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Optimal user experience in social commerce: the role of emotions, flow and user-generated information

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OPTIMAL USER EXPERIENCE IN SOCIAL
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AND USER-GENERATED INFORMATION

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DOCTORAL DISSERTATION

**OPTIMAL USER EXPERIENCE IN SOCIAL COMMERCE:
THE ROLE OF EMOTIONS, FLOW AND USER-GENERATED
INFORMATION**

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*A mis padres, Nieves y Antonio,
por apoyarme y animarme siempre a luchar por mis sueños*

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INTRODUCTION

Digital platforms have dramatically impacted the global economy. In the first quarter of 2019, worldwide revenue in the e-commerce market amounts to US\$2,027,945 million and is expected to show an annual growth rate (2019–2023) of 8.9% (Statista, 2019a). Furthermore, e-commerce has 56.2% user penetration in 2019 and is expected to hit 61.8% by 2023 (Statista, 2019a). In Spain, e-commerce revenue is expected to grow to US\$1,086 million in 2023 (Statista, 2019b). According to the e-commerce annual report of the Interactive Advertising Bureau (IAB, 2018), 71% of the Spanish population (i.e., 19.4 million people) make online purchases, and 70% of these buyers reported looking for information about and subsequently buying the product using only the online channel. The world-famous website Amazon leads this new socio-interactive online scenario, characterized by generating customer purchasing experiences from the sharing and exchange of information, advice and opinions. In this digital context, Amazon is the second-largest company in the world by market value after Apple (Statista, 2019c), with a net sales revenue of US\$232,890 million in 2018 (Statista, 2019d). According to the Global Consumer Insights survey of PricewaterhouseCoopers (PwC, 2018a), globally 59% of respondents shopped at Amazon, and this rose to 85% among the Spanish respondents (PwC, 2018b). In the same vein, in recent years, the digital context has seen a proliferation of social commerce websites, which, like Amazon, allow individuals to interact, to socialize and to buy anytime and anywhere (Turban *et al.*, 2018).

It is not only with regard to revenues that social commerce websites have revolutionized online business practice (Lin, Li and Wang, 2017). On the one hand, social commerce has forced companies to adapt their websites to consumers who demand interaction and socialization when they buy (Bleier, Harmeling and Palmatier, 2019), since this kind of trade is characterized by user participation and exchange of information. This is an opportunity as much as a challenge, since social commerce websites help companies to create bonds and to strengthen relationships with their customers (Zhang, Zhao and Gupta, 2018; Zhang, Wang, Chen and Guo, 2019; Huang and Benyoucef, 2017). On the other hand, users have acquired a more active role with the possibility of accessing a huge amount of information and of generating their own information, known as user-generated content or social word of mouth (sWOM), a specific form of eWOM in social commerce contexts (Lin *et al.*, 2017; Chen, Lu and Wang, 2017).

In this way, sWOM benefits from social tools on social commerce websites – such as recommendation and referrals, ratings and reviews, and forums and virtual communities (Zhang *et al.*, 2019; Li, 2017; Chen *et al.*, 2017) – and enables users to obtain information and opinions from other users and to interact with them, regardless of age or cultural background (Zhang, Lu, Gupta and Zhao, 2014; Ng, 2013; Liang, Ho, Li and Turban, 2011). Hence, social commerce is seen as a phenomenon of the age of internationalization and interconnectivity that is forcing business practice to evolve toward interactive environments rich in social interactions and information exchange that empower online customers (Lin *et al.*, 2017).

Social commerce has been defined as “*any commercial activities facilitated by or conducted through the broad social media and Web 2.0 tools in consumers’ online shopping process or business’ interactions with their customers*” (Lin *et al.*, 2017, p. 191). Social commerce integrates tools that enable interaction and socialization with commercial features (Huang and Benyoucef, 2013). In social commerce contexts, apart from buying products, users can interact and socialize with others and with the company (Turban *et al.*, 2018; Lin *et al.*, 2017; Zhang *et al.*, 2015).

The term social commerce was first introduced by Yahoo! in 2005, and authors have defined the concept from different perspectives without reaching total agreement (Baethge, Klier and Klier, 2016). Despite the fact that there are several definitions of social commerce, researchers have reached a broad consensus that social commerce is to be understood as an evolution of e-commerce combined with social media and Web 2.0 (Turban *et al.*, 2018; Huang and Benyoucef, 2017; Lu, Fan and Zhou, 2016; Liang and Turban, 2011). The difference between traditional e-commerce sites and social commerce environments lies mainly in three factors: business goals, customer connection and system interaction (Huang and Benyoucef, 2017, 2015, 2013; Baghdadi, 2016). Regarding business goals, social commerce is notable for its focus on social activities, while e-commerce aims to maximize shopping efficiency (Li and Ku, 2018). While traditional e-commerce emphasizes the efficiency of transactions and online communications with customers, social commerce goes deeper into relationship marketing to drive the social-commercial perspective, thus facilitating interactions among customers (Huang and Benyoucef, 2017; Li and Ku, 2018), with users playing an active role under the spotlight of the purchasing process. In fact, according to Kannan and Li (2017), the digital technologies research framework places customers at

the center of digital marketing strategy. E-commerce deals with *customers as individuals*, whereas social commerce considers a *community of customers* (Baghdadi, 2016, p. 96). Thus, the focus of online commerce has changed from being product-centered, with information provided by the company, to being social-centered (Li and Ku, 2018), with a clear orientation toward consumer and social connections (Huang and Benyoucef, 2017). Consequently, individuals have evolved from being product consumers to also being content producers (Constantinides, 2014). In terms of website design, e-commerce focuses on sales, while social commerce concentrates on information exchange (Huang and Benyoucef, 2017).

Furthermore, in recent years, several authors have come to the conclusion that two types of social commerce can be clearly identified in terms of the main focus of the website (Wang and Herrando, 2019; Ko, 2018; Zhang *et al.*, 2019; Chen *et al.*, 2017; Lin *et al.*, 2017; Zhang and Benyoucef, 2016; Ng, 2013). First, social commerce websites can be considered as e-commerce websites with added social interaction tools (e.g., Amazon and Booking.com), and second, they can be considered as social networks with added commercial functions that facilitate purchases (e.g., Facebook, Instagram and Fancy) (Grange, Benbasat and Burton-Jones, 2019; Kim and Park, 2013; Yadav *et al.*, 2013). In other words, the focus may be on commercial activity or on social interactions (Ko, 2018). Although the vast majority of studies of social commerce have concentrated on the social interaction aspect of social commerce platforms (see reviews of the literature on social commerce: Lin *et al.*, 2017; Zhang and Benyoucef, 2016; Zhou, Zhang and Zimmermann, 2013), this dissertation takes as its context the first kind of social commerce websites, that is, those that add social interaction tools to e-commerce websites, because these are more closely linked to the business field. The main aim of these websites is commercial activity, whereas social network-based social commerce websites tend to prioritize social connections and to put commercial purposes in second place (Grange *et al.*, 2019). To summarize, the social commerce purchasing experience encompasses interaction, socialization and commercial activities.

Undoubtedly, now more than ever, customer experience matters (Lemon and Verhoef, 2016). Social commerce has changed the customer purchase decision-making process by making room for social knowledge and the personal experiences of other users (Chen *et al.*, 2017). Users of social commerce have utilitarian, hedonic and social needs (Osatuyi and Qin, 2018; Farivar, Turel and Yuan, 2018); they want to know not

only the utilitarian characteristics of a product but also people's experiences with it. That is why customer experience has been a research priority (MSI, 2016–2018) and continues to be so (MSI, 2018–2020). Specifically, the importance of the utilitarian and hedonic components of social commerce has been identified as a promising and interesting research theme (see the systematic literature review of Baethge *et al.*, 2016).

Social commerce tools empower users to participate actively, to share their opinions and knowledge about a product and to assist in decision-making by evaluating products according to the personal experience of others (Ko, 2018; Li, Liang and Li, 2018; Huang and Benyoucef, 2017; Li and Ku, 2018; Curty and Zhang, 2013). Social commerce information content can come from two main sources: user-generated content (in the form of recommendations, reviews, ratings, posts, etc.) or information shared by the company (Huang and Benyoucef, 2017). Therefore, users contribute to the generation of information, and the information they generate is offered together with the traditional information provided by the company. These different sources of information raise concerns for companies about how trust is transferred from social commerce websites to users. As in e-commerce, trust in social commerce is essential, but the transfer of trust must be specifically studied in this particular context (Cheng, Gu and Shen, 2019). Within the context of social commerce, the credibility of information can no longer be analyzed as a whole, since it is necessary to differentiate between company-generated and user-generated information, even though it is the aggregate of the two kinds of content that makes the customer experience in social commerce unique.

The opportunity to access information generated by other users or to share real purchasing experiences offers users a certain degree of control on the Internet (Baghdadi, 2016). Social commerce enables users to speak out, thereby facilitating reinforcement, disconfirmation and comparison. Needless to say, this characteristic can be beneficial for companies if it helps users to make online purchase decisions; that is, this kind of online experience can be connected to an increase in purchase intention. Nevertheless, the same characteristic may work against the company if user-generated information is not consistent with company-generated content or if the company does not deal with complaints properly. That is why some researchers have raised concerns about the management of (company-created) word of mouth as part of the marketing mix (Dost, Phieler, Haenlein and Libai, 2019; Kumar *et al.*, 2016). It has been said that companies are losing control over the information flow throughout the customer

journey, while customers are gaining control and their purchasing experiences are becoming more social (Lemon and Verhoef, 2016; MSI, 2016–2018). Therefore, several researchers (Grange *et al.*, 2019; Lemon and Verhoef, 2016) have called for further research in order to understand customer experience and customer behavior. Social commerce websites challenge companies to develop strategies that facilitate social interactions on the part of users in ways that optimize the customer journey while the company maintains overall control.

The research priorities of the Marketing Science Institute (MSI, 2016–2018) have highlighted academic interest in customer experience in digital environments, emphasizing the importance of understanding how to address users from different generations and cultural backgrounds when it comes to studying online consumer behavior and consumer decision-making. Likewise, Baethge *et al.* (2016) have pointed out the relevance of culture in social commerce contexts as an important topic for future research. The main objective of this dissertation, which aims to understand online consumer behavior to optimize the customer experience in social commerce, can be framed in terms of several research priorities that remain unresolved (see Research Priority 3, “*Making sense of changing decision processes*,” in MSI, 2016–2018, p. 10):

- *What is the science of emotion in the digital, mobile, always on, always connected age? What is the role of emotions in experience? How do we design customer experiences that lead to maximal enjoyment, happiness and utility?*
- *How marketing can drive positive change in behavior: new approaches to help consumers make “good” decisions and “smarter choices”?*
- *How does engaging in technology change consumers? How does it influence emotions, decision making, and behavior?*
- *How do life stage differences, generational issues, and culture influence decision processes and path to purchase?*
- *Given the extent to which customers can search for information on their own, do we need to change the way we market to and sell to knowledgeable customers?*

According to these research concerns, there are still several gaps in the literature on consumer decision-making that need to be bridged. The present dissertation tries to answer these research questions in order to reach a better understanding of online

consumer behavior in the specific context of social commerce websites. This work focuses on understanding online customer experience as part of the customer journey (Lemon and Verhoef, 2016) to advise companies on how to offer optimal experiences on their websites and to help them to understand user behavior, regardless of cultural background and generational cohort. Specifically, this dissertation delves into four connected aspects of online customer experience in social commerce. First, it studies the process of generating engagement in social commerce and the role of emotions in that process. Second, it provides a thorough review of the literature in order to understand the role of flow in optimal experience. Third, it bridges the gap concerning trust generation on the basis of the kinds of information contained in social commerce. Finally, it examines the consequences in terms of customer intention of achieving an optimal experience in social commerce.

The inner social-interactive richness of social commerce contexts is precisely what motivates further research. Social commerce websites must adapt their social tools to the demands of market socialization, which constantly challenges companies to keep their websites up to date. Nowadays, “*consumer controls all information flow, company is invited to react*” (MSI, 2016–2018, p. 7). According to this premise, in social commerce contexts, companies have to recognize their loss of control and try to maximize customer experience in order to generate optimal states of navigation that result in positive behavior. Social commerce websites allow users to enjoy themselves, to concentrate and to lose track of time when they navigate and interact with other users and, in the end, to experience a state of flow (Gao and Bai, 2014; Zhang *et al.*, 2014). A concept drawn from positive psychology, the state of flow contributes to the generation of optimal experiences that result in positive behaviors and responses (Liu, Chu, Huang and Chen, 2016; Gao and Bai, 2014; Zhang *et al.*, 2014; Csikszentmihalyi, 1975). Thus, it is particularly relevant to understand how the online consumer experience in social commerce can be improved by the state of flow. Moreover, the state of flow is undeniably connected to emotions, especially in the case of social commerce experiences, which are characterized fundamentally by socialization. On social commerce websites, it is presumed that one element of user-generated information is the sharing of emotions. Thus, given the need for research on the role of emotions (MSI, 2016–2018), concerns about flow will be addressed by studying positive emotions such as enjoyment and passion in the context of social commerce.

Social commerce websites challenge companies to pay attention to the cognitive and affective dimensions of the purchasing process, as users are influenced not only by the website but also by the affective experience they can have on it (Chen *et al.*, 2017; Li, 2017). One of the distinguishing features of social commerce websites is their ability to involve customers in the company, giving them active roles and optimizing their social experience by allowing them to generate and share information (Brodie, Ilic, Juric and Hollebeek, 2013). This highly interactive environment, shaped by social interactions, can boost passion, a primarily affective and extremely positive attitude that leads to emotional attachment and influences relevant behavioral factors (Swimberghe, Astakhova and Wooldridge, 2014; Albert, Merunka and Valette-Florence, 2013; Vallerand, 2003). In the social commerce context, we coin the term sPassion (social passion or passion felt in relation to social commerce websites) for a positive affective feeling created as a result of navigating, interacting and socializing with other users and with the website.

The intrinsic characteristics of social commerce tools enable two key elements of engagement (Brodie *et al.*, 2013): social interactions and information exchange (Zhang *et al.*, 2014). This combination makes people feel part of the company (Blasco-Arcas, Hernández-Ortega and Jiménez-Martínez, 2014), which generates more engagement than can be achieved with traditional e-commerce sites. The quality of a social commerce experience is what leads users to provide co-creation value and ultimately to reach a quality relationship (Hu, Dai and Salam, 2019). Therefore, to optimize consumer experience in social commerce contexts, it is important to pay attention to user participation and socialization, and it seems reasonable to consider the existence of utilitarian stimuli and hedonic stimuli that help to generate the optimal experiences that engage users. In fact, these hedonic or emotional stimuli are related directly to loyal behaviors, advocacy and evangelism; accordingly, the emotional aspect of consumer behavior has received significant attention (MacInnis and Folkes, 2017; MSI, 2016–2018; Wakefield and Wakefield, 2016).

Nevertheless, the rapid development of social commerce raises concerns about the credibility of information. Information provided by users has been considered more trustworthy than information shared by companies (Dabholkar and Sheng, 2012; Dellarocas, Zhang and Awad, 2007; Smith, Menon and Sivakumar, 2005). However, the ways in which users interact with technology vary with age, and generational cohorts

show different shopping behaviors, interests and attitudes (Bilgihan, 2016). Hence, the ways in which users process information (user-generated or company-generated) can affect trust in different ways.

Just as user behavior can vary depending on generational cohort, it can also be affected by cultural origin (Richard and Habibi, 2016; Schumann *et al.*, 2010; Luna, Peracchio and de Juan, 2002; Luna and Gupta, 2001). Market globalization and new technologies are constantly challenging online businesses to move toward a multicultural environment. This has awakened a special interest in the interaction between social commerce and users from different cultural backgrounds.

Taking into account the gaps in the literature of social commerce and the research priorities formulated by the MSI (2016–2018), the present dissertation is organized into four studies. Each study tackles one of four main research objectives focused on answering the unresolved questions discussed above to reach a better understanding of online consumer behavior.

- **Research objective 1:** *To investigate the customer engagement behavior literature in depth, analyzing the cognitive, affective and behavioral dimensions of the engagement generation process in social commerce and the role of emotions within that process.*

This research objective is addressed in Study 1, which proposes a model of the engagement generation process that analyzes passion as the cornerstone of user behavior in social commerce. Drawing on extant marketing research, the engagement generation process is studied in three stages: the cognitive stage (social presence and interactivity), the affective stage (enjoyment and sPassion) and the behavioral stage (the spread of sWOM) (Brodie *et al.*, 2013). The model hypothesizes the antecedents of sPassion and its effect on the engagement of users by fostering participation in social commerce contexts.

The data used for Study 1 were collected through an online survey conducted in Spain during February 2015. The sample consists of 473 users of social commerce websites, ranging in age from 16 to 80, who had recently made an online purchase. To

test our hypotheses, we use the statistical software packages SPSS 22 and EQS 6 (Bentler, 1995), a covariance-based structural equation modeling (SEM) program.

Study 1 is an extension of the work: Herrando, C., Jiménez-Martínez, J., and Martín-De Hoyos, M.J. (2017) “Passion at first sight: How to engage users in social commerce contexts”, *Electronic Commerce Research*, 17(4), 701-720.

Because of the intrinsic characteristics of social commerce websites, online customer experience can be affected by utilitarian, hedonic and social factors (Osatuyi and Qin, 2018; Farivar *et al.*, 2018). Social commerce is characterized by socialization during the exchange of purchase experiences; as a result, it is reasonable to suppose that experiences will also be surrounded by an exchange of emotions. Hence, after investigating the role of sPassion as an emotion experienced during the engagement generation process and as a booster of positive sWOM, we will analyze whether the experience of flow can mediate this relationship.

- **Research objective 2:** *To reach a wider understanding of optimal user experience in social commerce and its mediating effect between emotions and behavior.*
 - **Research objective 2a:** *To analyze the dimensionality, structure and measurement of the state of flow.*
 - **Research objective 2b:** *To test how websites can improve user experience to boost positive sWOM while avoiding negative sWOM.*

To tackle these two research objectives, we develop Study 2, which is split into two parts. To address research objective 2a, and following a thorough review of the literature, we first tested the measurement of flow, consisting of the variables concentration, enjoyment and temporal dissociation; second, we tested flow dimensionality, in terms of unidimensionality versus multidimensionality, using the rival models technique; finally, we analyzed flow structure as a second-order reflective construct in social commerce contexts. To address research objective 2b, we tested a model to analyze how to enhance user experience in ways that foster positive sWOM.

Because of their richness in terms of social interactions, social commerce websites entail a completely new scenario for sharing experiences and opinions. Users

can interact with the company and with other users; hence, it is important to study how social stimuli such as sPassion affect user experiences during the socialization inherent in social commerce. Drawing on the stimulus–organism–response framework (Mehrabian and Russell, 1974) and flow theory (Csikszentmihalyi, 1975), this study hypothesizes that social stimulus (sPassion) has a positive effect on the organism (state of flow), which leads to a positive user response via sWOM.

The data for Study 2 were collected through an online survey conducted between February and June 2015 and analyzed using SEM in SPSS version 22 and EQS 6. The sample consists of 771 users of social commerce websites, aged between 16 and 80, of whom 51% are men and 49% are women.

Study 2 is an extension of the work: Herrando, C., Jiménez-Martínez, J., and Martín-De Hoyos, M.J. (2018) “From sPassion to sWOM: The role of flow”, *Online Information Review*, 42(2), 191-204.

Studies 1 and 2 show companies the importance of emotions and optimal experiences in social commerce trade. Nevertheless, they also raise concerns about the ownership of control. We have seen that social commerce differs from e-commerce in terms of empowering users, which is a positive development for customers. However, when users gain control, companies lose it, and this can have a range of consequences for business management. On the one hand, companies have to learn how to manage social commerce websites and, in particular, user-generated information and the control it entails (Dost *et al.*, 2019). On the other hand, the findings of previous research cannot be generalized to social commerce in any straightforward way (Cheng *et al.*, 2019). Specifically, analysis of user online trust based on information offered on the website needs to acknowledge that social commerce depends on two types of content: user-generated information and company-generated information. Therefore, it is necessary to analyze how trust is generated in the specific context of social commerce.

- **Research objective 3:** *To investigate how user-generated versus company-generated information contributes to trust in the social commerce site, at the same time analyzing how user within the different generational cohorts behave (Generations X, Y and Z).*

To meet this research objective, we carry out Study 3, in which we analyze how the new socio-interactive and commercial paradigm offered by social commerce websites influences the generation of trust. With the advent of social commerce, users have gained control and companies have lost it, since social commerce websites are consumer-centered and socially oriented (Huang and Benyoucef, 2017). Likewise, the design of social commerce websites is primarily focused not on sales (as in traditional e-commerce) but on information exchange (Huang and Benyoucef, 2017; Zhang *et al.*, 2014). Therefore, one of the inherent cues of social commerce is user-generated content (Lin *et al.*, 2017), and when users build their trust in a social commerce website, they can rely on two sorts of content, user-generated and company-generated information.

Given the importance of information exchange, it is interesting to compare how user-generated and company-generated information transfers trust to social commerce users. Users show behavioral and attitudinal patterns that are similar to those of their age-group peers, so it is necessary to analyze the moderating effect of generational cohorts. Drawing on trust transfer theory (Stewart, 2003) and generational cohort theory (Inglehart, 1977), Study 3 analyzes the effects of user-generated and company-generated information in boosting trust among three different cohorts, Generations X, Y and Z.

Generation X refers to people born between 1960 and 1980, Generation Y to those born between 1981 and 1990 and Generation Z to those born between 1991 and 2000. On the basis of the intrinsic characteristics of each generation, this study hypothesizes that the younger the generation, the more trust in social commerce is transferred from trust in user-generated information; the older the generation, the more trust in social commerce is transferred from trust in company-generated information.

To test the proposed hypotheses and moderating effects, the data for Study 3 were analyzed using variance-based SEM with partial least squares in the statistical software package SmartPLS 3 (Ringle, Wende and Becker, 2015). The data were collected through an online survey. The sample consists of 715 users of social commerce websites, aged between 16 and 55, distributed across Generations X, Y and Z.

Study 3 is an extension of the work: Herrando, C., Jiménez-Martínez, J., and Martín-De Hoyos, M.J. (2019) “Tell me your age and I tell you what you trust: The

moderating effect of generations”, *Internet Research*, <https://doi.org/10.1108/IntR-03-2017-0135>.

In the light of the analysis of emotions and socialization in Studies 1 and 2 and the analysis of trust generation in Study 3, it is important for companies to understand the consequences of reaching an optimal experience in the context of social commerce. In an attempt to offer a panoramic view of user experience in social commerce, this dissertation reaches its conclusion with Study 4, an analysis of intentions to return, repurchase and spread sWOM.

