification positively influences customer engagement (e.g., Algesheimer *et al.*, 2005; Martínez-López *et al.*, 2017). In practice, social commerce communities share many of the characteristics of brand communities, since in both cases companies use social networks to improve relations with their customers, to improve the user experience and to create value. Therefore, we hypothesize:

H3. Community identification has a positive impact on customer engagement in social commerce websites.

Trust, a basic element in social commerce, reduces the uncertainty and perceived risk of online relationships. Trust is generated after repeated positive experiences in which users not only perceive that the other party is legitimate, but also that it can respond to their needs and that it cares about their interests. Therefore, trust is a motivating factor that has a positive impact on the user's attitude and behavior. According to previous studies, community trust positively influences attitude toward transactions made through social media (Hansen, Saridakis, & Benson, 2018), encourages users to participate and influences their social commerce intention (Ben Yahia, Al-Neama, & Kerbache, 2018; Gibreel, Al Otaibi, & Altmann, 2018; Hajli, Sims, Zadeh, & Richard, 2017). In online brand communities it has been shown that community trust positively influences customer engagement (Martínez-López *et al.*, 2017). Therefore, we hypothesize:

H4. Community trust has a positive impact on customer engagement in social commerce websites.

3.2. Customer engagement consequences

An engaged customer is predisposed to dedicate more time and effort to the social commerce site, and more enthusiastically, than other customers. Füller, Matzler, and Hoppe (2008) showed that community members with a strong product/brand focus are knowledgeable about it, discuss it with others, help other members to resolve difficulties and provide suggestions for new product developments. Their exchanges with other users and with the social commerce website are more relational and the emotional bonds between them are stronger, giving rise to relationships in which the engaged customer wants to contribute to value generation (Sashi, 2012). Their participation can provide very valuable information about the needs of consumers,

market trends, product strengths and weaknesses and the characteristics of new products (Wirtz *et al.*, 2013). Prior research shows that customer engagement with company social media sites encourages the co-creation of functional, social and emotional values (Zhang *et al.*, 2017). In addition, the commitment of users to the exchange relationships that develop in social commerce websites has been identified as a factor that positively influences their intention to co-create (Wang & Hajli, 2014). As a result, we hypothesize:

H5. Customer engagement has a positive impact on willingness to co-create in social commerce websites.

Engaged customers are likely to participate in stimulating interactions that will provide pleasant emotional experiences. In addition, the reputation or social prestige that can be achieved in the community, and the satisfaction of helping others and feeling valued, provide psychological benefits. These gratifications positively influence attitudes toward social commerce websites, which is likely to lead to more frequent and extended visits to the website. In addition, the cognitive effort required to produce and process messages or information relevant to the community requires spending extended periods on the website (Hsu & Liao, 2014). Prior research demonstrates that customer engagement has a direct and positive effect on customer stickiness to company social networks (Zhang *et al.*, 2017). Thus, we hypothesize:

H6. Customer engagement has a positive impact on customer stickiness intention in social commerce websites.

The essence of social commerce is the participation of users in evaluating and giving opinions on products, and sharing information and experiences. These activities are obviously voluntary, but engaged customers seem to be more prone to this type of behavior, motivated both to help other users in their decision-making and to support the company or brand (Algesheimer *et al.*, 2005; Sashi, 2012; Van Doorn *et al.*, 2010; Vivek *et al.*, 2012). This may be because the engaged customer feels more satisfied with, and more emotional attachment toward, the social commerce website than other users (Brodie *et al.*, 2013), and positive eWOM is a way of acknowledging their sense of satisfaction in their relationship with the site (Wu *et al.*, 2010). Identification with the community creates in customers a certain emotional attachment that reinforces the satisfaction they derive from social interactions; in addition, they generally have positive attitudes toward the company and its goods or services. Previous studies into social media have shown that customer engagement with the community has a direct

and positive impact on eWOM intention (Chan, Zheng, Cheung, Lee, & Lee, 2014; Harrigan, Evers, Miles, & Dalu, 2017; Islam & Rahman, 2017). Customer engagement enhances the possibility that they will, following purchase, review the products and services and, moreover, that they will do so positively (Wu *et al.*, 2010). Therefore, we hypothesize:

H7. Customer engagement has a positive impact on positive eWOM intention in social commerce websites.

An engaged customer also contributes directly and actively to the firm's performance through repurchase (Pansari & Kumar, 2017). Repurchase is usually the result of positive consumer experiences. Although satisfaction is not in itself sufficient to produce an act of repurchase, the engaged customer is normally both satisfied and has developed a strong emotional connection with the company or brand, which increases the probability of a positive behavioral response such as repurchase (Van Doorn *et al.*, 2010; Vivek *et al.*, 2012). Previous studies demonstrate empirically, in various contexts (e.g., B2C in manufacturing and service industries), that customer engagement directly and positively impacts on repurchase (Kumar & Pansari, 2016). In particular, it has been shown that in online environments the customer engagement developed during interactions with the firm and other users positively influences repurchase intentions (Blasco-Arcas, Hernández-Ortega, & Jiménez-Martínez, 2016). Based on the above, we hypothesize:

H8. Customer engagement has a positive impact on repurchase intention in social commerce websites.