- **Research objective 4:** *To investigate user experience across cultures, analyzing the effect of hedonic and utilitarian antecedents on optimal user experience and its consequences on user intention.*

To address this objective, we design Study 4 to analyze the effect of culture on user experience in social commerce. Within Hofstede’s cultural dimensions (Hofstede, 1980, 2011), Study 4 examines differences in consumer experience and behavior between Asia (Japan) and Europe (Spain). It analyzes the degree to which hedonic stimulus (sPassion) and utilitarian stimulus (usability) determine optimal user experience (flow) and the effect of flow on emotional loyalty (sWOM) and behavioral loyalty (intention to return and repurchase).

Several authors have highlighted the importance for users of a quality website design (Bleier *et al.*, 2019; Curty and Zhang, 2013; Hernández-Ortega, Jiménez-Martínez and Martín-De Hoyos, 2009). However, within the new social-interactive environments, in addition to providing a useful website design, it is advisable for websites to optimize customer experience in ways that address the emotional side of users (McKinsey, 2016). Once users reach a state of optimal experience, they are likely to show positive responses (Gao and Bai, 2014; Zhang *et al.*, 2014). Thus, taking into account the Hofstede cultural dimensions, this study analyzes the stimuli that enhance the flow experience and the loyalty response to this experience across cultures.

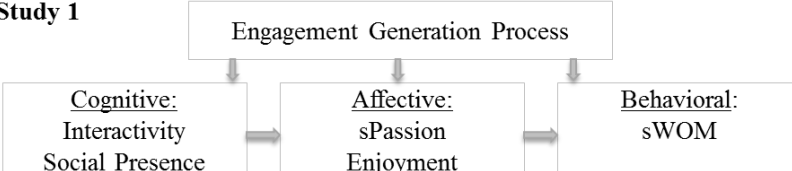
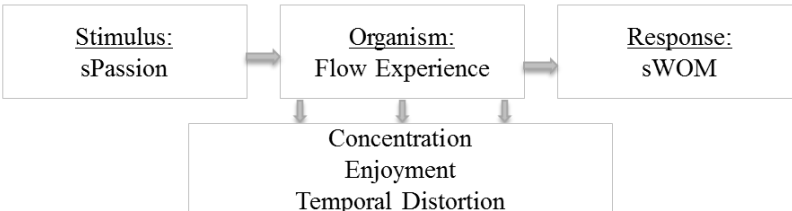
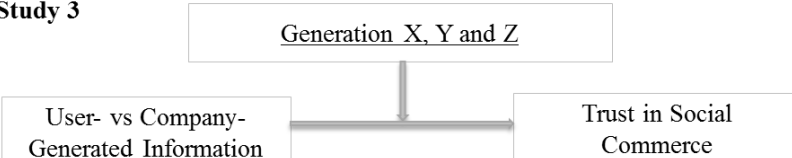
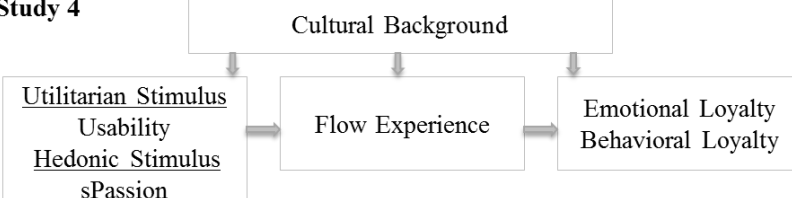
In order to test the measurement model, the structural model and the moderating effects, we used partial least squares SEM in SmartPLS 3 (Ringle *et al.*, 2015). Before conducting multigroup analysis to investigate the moderating effect of

culture, we tested the measurement invariance of composite models (Henseler, Ringle and Sarstedt, 2016).

The data were collected through an online survey translated into Spanish and Japanese, which was conducted during a research stay at Hosei University. The total sample consists of 590 responses, of which 396 were Spanish and 194 were Japanese, with respondents' ages ranging from 18 to 34. All respondents were online buyers who had recently bought on websites with social commerce characteristics.

Table 0.1 summarizes the main objective and the four specific research objectives of this doctoral dissertation, presenting the conceptual models of each study and relating them to the unresolved research priorities formulated by the MSI (2016–2018).

Table 0.1. Conceptual models

MSI 2016-2018 Research Priorities	Main Research Objective: To analyze how to optimize online customer experience in social commerce.	Conceptual Models
<p>> <i>What is the science of emotion in the digital, mobile, always on, always connected age?</i></p> <p>> <i>How does engaging in technology change consumers? How does it influence emotions, decision making, and behavior?</i></p>	<p>Research Objective 1: To investigate the customer engagement behavior literature in depth, analyzing the cognitive, affective and behavioral dimensions of the engagement generation process in social commerce and the role of emotions within that process.</p>	<p>Study 1</p>  <pre> graph TD A[Engagement Generation Process] --> B[Cognitive: Interactivity Social Presence] A --> C[Affective: sPassion Enjoyment] A --> D[Behavioral: sWOM] B --> C C --> D </pre>
<p>> <i>What is the role of emotions in experience? How do we design customer experiences that lead to maximal enjoyment, happiness and utility?</i></p> <p>> <i>How marketing can drive positive change in behavior: new approaches to help consumers make "good" decisions and "smarter choices"?</i></p>	<p>Research Objective 2: To reach a wider understanding of optimal user experience in social commerce and its mediating effect between emotions and behavior.</p> <p>> Research Objective 2a: To analyze the dimensionality, structure and measurement of the state of flow.</p> <p>> Research Objective 2b: To test how websites can improve user experience to boost positive sWOM while avoiding negative sWOM.</p>	<p>Study 2</p>  <pre> graph LR A[Stimulus: sPassion] --> B[Organism: Flow Experience] B --> C[Response: sWOM] D[Concentration Enjoyment Temporal Distortion] B --- D </pre>
<p>> <i>How do life stage differences, generational issues, and culture influence decision processes and path to purchase?</i></p>	<p>Research Objective 3: To investigate how user-generated versus company-generated information contributes to trust in the social commerce site, at the same time analyzing how user within the different generational cohorts behave (Generations X, Y and Z).</p>	<p>Study 3</p>  <pre> graph LR A[User- vs Company-Generated Information] --> C[Trust in Social Commerce] B[Generation X, Y and Z] --> C </pre>
<p>> <i>Given the extent to which customers can search for information on their own, do we need to change the way we market to and sell to knowledgeable customers?</i></p>	<p>Research Objective 4: To investigate user experience across cultures, analyzing the effect of hedonic and utilitarian antecedents on optimal user experience and its consequences on user intention.</p>	<p>Study 4</p>  <pre> graph LR A[Cultural Background] --> C[Flow Experience] B[Utilitarian Stimulus: Usability] --> C D[Hedonic Stimulus: sPassion] --> C C --> E[Emotional Loyalty] C --> F[Behavioral Loyalty] </pre>

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STUDY 1

Passion in social commerce

Study 1 is an extension of the work: Herrando, C., Jiménez-Martínez, J., and Martín-De Hoyos, M.J. (2017). Passion at first sight: how to engage users in social commerce contexts. *Electronic Commerce Research*, 17(4), 701-720.

1.1. Introduction

What is passion? Everybody has, at some time, experienced passion, whether for a summer love, a job, a football team, or even a favorite brand. From a marketing perspective, some authors relate passion to *brand love* (Batra, Ahuvia, and Bagozzi, 2012) and to *engagement* (Hollebeek, 2011; Vallerand *et al.*, 2003; Vivek, Beatty, and Morgan, 2012). In a qualitative study carried out by Hollebeek (2011), participants stated that their feeling of engagement on the Internet materialized as a sense of passion for the activity they were performing. Previous research demonstrates that if a company wants to succeed on the Internet, it should not only provide useful technology on its website, but also encourage engagement among its users (O'Brien and Toms, 2008; O'Brien and Toms, 2010). Could passion be a way to create this engagement in social commerce contexts?

Engagement is considered a key element in social commerce contexts (Shen, Li, Sun, Chen and Wang, 2019). Social commerce is characterized by the combination of social interactions and information exchange (Zhang, Lu, Gupta, and Zhao, 2014), two key elements of engagement (Brodie, Ilic, Juric, and Hollebeek, 2013). This combination makes the individual feel part of the company (Blasco-Arcas, Hernandez-Ortega, and Jimenez-Martinez, 2014), which generates more engagement than that achieved with traditional e-commerce sites. Some studies state that engagement is the result of a process that consists of three stages: cognitive, affective and behavioral (Brodie *et al.*, 2013; Groeger, Moroko, and Hollebeek, 2016; Hollebeek, 2013; Vivek *et al.*, 2012). It has been shown that the affective side is the cornerstone of the engagement process, both offline (Westbrook, 1987) and online (Hollebeek, 2013). This affective stage has been measured through attributes such as enjoyment (Calder, Malthouse, and Schaedel, 2009; Kim, Kim, and Wachter, 2013) and passion (Hollebeek, 2011). However, enjoyment by itself is a feeling that needs to be accompanied by a deeper experience in order to allow user engagement. Engaged users show emotional attachment, dedication and passion (Smith and Gallicano, 2015). Therefore, we propose that in social commerce contexts, passion is critical in the engagement-generation process.

The aim of this research is to conceptualize *passion* in social commerce contexts. To do so, we coin the term *sPassion*, referring to the passion that occurs on

these websites. We will study the role of sPassion in engaging users, and how it positively affects the participation of these users in the form of sWOM (social word of mouth). We propose a model to measure the perceptions of the individual in the three stages of the engagement process—cognitive, affective, and behavioral (Brodie, Hollebeek, Juric, and Ilic, 2011)—and the relationships among them. This model will explain to practitioners how increasing the sense of passion in potential users will be beneficial for the success of social commerce websites. The contribution of this investigation is to lay the foundations of engagement generation based on encouraging sPassion, which is a positive affective feeling that can enhance the spread of positive WOM.

In Section 1.2, we explain the concept of passion to define and contextualize its role in social commerce. Likewise, we review the literature on the engagement generation process to examine each of its three stages. In Section 1.3, we define our hypotheses, while Section 1.4 describes the methodology and the data analyzed. Section 1.5 presents the results. Finally, we conclude with the theoretical and business implications and limitations of our work, and future lines of research.

1.2. Theoretical background

1.2.1. Social commerce context

Social commerce brings together in a platform the trade functions of e-commerce and the socio-interactive functions of social media and web 2.0 (Wang and Herrando, 2019; Turban *et al.*, 2018; Huang and Benyoucef, 2017; Lu *et al.*, 2016; Liang and Turban, 2011). Therefore, although stemming from traditional e-commerce sites, social commerce differs on three main factors: business goals, customer connection and system interaction (Huang and Benyoucef, 2017, 2015, 2013). And with that, the online scenario has experienced several changes. Firstly, social commerce aims to boost both social interactions and commercial transactions (Huang and Benyoucef, 2017). In social commerce, online consumers are the central focus of the digital marketing strategy (Kannan and Li, 2017) and apart from establishing relationship with the customers, it is also the effort put into facilitating social relationships among customers (Li and Ku, 2018). This evolution has also moved the focus from sales and relationships to information exchange (Huang and Benyoucef, 2017), making possible

the exchange of personal experiences too (Chen et al, 2017). Hence, users have started to exchange utilitarian and hedonic opinions, making way to sharing emotions during the purchasing process (Osatuyi and Qin, 2018; Farivar *et al.*, 2018). The content of the social commerce platform is not only company-generated, but also user-generated (Herrando, Jiménez-Martínez and Martin-De Hoyos, 2019; Li and Ku, 2018), what also shifts the traditional control of the website from being exclusively on the company to be shared with users (Huang and Benyoucef, 2017). See the main differences between e-commerce and social commerce in Table 1.1.

Table 1.1 Differences between e-commerce and s-commerce

E-commerce	S-commerce
Relationship with the customers	Relationship with and among the customers
Company-generated information	Company and user-generated information
Company control	Users and social community control
Purchasing experience	Purchasing, social and interactive experience
Website design focuses on sells	Website design focuses on information exchange

Source: Own elaboration based on Huang and Benyoucef, 2017.

The vast majority of social commerce research distinguish between two types of platforms regarding commercial or social roots of the website (Wang and Herrando, 2019; Ko, 2018; Zhang *et al.*, 2019; Lin *et al.*, 2017; Zhang and Benyoucef, 2016; Ng, 2013). One type of social commerce stems from a combination of e-commerce websites which offer socio-interactive tools (such as Amazon, Booking or AliExpress); and the other type of social commerce is rooted in the opposite way, that is, it comes from social networks which enable commercial transactions (i.e. Facebook, Instagram, Fancy, etc.) (Ko, 2018; Yadav *et al.*, 2013). Therefore, while the first type focuses mainly on the commercial activity, the second type focuses mainly on social connections (Grange, Benbasat and Burton-Jones, 2019). This study is contextualized in social commerce websites coming up with commercial purposes, that is, those that add social interaction tools to e-commerce websites.

1.2.2. The concept of passion

Passion is an area that has attracted interest for many years. Even philosophers such as Descartes (1596–1650), Hegel (1770–1831) and Kant (1724–1804) studied the

emotions and consequences linked to passion. The term *passion* is often associated with love or sexual relationships. One of the most popular theories of passion, Sternberg's Triangular Theory of Love (1986; 1997), was developed based on this approach. The theory considers the different kinds of love as the fruit of three components: intimacy, passion and decision/commitment, which are separable but interactive. Passion can *fuel motivation* to engage in an activity, *enhance well-being* and *lead to greater positive affect* during task engagement (Vallerand *et al.*, 2003), but it may also have a *dark side*. In fact, the word *passion* comes from the Latin *passio*, or suffering. This is why Vallerand *et al.* (2003) distinguish between obsessive passion, when people lose control of the activity they are performing, and harmonious passion, which is related to positive states of mind and feelings such as *flow*, *enjoyment* and *engagement*, and where the individual can decide whether to engage in an activity and when.

In the marketing literature, passion is defined as “*a strong engagement in the passionate activity*” (Lavigne, Forest, and Crevier-Braud, 2012). In consumer research, use of the term derives from the fact that passionate consumers can love an object in the same way as one person can fall in love with another (Bauer, Heinrich, and Martin, 2007; Matzler, Pichler, and Hemetsberger, 2007; Shimp and Madden, 1988). From marketing perspectives, passion has been studied to explain customers' feelings toward a brand. This passion has been defined as “*a primarily affective, extremely positive attitude toward a specific brand that leads to emotional attachment and influences relevant behavioral factors*” (Bauer *et al.*, 2007). It has been said that passion is “*the core of all strong brand relationships*” (Fournier, 1998). In the process of customer brand engagement, several related concepts have been used to refer to passion for a brand, such as *passionate*, *mad for*, *obsessive*, *loving*, *adoring*, etc. (Hollebeek, 2011).

When it comes to purchasing and engaging online, as well as adoring a brand, users need to be passionate about the website in question, and its navigation. That is, if the website does not fulfill users' expectations, they may express disappointment and leave it. The real importance of passion in marketing strategies on the Internet lies in the fact that passionate consumers tend to share this excitement through positive WOM and act as brand evangelists (Albert, Merunka, and Valette-Florence, 2013; Bauer *et al.*, 2007; Matzler *et al.*, 2007; Swimberghe, Astakhova, and Wooldridge, 2014). Research on passion in e-commerce contexts is scarce, with the exception of investigations focused on positive WOM as an outcome of passion. However, these studies primarily

research the dual role of brand passion—that is, as harmonious and obsessive—disregarding the potential of passion as the main element in the engagement-generation process.

1.2.3. sPassion: Passion in social commerce contexts

On the Internet, the term *passion* has been used as a synonym of engagement (Hollebeek, 2011; Smith and Gallicano, 2015; Vivek *et al.*, 2012). However, passion is conceptually distinct from engagement. We can explain this using an example: when a national football team plays in the World Cup, people of that country—whether they are football fans or not—will often meet in a pub or at a friend’s house to watch the matches, enjoying both the game and the interaction and socialization with friends. When the team scores, a sense of passion is sparked in the audience. If the team wins in the quarterfinals and passes to the semifinals, this passion may turn into engagement, making it “impossible” not to watch the final, even for those who are not fervent fans of football. Therefore, in our study, the concept of engagement refers to an entire process, whose core is sPassion. sPassion appears when users enjoy, interact with, and perceive social presence during the activity they are performing online.

Passion can be contagious (Cardon, 2008). Hence, the social commerce context, where users are encouraged to share their experiences, participate in the virtual community and socialize (Zhang *et al.*, 2014), is an appropriate place to share and spread passion through positive WOM. Thanks to consumers’ experience of positive emotions on social commerce websites, the affective stage is closely related to eWOM (Groeger *et al.*, 2016; Li and Ke, 2014), which is how users communicate and interact. Therein lies the importance of studying the perception of passion in social commerce contexts, since the relationships established there are different from those of other kinds of exchanges. Hajli and Sims (2015), in their social commerce research, point out that social interactions are characterized by informational and emotional support on the website. That is, on these kinds of websites, users exchange functional information and share their experiences. Therefore, in social commerce, when they exchange information and socialize, users’ feelings play an important role because their positive or negative experiences may be reflected in their opinions and recommendations. Moreover, if users show enthusiasm and pleasure on social commerce websites, they will have a positive emotional experience and will pass on that passion by participating

in the website and helping other users. Consistent with investigations into *brand love* (Batra *et al.*, 2012) and *brand passion* (Pourazad and Pare, 2015; Swimberghe *et al.*, 2014), passion plays a major role in the spreading of positive WOM.

We define sPassion as a positive affective feeling that social commerce users experience as a result of enjoying navigation, and interacting and socializing with, users and the company, which leads to the individual being emotionally and commercially engaged with the social commerce website. sPassion leads to engagement because its capacity to create an emotional bond between the user and the website converts it into the cornerstone of the engagement-generation process in social commerce contexts. In online marketing, the difference between passion and sPassion is that while the former is linked to *being in love with* a brand or company (Batra *et al.*, 2012), the latter is related to the *passion* for the social commerce website and, therefore, to *participation* and *evangelism* in virtual communities. sPassion refers to the website itself, and not to the specific brand. Thus, social commerce websites are the focus of this study because they sell different brands using the same platform (e.g. Amazon, Aliexpress, etc.). Based on Brodie *et al.* (2013), we propose a model that considers the three stages of the engagement process—cognitive, affective and behavioral—and we consider sPassion as the central element of the process.

1.2.4. Cognitive antecedents of sPassion

The cognitive stage refers to the knowledge and experience users acquire during the social interactions and exchange of information typical of social commerce websites (Brodie *et al.*, 2013). In social commerce contexts, we assume that social presence and perceived interactivity are the cognitive antecedents of sPassion. Engagement, which involves cognitive and emotional immersion, is considered to be determined by information consumption, interest immersion, sense of presence, and social interaction (Smith and Gallicano, 2015). Following this argument, social-interactive engagement, which uses the Web as a medium, has also been linked to participation and socialization, since users can take advantage of the utilitarian experience gained through the advice and tips provided by the virtual community (Calder *et al.*, 2009). Recent studies suggest that social media engagement, which refers to engagement through social platforms for commercial purposes, is characterized by social interactions, content creation by engaged users and the use of social media as a

source of information (Panagiotopoulos, Shan, Barnett, Regan, and McConnon, 2015). Therefore, types of engagement that stem from social interactions are close to the engagement in social commerce contexts.

1.2.5. Affective antecedent of sPassion

The affective stage refers to the emotional side of the engagement-generation process, in which users feel emotional involvement with and affective commitment to the virtual community (Dholakia, Bagozzi, and Pearo, 2004). In online engagement, enjoyment (Calder *et al.*, 2009) and passion (Hollebeek, 2011; Vivek *et al.*, 2012) have been considered part of the affective stage. In relation to social commerce, we take both these variables into consideration because of the intrinsic characteristics of the context. The term *enjoyment* has been used by various authors to describe the state of flow, which is a state of optimal experience that is intrinsically rewarding and enjoyable (Koufaris, 2002, among others). For some authors (O'Brien and Toms, 2010), the connection between flow and engagement is very strong, although the former is a state of mind—and may therefore be temporary or even not always experienced when a website is visited—and the latter is a feeling, a process that is generated slowly and endures over time. From the perspective of an engaged user, a website is more attractive when it fosters interactivity and enjoyment among its users (Smith and Gallicano, 2015).

1.2.3. Consequence of sPassion

The behavioral stage refers to the changes experienced in consumer behavior due to the influence of the previous stages (Brodie *et al.*, 2013). It is believed that engaged users play a major role in making recommendations and referrals (Brodie *et al.*, 2011; Groeger *et al.*, 2016). Therefore, for social commerce, based on information exchange and social interactions, it is essential to encourage engagement. Passion influences participation in the form of positive WOM (Batra *et al.*, 2012; Pourazad and Pare, 2015), which is called sWOM in social commerce contexts (Hajli, Lin, Featherman, and Wang, 2014). Groeger *et al.* (2016) focus their investigation on the behavioral stage, and on non-paying-consumer engagement behaviors, by studying how engaged users help other customers through WOM, product feedback, recommendations and user-generated content.

1.3. Development of hypotheses

1.3.1. Social presence

The perception of interaction with another human being in online environments has been called social presence, which is defined as the extent to which the feeling of human contact is perceived as similar to that in social relationships in offline environments (Gefen and Straub, 2000). In offline environments, it has been proven that social support offered by shopping companions helps improving customers' experience by reducing stress (Lucia-Palacios, Pérez-López and Polo-Redondo, 2018). Sociability and human contact are absent in e-commerce, which is why websites that increase perceived social presence might encourage positive attitudes towards Internet shopping (Hassanein and Head, 2007). This socialization or social presence can influence users' attitude towards the website through their involvement, committed behavior, co-presence and affective or cognitive social presence (Cui, Wang, and Xu, 2010). According to Kumar and Benbasat (2006), recommendations and reviews that can be found on social commerce websites have both a transactional function—encouraging the individual to make a purchase and, thus, stimulating the utilitarian aspects of the process—and a relational function, through which social presence is increased. Smith and Gallicano (2015) consider sense of presence as a variable of online engagement, and define engagement as a state of mind characterized by passion, dedication and emotional attachment, where interactivity per se is necessary but not sufficient to engage users. Thus, we consider social presence to be an antecedent of sPassion:

H1a: Social presence has a positive effect on users' sPassion.

1.3.2. Interactivity

The concept of interactivity has been characterized as communication with a simultaneous and bidirectional flow of information, where the parties exercise active control over the navigation (Liu and Shrum, 2002; Liu, 2003; Rafaeli, 1988; Robu, 2012). Individuals' socialization may lead to higher levels of involvement (Kim, 2011), and interactivity can influence user engagement (Rafaeli and Sudweeks, 1997). Interactivity has been used in the study of customer engagement (Sawhney, Verona, and Prandelli, 2005) and, through interactivity on websites, users can evolve from being passive to active and interactive consumers (Wu, 2005). Moreover, interactivity has been used as an antecedent associated with different sensations; for example, Novak *et*

al. (2000) and Huang (2003), among others, show how interactivity helps users to reach the state of flow. Flow and engagement are closely related because they are characterized by users' absorption, enjoyment and positive attitude, and users experience passion for what they are doing. According to Mollen and Wilson (2010), the cognitive stage consists of perceived interactivity because, building on this interaction, in the case of online interactivity, users begin to create their cognitive experience on a website. In an investigation into entrepreneurial passion, Cardon *et al.* (2013) consider interaction necessary for experiencing passion. Thus, we hypothesize that interactivity acts as an antecedent of sPassion; that is, of the passion that the user experiences in social commerce contexts:

H1b: Perceived interactivity has a positive effect on users' sPassion.

1.3.3. Enjoyment

The affective stage focuses on the emotions that arise from interactions and socialization on the Web. Enjoyment is one of the feelings that must be experienced in the engagement-generation process because it is necessary in order to experience a positive feeling that engages users (Kim *et al.*, 2013; Santos and Cardon, 2018). Vivek *et al.* (2012), in their research about online engagement, consider entertainment and passion within the affective stage, and Cardon and Kirk (2015) enjoyment is a key dimension of passion. An experiential consumption that implies fun, excitement and pleasure directly affects brand passion (Bauer *et al.*, 2007). In the case of students' engagement, Case (2007) considers that in order to become passionate about an activity, individuals first need to experience enjoyment, which is what generates engagement. Passion and enjoyment could be linked; however, we consider that when an activity ends, enjoyment also finishes, while passion remains (although how long it persists may vary). Based on the above discussion, we hypothesize that enjoyment is an affective antecedent of sPassion.

H2: Enjoyment has a positive effect on users' sPassion.

1.3.4. The spread of positive sWOM

Several authors define social commerce as a combination of e-commerce, social media and Web 2.0, where users can participate and interact with the virtual community by spreading WOM (Li and Ke, 2014). In fact, WOM is so important in

social commerce that the term describing it has evolved from eWOM to sWOM (Hajli *et al.*, 2014). The difference between eWOM and sWOM lies in the fact that eWOM refers only to the WOM carried out on the Internet through e-mails or private messages while sWOM includes not only private communication tools, but also users' active and public participation on social commerce platforms. For instance, sWOM can refer to public peer recommendations or posts on a discussion board. In our study, we take into account the sWOM generated on social commerce websites—that is, websites that sell products online and contain social commerce features such as recommendation systems, referrals, ratings, discussion forums, etc. Examples of sWOM can be seen on social commerce websites such as Amazon, Booking and Aliexpress.

Theory states that WOM is a source of information to help other consumers (Engel, Kegerreis, and Blackwell, 1969), while sWOM refers to the online exchange of information or experiences to help other users (Kim and Park, 2013). sWOM can be classified as either active or passive. When users provide their experiences and suggestions, rate products or make recommendations, they are spreading active sWOM. On the other hand, drawing on observational learning theory (Bandura and McClelland, 1977; Bikhchandani, Hirshleifer, and Welch, 1998; Bikhchandani, Hirshleifer, and Welch, 2008), passive sWOM, refers to the tendency to observe and learn through the sWOM shared by other users (Libai *et al.*, 2010). According to an international report by Total Retail published in February 2016 (PwC, 2016), 45% of consumers were influenced by reading reviews, comments and feedback and 22% by writing reviews, comments and feedback.

Nonetheless, it seems that there are reasons why users spread WOM, whether in e-commerce or social commerce. There are both positive and negative reasons for sharing opinions; thus, it follows that WOM can be positive or negative (Hennig-Thurau, Gwinner, Walsh, and Gremler, 2004; King, Racherla, and Bush, 2014). Moreover, several factors can motivate an individual to spread WOM. For instance, depending on the users' emotional state before sharing their opinions and on the tools available on the social commerce website that allow socialization and interaction, the WOM (eWOM or sWOM) may be positive or negative. The previous stages of the engagement-generation process have a great deal of importance for the outcome thereof.

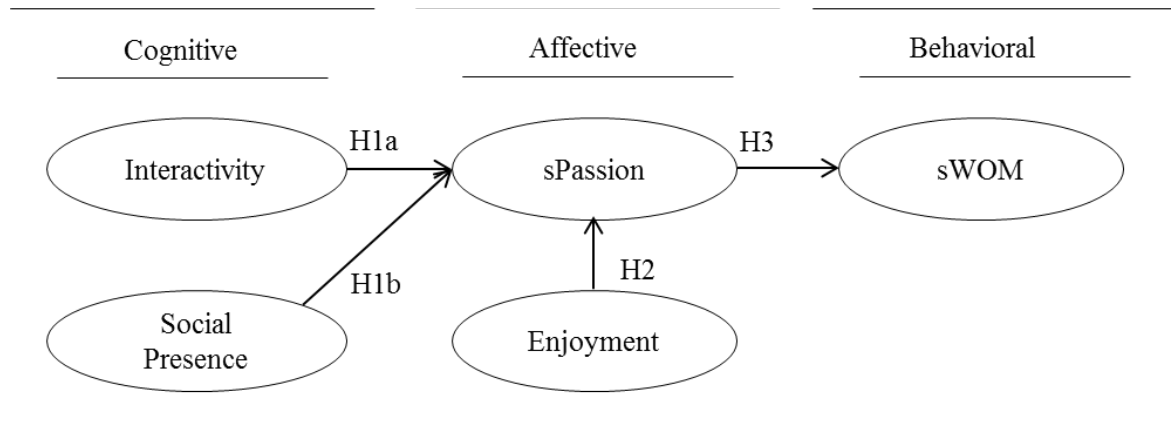
In offline environments, the affective response has a positive effect on WOM (Westbrook, 1987), whereas in online environments engaged users may increase the

spread of positive WOM (Vivek *et al.*, 2012). The behavioral stage of the engagement process has been directly related to collaborative behaviors such as WOM, recommendations and user-generated content (Groeger *et al.*, 2016). Smith and Gallicano (2015) affirm that “*becoming engaged involves making assessments about personal relativity of content for the purpose of consuming, linking and sharing the content*”. Consistent with the idea that engagement increases participation, passion has been considered the most important dimension of *brand love*, affecting loyalty, WOM and resistance to negative information (Batra *et al.*, 2012). Recent studies show that positive WOM and brand evangelism are outcomes of brand passion (Albert *et al.*, 2013; Bauer *et al.*, 2007; Matzler *et al.*, 2007; Pourazad and Pare, 2015; Swimberghe *et al.*, 2014). Therefore, we expect that, in social commerce, sPassion will positively affect users’ participation in the form of spreading positive sWOM:

H3: User perception of sPassion has a positive effect on positive sWOM.

The model proposes that sPassion is the cornerstone of the engagement-generation process, where social presence and perceived interactivity are cognitive antecedents, enjoyment is an affective antecedent and sWOM is the outcome (Figure 1.1).

Figure 1.1. Research model: engagement generation process



1.4. Methodology

1.4.1. Data collection

The data used for the analysis were collected in Spain during February 2015 through an online survey administered by a market research agency. The sample

consists of 473 users of social commerce websites, of which 59% are male and 41% female, with ages ranging from 16 to 80, similar to the Spanish users' profile according to the annual report of the Telecommunications and Information Society Spanish Watch (ONTSI, 2014) (see Table 1.2, the first column refers to the distribution of online consumers according to the Telecommunications and Information Society Spanish Watch; while the second column shows the distribution of our sample). The respondents were all experienced online consumers.

Table 1.2. Data representation

Online consumer age percentage according to ONSI:		Data collected
15-24:	15%	15%
25-34:	27%	32%
35-49:	36%	33%
50-64:	17%	18%
>65:	5%	3%
Total		100%
Online consumer gender percentage according to ONSI		
Female:	45%	41%
Male:	55%	59%

At the beginning of the questionnaire, after being given an explanation of the concept of social commerce, participants were asked whether they had recently purchased using a website with the characteristics of a social commerce platform. If they answered yes, they carried on answering the survey and were asked to name the social commerce website from which they had purchased. Among their answers were Amazon, Aliexpress and Booking. Throughout the questionnaire, the respondents were continuously asked to recall their experience on the website they had chosen.

In order to ensure content validity, we thoroughly reviewed the literature with respect to the variables included in our model, adapting them to the social commerce context. The survey was checked by several experts. The cognitive stage was measured through two factors: social presence and interactivity. Social presence was adapted from

the scales of Gefen and Straub (2003), Shen (2012) and Hassanein and Head (2007), and comprises three items. Interactivity was adapted from the scales of Song and Zinnkhan (2008), McMillan and Hwang (2002) and Liu (2003), and is composed of three items. The affective stage consists of enjoyment, using the scales of Koufaris (2002) and Kim and Han (2014), with three items, and the concept of sPassion, which was created from the scale of Baldus *et al.* (2015), consists of six items. The latter paper developed a scale to measure *online brand community engagement*; however, instead of using all of its factors, we only took those related to sPassion (*brand passion* and *helping*). Finally, the behavioral stage consists of the factor sWOM, created from the scale proposed by Liang *et al.* (2011) with four items (see Table 1.A in the appendix). All of the survey variables were measured on a seven-point Likert scale, with the lowest score being 1, *strongly disagree*, and the highest 7, *strongly agree*.

1.4.2. Measurement model validation

To ensure the dimensionality, reliability and validity of the scales, we conducted an exploratory factor analysis and a confirmatory factor analysis using the statistical software SPSS version 22 and EQS 6. As shown in Table 1.3, the Cronbach's alpha was higher than the recommended value of 0.70 (Nunnally, 1978), and the item-total correlation was at least 0.30 (Nurosis, 1993).

The next step was to conduct an exploratory factor analysis to assess the degree of unidimensionality of the proposed scales using the Principal Axis Factoring method and varimax rotation as developed by Kaiser (Hair, Anderson, Tatham, and Black, 1999; Kaiser, 1970; Kaiser, 1974), where the Kaiser–Meyer–Olkin values were all greater than the threshold of 0.70 and Bartlett's sphericity tests were significant. The data also showed that the factor loadings were greater than the required minimum of 0.50 (Hair *et al.*, 1999) and the explained variances for each of the constructs were at least 70%.

We tested the normality of the variables through the skewness and kurtosis values, which were greater than 2.52 and 1.96 (Hair, Wiliam, Barry, and Rolph, 2010), the K^2 test (combining the skewness and kurtosis tests), and the significance of the Kolmogorov–Smirnov–Lilliefors and Shapiro–Wilk statistics, so the distribution of our data did not fulfill the hypothesis of normality. Because of this, we used the robust maximum-likelihood estimation method (Bentler, 1995).

Finally, we conducted a confirmatory factor analysis following the robust method. The results showed that the model fitted the data well and that all estimated coefficients were significant, so we did not have to remove any items. The factor loadings were greater than the accepted value of 0.50 and the recommended value of 0.70. We also calculated the composite reliability index (Jöreskog, 1971), which was greater than 0.70, and the extracted variance or average variance extracted (AVE), which showed consistency with values higher than 0.50 (Fornell and Larcker, 1981). We can conclude that the scales met the requirements of reliability. The results of these analyses are shown in Table 1.3.

Scale validity was confirmed through the analysis of convergent validity and discriminant validity. Convergent validity was tested by checking the significance (Hildebrandt, 1984) and the value of each item (which had to exceed 0.5 points to confirm validity). Discriminant validity guarantees that the scales represent substantially different concepts. In our analysis, we used the AVE to compare, in a symmetrical matrix, whether the AVE on the diagonal was larger than its corresponding squared correlation coefficients in its rows and columns, which would show discriminant validity (Fornell and Larcker, 1981; Hair *et al.*, 1999) (see Table 1.4).

Table 1.3. Measurement model results

	Item	Cronbach's α	CR (composite reliability)	AVE	% Explained variance	Kaiser- Meyer- Olkin	t- value*	R-Sq	λ (factor loadings)
Social presence	SP1						22.584*	0.774	0.880
	SP2	0.925	0.924	0.803	86.89	0.764	24.952*	0.810	0.900
	SP3						25.938*	0.824	0.908
Interactivity	INT1						15.319*	0.584	0.764
	INT2	0.829	0.831	0.621	74.53	0.713	16.790*	0.681	0.825
	INT3						14.991*	0.599	0.774
Enjoyment	ENJ1						14.007*	0.582	0.763
	ENJ2	0.877	0.882	0.715	80.36	0.717	20.457*	0.743	0.862
	ENJ3						19.186*	0.819	0.905
sPassion	sPASS1						22.108*	0.679	0.824
	sPASS2						18.470*	0.588	0.767
	sPASS3	0.924	0.924	0.671	72.50	0.874	24.166*	0.707	0.841
	sPASS4						24.055*	0.694	0.833
	sPASS5						21.761*	0.663	0.814
	sPASS6						21.938*	0.692	0.832
Social WOM	sWOM1						21.885*	0.686	0.828
	sWOM2						18.310*	0.632	0.795
	sWOM3	0.858	0.860	0.606	70.36	0.751	16.561*	0.581	0.762
	sWOM4						16.438*	0.524	0.724

Satorra-Bentler Scaled Chi-Sq = 457.408, 142 d.f., p-value = 0.001; Bentler-Bonett Normed Fit Index (NFI) = 0.90; Bentler-Bonett Nonnormed Fit Index (NNFI) = 0.92; Comparative Fit Index (CFI) = 0.93; Bollen (IFI) Fit Index = 0.93; Root Mean-Sq. Error of Approximation (RMSEA) = 0.06; Chi-Sq/d.f. = 3.22. * Significant coefficients at 0.01 level.

Table 1.4. Discriminant validity

	SP	INT	ENJ	sPASS	sWOM
SP	0.803				
INT	0.462	0.621			
ENJ	0.213	0.242	0.715		
sPASS	0.356	0.299	0.387	0.671	
sWOM	0.201	0.229	0.310	0.448	0.606

1.5. Results

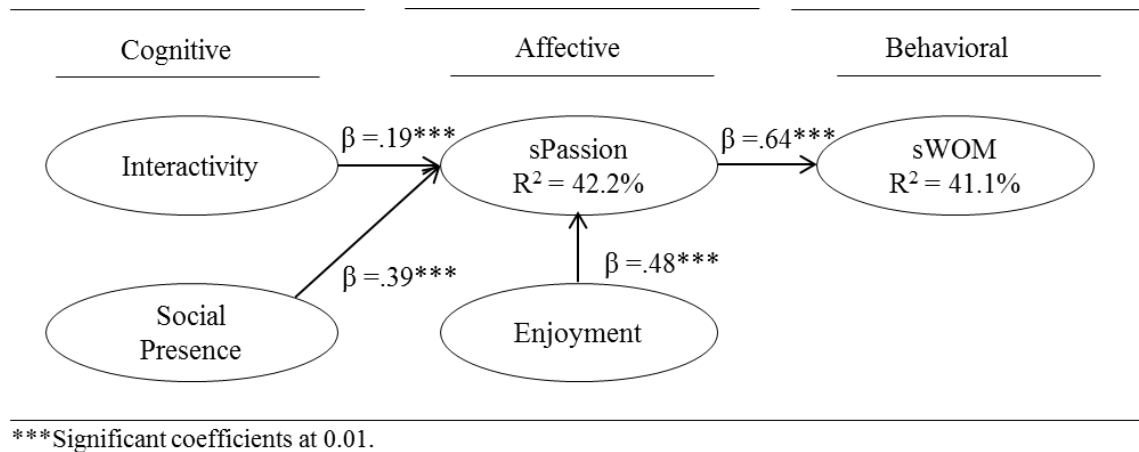
1.5.1. Structural model examination

After carrying out the exploratory and confirmatory analyses, the structural model was examined to test the hypotheses. The model fit indexes show acceptable values (Satorra-Bentler scaled chi-square = 691.390, 148 d.f. $p < 0.01$; Bentler–Bonett normed fit index (NFI) = 0.85; Bentler–Bonett non-normed fit index (NNFI) = 0.86; comparative fit index (CFI) = 0.88; Bollen fit index (IFI) = 0.88; root mean-square error of approximation (RMSEA) = 0.088; chi-square/d.f. = 4.67). However, it should be noted that the normed chi-square (chi-square/d.f.) is above the recommended cut-off of 3 (Kline, 2011) because of the large size of the sample and not because of internal consistency problems, since all factor loadings are statistically significant and above 0.50 (J. Hair *et al.*, 1999) and the goodness-of-fit indexes are acceptable. None of the hypotheses had to be rejected.

The findings show that, firstly, social presence ($\beta = 0.39$, $t = 7.775$, $p < 0.01$) and perceived interactivity ($\beta = 0.19$, $t = 3.404$, $p < 0.01$) on social commerce websites positively influence sPassion. Therefore, we can confirm that the cognitive stage consists of the knowledge acquired from the experience when perceiving social presence and interactivity on social commerce websites, thereby validating that the cognitive-stage components are antecedents of the affective stage. Secondly, we found support for the idea that enjoyment ($\beta = 0.48$, $t = 9.347$, $p < 0.01$) acts as an antecedent of sPassion in the affective stage, since enjoyment and sPassion are both positive emotional states and the user needs to enjoy to be able to feel passion in social commerce. Thirdly, the first two stages of the process have a positive effect on user

behavior, so sPassion has a positive effect on sWOM ($\beta = 0.64$, $t = 10.705$, $p < 0.01$). In other words, if users are passionate, they are more likely to spread sWOM. The analysis allows us to explain 41.1% of the sWOM variance (see Figure 1.2).

Figure 1.2. Structural equation model: engagement generation process



The aim of this study was to conceptualize passion in social commerce contexts, referred to here as sPassion. On the basis of the literature review and the empirical results, we define the concept of sPassion as the extent to which social commerce users experience a positive affective feeling as a result of enjoying navigation, and interacting and socializing with users and with the company. As all model paths were confirmed, our empirical results suggest that, as Brodie *et al.* (2013) proposed, the engagement-generation process has three stages. Firstly, in the cognitive stage, social presence and perceived interactivity generate a higher level of sPassion, which leads users to participate in the virtual community. The findings show that interactivity has a positive effect on user engagement, which supports Cardon *et al.* (2013), and that socialization entails higher levels of involvement (Kim, 2011). Secondly, the affective stage, besides being influenced by the cognitive stage, depends on the positive influence of enjoyment on sPassion. Finally, the cognitive and affective stages lead us to the behavioral stage. This last stage completes the engagement-generation process and, as a result, user behavior in social commerce is positively affected by the earlier stages of the process. That is, the cognitive experience and

emotional feelings derived from the process stimulate users' sWOM. Consistent with previous studies (Albert *et al.*, 2013; Batra *et al.*, 2012; Smith and Gallicano, 2015; Swimberghe *et al.*, 2014), the results indicate that sPassion positively affects users' participation in the form of spreading sWOM. Therefore, sPassion can be considered a cornerstone of generating engagement in social commerce.

1.6. Conclusions and discussion

The objective of this study was to analyze the concept of sPassion within the engagement-generation process so as to study its role as a booster of user participation in social commerce contexts, leading users to be engaged. Based on the proposal of Brodie *et al.* (2013), the originality of our research is that we propose sPassion as the cornerstone of the engagement-generation process, considering it as the positive affective feeling that individuals experience while using social commerce websites. As a result of interacting and socializing with other users and with the company, they become emotionally and commercially engaged with the social commerce website. The empirical findings allow us to conclude that in order to experience the feeling of engagement, the user must first gain experience and knowledge from interaction and socialization on social commerce websites and enjoy the experience, thus experiencing the affective component alongside a sense of passion. As a result of this, consumers' behavior leads to an increase in their spread of sWOM.

The results of our study allow us to draw the following conclusions. Firstly, we have shown that a cognitive experience on social commerce websites positively influences users' emotional experience. The significance of social commerce websites, where one can give an opinion, advise others, ask questions on a forum and share experiences, is subject to the tools available for enhancing interactivity and socialization on the website. That is, the users' perception of interactivity depends heavily on interactions, but also on the communication options available on the website. The chance to interact on a website is not, in itself, what drives the formulation of sPassion; the user must also perceive interactivity and socialization, as well as experiencing enjoyment. The human contact experienced on a website when social presence is perceived has positive effects on users. If users imagine themselves surrounded by people instead of computers, they feel closer to an offline experience and, therefore,

show affections similar to those they feel in real life. We have also shown that enjoyment in social commerce contexts boosts users' sPassion. Although some research refers to these feelings with respect to online contexts, passion has not been studied quantitatively to date as a variable in social commerce environments.

When users experience sPassion, their behavior is positively affected, supporting the idea put forth by Brodie *et al.* (2013) that it is in the last stage of the engagement-generation process that user behavior is modified. Once users have acquired knowledge from their experience on social commerce websites and feel emotionally connected to it, they will transform their behavior in accordance with the feelings they have experienced. They will therefore be more willing to spread sWOM because they want to share their excitement and tell others their personal opinions. Because sPassion is defined as a positive affective feeling, users who experience this sense of passion will report a positive experience. Thus, companies that are concerned about the valence of the WOM on their social commerce websites—that is, those whose marketing efforts are focused on fostering positive comments, generating high ratings, etc.—can find, in sPassion, an efficient way of affecting users so that they share their positive experiences and opinions.

Finally, consistent with the idea that passion can be contagious (Cardon, 2008), the engagement-generation process seems to be a living one because the model involves continuous feedback. Specifically, the behavior of users who have been through the whole process will help others through comments, and improve others' perceptions of each step by increasing the engagement with the company. In other words, through positive WOM, users may spread their passion and influence other users' behavior.

1.6. Implications for business and academia

This study opens new horizons for both marketers and researchers. It has implications for business because knowing how sPassion is formed and what factors are key to its creation will enable companies to understand the necessary steps to enhance users' participation in social commerce contexts. Once users are engaged they act autonomously as brand promoters, commenting on and sharing their purchase experience with the virtual community. In addition, given that sPassion and enjoyment are related to positive feelings, it is to be expected that these comments will have

positive connotations. In this way, companies can make the most of the information and experiences shared by users because it is well known that other users consider this information as more trustworthy compared to that issued by the company.