4. Research methodology

To test the hypotheses and assess the research model an empirical study was conducted through an online survey.

4.1. Measurement development

We developed a questionnaire to collect the data. The measurement scales of the research model constructs were adopted from previous, related studies. A group of ten experts reviewed the methodology and the measurement scales to ensure content

validity and the appropriateness of the wording of the questions. We used 7-point Likert scales, moving from "strongly disagree" to "strongly agree", to measure the construct items (Appendix A).

The initial questionnaire was piloted with a sample of 210 undergraduate and postgraduate students from two public universities in November 2016. This pilot study analyzed the questionnaire to verify the acceptance level, dimensionality, reliability and validity of the proposed measurement scales. Finally, after all the relevant tests were performed, and the scales and relationships had been evaluated and found to be appropriate, we analyzed the proposed model.

4.2. Data collection

The data was collected through a survey conducted in Spain during February 2017, following a convenience sampling method. Our target population was Facebook users who had made purchases using the "Shop Now" button on a company's Facebook fan page (e.g., www.facebook.com/ZARA-542604459258146/). Facebook is the world's most popular social networking site. It provides its users with most Web 2.0 tools for content generation (Hajli, Sims, *et al.*, 2017).

The participation process was in four phases. First, the users received an invitation to take part in the study, accompanied by a link to the questionnaire. Second, on accessing the questionnaire, they were given a link to a video explaining social commerce. The purpose of the video is to avoid any possible confusion with other website formats (e.g., online brand communities and e-commerce with social tools). It explains, objectively, using examples, social commerce as operated through Facebook (e.g., reviews, the community, the purchase button, etc.). To encourage them to watch the whole video, the viewers were told they had to reproduce a code at the end of the video. This would be shown in the final scene. Only data from those who did so was used in the analysis. According to Wells (1997) and Liébana-Cabanillas, Muñoz-Leiva and Sánchez-Fernández (2018), information that has been processed, consciously or unconsciously, stimulates recall, which increases the probability of participants remembering messages they have been shown, which improves the reliability of the results. Third, after viewing the video they were asked if they had previously taken part in social commerce. They were then invited to complete the survey only if they had, indeed, taken part in social commerce. The participants were then asked to provide answers based on their experiences of only the website that they used most frequently. Finally, when the questionnaire was completed, the participants were invited to pass on the invitation to their contacts with experience of social commerce.

Of the 593 questionnaires that were collected, the final valid sample was 437 (73.70% completion rate). The questionnaires were considered complete only if all the questions related to the participant's behavior in relation to the model variables were answered; that is, it was only acceptable to ignore the demographic questions. Incomplete questionnaires were excluded from the database. This sample is considered sufficient to evaluate the research model, since the ratio of sample size to number of parameters to be estimated, 8.74, exceeds the minimum threshold for normal distributions (5:1) and is close to the most conservative threshold (10:1) (Bentler & Chou, 1987), with almost all factor loadings being higher than 0.80 (Guadagnoli & Velicer, 1988).

4.3. Data analysis procedure

This study applied structural equation modeling (SEM) to empirically test the proposed research model. SEM is a very useful statistical procedure in surveys using cross-sectional data, combining multiple regression and factor analysis to evaluate the measurement instrument and test the hypotheses (Bagozzi & Yi, 2012).

5. Data analysis results

To conduct the analysis we followed Anderson and Gerbing's (1992) two stage procedure. First, we verified the instrument's reliability and validity by analyzing the measurement model; we then analyzed the structural model. SPSS 16.0 was employed with descriptive analysis to determine the demographic attributes of the sample, and with Cronbach's alpha to assess reliability. We undertook a confirmatory factor analysis to test the validity of the measurement instruments and used structural equation modeling to test the hypotheses, using Amos 21.0 for both tests.

5.1. Sample descriptive analysis

Table 1 presents the participants' demographic characteristics. Most are female, with the preponderant age range being 19-25, which is quite common in social commerce studies (e.g., Hajli, Sims *et al.*, 2017; Ko, 2018; Lee, Kim, Chung, Ahn, & Lee, 2016). The largest proportion of educational level was bachelor's degree (78.95%). Some 45% of the respondents were students. A 7-point Likert scale, ascending from "hardly ever" to "more than once daily", was used to measure the participants' average

purchase frequency on social commerce websites. The average general frequency of purchases was 4.53 and the average was 3.31 on the website that the participants used most frequently.