Social commerce cues are very important for generating engagement. The relationships that are established on these websites have an affective component that makes them optimal platforms on which to engage users. Therefore, social commerce websites should be designed to encourage interaction between users, to share information and to boost participation since, in this type of online commerce, it is users who form the virtual community. The sense of human contact and interactivity facilitate the integration of users into the website, and as a consequence the possibility of feeling passion increases. However, in addition to the tools that facilitate interpersonal relationships on the Web, companies should encourage enjoyment.

In order to create engagement on social commerce websites, companies' actions should be twofold. Firstly, they should create an interactive atmosphere in which users are seen as humans, not as machines, thereby promoting enjoyment and passion. Secondly, although the term *passion* has been used as a dimension of *brand love* (Batra *et al.*, 2012), in the *brand passion dualistic approach* (Vallerand *et al.*, 2003), and to describe the concept of *engagement* (Hollebeek, 2011; Smith and Gallicano, 2015; Vivek *et al.*, 2012), the introduction of the concept of sPassion may have theoretical implications, thereby opening a new line of research on passion in marketing. Our study can help companies to create an affective feeling that has positive effects on users' participation. Furthermore, in addition to helping to develop the engagement concept, we hope that this study will contribute to the research on WOM valence, since sPassion is directly associated with positive sWOM.

1.7. Limitations and future lines of research

This study is not without limitations. Firstly, the sample of the study was drawn from a single country, so future research should collect data from other countries in order to carry out comparative analyses, considering ethnicity as a moderator. The Internet has no borders, and users of a website may come from different countries, with different languages, different cultures and different perceptions of the same social commerce website. Thus, as, to a greater or lesser extent, all websites work in the

international market and are visible globally, it would be interesting to conduct a cross-cultural study to examine whether there are differences in passion and in the way users become engaged. Secondly, we did not test which factors may influence enjoyment. Therefore, as a future line of research, we propose widening the model in order to analyze which components related to social commerce website design create or positively affect user enjoyment. It would also be interesting to study how the components of social commerce (Hajli, 2015) (recommendations and referrals, forums and communities, and ratings and reviews) influence the spread of sWOM, the perception of interactivity and social presence, and how website components or tools can contribute to generating a living process in which newcomers create their cognitive experience as a result of sWOM. Moreover, it would be interesting for future research to discriminate between willingness to spread and receive sWOM, considering the active or passive role of users when interacting with online content.

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APPENDIX A**Table 1.A. Scale**

Item	Scales
<i>Social Presence</i> - Adapted from Gefen & Straub (2003); Hassanein & Head (2007):	
SP1	There is a sense of human contact on this social commerce website
SP2	There is a sense of sociability on this social commerce website
SP3	There is a sense of human warmth on this social commerce website
<i>Interactivity</i> - Adapted from Song & Zinnkhan (2008); McMillan & Hwang (2002)	
INT1	This social commerce website makes me feel it wants to listen to its users
INT2	Getting information from this social commerce website is very fast
INT3	When I clicked on the links, I felt I was getting instantaneous information
<i>Enjoyment</i> - Adapted from Koufaris (2002); Kim & Han (2014):	
ENJ1	I found my visit interesting
ENJ2	I found my visit enjoyable
ENJ3	I found my visit fun
<i>sPassion</i> - Developed from Baldus <i>et al.</i> (2015):	
sPASS1	I am motivated to participate on this social commerce website because I am passionate about it
sPASS2	I participate on this social commerce website because I care about it
sPASS3	My passion for this social commerce website's products makes me want to participate in its community
sPASS4	I like participating on this social commerce website because I can use my experience to help other people
sPASS5	I really like helping other users with their questions
sPASS6	I feel good when I can help answer other users' questions
<i>Social Word of Mouth</i> - Adapted from Liang <i>et al.</i> (2011):	
sWOM1	I have provided my experiences and suggestions when other users need advice on buying something
sWOM2	I have recommended a product that is worth buying
sWOM3	I have read other users' recommendations to see their suggestions before I go shopping
sWOM4	I have bought the products recommended by others

STUDY 2

The optimal experience in social commerce

Study 2 is an extension of the work: Herrando, C., Jiménez-Martínez, J., and Martín-De Hoyos, M.J. (2018). From sPassion to sWOM: The role of flow. *Online Information Review*, 42(2), 191-204.

2.1. Introduction

Social commerce appears as a consequence of the evolution of e-commerce combined with the Web 2.0 features on the websites (Zhang and Benyoucef, 2016), making possible users' online participation (Huang and Benyoucef, 2013; Wang and Herrando, 2019). Different from e-commerce, social commerce involves customers within the firm, gives them active roles and optimizes their social experience because it allows users to generate and share information (Brodie *et al.*, 2013). Nevertheless, social commerce allows users to share both positive and negative social word of mouth (sWOM); hence, companies are on a constant search to identify how to encourage positive, and avoid negative, sWOM. It is assumed that if users have positive experiences on a website, their attitude will be positive, making it more likely that they will spread the word in a positive way, and thereby acting as website evangelists. This highly interactive environment shaped by social interactions can contribute to boosting social passion (sPassion); that is, to creating a positive affective feeling as a result of navigating, interacting with, and socializing with users and the website (Herrando *et al.*, 2017). Likewise, social commerce websites allow users to enjoy, concentrate, and lose track of time when surfing and interacting with other users, and ultimately to experience a state of flow (Gao and Bai, 2014; Zhang *et al.*, 2014). Some authors have studied the positive relationship between passion and flow (Carpentier, *et al.*, 2012; Lavigne, Forest, and Crevier-Braud, 2012; Vallerand *et al.*, 2003); however, there are no studies focusing on how this relationship could increase positive sWOM.

The research question in this paper is *How can websites improve users' experience to boost positive, while avoiding negative, sWOM?* Companies can make a great deal of effort to offer efficient, useful, and interactive websites; however, social interactions are not completely in their hands. That is, it is not as easy as having (or not) a specific feature on the website, as a positive atmosphere must also be generated. The importance of sPassion and state of flow in the context of this investigation lies in the fact that positive experiences and states of mind are likely to result in a positive response (Albert *et al.*, 2013; Bauer *et al.*, 2007; Matzler *et al.*, 2007; Swimberghe *et al.*, 2014). Therefore, even when navigating a well-designed website, users can also be affected by social stimuli. When users generate content about products they are giving information about the products themselves, but also about their opinions and experiences. Passionate users tend to express their enthusiasm and can infect others with

their excitement, and this stimulus could be an antecedent of the state of flow. Hence, the contribution of the current work is to bridge the gap in terms of encouraging sWOM from the perspective of social interactions.

Given that social commerce takes place in an environment characterized by social interactions and exchange of experiences, it is suitable to study sWOM with reference to positive states of mind, such as sPassion and flow, which can be generated based on social relationships and not only from websites cues. This paper aims to study how positive sWOM responses can be increased. The stimulus–organism–response (SOR) framework is used to help explain how users share positive sWOM as a response to the effect on the organism of a social stimulus. Drawing on the SOR framework (Donovan and Rossiter, 1982; Eroglu *et al.*, 2001; Eroglu *et al.*, 2003; Mehrabian and Russell, 1974) and flow theory (Csikszentmihalyi, 1975), this study analyzes the role of sPassion as the social *stimulus* and its positive effect on the state of flow, the *organism*, achieving as a *response* an increase in positive sWOM. As noted above, the sPassion–flow relationship has been studied by several authors to date; however, to the best of the current authors’ knowledge, this relationship has not been analyzed in terms of the social stimulus in the SOR framework to study how to boost users’ participation from experiencing a state of flow. Likewise, the SOR framework is also focused on the individual.

Section 2.2 reviews literature background of flow and explains the SOR framework to contextualize its role in social commerce in terms of boosting positive sWOM thorough the social stimulus of sPassion. Section 2.3 presents the literature on sPassion, the state of flow components, and sWOM, and the relationships between the concepts hypothesized. Section 2.4 reviews the different methodological techniques used to analyze flow and describes the methodology and procedures carried out in the present research. Due to the lack of consensus about the dimensionality of the concept of flow and the variables used for its measurement (Ghani and Deshpande, 1994; Hoffman and Novak, 1996), Section 2.5 first empirically tests the flow concept and then analyzes the SOR model and presents the results. Finally, findings are discussed, and the paper concludes with the theoretical and business implications of the work, future lines of research, and limitations.

2.2. Theoretical background

2.2.1. Flow theory: *The state of optimal experience*

Flow is a state that can occur anytime and anywhere and is defined as “*the holistic sensation that people feel when they act with total involvement*” (Csikszentmihalyi, 1975). It is reached when the individual is engaged in an activity with “*total implication, concentration and enjoyment, and experiences an intrinsic interest and a temporal distortion*” (Chen *et al.*, 2000). Csikszentmihalyi (1988) describe flow state through nine characteristics or components: clear goals, quick and unambiguous feedback, skills/challenges balance, merging of action and awareness, perceived control, concentration, loss of self-consciousness, time distortion and autotelic experience. Consequently, Chen *et al.* (1999) started to consider that this components should be classified in three stages as antecedents, experience and consequence: antecedents (clear goals, quick and unambiguous feedback, skills/challenges balance), experience (merging of action and awareness, perceived control, concentration) and consequences (loss of self-consciousness, time distortion, autotelic experience). Later on, other components, directly related to flow theory, were added, including telepresence, stemming from the Steuer’s Telepresence theory (1992) and enjoyment (e.g. Koufaris, 2002).

Although the vast majority of studies that apply flow theory consider these three stages, there is no consensus about their classification as antecedent, experience or consequence. For example, Ghani and Deshpande (1994) consider the balance between skills and challenges and perceived control as antecedents of the flow state in computer usage. According to these authors, flow is a multidimensional construct characterized by attention focused on the activity and enjoyment, which results in an increase in the exploratory use of the Internet and temporal distortion. On the other hand, in one of the reference work of flow theory, Hoffman and Novak (1996), when analyzing the role of flow in web environments, added attention focused on the activity, telepresence, interactivity, vividness and involvement as antecedents. Moreover, they defined the state of flow as unidimensional instead of as multidimensional and pointed out that the consequence of reaching flow is perceived control, which had been considered as an antecedent by Ghani and Deshpande (1994). In conclusion, there is no general

acceptance of the composition of flow in web environments. In the Appendix, Table 2.A shows a literature review of definitions and statements about the concept of flow.

One of the reasons for the variety and vagueness in the conceptualization of flow is that authors of various disciplines have used it and adapted it to different contexts (Choi, Kim, and Kim, 2007; Hoffman and Novak, 2009). Evidence of the complexity of the concept can be appreciated in our review of the literature about flow between 1975 and 2019. We have found approximately 70 constructs used to measure it. Of the approximately 150 studies that have been reviewed, more than a third apply the flow theory to online environments and, as can be seen in Table 2.1, there is no consensus about the dimensionality of the concept or about the measurement variables (25 different variables having been used to measure it).

Table 2.1. Different concepts to measure the state of flow in online marketing

Measurement variable	Authors
Flow (unidimensional)	Hoffman & Novak (1996); Novak <i>et al.</i> (1998); Novak <i>et al.</i> (2000); Richard & Chandra (2005); Wan & Nan (2001); van Noort <i>et al.</i> (2012); Luna <i>et al.</i> (2002, 2003); Bridges & Florsheim (2008); Rose <i>et al.</i> (2012); Koorzan (2003); Sánchez Franco <i>et al.</i> (2007); Richard & Chebat (2016); Rodríguez-Ardura & Meseguer-Artola (2019)
Concentration	Finneran & Zhang (2005); Rettie (2001); Siekpe (2005); Ghani <i>et al.</i> (1991); Hosseini & Fattahi (2014); Jiang & Benbasat (2004); Ghani (1995); Trevino & Webster (1992); Koufaris (2002); Lee & Chen (2010); Ding <i>et al.</i> (2010); Shim <i>et al.</i> (2015); Walker <i>et al.</i> (1998); Chang (2013); Kwak <i>et al.</i> (2014); Mahnke & Hess (2014); Chen <i>et al.</i> (1999); Herrando <i>et al.</i> (2018); Huang (2006); Nel <i>et al.</i> (1999); Hausman & Siekpe (2003); Huang (2003); García-Jurado <i>et al.</i> (2019)
Enjoyment	Finneran & Zhang (2005); Pace (2004); Ghani <i>et al.</i> (1991); Herrando <i>et al.</i> (2018); Hosseini & Fattahi (2014); Jiang &

	Benbasat (2004); Kamis <i>et al.</i> (2010); Skadberg & Kimmel (2004); Ghani (1995); Koufaris (2002); Lee & Chen (2010); Shim <i>et al.</i> (2015); Chang (2013); Kwak <i>et al.</i> (2014); Huang (2006); Hausman & Siekpe (2003); García-Jurado <i>et al.</i> (2019)
Loss of self-consciousness	Pace (2004); Pilke (2004); Rettie (2001); Hosseini & Fattahi (2014); Trevinal & Stenger (2014); Walker <i>et al.</i> (1998); Mahnke & Hess (2014)
Merging of action and awareness	Pace (2004); Pilke (2004); Rettie (2001); Hosseini & Fattahi (2014); Chen <i>et al.</i> (1999)
Sense of control	Pace (2004); Rettie (2001); Siekpe (2005); Jiang & Benbasat (2004); Kamis <i>et al.</i> (2010); Trevino & Webster (1992); Koufaris (2002); Ding <i>et al.</i> (2010); Shim <i>et al.</i> (2015); Chen <i>et al.</i> (1999); Huang (2006); Nel <i>et al.</i> (1999); Hausman & Siekpe (2003); Huang (2003)
Telepresence	Pace (2004); Lee & Chen (2010); Mathwick & Rigdon (2004); Shim <i>et al.</i> (2015); Chang (2013); Kwak <i>et al.</i> (2014)
Mental alertness	Pace (2004)
Clear goals	Pilke (2004); Hosseini & Fattahi (2014); Chen <i>et al.</i> (1999)
Immediate feedback	Pilke (2004); Rettie (2001); Hosseini & Fattahi (2014); Mahnke & Hess (2014); Chen <i>et al.</i> (1999)
Balance skill/challenge	Pilke (2004); Rettie (2001); Siekpe (2005); Ding <i>et al.</i> (2010); Mahnke & Hess (2014); Chen <i>et al.</i> (1999); Chen <i>et al.</i> (2000); Hausman & Siekpe (2003)
Time distortion	Pilke (2004); Rettie (2001); Herrando <i>et al.</i> (2018); Hosseini & Fattahi (2014); Skadberg & Kimmel (2004); Lee & Chen (2010); Shim <i>et al.</i> (2015); Trevinal & Stenger (2014); Walker <i>et al.</i> (1998); Chang (2013); Kwak <i>et al.</i> (2014); Mahnke & Hess (2014); García-Jurado <i>et al.</i> (2019)
No worry for failure	Pilke (2004)
Distractions are excluded from consciousness	Pilke (2004)
Autotelic experience	Pilke (2004); Rettie (2001); Chen <i>et al.</i> (1999)

Curiosity	Siekpe (2005); Trevino & Webster (1992); Kwak <i>et al.</i> (2014); Nel <i>et al.</i> (1999); Huang (2003)
Choice satisfaction	Kamis <i>et al.</i> (2010)
Intrinsic interest	Trevino & Webster (1992); Huang (2006); Nel <i>et al.</i> (1999); Huang (2003)
Interactivity	Ding <i>et al.</i> (2010); Chen <i>et al.</i> (2000)
Playfulness	Mathwick & Rigdon (2004); Chan (2014)
Involvement	Mathwick & Rigdon (2004); Chan (2014); Chen <i>et al.</i> (2000)
Intensity	Smith & Sivakumar (2004)
Duration	Smith & Sivakumar (2004)
Sense of pleasure	Trevinal & Stenger (2014)
Inner logic	Mahnke & Hess (2014)

Source: own elaboration

2.2.2. Stimulus Organism Response framework: SOR model

The SOR framework was proposed by Mehrabian and Russel (1974), and later applied to the retail context by Donovan and Rossiter (1982) and to online retailing by Eroglu *et al.* (2001). The SOR framework stems from environmental psychology and states that some environmental stimuli affect users' emotional states, which result in specific behavioral responses (Eroglu *et al.*, 2001). Some authors have suggested that there are three kinds of stimuli: social factors, design factors, and ambient factors (Baker, 1986; Bitner, 1992). The vast majority of studies in online environments have focused on design and ambient stimuli, such as interactivity (i.e., Huang and Huang, 2013; Jiang *et al.*, 2010; Mollen and Wilson, 2010), and fewer studies have considered social stimuli (Animesh *et al.*, 2011; Chang, 2013; Fiore and Kim, 2007; Liu *et al.*, 2016; Zhang *et al.*, 2014). The SOR framework has been applied together with flow theory in social commerce contexts (Gao and Bai, 2014; Liu *et al.*, 2016; Zhang *et al.*, 2014), and widely used in the context of online consumer behavior (Ha and Im, 2012; Koo and Ju, 2010; Xu *et al.*, 2014). In this research, the SOR framework is considered appropriate for studying how to increase positive sWOM through the social stimulus of sPassion and the state of flow as organism. sPassion can stimulate users to experience a

state of flow and, since both concepts are related to positive states of mind, it is expected that users respond to this in the form of positive sWOM.

2.3. Development of hypotheses

2.3.1. Stimulus: sPassion

Passion has been described as *a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy* (Vallerand *et al.*, 2003, p. 757). For these authors there are two kinds of passion, obsessive, that is the passion that *controls the person*, and harmonious, which is related to positive states of mind and feelings such as flow, what produces *a motivational force to engage in the activity willingly and engenders a sense of volition and personal endorsement about pursuing the activity* (Vallerand *et al.*, 2003, p. 757). In this study, sPassion is defined as a positive affective feeling that social commerce users experience when interacting and socializing on a website (Herrando *et al.*, 2017). Social commerce enables interaction, participation, and sharing of information and experiences with other users. While passion is related to being in love with a brand or company (Batra *et al.*, 2012), sPassion is linked to passion for the social commerce website itself, and not to a specific brand (Herrando *et al.*, 2017). In this study, the concept of sPassion is coined and is measured using a scale suggested by Baldus *et al.* (2015) by focusing on those items that reflect brand passion and helping, and contextualizing the role of sPassion in social commerce (Herrando *et al.*, 2017). While those items derived from brand passion are related to the emotional component, the other items related to helping behavior are associated with altruistic and evangelistic behavior, which is precisely where the difference between passion and sPassion can be found. sPassion not only has an emotional component, but also an altruistic one, which contextualizes its usage in social commerce contexts. Passion is important for the online marketing strategies because passionate consumers tend to share their excitement and act as *brand evangelists* (Albert *et al.*, 2013; Bauer *et al.*, 2007; Herrando *et al.*, 2017; Matzler *et al.*, 2007; Swimberghe *et al.*, 2014). Hence, it is proposed that although passion has not been used as the social stimulus in the SOR framework to date, sPassion could be a stimulus that fosters a state of flow and increases positive sWOM as a consequence, since passion has been shown to increase the state of flow and boost evangelistic behavior. The SOR

framework states that there are some social interactions that act as stimuli and can have a positive effect on the organism (Animesh *et al.*, 2011; Chang, 2013; Fiore and Kim, 2007; Liu *et al.*, 2016; Zhang *et al.*, 2014). In this study, sPassion is considered the social stimulus, and, according to several authors, passion can stimulate a state of flow (Carpentier *et al.*, 2012; Lavigne *et al.*, 2012; Vallerand *et al.*, 2003). Therefore, we hypothesize the following:

H1: sPassion positively affects the state of flow.

2.3.2. Organism: State of flow in social commerce

The state of flow has been described as a rewarding experience where people are so concentrate on and absorbed in the activity they are performing that they are not conscious of themselves or of the track of time, but they enjoy every single minute of the experience and afterwards they look for repeating the sensation (Csikszentmihalyi, 1975). The state of flow or optimal experience has been extensively applied in various disciplines and in several contexts (Csikszentmihalyi and Csikszentmihalyi, 1988). In recent years, investigations have analyzed the impact of flow in social commerce environments (i.e., Gao and Bai, 2014; Zhang *et al.*, 2014), but such studies remain scarce and there is no general consensus on the definition of flow in web environments. The pertinence of flow theory to e-commerce lies in the fact that the state of flow involves an increase in intentions to purchase, or return to the website and repurchase (Kamis *et al.*, 2010). It has been shown that the state of flow enhances loyalty towards a website and the intention to spread positive WOM (O'Cass and Carlson, 2010; Herrando, Jiménez-Martínez and Martin-De Hoyos, 2018).

The state of flow has been considered as the organism within the SOR framework in social commerce contexts (Gao and Bai, 2014; Zhang *et al.*, 2014; Liu *et al.*, 2016), because it is an emotional state that can be affected by the stimulus and can generate a behavioral response. In such contexts, the state of flow can be considered to be defined by concentration, enjoyment, and temporal distortion (Wang and Hsu, 2014; Lee and Chen, 2010). On a social commerce website, as its name implies, users relate to others in an environment that is highly influenced by interactivity, personalization, and socialization, which directly affect the state of flow (Zhang *et al.*, 2014). Thus, online social relationships, like those that take place in offline environments, can come from enjoyable experiences, can absorb users—causing a temporal distortion—and can

require users' concentration; for example, in terms of concentrating in order to share/receive user-generated content, write referrals, and so on.

Due to the lack of consensus about the dimensionality of flow, before analyzing the model, the paper will first discuss whether *the state of flow is in fact composed of these three dimensions (concentration, enjoyment, and temporal distortion)*. Despite the differences among these three dimensions, they reflect a common concept; thus to reach a state of flow, it is suggested that they must be simultaneous and reflective (as will be explained in Section 5.1). Therefore, whether *the dimensions of the state of flow converge toward a single factor as reflective constructs* will also be tested, through a second-order structure.

2.3.3. Response: Positive sWOM

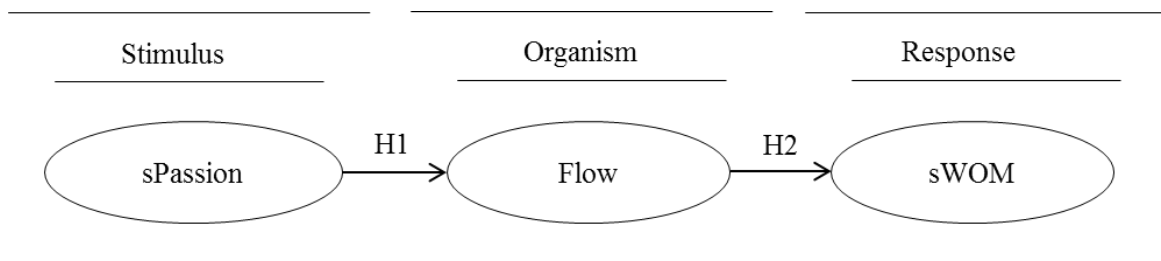
Social commerce is based on a combination of e-commerce and Web 2.0, providing the tools for *user-generated content* and *sharing of content*; hence, it is focused on enhancing *customer participation and achieving greater economic value* (Huang and Benyoucef, 2013, p. 246). *Social relationship is the key element that differentiates social commerce from other forms of online commercial activities* (Liang *et al.*, 2011, p. 71). WOM is so crucial in social commerce contexts that the concept of sWOM—previously referred to as eWOM in e-commerce contexts—has been used to refer specifically to the WOM spread in this highly interactive environment (Hajli *et al.*, 2014). The current study defines positive sWOM as the positive comments, recommendations, advice, suggestions, etc., shared by users on social commerce websites—that is, websites that sell products online and contain social commerce features, such as recommendation systems, referrals, ratings, discussion forums, etc. (Herrando *et al.*, 2017).

According to the SOR framework, the state of flow, here considered as the organism, can affect users' responses (Gao and Bai, 2014; Zhang *et al.*, 2014; Liu *et al.*, 2016); thus, it is likely to affect positive WOM behaviors as a response. Although numerous studies based on flow theory have focused on analyzing online consumer behavior as a result of having experienced a state of flow, few have been focused on studying how this positive state affects sharing behavior to spread WOM. To the best of the authors' knowledge, to date, a study by O'Cass and Carlson (2010) is the only one to have considered WOM behavior a consequence of the state of flow. Zhang *et al.*

(2014) applied the SOR framework to study social commerce intention as a response of experiencing flow, also related to WOM behavior. Although WOM is a well-known concept in the online consumer behavior research, there is little evidence of its study as a response within SOR models (e.g., Ha and Im, 2012). Nevertheless, here it is considered that applying the SOR framework can explain how users share positive sWOM as a response to the effect on the organism of a social stimulus. Considering sPassion and the state of flow as positive states of mind related to users' experiences, it is reasonable to suggest that the response of users can take the form of positive sWOM. Therefore, based on the idea that users who have experienced a state of flow are prone to reengage on the website and share their feelings (O'Cass and Carlson, 2010), we hypothesize that the state of flow could boost positive sWOM (see Figure 2.1).

H2: The state of flow positively affects positive sWOM.

Figure 2.1. Proposed model



2.4. Methodology

2.4.1. Measurement techniques of flow state

The state of flow has been studied through diverse techniques such as interviews, surveys, laboratory experiments, the Experience Sampling Method (ESM) and there are even some studies that have started to analyze flow through neuro-physiological techniques (see the literature review of different methodological techniques used in flow research in Appendix Table 2.B). In the following lines, the different techniques are presented and discussed for their usage in the analysis of flow.

While interviews have been employed as an exploratory technique to examine the concept of flow and adapt its variables to the context of research; surveys have allowed measuring the dimensions of flow for the identified variables recalling past flow experiences. Nevertheless, the limitation of surveys is that determine the state of flow in a retrospective way.

In flow research, surveys have been classified as narrative survey or active survey (Novak and Hoffman, 1997). The narrative survey consists of a short description of the concept of flow followed by three questions, and all this has been called The Flow Questionnaire (Csikszentmihalyi, 1982). That is, once participants read the short description about flow state, they are asked if they have experienced something similar to this state. Subsequently, the three quotations of the Flow Questionnaire have been contextualized into website navigation to analyze the optimal experience in interactive environments (Sicilia, Ruiz-De Maya and Munuera, 2005; Sicilia and Ruiz-De Maya, 2007). Regarding the active survey, this concept refers to the traditional questionnaires based on closed questions. Particularly in flow research, The Flow State Scale (FSS) (Jackson and Marsh, 1996) stands out for being a flow scale created on purpose for measuring the variables of flow state. Some years later, Jackson and Eklund (2002) reviewed the FSS and presented The Flow State Scale-2 (FSS-2), since in the sport and physical activity context the dimensions of “loss of self-consciousness” and “temporal distortion” did not show validity and they seemed not to be main dimensions for the athletes.

Laboratory experiments of flow have been conducting within real environments, for instance in a website, as well as in a fictitious environment designed specifically for the experiment (see Table 2.B in the Appendix). Within the experiments, flow is analyzed in a direct way during the experiment or in a retrospective way after carrying out after the experiment. Therefore, one of the limitations of this method is that the state of flow is a context experience (Finneran and Zhang, 2005), so the individual could be forced by the environment.

Recent experiment-based research of flow has started to consider neuroscience in order to try to study the physiological and neuronal reaction of experience flow in situ. For this purpose, different biosensors and technology can be used such as electroencephalograms (EEG) to measure brain electrical activity (Berta *et al.*, 2013;

Wang and Hsu, 2014), functional magnetic resonance (fMRI) (Huskey *et al.*, 2018), galvanic skin response sensors (Nacke *et al.*, 2010), electrocardiograms to measure heart rate variability (ECG - HRV) (Harmat *et al.*, 2015; Tozman *et al.*, 2015; De Manzano *et al.*, 2010), etc.

The Experience Sampling Method (ESM) was developed to study the flow experience in everyday life (Csikszentmihalyi, Larson, and Prescott, 1977). This technique is a non-retrospective tool which consists in collecting, through questionnaires (the experience sampling form or ESF), the state of the participant at a given time. To do so, during a week participants are provided with a beeper which emits 8 daily beeps (56 per week), and after this sound, participants have to fill in the questionnaire (the ESF), based on their state of mind in the moment of the beep sound. In the ESF, each time the beeper sound, participants have to fill in the form with the date, the time, the activity they were performing, their level of skills and challenges in this specific moment, and their level of concentration, control and self-consciousness. Moreover, they must describe their emotional and physical state, among other atmosphere factors. Therefore, this technique allows measuring flow frequency.

As a necessity to study flow in online environments, Chen *et al.* (1999) introduced the ESM to the digital environment, and consequently created the digital ESF. For data collection in digital environments, instead of a beeper, a pop-up window appears during navigation in a specific interval of time, interrupting the activity to fill in the ESF online.

The same discrepancies that exist about the constructs employed to apply the flow theory exist also about the most appropriate technique to measure it. Nevertheless, it must be taken into consideration that this theory has been applied to very different contexts and, therefore, not only different techniques has been employed or specifically created to analyzing flow (such as the ESF and the FSS), but also some scales have been adapted with different constructs. Likewise, researchers must ask themselves what is exactly what they want to analyze with the flow theory. For example, if what they want to observe is if individuals experience the state of flow in their everyday life, they should use the ESM, since the ESF allows collecting instant data about the activity (Delle Fave and Bassi, 1998). On the contrary, if instead of studying flow frequency flow what is wanted is to analyze flow experience, the FSS would be more appropriate.

Unlike the ESF, the FSS does not measure context experiences, but can be applied easily to an activity specified beforehand, such as the laboratory experiment. Furthermore, the FSS can be administered with time or spatial independence because individuals must appeal to their memories about the activity. Finally, in favor of the usage of the FSS, Moneta (2012) highlights that the FSS is not only more complete than the ESM or the three quotations of The Flow Questionnaire, but also it provides more valid and reliable statistical flow measures than the others. Thus, while The Flow Questionnaire measures flow frequency, the FSS measures flow experience. The usage of one technique or the other will depend on the aim of the investigation, being advisable quantitative techniques, such as in-depth interview, to define the variables of the investigation in prelaminal phases and, subsequently, to adapt the scale to the needs of each context (Nakamura and Csikszentmihalyi, 2014). Therefore, due to our interest in measuring the experience of flow on social commerce websites, we consider that, for this first research, the most appropriate method is the questionnaire (see a summary of the techniques in Table 2.2).

Table 2.2. Summary of techniques to measure flow

Techniques	Characteristics	Limitations
Interview	To obtain perceptions about the experience. To explore the concept of flow. To adapt flow variables to a specific context.	Retrospective
Survey	The Flow Questionnaire – Flow narrative description + 3 short questions (Csikszentmihalyi, 1982; Sicilia, Ruiz De Maya & Munuera, 2005). Flow State Scale (FSS) (Jackson & Marsh, 1996). Flow State Scale 2 (FSS-2) (Jackson & Ecklund). Other scales added to flow: enjoyment (Koufaris, 2002), telepresence (Steuer, 1992).	Retrospective Context adaptation of the scales
Experiment	To study flow experience Laboratory experiments Quasi-experiments	Temporal and special limitation Context-specific (Finneran & Zhang, 2005)
ESM (Experience Sampling Method)	To study flow frequency in everyday life. Non-retrospective technique. Beep + Experience Sampling Form (ESF). (Csikszentmihalyi, Larson & Prescott, 1977). Pop-up + ESF digital (Chen <i>et al.</i> 1999).	Specific moment of time To study flow frequency, not experience
Neuroscience	To study the physiological reaction to flow <i>in situ</i> . Heart rate variability (Harmat <i>et al.</i> , 2015; Tozman <i>et al.</i> , 2015; De Manzano <i>et al.</i> , 2010). Galvanic Skin Response (Nacke <i>et al.</i> , 2010). Electroencephalograms (Berta <i>et al.</i> , 2013; Wang & Hsu, 2014). Functional Magnetic Resonance Imaging (Huskey <i>et al.</i> , 2018)	Temporal and special limitation The stimulus has to cause flow. It is needed to wear some devices

Source: Own elaboration.

2.4.2. Data collection and procedures

The data were collected in Spain through an online survey between February and June 2015. The sample consists of 771 users of social commerce websites. It resembles the profile of the Spanish users' according to the annual report of the Telecommunications and Information Society Spanish Watch (ONTSI, 2014), because both genders are equally represented and the age varies between 16 and 80 years old. We checked that all of them were experienced online consumers. Participants were given an explanation of the concept of *social commerce* at the beginning of the questionnaire, and after that they were asked whether they had recently purchased using a social commerce platform. Those respondents who answered positively, continued with the survey, being asked to recall their experience on the website they had chosen, and were asked to name the social commerce website from which they had purchased. Among their answers were Amazon, Aliexpress, and Booking.

A thorough review of the literature that used the measurement factors employed in this model was conducted in order to ensure content validity. Some of them were adapted to the context of social commerce (see Table 2.3). Seven-point Likert scale were used to measure all the variables, ranging from "1 = strongly disagree" to "7 = strongly agree." The questionnaire was checked by various experts, with the aim to ensure that all the questions and text were understandable, apart from assessing its length and ease of completion. This pretest turned into some minor changes, most of them oriented to improve the reading fluency and comprehensibility of certain issues. Software SPSS 22 and EQS 6 were used in the statistical analyses.

Table 2.3. Scale

<i>sPassion</i> – Herrando <i>et al.</i> (2017) developed from Baldus <i>et al.</i> (2015):	
sPASS1	I am motivated to participate on this social commerce website because I am passionate about it
sPASS2	I participate on this social commerce website because I care about it
sPASS3	My passion for this social commerce website's products makes me want to participate in its community
sPASS4	I like participating on this social commerce website because I can use my experience to help other people
sPASS5	I really like helping other users with their questions
sPASS6	I feel good when I can help answer other users' questions
<i>State of flow:</i>	
<i>Concentration</i> - Based on Jackson & Marsh (1996).	
CON1	My attention was focused entirely on what I was doing.
CON2	I was totally absorbed in what I was doing.
CON3	I had total concentration.
<i>Enjoyment</i> - Based on Koufaris (2002).	
ENJ1	I found my visit interesting.
ENJ2	I found my visit enjoyable.
ENJ3	I found my visit fun.
<i>Temporal distortion</i> - Based on Agarwal & Karahanna (2000); Novak <i>et al.</i> (2000).	
TD1	Time seemed to go by very quickly when I used this social commerce website.
TD2	When I used this social commerce website, I tended to lose track of time.
TD3	I often spend more time on this social commerce website than I had intended.
TD4	I feel I am in a world created by the web I visit.
TD5	Using this web often makes me forget where I am.
TD6	The world generated by the web I visit is more real for me than the "real world".
<i>sWOM</i> - Based on Liang <i>et al.</i> (2011)	
sWOM1	I have provided my experiences and suggestions when other users need advice on buying something
sWOM2	I have recommended a product that is worth buying

2.5. Results

2.5.1. Analysis of dimensionality

With the purpose of identifying the dimensionality of the flow concept, the first step started by carrying out an exploratory factor analysis of the three factors—enjoyment, concentration, and temporal distortion—using the principal axis factoring method and varimax rotation (Hair *et al.*, 1999; Kaiser, 1970; Kaiser, 1974). The Kaiser–Meyer–Olkin (KMO) value was greater than the threshold of 0.70 (KMO = 0.905), and Barlett’s sphericity test was significant. The findings show that each item loaded onto its factor, so the three-factor structure can be introduced as hypothesized (see Table 2.4). These three factors explain 80.13% of the total variance. Furthermore, Cronbach’s alpha ($\alpha = 0.927$) was greater than 0.70 (Nunnally, 1978), and was not improved if any element was removed.

Table 2.4. Rotated component matrix

Items	Factor 1 (λ)	Factor 2 (λ)	Factor 3 (λ)
Temporal Distorsion 2	.857		
Temporal Distorsion 5	.829		
Temporal Distorsion 1	.806		
Temporal Distorsion 6	.797		
Temporal Distorsion 3	.726		
Temporal Distorsion 4	.703		
Enjoyment 3		.894	
Enjoyment 2		.811	
Enjoyment 1		.719	
Concentration 3			.782
Concentration 2			.763
Concentration 1			.748

The normality of the variables was tested through the asymmetry and kurtosis values, which were greater than 2.52 and 1.96, respectively (Hair *et al.*, 2010), and the significance of the Kolmogorov–Smirnov–Lilliefors and Shapiro–Wilk statistics, so that

distribution of the data did not fulfill the hypothesis of normality. Because of this, the robust maximum-likelihood estimation method was used (Bentler, 1995). With the purpose of testing the reliability and validity of the proposed dimensions and to confirm the obtained results, confirmatory analyses were performed. The findings confirm that the three factors fit the data well and the coefficients calculated were all significant (Satorra-Bentler Scaled Chi-Sq = 504.7682, 51 d.f., p-value = 0.001; Bentler-Bonett Normed Fit Index (NFI) = 0.925; Bentler-Bonett Nonnormed Fit Index (NNFI) = 0.912; Comparative Fit Index (CFI) = 0.932; Bollen (IFI) Fit Index = 0.932; Root Mean-Sq. Error of Approximation (RMSEA) = 0.107; ($\chi^2/d.f.$) = 9.898).

With intent to analyze the reliability and validity of the flow dimensions it was tested that Cronbach's alpha values were greater than 0.70 (Nunally, 1978), the composite reliability (CR) indexes (Jöreskog, 1971) exceeded the recommended value of 0.70, and the average variance extracted (AVE) showed values higher than 0.50 (Fornell and Larcker, 1981). As for convergent and discriminant analyses; convergent validity was analyzed to corroborate that the standardized coefficients of all factorial loadings were statistically significant and greater than 0.50 (Hildebrandt, 1984); and, discriminant validity was tested with the AVE analysis to compare, in a symmetric matrix, whether the AVE on the diagonal was larger than its corresponding squared correlation coefficients in its rows and columns (Fornell and Larcker, 1981; Hair *et al.*, 1999). Therefore, the results confirm that the flow state is indeed composed of the three dimensions concentration, enjoyment, and temporal distortion.

After that, the following step was to compare the multidimensional and the unidimensional model. Using the *rival models technique* proposed by Anderson and Gerbing (1988) and Hair *et al.* (1999), this analysis consists of comparing alternative models. The first alternative established a unidimensional model in which all items were gathered in a single factor. The second alternative—based on the three dimensions obtained in the previous analyses—proposed a multidimensional model that contains three factors. The comparison between the empirical findings corroborate that the multidimensional model has better goodness of fit indexes than the unidimensional model does (see Table 2.5). This confirms that flow is multidimensional and is measured through concentration, enjoyment, and temporal distortion.

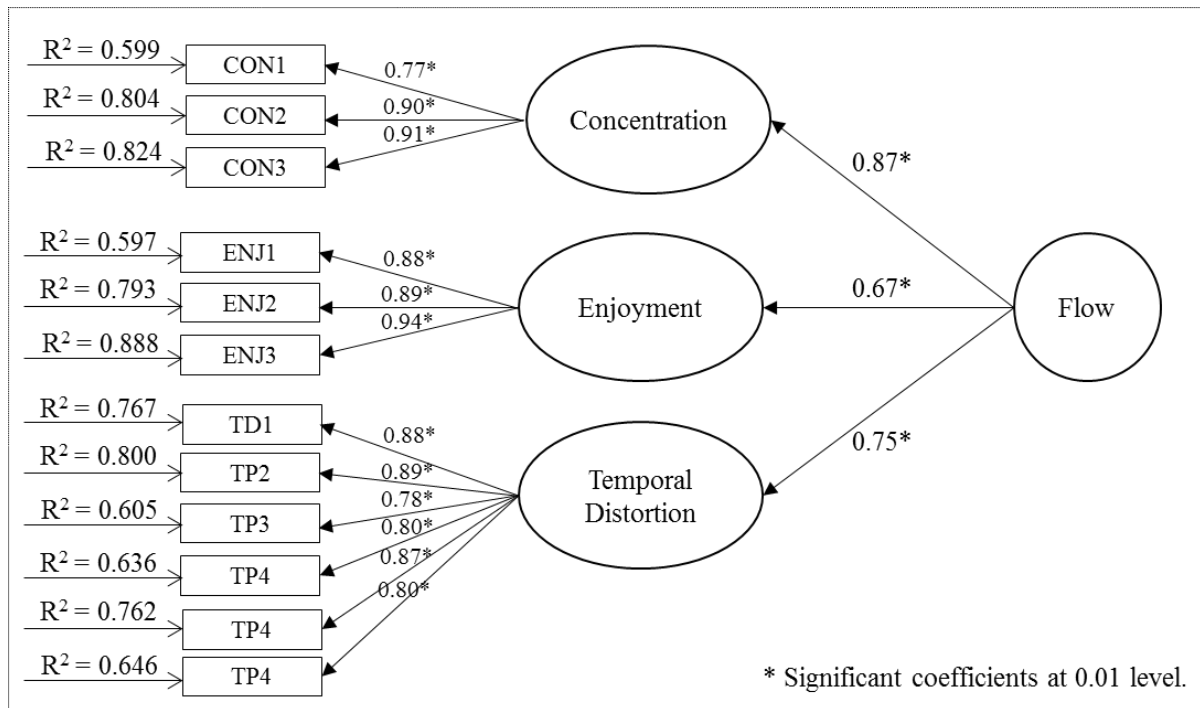
Table 2.5. Comparison between unidimensional and multidimensional models

Goodness of fit indexes	Alternative 1	Alternative 2
	Unidimensional	Multidimensional
	model	model
	12 items – 1 factor	12 items – 3 factors
Satorra-Bentler Scaled Chi-Sq	1768.078	504.7957
Degrees of freedom	54	51
P	.000	.000
Bentler-Bonett Normed Fit Index (NFI)	.74	.93
Bentler-Bonett Nonnormed Fit Index (NNFI)	.69	.91
Comparative Fit Index (CFI)	.74	.93
Bollen (IFI) Fit Index	.74	.93
Root Mean Sq. Error of App. (RMSEA)	.203	.107
Confidence Interval of RMSEA	(.195 - .211)	(.099 - .116)

2.5.2. Factorial analysis of the second-order model

After determining the three-dimensional structure, the following step was to analyze the convergence of concentration, enjoyment, and temporal distortion toward a single factor, *flow*. Based on the existing literature, a reflective second-order model was proposed. In computer-mediated environments, the multidimensionality of the flow concept was analyzed and it was examined whether flow should be measured in a formative or a reflective model, showing better fit for the reflective version (Siekpe, 2005). Furthermore, some authors have found cognitive absorption—derived from the state of flow—to be reflective, since covariance is expected among the indicators that measure it (Agarwal and Karahanna, 2000; Reychav and Wu, 2015). Likewise, when measuring psychological constructs that show an attitude or behavior, it is better to use reflective indicators because they are the origin of the observed variable and their effects are reflected in this variable.

The results affirm that flow as a concept is not directly observable, but is measured through three dimensions; namely, concentration, enjoyment, and temporal distortion. The confluence of the three factors is what allows users to reach the state of flow (see Figure 2.2).

Figure 2.2. Second-order model of flow

2.5.3. Analysis of the measurement model

The next step was to test whether the social stimulus, represented by sPassion, affects users' flow state, which results in boosting users' positive sWOM. Hence, to assess the reliability of the scale of the variables included in the SOR model, exploratory and confirmatory analyses were carried out.

Firstly, the psychometric properties were tested (Gerbing and Anderson, 1988). As shown in Table 2.6, all the indexes studied were accepted. The reliability of the scale was corroborated by analyzing Cronbach's alpha (Nunally, 1978), the CR index (Jöreskog, 1971) and the AVE (Fornell and Larcker, 1981). The KMO value was greater than 0.70, except in the case of the variable sWOM, whose value was 0.50 with a medium level of correlation and, therefore, medium acceptance (Kaiser, 1970). Then, the confirmatory factor analysis was conducted with the robust maximum-likelihood estimation method. The results show that the model fit the data well and that the coefficients calculated were all significant. The factor loadings were greater than the accepted value of 0.50 (see Table 2.6).

Table 2.6. Analysis of the reliability and validity of the model

Ítem	α Cronbach	CR	AVE	Kaiser Olkin	Meyer R ²	λ^{***}
sPASS1	.933	.933	.699	.879	.728	.853
sPASS2					.696	.834
sPASS3					.724	.851
sPASS4					.721	.849
sPASS5					.677	.823
sPASS6					.646	.804
CON1	.895	.896	.743	.736	.601	.775
CON2					.805	.897
CON3					.823	.907
ENJ1	.900	.904	.760	.717	.604	.777
ENJ2					.797	.893
ENJ3					.880	.938
TD1	.933	.934	.703	.891	.642	.801
TD2					.766	.875
TD3					.648	.805
TD4					.764	.874
TD5					.794	.891
TP6					.604	.777
sWOM1	.835	.836	.718	.500	.741	.861
sWOM2					.694	.833
Satorra-Bentler Scaled Chi-Sq = 1112.1025, 160 d.f., p<0,01; Bentler-Bonett Normed Fit Index (NFI) = 0.903; Bentler-Bonett Nonnormed Fit Index (NNFI) = 0.899; Comparative Fit Index (CFI) = 0.915; Bollen (IFI) Fit Index = 0.916; Root Mean-Sq. Error of Approximation (RMSEA) = 0.08						
*** Significant coefficients at 0.01 level.						