Before analyzing the structural relationships, the mean values of the research model factors were compared for the different participant groups, according to demographic characteristics. These analyses revealed no significant differences between means (p> 0.05), with the exception of the two gender groups. Therefore, the values of the model factors are influenced only by gender.

[Please, insert Table 1 about here]

5.2. Normality and common method bias

Normality tests were conducted based on the skewness and kurtosis values of each item (Table 2). The skewness and kurtosis values of the items were below the absolute values of 2 and 7, respectively, which allow us to use maximum likelihood procedures, which indicated similarity with the normal curve (Curran, West, & Finch, 1996).

Harman's single factor test was used to examine the effect of common method bias (CMB). Should a single factor have total variance above 50%, it is likely that CMB will influence the data and, consequently, the empirical outcomes (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In our study the total variance for a single factor is 29.53%. When the complete set of factors was present in the model, 79.21% of the variance was explained. This suggests that it is unlikely that common method bias exists (Gao, Liu, Guo, & Li, 2018; Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014; Park & Baek, 2018).

5.3. Reliability and validity of the measurement instrument

The suitability of the measurement scales was assessed through several measures of reliability and validity. First, three methods were used to measure reliability: Cronbach's alpha (α), average variance extracted (AVE) and composite reliability (CR). Table 2 shows that all the constructs are reliable, all values being above the recommended thresholds: Cronbach's alpha is 0.6 (Malhotra, 1997), CR is 0.7 and the AVE is 0.5 (Hair, Black, Babin, & Anderson, 2014).

[Please, insert Table 2 about here]

A principal component analysis (PCA) was subsequently carried out to verify the degree of unidimensionality of the scales. The results show correlations by blocks of items that allow us to group these into constructs (Appendix B). In addition, high communalities ($\lambda > 0.5$) were found in the variables, which imply that all are fairly well represented in the factor space and that the factor loads exceed the recommended minimum thresholds ($R2 > 0.5$). This analysis allows us to conclude that the measurement scales have a unidimensional structure.

A confirmatory factor analysis (CFA) was carried out to verify the convergent and discriminant validity of the scales. Convergent validity was evaluated through the factorial loads of the indicators. It was found that the coefficients were significantly different from zero, and that the loadings were higher than 0.7 in all cases. Regarding discriminant validity, the variances were significantly different from zero and the correlation between each pair of scales was not higher than 0.9 (Hair *et al.*, 2014) (Appendix C). Therefore, all constructs had good measurement properties.

6. Research findings

The hypotheses were evaluated through structural equation modeling (SEM), using the maximum likelihood method and the bootstrapping technique for 500 consecutive steps or samples, at a 95% significance level. The results show significant fit indices for the model (Table 3) (Bollen, 1989). This model was then used to test the hypotheses.

[Please, insert Table 3 about here]

Figure 2 shows the standardized path coefficients and p-values. In addition, the second order construct (i.e., customer engagement) fulfills all the requirements for identification, reliability and validity.

[Please, insert Figure 2 about here]

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The analysis confirms the statistical significance of the impact of three of the four antecedents on customer engagement. H1, H3 and H4 are validated and H2 (community drivenness) is not supported. As to the significance results, social support (β = 0.432, p <0.001) and community identification (β = 0.559, p <0.001) had similar strengths, both much greater than community trust (β = 0.093, p <0.05).

As to the consequences of customer engagement, the results support H5 (β = 0.739, p <0.001), which means that customer engagement impacts on willingness to co-create with the social commerce site. H6, which posits that customer engagement has a positive impact on customer stickiness, is also supported (β = 0.832, p <0.001). Similarly, H7, which posits that customer engagement has a positive impact on positive eWOM intention, is supported (β = 0.683, p <0.00). Finally, H8, which proposes that customer engagement has a positive impact on repurchase intention, is also supported (β = 0.715 and p <0.001, respectively).

7. Conclusions and implications

7.1. Theoretical implications

This study contributes to the research in several important ways. First, we build on prior social commerce studies by assessing and validating a model with social support and community factors as antecedents of customer engagement and customer loyalty dimensions as consequences. We believe this study is one of few that empirically assesses customer engagement as a central element and, therefore, enriches the existing literature on social commerce consumer behavior.

Second, regarding the first research question, this study advances the understanding of the importance of social support and community factors in social commerce. Social support and community identification seem to be more important than community trust. Community drivenness does not appear to be significant. The explanation for this is that social support contributes to the improvement of perceived self-efficacy (Bandura, 1977, 1993), which leads consumers to believe in their abilities to make better purchasing decisions. In this study, the average values of the social support indicators suggest that individuals perceive support more in emotional than in cognitive terms. We believe this is an interesting contribution to the literature. Social commerce participants could be thought of as only interested in making good purchase decisions; however, in fact, they value even more the interest and the concern that

others show for their well-being. This feeling emotionally and cognitively promotes engagement with the social commerce site. Thus, this study expands the literature on social support in social commerce (e.g., Hajli, 2014; Liang *et al.*, 2011; Zhang, Lu, Gupta & Zhao, 2014) by demonstrating its positive influence on customer engagement.