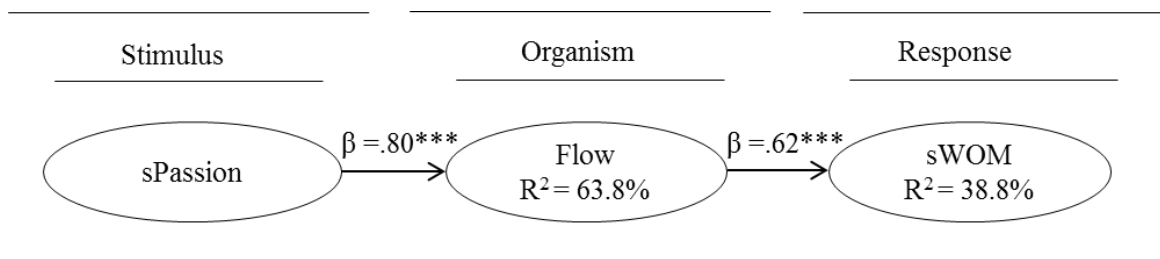
Discriminant validity was analyzed by checking whether the square root of the AVE for each construct was higher than the correlations of this construct and the rest of the constructs in the same row and column (see Table 2.7).

Table 2.7. Discriminant validity

	sPASS	CON	ENJ	TD	sWOM
sPASS	.699				
CON	.286	.743			
ENJ	.393	.345	.760		
TD	.336	.440	.261	.703	
sWOM	.355	.175	.247	.153	.718

2.5.4. Analysis of the structural model

Finally, the theoretical SOR based model was estimated. As can be seen in Figure 2.3, the goodness of fit indexes from the structural model showed acceptable values and the two hypotheses were supported. The results show that sPassion has a positive effect on the state of flow ($\beta = 0.80$, $t = 15.02$, $p < 0.01$) and this influences positive sWOM as a response ($\beta = 0.62$, $t = 11.60$, $p < 0.01$). As posited above, the aim was to determine whether those who are prone to experience a state of flow report more positive sWOM. Regarding the empirical findings, the state of flow can be said to have a positive effect on positive sWOM. Thus, all the hypotheses were supported and sPassion can be confirmed to positively affect the flow state, thereby helping to increase online participation through positive sWOM.

Figure 2.3. Structural model

Satorra-Bentler scaled $\chi^2 = 1184.1970$, 165 d.f. $p < 0.01$; Bentler-Bonnet Normed Fit Index (NFI) = 0.896; Bentler-Bonett Nonnormed Fit Index (NNFI) = 0.896; Comparative Fit Index (CFI) = 0.909; Bollen (IFI) Fit Index = 0.910; Root Mean-Sq. Error of Approximation (RMSEA) = 0.090. Significant coefficients: *** $p < 0.01$

2.6. Conclusions and discussion

This study uses the SOR framework based on a social stimulus to analyze how positive sWOM can be increased in social commerce. That is, it addressed the role of sPassion as the social *stimulus* and its positive effect on the state of flow, the *organism*, achieving as a *response* an increase in positive sWOM. Firstly, it was empirically found that flow is a multidimensional factor composed of concentration, enjoyment, and temporal distortion. When users experience the three dimensions, they reach a state of flow or optimal experience; that is, they not only navigate, but flow. Secondly, the SOR model was analyzed to show that passionate users are prone to experience a state of flow and, as a consequence, to share positive sWOM. Therefore, experiencing flow can be a way of increasing online participation.

The literature in which the concept of flow is analyzed in various contexts was considered in order to study the variables, dimensions, and structure that must be used to measure flow. Nevertheless, no consensus was found in this regard (Ghani and Deshpande, 1994; Hoffman and Novak, 1996). Secondly, a three-dimensional structure was theorized that comprises a second-order factor to measure flow in social commerce contexts. Following this theoretical proposal, various statistical analyses were conducted to compare the unidimensional and multidimensional models through the *rival models technique*; these confirmed the tri-dimensionality of the concept. The next step was to conduct a second-order confirmatory analysis to corroborate that the second-order reflective model fit the data well. Therefore, support was found for the idea that the state of flow is measured through the dimensions concentration, enjoyment, and temporal distortion, and can be considered a second-order multidimensional factor. As a consequence, when users experience flow, they focus their attention on the activity they are performing, enjoying it and losing track of time, which leads them to flow when navigating on the website, reaching an optimal experience when surfing.

Finally, the SOR model was tested to showed that, as per to previous studies (Animesh *et al.*, 2011; Chang, 2013; Fiore and Kim, 2007; Liu *et al.*, 2016; Zhang *et al.*, 2014), the stimulus has a positive effect on flow. Likewise, supporting the idea put forth by Carpentier *et al.* (2012), Lavigne *et al.* (2012) and Vallerand *et al.* (2003) sPassion boosts users' flow state, which has a positive effect on positive sWOM.

Therefore, the empirical analyses shed light on controversial flow issues that were previously without consensus. The literature review showed that there is still no agreement about how to measure the state of flow, not only with regard to the variables that comprise the experience, but also concerning its structure. This gap is an important aspect to consider in order to help companies develop their websites to be truly appealing and to show which social commerce keys generate optimal experiences that enhance users' positive behavior. Thus, the contribution of this study is that positive sWOM can be boosted through sPassion and the state of flow; that is, through a social stimulus and an individual's state of mind. Likewise, regarding the direct relationship between experiencing flow and spreading positive sWOM, our results contribute to the literature because there have been few studies on this positive relationship to date (O'Cass and Carlson, 2010).

2.7. Implications and future lines of research

This study contributes to establishing the foundations for measuring the state of flow, and its structure, factors, and measurement instrument. The study supports the idea of the multidimensionality of the state of flow and establishes the three dimensions that shape it. The findings have academic implications for the establishment of guidelines for using flow theory in the specific context of social commerce.

In addition, it was shown that the social stimulus (sPassion) has a positive effect on the organism (state of flow), which implies a positive response (sWOM). Therefore, this formula could help companies to direct WOM valence online. WOM valence (positive, neutral, or negative) can impact how users value and perceive reviews; for example, on the perceived usefulness of, and enjoyment derived from reading, online reviews (Park and Nicolau, 2015). Users who experience a state of flow are prone to share their positive experiences through sWOM; therefore, this formula could help companies to direct the online valence of WOM. That is, companies that are able to stimulate a state of flow in their users will be more likely to have positive sWOM, since it is supposed that a positive optimal experience is verbalized in positive sWOM. Likewise, given that people who reach a state of flow affirm that it is a rewarding experience that is worth repeating (Csikszentmihalyi, 1975), users who desire to experience this sensation again will return to the same website to find it. This will entail

benefits for companies because, on the one hand, returning to the website facilitates user repurchase and, on the other, it can contribute to customers' loyalty and engagement.

Nevertheless, marketing strategies on the Internet that adopt the flow approach should bear in mind that delivery is as important as the navigation and transaction processes, since consumers' irritation in one of the purchasing process stages may vanish the rewarding sensation. Hence, user navigation should be considered as important as purchase and post-purchase. That is the reason why it would be advisable to study flow and engagement together and to test how both concepts interact.

Furthermore, as sPassion differs from passion based on the social component, if companies seek to encourage sPassion, they should boost social interactions—that is, interactivity (Cardon *et al.*, 2013) and social presence (Smith and Gallicano, 2015)—besides generating an enjoyable atmosphere (Herrando *et al.*, 2017). In this vein, social commerce relies on recommendation systems, rating tools, discussion boards, etc.

2.8. Limitations

This research presents some limitations. The sample consists of data from a single country, so the research would benefit from collecting data from different countries and carrying out a cross-cultural analysis. This would allow to extent the findings and would identify how flow is generated in different countries because users all around the world can access and navigate a same social commerce website, so cultural issues may arise.

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APPENDIX 2

Table 2.A. Definitions and statements about the concept of flow

Authors	Flow statements and definitions
Agarwal & Karahanna (2000)	The state in which people are so involved in an activity that nothing else seems to matter.
Allison & Duncan (1988)	Flow represents absolute enjoyment, antiflow represents extreme disdain or dislike for and activity.
Asakawa & Yana (2009)	Flow theory provides a model of human development which explains how individuals develop higher levels of skills or abilities through daily experiences called “flow”.
Bridges & Florsheim (2008)	A sense of deep involvement that is intrinsically enjoyable, because that this enhanced experience leads to more online buying.
Chen (2007)	During flow experience, we lose track of time and worries. Indeed, our level of focus maximizes our performance in and pleasurable feelings from the activity.
Chen, Wigand & Nilan (1999)	The concept of flow refers to those optimal, extremely enjoyable experiences when an individual engages in an activity with total involvement, concentration and enjoyment, and experiences an intrinsic interest as well as a sense of time distortion during his/her engagement.
Chen, Wigand & Nilan (2000)	Flow is an optimal, extremely enjoyable experience when an individual engages in an activity with total involvement, concentration and enjoyment, and experiences an intrinsic interest and the sense of time distortion during his/her engagement.
Csikszentmihalyi & Csikszentmihalyi (1988)	When all the contents of consciousness are in harmony with each other, and with the goals that define the person’s self.
Csikszentmihalyi (1975)	Flow is the holistic sensation that people feel when they act with total involvement. Flow is a state of experience that is autotelic or intrinsically rewarding; hence, it provides its own motivation.
Csikszentmihalyi (1990)	Flow: the state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it.
Delle Fave & Bassi (1998)	L’esperienza di Flow... si caratterizza principalmente con la percezione di un bilanciamento tra il livello di opportunità d’azione reperite nell’ambiente (challenges) e quello delle capacità personali (skills) nel confrontarsi con 102se.
Delle Fave & Massimini (1988)	A person in flow will describe his experience in terms of being very involved, having clear feedback, wanting to do the activity, not being bored, not making an effort to concentrate, and so on.
Dietrich (2004)	A flow state ensues when one becomes so deeply focused on a task and pursues it with such passion that all else disappears, including a sense of time or the worry of failure.
Ding, Hu, Verma & Wardell (2010)	Flow experience is a sensation that occurs as a result of significant cognitive involvement.

Ellis, Voelkl & Morris (1994)	Flow is an optimal experience that stems from people's perceptions of challenges and skills in given situations.
Faiola, Newlon, Pfaff & Smyslova (2013)	"Flow" or "optimal experience" is a highly enjoyable state of consciousness that occurs when our skills match the challenges that we are undertaking.
Finneran & Zhang (2005)	Flow represents a state of consciousness where a person is so absorbed in an activity that s/he excels in performance without consciously being aware of his or her every movement.
Fong, Zaleski & Leach (2014)	Flow is an intrinsically motivating state of consciousness characterized by simultaneous perception of high challenge and skill.
Ghani & Deshpande (1994)	The theory emphasizes the role of context rather than individual differences in explaining human motivation.
Ghani (1995)	Flow results in a focus on the process rather than outcomes, and in enhanced learning and creativity.
Ghani, Supnick & Rooney (1991)	Flow is a state of being characterized by involvement in and enjoyment of a task.
Guo (2004)	When people are in flow, they act with a sense of total control, concentration, and deep involvement.
Han (1988)	Those who have flow should feel better about themselves, feel more in control of their worlds, and be less dependent on extrinsic supports.
Hoffman & Novak (1996)	The flow experience in a CMEs is the state occurring during network navigation which is characterized by a seamless sequence of responses facilitated by machine interactivity, intrinsically enjoyable, accompanied by a loss of self-consciousness, and self-reinforcing.
Hsu & Lu (2004)	The holistic experience that people feel when they act with total involvement.
Huang (2003)	Interactivity is the key to creating experiential flow and is the most important attribute for determining hedonic Web performance.
Jackson & Marsh (1996)	The flow state occurs when the performer is totally connected to the performance, in a situation where personal skills equal required challenges.
Jackson, Thomas, Marsh & Smethurst (2001)	Flow is a state of concentration so focused that it amounts to absolute absorption in an activity.
Jiang & Benbasat (2004)	Flow portrays consumers' experiences with computers as characterized by engaging and exploratory affective responses.
Joo, Lim & Kim (2012)	Flow is the optimal experience as a mental state of extremely rewarding concentration that emerges in-between frustration and boredom.
Kawabata & Mallett (2011)	Flow is a metaphorical term to illustrate the feeling of an optimal state of mind that individuals report when they are acting with focus attention and intense involvement.
Kiili (2005)	During optimal experience, a person is in a psychological state where he or she is so involved with the goal driven

	activity that nothing else seems to matter.
Korzaan (2003)9	Individuals in a flow state are completely immersed in their activity, to the extent that they are oblivious to everything else and become wholly absorbed into a new reality.
Kwak, Choi & Lee (2014)	The flow refers to the optimal experience which people are pleased with themselves when they do something.
Larson (1988)	Activities that produce flow experience are autotelic and intrinsically motivated; that is, people do them simply because they are enjoyable even if no rewards follow.
LeFevre (1988)	Flow during everyday life is an optimal experience that facilitates the fulfillment of individual potential.
Logan (1988)	During flow the self-manifests itself nondualistically as “I” – acting, controlling, attending, observing, but not reflecting dialectically. The “me” is absent when one is fully involved.
Mahnke & Hess (2014)	Flow results in ‘optimal’ user experience leading to intrinsically motivated behavior, engagement, and loyalty.
Massimini & Carli (1988)	The stream of ordinary experiences, ranging from the faintly pleasant to the boring and the anxious, is made up of a random collection of discordant notes. Occasionally the notes fall into a harmonious chord – when that happens, information in consciousness is ordered, and we experience flow.
Massimini, Csikszentmihalyi & Delle Fave (1988)	A person in flow wishes to do what he or she is doing for the sake of the activity itself, independently of external consequences.
Mathwick & Rigdon (2004)	An intrinsically motivated optimal state.
Moneta & Csikszentmihalyi (1996)	Flow theory represents the person as a system that acts according to three integrated “teleonomies” or motivational systems: the genetic teleonomy, the cultural teleonomy, and the teleonomy of the self. Flow is defined as a psychological state in which the person feels simultaneously cognitively efficient, motivated, and happy.
Moneta (2004a)	Flow is a state of profound task-absorption, cognitive efficiency, and intrinsic enjoyment that makes a person feel one with the activity in which s/he is involved.
Moneta (2004b)	Flow occurs when the person is primarily driven by the “teleonomy of the self”, i.e., the motivation to relentlessly develop skills in order to tackle ever-growing challenges.
Moneta (2012)	Flow theory is a set of interrelated constructs and propositions that describe systematically the relationships among the constructs with the purpose of explaining and predicting a range of measurable outcomes.
Nakamura & Csikszentmihalyi (2014)	Viewed through the experiential lens of flow, a good life is one that is characterized by complete absorption in what one does.
Nakamura (1988)	Flow is a powerful source of positive experience, and thus that it contributes to the quality of life by improving subjective states as they occur in the present.

Nel, van Niekerk, Berthon, Davies (1999)	Flow represents the extent to which the individual perceives a sense of control over the interaction with the technology, the individual perceives that his or her attention is focused on the interaction, the individual's curiosity is aroused during the interaction, and the individual finds the interaction intrinsically interesting.
Novak & Hoffman (1997)	The state occurring during network navigation which is characterized by a seamless sequence of responses facilitated by machine interactivity, intrinsically enjoyable, accompanied by a loss of self-consciousness, and self-reinforcing.
Novak, Hoffman & Yung (1998)	Flow is the state occurring during network navigation which is characterized by a seamless sequence of responses facilitated by machine interactivity, intrinsically enjoyable, accompanied by a loss of self-consciousness, and self-reinforcing.
Pace (2004)	Flow is a state of consciousness that is sometimes experienced by individuals who are deeply involved in an enjoyable activity.
Park, Cho & Lee (2014)	Flow refers to the state of being completely absorbed in a certain act, for example, losing the sense of time and becoming unaware of surrounding situations.
Pearce, Ainley & Howard (2005)	Flow describes a state of complete absorption or engagement in an activity. A 'flow activity' is one in which the mind becomes effortlessly focused and engaged on an activity, rather than falling prey to distractions.
Pilke (2004)	The optimal experience as a mental state of extremely rewarding concentration that emerges in the space between frustration and boredom.
Privette (1983)	Flow is an intrinsically enjoyable experience, is similar to both peak experience and peak performance, as it shares the enjoyment or valuing of peak experience and the behavior of peak performance.
Rathunde (1988)	Flow occurs only when both challenges and skills are high and there is a perceived balance between them.
Sánchez Franco, Rondán Cataluña & Villarejo Ramos (2007)	El flujo induce un estado donde la navegación en sí se convierte en la recompensa primaria frente a los resultados derivados de su ejecución.
Shernoff, Csikszentmihalyi, Schneider & Shernoff (2003)	Flow invokes a growth principle, in which a more complex set of capacities is sought after and developed.
Shim, Forsythe & Kwon (2015)	Online flow: a state of optimal, outstanding, memorable, extraordinary, totally absorbing, or engaging online experience.
Sicilia & Ruiz-De Maya (2009)	El flujo es un concepto gradual, que se puede experimentar desde un nivel mínimo hasta un máximo que supone una pérdida absoluta de contacto con el mundo real.
Sinnamon, Moran & O'Connell (2012)	"Flow" is a highly coveted yet elusive state of mind that is characterized by complete absorption in the task at hand as well as by enhanced skilled performance.
Smith & Sivakumar (2004)	Flow only occurs when both challenges and skills exceed the level of difficulty that is typical for the individual's day-to-day experiences.

Sweetser & Wyeth (2005)	The key element in flow is that it is an end in itself – the activity must be intrinsically rewarding and autotelic.
Wang & Wang (2014)	Flow Theory... subjectively explore the well-being of people during engagement in an activity.
Wells (1988)	People with higher frequencies of flowlike experiences will feel better about themselves and feel more in control of their lives.

Table 2B. Literature review of methodologies used with flow theory

Authors	Concept of flow	Context	Type of methodology	Methodological technique	Statistical software	Sample size	Participants	Country
Agarwal & Karahanna (2000)	Cognitive absorption as multi-dimensional construct similar to flow	Information technologies	Quantitative	Survey	PLS	288	Students	USA
Alcántara-Pilar, Barrio-García, Porcu & Crespo-Almendros (2015)	Multi-dimensional construct	Online consumer behavior	Quantitative	Experiment	-	227	online panel	Spain
Allison & Duncan (1988)	Multi-dimensional construct	Work	Qualitative	Interview	-	20	Working women	-
Asakawa (2010)	Frequency of flow	Daily life Psychological well-being Education	Quantitative	The Flow Questionnaire (three quotations)	-	372	Students	Japan
Asakawa (2004)	Multi-dimensional construct	Daily life Education Building quality of life Mental health	Quantitative	Experience Sampling Method (ESM)	-	102	Students	Japan
Asakawa & Yana (2010)	Multi-dimensional construct	Education	Quantitative	Experience Sampling Method (ESM)	-	21	Students	Japan
Baydas <i>et al.</i> (2015)	Multi-dimensional construct	3D learning	Quantitative	Experiment	-	146	Students	Turkey
Berta, Bellotti, De Gloria, Pranantha & Schatten (2013)	Flow as a state (versus no-flow)	Videogames	Neuroscience	EEG	MATLAB	22	Students	-
Bilgihan, Nusair, Okumus & Cobanoglu (2015)	Uni-dimensional construct	Online consumer experience	Qualitative Quantitative	Focus group Survey	AMOS	511	Students and professors	USA
Bombeke <i>et al.</i> (2018)	Three channel model of flow	Virtual Reality videogames	Neuroscience	EEG	EEGLAB MATLAB	18	Students	Belgium

Bridges & Florsheim (2008)	Uni-dimensional construct	Online consumer behavior Online shopping	Quantitative	Survey	-	337	Students	USA
Buil, Catalán & Martínez (2019)	Multi-dimensional construct	Learning	Quantitative	Survey	PLS	204	Students	Spain
Buil, Catalán & Martínez (2018)	Multi-dimensional construct	Learning	Quantitative	Survey	PLS	167	Students	Spain
Carli, Delle Fave & Massimini (1988)	Multi-dimensional construct	Everyday life experiences	Quantitative (cross-cultural)	Experience Sampling Method (ESM)	-	75 47	Students	USA Italy
Catalán, Martínez & Wallace (2019)	Uni-dimensional construct	Advergaming	Quantitative	Experiment	PLS	227	Students	Ireland
Chan (2014)	Multi-dimensional construct	Social media	Quantitative	Survey	Lisrel	219	Facebook users (Students)	China
Chang (2013)	Uni-dimensional construct	SNGs - Social Networking Games	Quantitative	Survey	PLS AMOS	358	Facebook game users (Students)	Taiwan
Chang <i>et al.</i> (2017)	Multi-dimensional construct	Game-based learning	Quantitative	Experiment	-	103	Students	Taiwan
Chen (2006)	Multi-dimensional construct	Web navigation	Quantitative	Experience Sampling Method (Digitalized ESM)	-	299	Web users	Taiwan
Chen, Wigand & Nilan (1999)	Multi-dimensional construct	Web navigation	Quantitative	Experience Sampling Method (ESM)	-	100	Students	USA
Chen, Wigand & Nilan (2000)	Multi-dimensional construct	Web navigation	Qualitative	Open-ended questionnaire	-	304	Web users	USA
Chen, Wigand & Nilan (1999)	Multi-dimensional construct	Web navigation	Qualitative	Experience Sampling Method (ESM)	-	304	-	USA

Choi, Kim & Kim (2007)	Uni-dimensional construct	Electronic learning	Quantitative	Online survey	Lisrel	223	Students	Korea
Csikszentmihalyi (1975)	Multi-dimensional construct	Leisure, work and everyday life	Conceptual work	-	-	-	-	-
Csikszentmihalyi (1990)	Multi-dimensional construct	Everyday life experiences	Conceptual work	-	-	-	-	-
Csikszentmihalyi & Csikszentmihalyi (1988)	Multi-dimensional construct	Education Clinical Commercial Everyday life	Conceptual work	-	-	-	-	-
Csikszentmihalyi & LeFevre (1989)	Multi-dimensional construct	Work and leisure	Quantitative	Experience Sampling Method (ESM)	-	107	Employees	USA
De Manzano <i>et al.</i> (2010)	Multi-dimensional construct	Piano playing	Neuroscience	Heart rate Blood pressure Respiration Head movements Facial movements	MATLAB	18	Musicians	Sweden
Delle Fave & Bassi (1998)	Multi-dimensional construct	Psychology Everyday life experiences	Quantitative	Experience Sampling Method (ESM) Flow Questionnaire	-	-	-	Italy
Delle Fave & Massimini (1988)	Multi-dimensional construct	Work and leisure	Qualitative Quantitative	-	-	193	Occitans, dancers, workers	Italy
Dietrich (2004)	Multi-dimensional construct	Neuroscience	Conceptual work	-	-	-	-	-
Ding <i>et al.</i> (2010)	Multi-dimensional construct	Online financial services	Quantitative	Survey	-	734	Investors	USA

Engeser & Rheinberg (2008)	Levels of flow	Obligatory learning Computer games Voluntary learning	Quantitative	Survey	SPSS	273	Students	Germany
Faiola <i>et al.</i> (2013)	Uni-dimensional construct	Online game-based learning	Quantitative	Online survey	SPSS	115	Second Life users	-
Finneran & Zhang (2003)	Multi-dimensional construct	Computer-mediated environments	Conceptual model	-	-	-	-	-
Finneran & Zhang (2005)	Multi-dimensional construct	Computer-mediated environments	Conceptual work	-	-	-	-	-
Fong, Zaleski & Leach (2014)	Multi-dimensional construct	-	Meta-analysis	-	-	-	-	-
Gao & Bai (2014)	Uni-dimensional construct	Online travel websites e-commerce website atmospherics	Quantitative	Online survey (panel)	AMOS	354	Users	-
García Calvo <i>et al.</i> (2008)	Multi-dimensional construct	Sport and physical activity	Quantitative	Survey	SPSS AMOS	2036	Athletes	Spain
García-Jurado <i>et al.</i> (2019)	Multi-dimensional construct	Gamification in e-commerce	Quantitative	Survey	PLS	253	Amazon users	Spain
Ghani (1995)	Multi-dimensional construct	Human-computer interactions	Quantitative	Survey	-	130	Students	USA
Ghani & Deshpande (1994)	Multi-dimensional construct	Human-computer interactions Work	Quantitative (causal model analysis)	Online survey	Lisrel	158	Computer users in day-to-day work	USA

Ghani, Supnick & Rooney (1991)	Multi-dimensional construct	Computer-mediated and Face-to-Face groups	Quantitative	Survey	Lisrel	59	Students	USA
Guo (2005)	Multi-dimensional construct	Internet shopping	Quantitative	Survey Experience Sampling Method (ESM) Eye tracking Experiment	AMOS	Study 1-A: 40 Study 1-B: 149 Study 1-C: 354	Students	USA
Gupta & Kabadayi (2010)	Uni-dimensional construct	Website loyalty	Quantitative	Survey	Lisrel	145	Students	USA
Han (1988)	Frequency of flow	Life satisfaction	Quantitative	Survey	-	31	Elderly Korean immigrants	USA
Harmat <i>et al.</i> (2015)	Multi-dimensional construct	Videogames	Neuroscience	Electrocardiogram (HRV) HRV - Cardiac activity Respiration Cortical oxygenation. Functional near-infrared spectroscopy (fNIRS)	STATISTICAL	77	Healthy, right-handed individuals	Sweden
Hausman & Siekpe (2009)	Multi-dimensional construct	Website design	Quantitative	Survey	Lisrel	87	Students	USA
Hoffman & Novak (1996)	Multi-dimensional construct	Computer-mediated environments e-commerce	Conceptual model	-	-	-	-	-
Hoffman & Novak (2009)	Multi-dimensional construct	Online consumer behavior	Conceptual model	-	-	-	-	-

Hosseini & Fattahi (2014)	Multi-dimensional construct	Databases' user interface	Quantitative	Survey	AMOS	366	Students	Iran
Hsu & Lu (2004)	Multi-dimensional construct	Online games	Quantitative	Online survey	Lisrel	233	Online game users	Taiwan
Huang & Huang (2013)	Uni-dimensional construct	Virtual shopping	Quantitative	Online survey	AMOS	215	Users	Taiwan
Huang (2003)	Multi-dimensional construct	Website design	Quantitative	Survey	-	243	Web users	Taiwan
Huang (2006)	Multi-dimensional construct	Web navigation	Quantitative	Experience Sampling Method (ESM) Self-report flow scale	Lisrel	290	Consumers	Taiwan
Inal & Cagiltay (2007)	Multi-dimensional construct	Online games	Qualitative	Observations Interviews	-	33	Children	Turkey
Jackson & Marsh (1996)	Multi-dimensional construct	Sport and physical activity	Validation of the scale	Survey - Flow State Scale (FSS)	Lisrel	394	Athletes	USA Australia
Jackson <i>et al.</i> (2001)	Multi-dimensional construct	Sport and physical activity	Quantitative	Survey - Flow State Scale (FSS)	SPSS	236	Athletes	-
Jiang & Benbasat (2005)	Multi-dimensional construct	e-commerce	Quantitative	Experiment	SPSS	84	Students	-
Johnson, Bauer & Singh (2019)	Multi-dimensional construct	mobile interface	Quantitative	Survey	SPSS	124	Students	USA
Joo, Lim & Kim (2012)	Multi-dimensional construct	Electronic learning	Quantitative	Survey	AMOS	326 271	Online learner	Korea
Kamis, Stern & Ladik (2010)	Multi-dimensional construct	e-commerce customization	Quantitative	Online experiment Online survey	PLS	230	Online users	USA
Kaur <i>et al.</i> (2016)	Multi-dimensional construct	social networking	Quantitative	Survey	AMOS	804	Facebook users	India

Kawabata & Mallett (2011)	Multi-dimensional construct	In physical activity	Quantitative	Survey	EQS	1048	Random sample	Japan
Kawabata, Mallett & Jackson (2008)	Multi-dimensional construct	Sport and physical activity	Quantitative	Survey	EQS	970 966	Athletes	Cross-cultural: Japón USA
Keller <i>et al.</i> (2011)	Boredom, fit and overload (channel model of flow)	Computerized tasks	Neuroscience	HRV Salivary cortisol	-	8	Students	Germany
Kiili (2005)	Multi-dimensional construct	Educational games	Conceptual model	-	-	-	-	-
Kim & Han (2014)	Multi-dimensional construct	Smartphone advertisements	Quantitative	Survey	AMOS	256	Students	South Korea
Konradt, Filip & Hoffman (2003)	Multi-dimensional construct	Online learning	Quantitative	Experiment	-	66	Students	Germany
Korzaan (2003)	Uni-dimensional construct	Online purchase intentions	Quantitative	Online survey	AMOS	342	Students	-
Koufaris (2002)	Multi-dimensional construct	Online consumer behavior	Quantitative	Online survey	-	300 280	Book buyers	-
Kwak, Choi & Lee (2014)	Multi-dimensional construct	SNS (Social Networking Service)	Quantitative	survey	PLS SPSS	263	Facebook users	Korea
Larson (1988)	Multi-dimensional construct	Writing	Qualitative	Survey Interview	-	90	Students	USA
Lee & Chen (2010)	Multi-dimensional construct	Online consumer behavior	Quantitative	Online survey	PLS	288	Students	-
LeFevre (1988)	Multi-dimensional construct	Work and leisure	Quantitative	Experience Sampling Method (ESM)	-	107	Workers	USA

Liu <i>et al.</i> (2016)	Uni-dimensional construct	social commerce	Quantitative	Survey	PLS	349	Social commerce users	China
Logan (1988)	Multi-dimensional construct	Solitary ordeals	Qualitative	-	-	-	-	-
Luna, Peracchio & de Juan (2002)	Uni-dimensional construct	Web navigation Online consumer behavior	Conceptual work	Experiment	-	-	-	Cross-cultural
Luna, Peracchio & de Juan (2003)	Uni-dimensional construct	Navigation of a specific Web site	Quantitative	-	-	-	-	Cross-cultural
Macbeth (1988)	Multi-dimensional construct	Lifestyle	Qualitative	Interview	-	59	Ocean cruisers	-
Mahnke & Hess (2014)	Multi-dimensional construct	User experience	Qualitative	Focus group(Ground theory)	-	-	-	Germany
Massimini & Carli (1988)	Multi-dimensional construct	Everyday life experiences	Quantitative	Experience Sampling Method (ESM)	-	47	Students	Italy
Massimini, Csikszentmihalyi & Delle Fave (1988)	Multi-dimensional construct	Biological and cultural evolution	Qualitative Quantitative	Survey Interview	-	636	-	-
Mathwick & Rigdon (2004)	Multi-dimensional construct	Online search experience	Quantitative	Telephone survey	-	-	-	-
Mitchell (1988)	Multi-dimensional construct	Everyday life experiences	-	-	-	-	-	-
Mollen & Wilson (2010)	Multi-dimensional construct	Online consumer experience	Conceptual model	-	-	-	-	-

Moneta & Csikszentmihalyi (1996)	Multi-dimensional construct	Everyday life experiences	Quantitative	Experience Sampling Method (ESM)	ML3	208	Students	USA
Moneta (2004)	Multi-dimensional construct	Everyday life experiences	Conceptual work	-	-	-		Cross-cultural
Moneta (2004)	Multi-dimensional construct	Everyday life experiences	Quantitative	Experience Sampling Method (ESM)	Lisrel	269 533	Students	Cross-cultural China USA
Moneta (2012)	-	-	Literature review	-	-	-	-	-
Nah <i>et al.</i> (2018)	Boredom, flow and anxiety	Videogames	Neuroscience	EEG	Brain Vision Analyzer	44	Students	USA
Nakamura (1988)	Multi-dimensional construct	Everyday life experiences	Quantitative	Experience Sampling Method (ESM)	-	26	Students	USA
Nakamura & Csikszentmihalyi (2005)	Multi-dimensional construct	Psychology	Literature review	-	-	-	-	-
Nel <i>et al.</i> (1999)	Multi-dimensional construct	Web sites and customer involvement	Quantitative	Experiment	-	36	Students	-
Novak, Hoffman & Yung (1998)	Uni-dimensional construct	Computer-mediated environments	Quantitative	Online survey	EQS	572	Web users	USA
Novak & Hoffman (1997)	Uni-dimensional construct	Consumer behavior on the Web Computer-mediated environments	Quantitative	Online survey	XGobi	4232	Non-probabilistic sampling (online)	USA

Novak, Hoffman & Duhachek (2003)	Multi-dimensional construct	Consumer behavior on the Web Computer-mediated environments	Quantitative	Online survey	-	1312	Non-probabilistic sampling (online)	USA
Novak, Hoffman & Yung (2000)	Uni-dimensional construct	Computer-mediated environments e-commerce Customer experience in online environments	Quantitative	Online survey	EQS	1962	Non-probabilistic sampling (online)	-
O'Cass & Carlson (2010)	Uni-dimensional construct	Sporting team websites	Quantitative	Survey	PLS	400	Online panel	Australia
Pace (2004)	Multi-dimensional construct	Computer-mediated environments e-commerce	Qualitative	Semi-structured in-depth interviews Theoretical sampling	NVivo	22	Students and univeristy staff	Australia
Park (2009)	Multi-dimensional construct	Computer-mediated environments Blogging Behavior	Quantitative	Survey	SPSS	432	Students	USA
Park, Cho & Lee (2014)	Uni-dimensional construct	Mobile Instant Messenger	Quantitative	Survey	SPSS	202	smartphone user Students	South Korea
Pearce, Ainley & Howard (2005)	Multi-dimensional construct	Online learning	Quantitative	Experiment Survey	-	42	Students	Australia
Peifer <i>et al.</i> (2014)	Multi-dimensional construct	Stress	Neuroscience	HRV with ECG Salivary cortisol	WinCPRS SPSS	22	males	Germany

Pilke (2004)	Multi-dimensional construct	Computer-mediated environments e-commerce	Qualitative	Face to face semi-structured interviews	-	20	Students	Finland
Powell (2013)	Multi-dimensional construct	Computer anxiety	Literature review	-	-	-	-	-
Privette (1983)	Peak experience, peak performance and flow	Computer-mediated environments e-commerce	Conceptual comparative analyses	-	-	-	-	USA
Pu, Chen & Shieh (2015)	Uni-dimensional construct	Online shopping	Quantitative	Experiment	Lisrel	137	-	Taiwan
Rares Obada (2013)	-	Online environments	Literature review	-	-	-	-	-
Rathunde (1988)	Multi-dimensional construct	Family	Quantitative	Experience Sampling Method (ESM)	-	193	Students	-
Rathunde & Csikszentmihalyi (2005)	Multi-dimensional construct	in Middle School Students (Montessori vs. Traditional School Environments)	Quantitative	Experience Sampling Method (ESM)	-	290	Students	USA
Rettie (2001)	Multi-dimensional construct	Computer-mediated environments e-commerce	Qualitative	Experience Sampling Method (ESM)	-	32	-	-
Reychav & Wu (2015)	Multi-dimensional construct	In mobile training	Quantitative	Experiment	AMOS	501	-	-
Richard & Chandra (2005)	Uni-dimensional construct	Computer-mediated environments e-commerce	Quantitative	Survey	-	-	Online pharmaceutical company	USA

Richard & Chebat (2015)	Uni-dimensional construct	Online consumer behavior	Quantitative	Experiment	EQS	1443	Students	USA
Rodríguez-Ardura & Meseguer-Artola (2019)	Uni-dimensional construct	M-Facebook	Quantitative	Survey Flow description	EQS	778	M-Facebook users	Spain
Rose <i>et al.</i> (2012)	Uni-dimensional construct	Online consumer experience e-Retailing	Quantitative	Survey	PLS	220	Users	USA
Salanova <i>et al.</i> (2005)	Multi-dimensional construct	Work	Quantitative	survey	AMOS SPSS	770	Workers	Spain
Salanova, Schaufeli & Cifre (2014)	Multi-dimensional construct	Flow at work among workgroups	Quantitative	Experiment	AMOS	250	Students	-
Sánchez Franco & Roldán (2005)	Multi-dimensional construct	Online users' goals	Quantitative	Survey	PLS	440	Experiential users Goal-directed users	Spain
Sánchez Franco, Rondán Cataluña & Villarejo Ramos (2007)	Uni-dimensional construct	Web navigation	Quantitative	Online survey	PLS	227	Web users	Spain
Sato (1988)	Multi-dimensional construct	Bosozoku (tribus de motoristas)	Quantitative Qualitative	Survey Interview	-	86 30	Motorbikers	Japan
Schaufeli <i>et al.</i> (2002)	Engagement and burnout	Work	Quantitative	Survey	AMOS	314 619	Students employees	Spain
Shernoff <i>et al.</i> (2003)	Multi-dimensional construct	in Students engagement in high school	Quantitative	Experience Sampling Method (ESM)	-	526	Students	USA
Shim, Forsythe & Kwon (2015)	Multi-dimensional construct	Online shopping	Quantitative	survey	SPSS / AMOS	400	Women	USA

Shin (2006)	Multi-dimensional construct	Online learning	Quantitative	Online survey	SPSS	525	Students	Korea
Sicilia & Ruiz De Maya (2009)	Uni-dimensional construct	Comunicación interactiva	Quantitative	Experiment Flow Narrative description	Lisrel	-	Convenience sampling	Spain
Sicilia & Ruiz De Maya (2007)	Uni-dimensional construct	Consumer interactions with a web	Quantitative	Experiment Flow Narrative description	Lisrel	240	Students	Spain
Sicilia, Ruiz De Maya & Munuera (2005)	Uni-dimensional construct	Advertisement interactive websites	Quantitative	Experiment Flow Narrative description	-	233	Students	Spain
Siekpe (2005)	Multi-dimensional construct	Computer-mediated environments e-commerce Online consumer behavior	Quantitative	Online survey	Lisrel	281	Web users	USA
Sinnamon, Moran & O'Connell (2012)	Multi-dimensional construct	Music performance	Quantitative	Survey	SPSS	205	Musicians	Europe
Skadberg & Kimmel (2004)	Multi-dimensional construct	Human-computer interaction Browsing a Web site	Quantitative	Online survey	-	272	Online users	-
Smith & Sivakumar (2004)	Multi-dimensional construct	Online shopping behavior	Conceptual model	-	-	-	-	-
Tozman <i>et al.</i> (2015)	Multi-dimensional construct Boredom, flow and anxiety	Simulated driving tasks	Neuroscience	HRV Flow Short Scale		18	Students	Australia
Trevinal & Stenger (2014)	Multi-dimensional construct	Online shopping experience	Qualitative	Focus group	-	4 focus groups	Random	France

						(31 persons)		
Trevino & Webster (1992)	Multi-dimensional construct	Information technologies	Quantitative	Survey	-	154	-	-
van Noort, Voorveld & van Reijmersdal (2012)	Uni-dimensional construct	Marketing Web navigation	Quantitative	-	-	Study 1-66 Study 2-103	Social networkers	-
Vlachopoulos, Karageorghis & Terry (2000)	Multi-dimensional construct	Sport and physical activity	Quantitative	Survey	EQS	1231	Athletes	UK
Voiskounsky (2008)	Multi-dimensional construct	Cyberspace	Quantitative	-	-	347 203	Russian speakers Francophones	Cross-cultural: Rusia France
Walker, Hull & Roggenbuck (1998)	Multi-dimensional construct	On-site optimal experience	Quantitative	Survey	-	169	National Recreation Area users	USA
Wan & Nan (2001)	Uni-dimensional construct	e-commerce	Quantitative	Experiment Survey	SPSS	225	Students	USA
Wang & Hsu (2014)	Multi-dimensional construct	Electronic learning	Quantitative Neuroscience	Survey Electroencephalography (EEG)	-	148	Students	Taiwan
Wang, Wang & Wu (2015)	Multi-dimensional construct	Tourism	Quantitative	Survey	-	432	-	China
Webster, Trevino & Ryan (1993)	Multi-dimensional construct	Human-computer interaction	Quantitative	Survey	-	1133	-	USA
Wells (1988)	Multi-dimensional construct	Everyday life experiences	Quantitative	Experience Sampling Method (ESM)	-	49	Mothers	USA
Zaman, Ananda rajan & Dai (2010)	Multi-dimensional construct	Instant Messaging	Quantitative	Online survey	AMOS	207	Students	USA

Zhou & Lu (2011)	Multi-dimensional construct	Mobile commerce Mobile instant messaging	Quantitative	Survey	Lisrel	223	Students	China
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STUDY 3

Generational cohorts' behavior in social commerce

Study 3 is an extension of the work: Herrando, C., Jiménez-Martínez, J., and Martín-De Hoyos, M.J. (2019). Tell me your age and I tell you what you trust: The moderating effect of generations. *Internet Research*, <https://doi.org/10.1108/IntR-03-2017-0135>

3.1. Introduction

Social commerce has gained increasing attention in recent years (Zhang and Benyoucef, 2016). Social commerce websites are platforms that aim to facilitate the sharing and exchange of information among users (Zhang *et al.*, 2014) and are defined as a combination of e-commerce, social networks and social media (Lu *et al.*, 2016; Liang and Turban, 2011). Using social commerce platforms, users can buy products, share information, exchange opinions, receive advice from trustworthy individuals (Ickler *et al.*, 2009; Kim *et al.*, 2012; Zhou *et al.*, 2013) and even make group purchases (Kim, 2013). This kind of trade is based on B2C and C2B2C interactions, enabling users to play an active role in the website based on the opportunity to generate information and influence other users' purchase decisions (Pralhalad and Ramaswamy, 2004). Forrester (2016) reported that online consumers rely on online information to make daily choices, and 42% of interviewees affirmed that they read detailed product reviews at least weekly. According to PricewaterhouseCoopers (2016), 78% of online users stated that they are influenced by social media and 45% of consumers were influenced by reading reviews, comments and feedback.

The purchase experience in social commerce differs from that of traditional e-commerce, primarily based on the participation aspect, since users can get involved in the generation and sharing of content (Huang and Benyoucef, 2013; Wang and Herrando, 2019). Social commerce generates utilitarian, hedonic and social value for users affecting purchase intention (Gan and Wang, 2017). Social commerce platforms, in addition to the information generated by companies, contain tools that facilitate participation and interaction among users, companies and the community. Among the tools offered by social commerce websites that allow the exchange of information are systems for recommendations, referrals, ratings, references, virtual communities, discussion forums, wish lists, social networks, etc. Hence, users are seen as content consumers and content producers (Constantinides, 2014). Consequently, consumers take part in the co-creation of value (Jiao *et al.*, 2015), which increases their purchase and participation intention (Blasco-Arcas *et al.*, 2014). Therefore, in the purchase decision process, when it comes to trusting social commerce websites based on the information available, users can refer not only to that provided by the company, but also that generated and shared by other users. On social commerce websites, the reliability of the

information depends not only on the content provided by the company, but also on user-generated content.

It is believed that people are more likely to trust information that is shared by other consumers than that shared by companies (Dabholkar and Sheng, 2012; Smith *et al.*, 2005; Dellarocas *et al.*, 2007). However, the question arises as to whether we can generalize this to all Internet users, or whether the different generations behave differently from one another. Some studies have already shown that age can affect users' behavior, since technology inclusion is not equal for all generations and moreover, consumers' interests and attitudes vary with age (San-Martín *et al.*, 2015). Likewise, different generational cohorts show different preferences and shopping behaviors on the Internet (Bilgihan, 2016; Parment, 2011; Parment, 2013).

Research about the differences among generations when shopping online is scarce. Several studies have focused on analyzing how one specific generation behaves online, but no studies have compared how different generational cohorts behave on social commerce websites and how they develop trust regarding the source of information with which they interact. Hence, it is considered interesting here to study whether there are generational differences in users' interaction with the different kinds of online information. Therefore, drawing on trust transfer theory (Stewart, 2003; Ng, 2013) and generational cohort theory (Inglehart, 1977), the aim of this study is to contribute to research into online information, by analyzing whether generational differences exist when it comes to trusting one type of information over another (trust in user- vs. company-generated information). To do so, this study proceeds along two steps; first, an integrated model is proposed to analyze the importance of trust in user- vs. company-generated information in boosting trust in social commerce websites; second, the moderating role of age is studied through a consideration of Generations X, Y and Z in social commerce contexts.

The following section reviews the literature on the two kinds of online information (trust in user- vs. company-generated) and its role in social commerce is contextualized through trust transfer theory and generational cohort theory. Next, the moderating roles of generational cohorts X, Y and Z are presented, followed by definition of the hypotheses. Generation X refers to people born between 1960 and 1980; that is, currently between 35 and 55 years old. Generation Y refers to people born

between 1981 and 1990; now around 25 and 34 years old. Generation Z refers to the youngest population, born between 1991 and 2000, now younger than 24 years old. Although this categorization is still under debate, as shown in section 3.3, based on several reports the three generational cohorts can be classified depending on the inclusion of each cohort into the online environment, that is, based on the period of time when people were born and the Internet development. Section 3.4 describes the methodology and the data analyzed; section 3.5 presents the results; and the paper concludes with the theoretical and business implications and limitations of the work and lines of future research.