Similarly, the study shows that a greater sense of identification with the community has a positive influence on the individual's engagement with the group, which increases his or her motivation to participate in the community and help other members. This relationship has been demonstrated in the context of online brand communities (e.g., Algesheimer *et al.*, 2005; Hsu *et al.*, 2012) but, to our knowledge, not in social commerce. Moreover, within the framework of social identity theory, we observe that the indicators related to friendship among community members have greater average values than those related to identification with the community as a whole. Surprisingly, and in line with the assessment of the emotional aspects of social support, common bonds seem to have greater influence than community identity in shaping sense of community. This contribution, although limited, is important because it highlights the importance of the social and affective elements of the social commerce community as individuals and not just as part of an impersonal whole.

Furthermore, community trust also enhances customer engagement, although to a lesser degree than the aforementioned variables. A possible explanation for this is that trust in the community may not be as important as trust in the platform itself or the social commerce company, since it is ultimately the company that guarantees the provision of the service in question and fulfills the commitments. These results are in line with previous studies on online brand communities (e.g., Brodie *et al.*, 2011; Martínez-López *et al.*, 2017) and highlight the importance of trust in social commerce. Until now the assumption has been that it is only necessary for the buyer to trust the vendor (e.g., Lu, Fan, & Zhou, 2016) and the platform (e.g., Hajli, Sims, *et al.*, 2017); trust had not hitherto been evaluated in terms of the whole community.

Community drivenness does not have a significant impact on customer engagement. A possible explanation for this is that users habitually use social networks to interact with others, so the fact that a community permits this does not influence customer engagement. These results complement those obtained by Yang *et al.* (2015), who demonstrated that community drivenness had a positive impact on participation in social commerce. Social commerce offers interaction opportunities, which facilitate participation, but this is not sufficient to achieve customer engagement. Therefore, this study expands knowledge of the effects of community drivenness and suggests that there is a need to further study the influence of this variable on consumer behavior in social commerce.

Third, in regard to the second research question, customer engagement was found to be a key predictor of the four customer loyalty intention dimensions in social commerce websites. Therefore, engaged customers are likely to co-create with the company, spend longer on the website (stickiness), spread positive eWOM and repurchase products through that social commerce website. Engaged customers have a more positive perception of their relationship with the social commerce website, probably because they are satisfied with their repeat experiences. The more engaged a customer is, the greater will be his/her active participation, commitment, interest in helping others, willingness to support the social commerce company and repurchase behavior on the website. This, therefore, emphasizes the importance of customer engagement in both transactional and non-transactional behaviors. In this regard, our findings are consistent with previous research conducted in other contexts, such as e-commerce and online brand communities (e.g., Chan *et al.*, 2014; Cheung *et al.*, 2011; Martínez-López *et al.*, 2017; Zhang *et al.*, 2017). Furthermore, to the best of our knowledge, few studies to date have evaluated the influence of customer engagement on willingness to co-create and stickiness. Therefore, this study also expands the literature on the consequences of customer engagement.

Finally, this study contributes to the social commerce literature by comprehensively conceptualizing customer engagement and operationalizing it as a second-order construct with three dimensions: absorption (i.e., cognitive), dedication (i.e., emotional) and vigor (i.e., behavioral), based on Cheung *et al.* (2011). Very few social commerce studies have measured engagement multidimensionally, and none has followed our approach, an approach that enriches the interpretation of the construct and furthers the knowledge of consumer behavior.

7.2. Managerial implications

This study can contribute to the improvement of the management of social commerce websites. First, customer engagement is shown to be a key success factor for social commerce companies. Customers who are more engaged are more likely to co-create with the companies, spend more time on their websites (stickiness), spread positive eWOM and repurchase products. Social commerce website managers can increase customer engagement by improving social support, community identification and community trust.

Second, consumers visit these sites mainly to dispel doubts, to feel more confident as they progress through the various stages of the purchase decision-making process and to reduce the risks inherent in transactions. Website managers should

foster social support by establishing channels where users can interact, such as review and ratings tools, forums, recommendation systems and communities, among others. It would also be helpful to facilitate the use of different UGC formats (e.g., text, photos and videos). Similarly, other initiatives, such as rewarding the most active users, publishing a "freedom of expression" policy, or even increasing the website's functionality to allow users to search by topics of interest, could also help to increase social support.

Third, social commerce managers should also reinforce community identification because it has a very significant positive effect on customer engagement. Identification can be fomented in both cognitive and affective ways; for example, by allowing the users to establish the rules of operation, thereby enabling them to share resources amongst themselves (publicly and privately), and even with the company, and allow members to coordinate activities. Managers must strive to ensure that community members feel satisfied with their sense of belonging to the group by providing both utilitarian value (e.g., preferential purchase conditions, exclusive access to certain products) and hedonic value (e.g., sharing experiences, celebrating events). The more identified that the members feel with the community, the greater will be their engagement.

Lastly, trust in the community reduces users' feelings of risk and uncertainty, which will consequently make them regard other community members' comments and reviews as being more credible. Social commerce managers should provide mechanisms to strengthen community trust to increase customer engagement. For example, they might establish mechanisms to acknowledge the usefulness of comments through a scoring system, which would identify the highest-rated users. They might also increase, with relevant permissions, the information given in user profiles, to promote transparency and provide more user behavior rating criteria (e.g., number of purchases made, types of product purchased); and provide more personal characteristics (e.g., gender, age, occupation). In addition, companies are strongly recommended to behave honestly, credibly and sincerely, and to avoid manipulating information or acting with ulterior motives.

8. Limitations and future research

This study has various limitations. First, the data used to evaluate the conceptual model comes from a cross-sectional survey. Future studies might use longitudinal data to identify the effects of social variables and community variables on customer engagement and the role of engagement on consumer loyalty in social commerce

websites. Second, the non-probabilistic sampling procedure used, and the lack of information on the characteristics of the social commerce user population in Spain, make it impossible to assess the representativeness of the sample; so the results should be interpreted with caution. Future works might collaborate with social commerce websites to gain access to their user databases, to undertake random sampling procedures. Third, the study uses data gathered from social commerce users based on their experiences with only one network, Facebook. The results might be different if scholars evaluated the model using data from other platforms, such as Twitter and Instagram, among others. Fourth, the data are drawn from customers in Spain. The results might vary in other countries; therefore, further studies might examine and validate the results in other parts of the world. Finally, researchers might expand the model to include other variables, such as self-efficacy, common identity and common bonds. Similarly, given the gender-based differences shown in the values of the model variables, researchers might analyze the moderating effect of gender in the relationships.

[Please, insert Appendix A about here]

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Table 1

Sample characteristics

Demographics	Frequency	Percentage
Gender		
Men	151	34.55%
Women	286	65.45%
Age range		
Under 18	8	1.83%
From 19 to 25	245	56.06%
From 26 to 30	65	14.87%
From 31 to 35	44	10.07%
From 36 to 40	37	8.47%
From 41 to 45	19	4.35%
From 46 to 50	8	1.83%
From 51 to 55	4	0.92%
From 56 to 60	3	0.69%
Over 60	4	0.92%
Educational level		
Elementary and high school	38	8.70%
Bachelor's degrees	345	78.95%
Master's/Doctoral degrees	43	9.84%
Others	11	2.52%
Activity		0.00%
Unemployed	37	8.47%
Student	197	45.08%
Retired	1	0.23%
Employee	142	32.49%
Self-employed	43	9.84%
Others	17	3.89%

Table 2

Descriptive statistics, convergent validity and internal consistency reliability

Constructs	Items	Mean	S.D	Skewness	Kurtosis	St. Coef.	α	CR	AVE
Social Support	SS1	2.062	1.573	1.509	1.394	0.87	0.94	0.94	0.77
	SS2	2.732	1.891	0.860	-0.457	0.73			
	SS3	2.064	1.704	1.553	1.240	0.90			
	SS4	2.098	1.744	1.531	1.182	0.93			
	SS5	2.066	1.622	1.493	1.221	0.95			
Community Drivenness	CDR1	3.105	1.909	0.632	-0.771	0.88	0.94	0.94	0.8
	CDR2	3.357	1.910	0.410	-0.966	0.92			
	CDR3	3.622	1.967	0.238	-1.179	0.92			
	CDR4	3.462	2.039	0.321	-1.260	0.86			
Community Identification	CID1	3.410	1.893	0.522	-0.875	0.87	0.93	0.93	0.76
	CID2	3.586	1.876	-0.111	-1.323	0.86			
	CID3	3.778	1.932	0.194	-1.276	0.89			
	CID4	3.238	1.912	0.016	-1.263	0.88			
Community Trust	TRU1	3.892	2.086	0.072	-1.329	0.80	0.94	0.94	0.75
	TRU2	3.908	2.033	0.085	-1.279	0.84			
	TRU3	3.265	2.014	0.482	-1.024	0.89			
	TRU4	3.160	2.015	0.579	-0.962	0.94			
	TRU5	2.883	1.955	0.758	-0.687	0.87			
Vigor	VI1	3.764	2.061	0.207	-1.272	0.66	0.93	0.94	0.72
	VI2	2.542	1.851	1.008	-0.193	0.91			
	VI3	2.556	1.813	0.914	-0.363	0.89			
	VI4	2.563	1.842	0.963	-0.272	0.89			
	VI5	2.451	1.870	1.139	0.086	0.91			
	VI6	2.835	2.116	0.809	-0.784	0.82			
Dedication	DE1	2.924	1.973	0.750	-0.677	0.90	0.95	0.95	0.77
	DE2	2.780	1.922	0.852	-0.483	0.90			
	DE3	2.760	1.882	0.778	-0.621	0.88			
	DE4	2.895	1.934	0.683	-0.777	0.88			
	DE5	3.497	1.982	0.264	-1.178	0.82			
	DE6	3.009	1.985	0.659	-0.813	0.88			
Absorption	AB1	3.476	2.005	0.365	-1.138	0.84	0.96	0.96	0.8
	AB2	2.895	1.938	0.710	-0.754	0.91			
	AB3	2.938	1.897	0.640	-0.809	0.86			
	AB4	2.824	1.920	0.754	-0.670	0.94			
	AB5	3.076	1.971	0.528	-1.012	0.92			
	AB6	3.082	1.965	0.595	-0.922	0.90			
Willingness to co-create	WTC1	3.039	2.145	0.641	-1.020	0.95	0.98	0.98	0.92
	WTC2	2.936	2.097	0.699	-0.928	0.97			
	WTC3	2.993	2.136	0.694	-0.930	0.98			
	WTC4	3.082	2.123	0.603	-1.033	0.95			
Stickiness intention	STI1	3.220	1.977	0.531	-0.960	0.87	0.84	0.93	0.81
	STI2	2.975	1.892	0.688	-0.696	0.91			
	STI3	3.382	1.999	0.434	-1.092	0.92			
Repurchase intention	REP1	4.254	2.041	0.438	-0.906	0.88	0.94	0.94	0.84
	REP2	3.730	2.061	0.232	-1.039	0.91			
	REP3	3.977	2.038	0.165	-1.125	0.95			
Positive eWOM intention	WOM1	3.842	2.051	0.152	-1.280	0.92	0.97	0.97	0.89
	WOM2	4.162	2.002	-0.059	-1.265	0.93			
	WOM3	4.080	2.007	0.006	-1.262	0.97			
	WOM4	4.151	1.997	-0.015	-1.271	0.96			

Table 3

Fit indices

Fit indices	Recommended value	Value in the model
Normal chi-square/ degrees of freedom (CMIN/DF)	2 <CMIN/DF< 5	3.50
Goodness-of-fit index (GFI)	>0.9	0.91
Relative fix index (RFI)	> 0.9	0.90
Normed fit index (NFI)	> 0.9	0.90
Comparative goodness of fit (CFI)	> 0.9	0.92
Tucker-Lewis Index (TLI)	> 0.9	0.90
Incremental fit index (IFI)	> 0.9	0.90
Root mean square error of approximation (RMSEA)	< 0.08	0.07

Appendix A. Measures

Construct	Items	Authors
Social Support	SS1 When faced with difficulties, some people on my favorite social commerce site comforted and encouraged me. SS2 When faced with difficulties, some people on my favorite social commerce site expressed interest and concern for my well-being. SS3 On my favorite social commerce site, some people would offer suggestions when I needed help. SS4 When I encountered a problem, some people on my favorite social commerce site would give me information to help me overcome the problem. SS5 When faced with difficulties, some people on my favorite social commerce site would help me discover the cause and provide me with suggestions.	Hajli, Shanmugam *et al.* (2015); Liang *et al.* (2011)
Community Drivenness	CDR1 This social commerce site offers opportunity to make new friends. CDR2 This social commerce site lets me communicate with other customers to get advice or opinions before and/or after purchasing. CDR3 I like talking with other online customers on this social commerce site about mutual opinions and experiences. CDR4 This social commerce site lets me share information with friends.	Yang *et al.* (2015)
Community Identification	CID1 I am very attached to this social commerce site. CID2 Other social commerce site customers and I share the same objectives. CID3 The friendship I have with other social commerce site customers means a lot to me. CID4 I see myself as part of this social commerce site community.	Algesheimer *et al.* (2005) Liao, Huang, & Xiao (2017)
Community Trust	TRU1 The community of customers of this social commerce site is trustworthy. TRU2 I trust that the community of customers of this social commerce site keeps my best interests in mind. TRU3 The community of customers of this social commerce site will keep its promises. TRU4 I believe in the information that the community of customers of this social commerce site provides. TRU5 The community of customers of this social commerce site wants to be known as a community that keeps its promises and commitments.	Kim & Park (2013)
Customer Engagement	*Vigor:* VI1 I can continue using this social commerce site for very long periods at a time. VI2 I feel strong and vigorous when I am participating in this social commerce site. VI3 I feel very resilient, mentally, as far as this social commerce site is concerned. VI4 In this social commerce site, I always persevere, even when things do not go well. VI5 I devote a lot of energy to this social commerce site. VI6 I try my hardest to perform well on this social commerce site. *Dedication:* DE1 I am enthusiastic in this social commerce site. DE2 This social commerce site inspires me. DE3 I found this social commerce site full of meaning and purpose. DE4 I am excited when using this social commerce site. DE5 I am interested in this social commerce site. DE6 I am proud of using this social commerce site. *Absorption:* AB1 Time flies when I am participating in this social commerce	Cheung *et al.* (2011)

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Construct	Items	Authors
	site. AB2 Using this social commerce site is so absorbing that I forget about everything else. AB3 I am rarely distracted when using this social commerce site. AB4 I am immersed in this social commerce site. AB5 My mind is focused when using this social commerce site. AB6 I pay a lot of attention to this social commerce site.	
Willingness to co-create	WTC1 I intend to work with this social commerce site to co-create value. WTC2 I will co-develop products/services with this social commerce site. WTC3 I will work to co-design products/services with this social commerce site. WTC4 Overall, I will cooperate with this social commerce site in co-creating value.	Porter and Donthu (2008)
Stickiness intention	STI1 I will stay for a long time browsing this social commerce site. STI2 I intend to prolong my stays on this social commerce site. STI3 I will visit this social commerce site frequently.	Zhang *et al.* (2017)
Repurchase Intention	REP1 I would like to buy products from this social commerce site again. REP2 I would like to buy products continuously from this social commerce site. REP3 Next time I would like to buy products from this social commerce site.	Shin, Chung, Oh, & Lee (2013)
Positive eWOM intention	WOM1 I will encourage friends or others to shop on this social commerce site. WOM2 I will recommend this social commerce site to someone who seeks my advice. WOM3 I will say positive things about this social commerce site to other people. WOM4 I will recommend this social commerce site to someone else.	Yang *et al.* (2015)

Appendix B. Principal Component Analysis (PCA). Rotated components matrix [a]

	Components							
	1	2	3	4	5	6	7	8
CDR1	0.671	0.300	0.239	0.219	0.294	-0.007	0.204	0.209
CDR2	0.641	0.248	0.297	0.259	0.304	0.000	0.133	0.245
CDR3	0.743	0.110	0.256	0.217	0.185	0.231	0.152	0.178
CDR4	0.708	0.186	0.272	0.165	0.251	0.207	0.157	0.108
TRU1	0.374	0.089	0.248	0.226	0.133	0.202	0.244	0.749
TRU2	0.441	0.133	0.280	0.196	0.091	0.182	0.281	0.706
TRU3	0.377	0.235	0.216	0.267	0.168	0.136	0.639	0.301
TRU4	0.391	0.325	0.216	0.210	0.193	0.113	0.641	0.328
TRU5	0.417	0.350	0.166	0.239	0.164	0.128	0.666	0.144
SS1	0.161	0.842	0.146	0.166	0.144	0.087	0.092	0.097
SS2	0.411	0.661	0.223	0.215	0.058	0.041	0.074	0.023
SS3	0.158	0.858	0.048	0.180	0.189	0.044	0.125	0.041
SS4	0.153	0.857	0.057	0.227	0.225	0.049	0.122	0.052
SS5	0.124	0.883	0.095	0.217	0.181	0.057	0.133	0.057
CID1	0.196	0.254	0.268	0.151	0.054	0.247	0.733	0.098
CID2	0.087	0.174	0.238	0.145	0.093	0.233	0.816	0.119
CID3	0.143	0.103	0.278	0.146	0.070	0.211	0.804	0.203
CID4	0.177	0.278	0.190	0.197	0.184	0.082	0.764	0.065
REP1	0.381	0.037	0.415	0.174	0.121	0.697	0.061	0.155
REP2	0.405	0.188	0.387	0.248	0.075	0.643	0.175	0.142
REP3	0.388	0.106	0.441	0.238	0.077	0.667	0.126	0.170
WOM1	0.302	0.189	0.808	0.218	0.122	0.152	0.149	0.099
WOM2	0.318	0.097	0.828	0.207	0.123	0.191	0.054	0.145
WOM3	0.316	0.116	0.832	0.239	0.103	0.193	0.118	0.128
WOM4	0.299	0.142	0.837	0.205	0.116	0.206	0.123	0.117
STI1	0.246	0.450	0.149	0.175	0.714	0.111	0.066	0.156
STI2	0.305	0.396	0.169	0.241	0.688	0.109	0.184	0.085
STI3	0.296	0.434	0.168	0.231	0.706	0.041	0.162	0.020
WTC1	0.224	0.268	0.254	0.820	0.142	0.125	0.134	0.132
WTC2	0.216	0.261	0.198	0.859	0.135	0.115	0.128	0.112
WTC3	0.200	0.295	0.197	0.863	0.135	0.109	0.109	0.101
WTC4	0.220	0.253	0.230	0.833	0.155	0.147	0.127	0.087

Extraction method: Principal component analysis.
Rotation method: Varimax with Kaiser normalization.
a. The rotation converged in seven iterations.

Appendix C. Correlation matrix

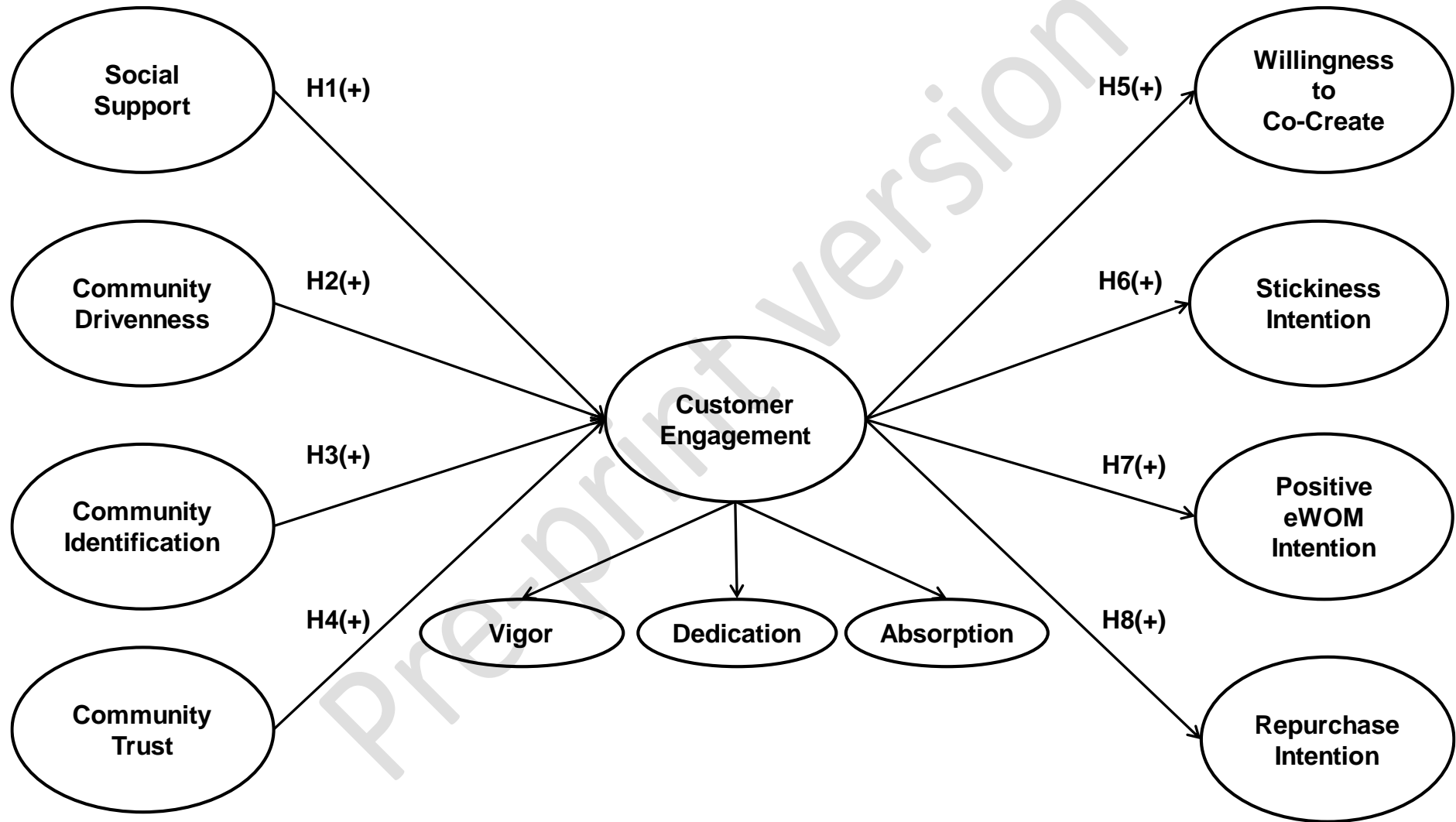|	CDR	TRU	SS	CID	CENG	REP	WOM	STI	WTC
CDR	1								
TRU	0.779	1							
SS	0.477	0.587	1						
CID	0.908	0.811	0.552	1					
CENG	0.804	0.817	0.796	0.877	1				
REP	0.575	0.585	0.569	0.627	0.715	1			
WOM	0.549	0.559	0.544	0.599	0.683	0.489	1		
STI	0.669	0.680	0.662	0.729	0.832	0.595	0.568	1	
WTC	0.594	0.604	0.588	0.648	0.739	0.529	0.505	0.615	1

Fig 1. Conceptual model

Fig. 2. Results of the research model test.