3.2. Literature review

3.2.1. Trust

Trust has been widely studied in online commerce environments (Gefen and Straub, 2003; Grabner-Kräuter and Kaluscha, 2003; Ng, 2013; Sharma and Crossler, 2014; Farivar *et al.*, 2017). According to Gefen and Straub (2003), trust is defined as users' necessity to control the social environment in which they live and interact. In social commerce, trust has been defined as *the willingness of s-commerce users to trust in the ability, generosity, integrity, and predictableness of a seller based on the belief that the seller would take certain action crucial for its customers regardless of their capability to monitor or control the seller* (Kim and Park, 2013, p. 325). Therefore, the information contained on a website could contribute to trust, although this information is not only generated by the seller, but also by other users. In online environments, trust is crucial to mitigate the risk and insecurity barrier. Grabner-Kräuter and Kaluscha (2003) reviewed literature about trust in the e-commerce context and stated that there is a common belief that *trust only exists in an uncertain and risky environment*. According to the authors, an uncertain environment is one in which there is a lack of control and the available resources are limited. Hence, through online content, companies can offer more sources of information and users can make use of social tools to share and obtain information, while also controlling the information exchanged. Trust toward the social commerce site not only reduces perceived risk, but also increases purchase intentions (Farivar *et al.*, 2017). Within social commerce, social interactions can change the perception of uncertainty and insecurity; this is due to factors of sociability and human

contact, which can encourage positive attitudes towards Internet shopping (Hassanein and Head, 2007). If social commerce users trust a website, it is assumed that this trust will be reflected in the comments and the information shared on the platform, whereby trust can be transferred from one user to another.

Trust transfer theory postulates that trust can be transferred from different sources, such as individuals, the communication process, or the context (Stewart, 2003; Ng, 2013). The development of trust is based on a cognitive process, among other things, since users not only process the information but also derive an impression about the source (Stewart, 2003). It has been suggested that one of the necessary conditions for trust transfer is the existence of perceived relational bond (Wu *et al.*, 2016). Hence, this study considers that transfer of trust from user- or company-generated information to social commerce websites might depend on the generational cohort, since age groups share unique common bonds. Trust transfer in online settings has also been studied by several authors; for instance, Pavlou and Gefen (2004), in a study on how to build trust in online auction marketplaces, found that trust in an intermediary can be transferred to trust in the community of sellers. Trust can be also transferred from online payment to mobile payment continuance intention through satisfaction (Cao *et al.*, 2018). In the social commerce context, Shi and Chow (2015) suggested that trust is not only based on the trustworthiness of companies, but also on social interactions, naming information-based trust as trust in information from companies and from other customers in social commerce, where trustworthy information is understood as that which is accurate, valid and reliable. According to these authors, on social commerce websites “*trust is important for customers to evaluate the quality of information from various sources, and serves as a foundation for their sharing of information with others*” (Shi and Chow, 2015, p. 1183). Also in social commerce, it has been shown that trust toward members can be transferred into trust toward the community (Chen and Shen, 2015), and that users may develop trust based on information from the social community (Ng, 2013). Therefore, drawing on trust transfer theory, this study hypothesizes that trust can be transferred as much from user to user as from company to user. The current investigation considers two kinds of information sources (though there are other variables that obviously also generate trust). On the one hand, in social commerce contexts, trust is increased by social WOM—that is, the information shared by users. Indeed, several authors have stated that user-generated information has a positive effect

on trust (Filieri, 2015; Han, 2014; Kuan and Bock; 2007, Bock *et al.*, 2012). On the other, users can develop trust based on website content provided by the company (Chen *et al.*, 2015; Beldad *et al.*, 2010; Kim and Park, 2013). Thus, focusing on these two sources of information, this study considers how Generations X, Y and Z differ in terms of trusting information sources (trust in user- vs. company-generated information).

3.2.2. User-generated information

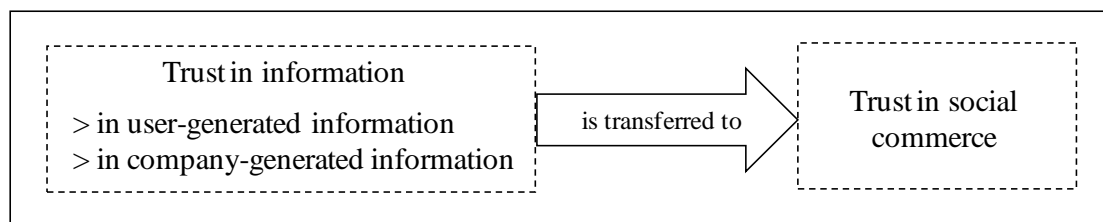
User-generated information refers to content posted and shared by users on social commerce websites. In this study, trust in user-generated information refers to trustworthy, frank and reliable user-generated content shared by recommendations and referrals, ratings and reviews, and forums and virtual communities (Hajli *et al.*, 2014). These tools offer an important amount of information and help others to make informed purchase decisions (Liu *et al.*, 2011). Participation is crucial to boost information quality on websites (Yang *et al.*, 2015) and it has been shown that information provided via social commerce has a positive effect on trust (Han, 2014; Jung, 2014). Likewise, social commerce components—again including recommendations and referrals, forums and virtual communities, and ratings and reviews—increase trust, whilst decreasing mistrust (Hajli, 2015). The quality of information shared by other users via websites refers to its relevance, accuracy, credibility and usefulness, among other aspects (Filieri, 2015). As a rule of thumb, social commerce websites are seen as trustworthy platforms because the information is generated by consumers themselves (Linda, 2010). It has been shown that online peer recommendations influence trust in social media settings (See-To and Ho, 2014) and the quality of the information, communication and WOM is critical in building this trust (Linda, 2010). According to Alshibly (2014), the effectiveness of social commerce depends, among other things, on the system and the information, which must be detailed, comprehensible and up to date. In fact, the success of a website consists of shared information and fostering connectivity and socialization (Hodis *et al.*, 2015).

3.2.3. Company-generated information

Company-generated information pertains to product-related content offered by the company on the website, with the intention of providing details such as product descriptions, sizes, measurements, available options, images and videos, materials, prices, delivery information, etc. In other words, all the information created and spread

by the company. Company-generated information refers to *the latest, accurate, and complete information provided by a website to its users* (Kim and Park, 2013). According to Lin and Lu (2000), the quality of the website depends on the information provided and the site's responsiveness and accessibility. Hernández-Ortega *et al.* (2009) stated that the quality of a website is measured partly in terms of accessibility and content. This is why various investigations have highlighted the importance of companies focusing on the reliability of the content they offer. The information itself can also positively affect trust (Chen *et al.*, 2015; Beldad *et al.*, 2010; Kim and Park, 2013) and it has been said that the information offered by the company decreases the perception of uncertainty and risk in electronic commerce and thus has a positive effect on trust (Kim *et al.*, 2008; Liao *et al.*, 2006).

Figure 3.1. Conceptual model of trust transfer in social commerce contexts



3.2.4. Generational cohort theory

However, marketers should not approach users as a whole, since age can affect consumers' interest, attitudes and shopping behaviors (Meriac *et al.*, 2010; San-Martín *et al.*, 2015; Parment, 2011; Parment, 2013; Pieri and Diamantinir, 2010). Hence, segmenting the target would improve companies' ability to focus on the information source that must be stressed in order to foster trust on the social commerce website. Generational cohort theory (Inglehart, 1977) posits that populations can be segmented into generational cohorts based on their years of birth, since age groups develop common attitudes and beliefs based on their life experiences (Meriac *et al.*, 2010; Meredith and Schewe, 1994; Howe and Strauss, 1992). Hence, generation market segmentation has been considered more efficient than segmenting simply by age (Lissitsa and Kol, 2016; Schewe *et al.*, 2000; Parment, 2013), without considering

group attitudes and behavior. Generational cohort theory has been applied to studying offline (Brosdahl and Carpenter, 2011; Jackson *et al.*, 2011; Pentecost and Andrews, 2010) and online consumer behavior (Bilgihan, 2016; Lissitsa and Kol, 2016). However, to the best of our knowledge, it has not been studied in social commerce contexts to date.

3.3. Development of hypotheses

Several studies have already shown the importance of online information on trust (Filieri, 2015; Han, 2014; Chen *et al.*, 2015); however, the vast majority has tested the influence of each type of information together with other antecedents of trust. The conceptual model proposed in this study is based on the idea that trust can be transferred from the information generated—whether by users or by the company—to the social commerce website. That is, if users trust in user- or company-generated information, this trust will be transferred to the social commerce website (see Figure 3.1). Based on trust transfer theory, the research model proposed in this paper relies on comparative analysis in order to study the individual influence of each source of information on trust. The main contribution of this investigation is provided in the following lines, in which the moderating effect of generational cohorts is hypothesized in order to study the effect on different types of information of different generations.

Generational cohorts have been segmented to show the development of similar attitudes and beliefs among people (Meriac *et al.*, 2010). We can distinguish three main generational cohorts currently: Generation X, or X-ers (between 1960 and 1980); Generation Y, Y-ers, or millennials (between 1981 and 1990); and Generation Z, Z-ers, post-millennials, or centennials (between 1991 and 2000). Generation X grew up before the Internet was launched, but X-ers have learnt to deal with online environments (American Marketing Association, 2016b). X-ers find explanations of product features necessary to make purchase decisions (Himmel, 2008); read reviews and opinions; and look for convenience and community relations (Lissitsa and Kol, 2016). Generation Y grew up with technology (Palmer, 2009) and is used to a wide range of online activities (Bilgihan *et al.*, 2013, Lester *et al.*, 2006). It is said that Generation Y processes website information five times faster than older generations do (Kim and Ammeter, 2008). Y-ers are also known as *digital natives*, *the millennial generation* or *the next generation*

(Bilgihan, 2016). Members of Generation Z were born during the 1990s (American Marketing Association, 2016a), have not lived in a world without the Internet and are on social networks such as Facebook, Instagram and Snapchat (Puro Marketing, 2015). Z-ers were born in a post-linear digital world and have been described as industrious and collaborative users (Kantar Millward Brown, 2016).

This study considers the moderating role of age, specifically through the three different cohorts: Generations X, Y and Z. Several authors have argued that young users are more experienced with the Internet (e.g. San-Martín *et al.*, 2015) because, in the case of millennials, they grew up with this technology (Palmer, 2009). However, although young people are more used to the Internet (Pieri and Diamantinir, 2010), older users are more experienced in terms of purchasing (Alam *et al.*, 2008). The moderating role of age has been studied in e-commerce (Yoon, 2002, Kim *et al.*, 2012, Hill and Beatty, 2011) and m-commerce (San-Martín *et al.*, 2015) contexts to observe differences in the behavior of adults compared to young adults. Although Yoon and Occeña (2015) studied age as a moderator of trust in e-commerce, to the best of the current authors' knowledge, it has not been tested before in social commerce contexts. Hence, if trust depends on the information provided, it can be said that the different kinds of information users process (user- vs. company-generated) can affect trust in social commerce differently as well. Based on the idea that X-ers require product explanations to make their purchase decisions, we can consider that the oldest generation will trust more on the company-generated information than user-generated information.

In relation to the above, it can be considered that the younger the generation, the more willing people will be toward user-generated content. The importance of user-generated information is that individuals produce and consume it (Ickler *et al.*, 2009) and can get opinions from a community, thereby accessing up-to-date content in a common jargon (Grange and Benbasat, 2010), feeding the system and offering more information. This information generated on social commerce websites increases trust (Hajli *et al.*, 2014). It has been shown that information provided by users on websites positively affects trust (Filieri, 2015; Han, 2014; Kuan and Bock, 2007; Bock *et al.*, 2012). Because Z-ers and Y-ers seem to be most active on the Internet, since they are used to online environments, it is assumed that they will tend more toward user-generated information. This begs the following research questions: RQ1: *Is it true that*

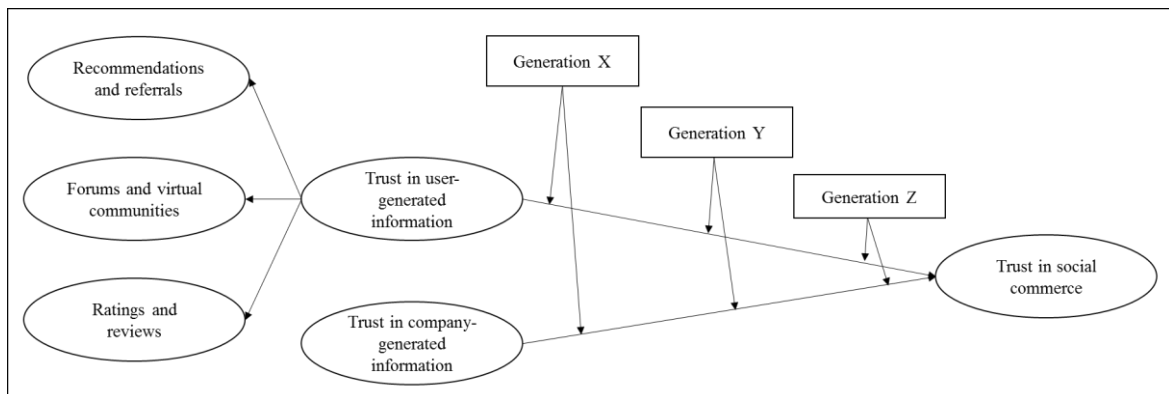
the younger the generation, the more trust in social commerce is transferred from trust in user-generated information?; and RQ2: Is it true that the older the generation, the more trust in social commerce is transferred from trust in company-generated information? Thus, based on these questions, we hypothesize the following moderating effects of generational cohorts (see the research model in Figure 3.2):

H.X-ers: For X-ers, trust in social commerce is transferred mainly from trust in company-generated information than from trust in user-generated information.

H.Y-ers: For Y-ers, trust in social commerce is transferred mainly from trust in user-generated information than from trust in company-generated information.

H.Z-ers: For Z-ers, trust in social commerce is transferred mainly from trust in user-generated information than from trust in company-generated information.

Figure 3.2. Research model



3.4. Methodology

3.4.1. Survey, sample and data-collection procedure

The data used for this analysis were collected between February and June 2015 through an online survey carried out by a specialized market research agency. The respondents' age range was representative of the Spanish online consumer population according to Telecommunication and Information Society Spanish Watch (ONTSI, 2014). The total number of responses was 771, but participants older than 55 years were removed from the sample, since they do not belong to the generations studied in this investigation. Likewise, after having collected all the data and reviewed the literature

about generations, the sample was segmented into the three generational cohorts studied in this investigation, based on the years of birth of the respondents. In this way, the distribution of data was ensured to represent Spanish online consumer society. The final sample consisted of 715 users of social commerce websites, of which 49.9% were male and 50.1% female, with ages ranging from 16 to 55 (see Table 3.1). All respondents were online buyers who had recently bought from social commerce websites.

At the beginning of the questionnaire, after being informed about the anonymity of the questionnaire and the lack of right or wrong responses and being given an explanation of the concept of social commerce, the participants were asked whether they had recently purchased using a website with the characteristics of a social commerce platform. If they answered yes, they carried on answering the survey and were asked to name the social commerce website from which they had purchased. Among their answers were Amazon (34%), AliExpress (7%) and Booking (3.5%). Throughout the questionnaire, the respondents were continuously asked to recall their experience on the website they had chosen.

Table 3.1. Detailed demographics of the participants

Age	N	Gender (Female/Male)	
Z-ers: 16-24	135	19%	58% / 42%
Y-ers: 25-34	262	37%	46% / 54%
X-ers: 35-55	318	44%	50% / 50%
Total	715	100%	50.1% / 49.9%

3.4.2. Instrument development and validation

Before commencing data collection, the survey instrument was checked by various experts in order to ensure that all items and text were understandable and thereby to assess face and content validity. This pretest led to some minor changes, most of which were oriented toward shortening the questionnaire's length and making it easier to complete.

In order to ensure content validity, literature about the variables included in the model was thoroughly reviewed and the variables were adapted to the social commerce

context. The survey was checked by several experts. Trust in user-generated information was measured as a second-order reflective construct that consists of three sub-dimensions—the information derived from recommendations and referrals; forums and virtual communities; and ratings and reviews—with three items in each, adapted from the scales of Han and Windsor (2011) and Hajli *et al.* (2014). Trust in company-generated information consisted of three items adapted from the scale of information quality by Kim and Park (2013). Trust in social commerce, which comprised four items, was adapted from the scale of Kim and Park (2013) (see Table 3.2). All survey variables were measured on a seven-point Likert scale, with the lowest score being 1 (strongly disagree) and the highest 7 (strongly agree). Age was measured using a nominal scale and gender was gauged using a non-ratio scale in order to collect the exact age and thus build up the generational cohort segments.

Table 3.2. Scale

<i>Trust in user-generated information</i> — Han & Windsor (2011), Hajli <i>et al.</i> (2014):	
RR1	Overall, the recommendations and referrals on this social commerce website are trustworthy.
RR2	I feel the recommendations and referrals on this social commerce website are generally frank.
RR3	I feel the recommendations and referrals on this social commerce website are generally reliable.
FC1	Overall, the forums and communities on this social commerce website are trustworthy.
FC2	I feel the information from forums and communities on this social commerce website is generally frank.
FC3	I feel the information from forums and communities on this social commerce website is reliable.
RRw1	Overall, the ratings and reviews on this social commerce website are trustworthy.
RRw2	I feel the ratings and reviews on this social commerce website are generally frank.
RRw3	I feel the ratings and reviews on this social commerce website are reliable.

<i>Trust in company-generated information</i> —adapted from Kim and Park (2013):	
CI1	This social commerce website provides accurate information on the item that I want to purchase.
CI2	This social commerce website provides reliable information.
CI3	This social commerce website provides sufficient information when I try to make a transaction.

<i>Trust in social commerce</i> —adapted from Kim and Park (2013):	
T1	This social commerce website is trustworthy.
T2	This social commerce website wants to be known as a company that keeps its promises and commitments.
T3	This social commerce website will keep its promises.
T4	I believe in the information that this social commerce website provides.

Note: RR = Recommendations and referrals; FC = Forums and virtual communities; RRw = Ratings and reviews; CI = Trust in company-generated information; T = Trust in social commerce.

3.4.3. Multivariate assumption of normality

The multivariate assumption of normality was tested through the asymmetry and kurtosis values—which were greater than 2.52 and 1.96, respectively (Hair *et al.*, 2010)—and the significance of the Kolmogorov–Smirnov–Lilliefors and Shapiro–Wilk statistics, so that distribution of the data did not fulfill the hypothesis of normality.

3.4.4. Exploratory factor analysis

Before validating the full measurement and structural model, an exploratory factor analysis was conducted using the principal axis factoring method and varimax rotation (Hair *et al.*, 1999; Kaiser, 1970; Kaiser, 1974) with SPSS 22. The Kaiser–Meyer–Olkin (KMO) value was greater than the threshold of 0.70 (KMO trust in user-generated information = 0.906; KMO trust in company-generated information = 0.743; KMO trust in social commerce = 0.849) and Barlett's sphericity test was significant. The findings show that each item loaded onto its factor.

3.4.5. Measurement model validation

The focus of data analysis is the effect on different types of information (trust in user- vs. company-generated information) of different generations (Generations X, Y and Z) in boosting trust toward the social commerce website. To do so, firstly, we ran the measurement and the structural model in order to test the relationship between trust in user- and trust in company-generated information on trust in social commerce; and secondly, we analyzed the moderating effects of generational cohorts.

3.4.5.1 Convergent validity and construct reliability

To ensure the validity and reliability of the measurement scale, construct validity was analyzed using partial least squares (PLS) with the statistical software Smart PLS 3 (Ringle *et al.*, 2015). Construct validity determines whether there are high correlations between measures of the same construct—i.e., convergent validity—and low correlations between measures of constructs that are expected to differ—i.e., discriminant validity (Straub, 1989; Campbell and Fiske, 1959).

Based on Fornell and Larcker (1981), to assess convergent validity the reliability of each item was examined and deemed to show internal consistency when the Cronbach's alpha (CA) values were higher than 0.70 (Nunnally and Bernstein, 1994;

Nunnally, 1978). The composite reliability (CR) of each construct was also considered, with values greater than 0.60 deemed acceptable (Bagozzi and Yi, 1988; Fornell and Larcker, 1981), along with the average variance extracted (AVE), which had to exceed the value of 0.50 (Fornell and Larcker, 1981) and advisable be greater than 0.70 (Hair *et al.*, 2014).

Table 3.3. Reliability and convergent validity of the measurement model

Variable	Item	Mean	SD	Loading	t-value	CA	CR	AVE
Trust in user-generated information	RR1	5.37	1.229	0.867	62.364***			
	RR2	5.32	1.258	0.887	70.926***			
	RR3	5.32	1.226	0.889	87.189***			
	FC1	5.27	1.309	0.857	59.405***			
	FC2	5.23	1.314	0.857	51.545***	0.961	0.967	0.764
	FC3	5.19	1.281	0.884	80.553***			
	RRw1	5.40	1.261	0.870	87.189***			
	RRw2	5.33	1.282	0.875	70.569***			
	RRw3	5.30	1.282	0.882	73.397***			
Trust in company-generated information	CI1	5.29	1.231	0.883	75.199***			
	CI2	5.23	1.243	0.923	138.940***	0.885	0.928	0.812
	CI3	5.25	1.235	0.898	87.094***			
Trust in social commerce	T1	5.53	1.266	0.918	118.540***			
	T2	5.56	1.288	0.894	58.177***	0.937	0.955	0.841
	T3	5.44	1.278	0.941	163.592***			
	T4	5.35	1.279	0.914	100.472***			

Note: SD = Standard Deviation; CA = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted. *** $p < 0.01$.

3.4.5.2. Discriminant validity

The discriminant validity was tested to confirm that the constructs differed from each other. To do so, first, the cross-loadings (Hair *et al.*, 1999) were analyzed. Second, a symmetric matrix was used to corroborate that the AVE on the diagonal was larger

than its corresponding squared correlation coefficients in its rows and columns (Fornell and Larcker, 1981; Hair *et al.*, 1999). Finally, the HT/MT (Heterotrait/Monotrait) ratio between correlations (Henseler *et al.*, 2015) was determined; this showed discriminant validity when the correlations between the construct items were higher than the correlations that measured other constructs. The measurement model results are shown in Tables 3.3 and 3.4.

Table 3.4. Discriminant validity

	Trust in user- generated information	Trust in company- generated information	Trust in social commerce
Trust in user-generated information	0.874	0.557	0.534
Trust in company-generated information	0.600	0.901	0.647
Trust in social commerce	0.508	0.595	0.917

Note: Diagonal values are AVE squared roots. Below the diagonal: correlations among factors. Above the diagonal: the HT/MT ratio

3.5. Results

3.5.1. Testing of the hypotheses and full structural model

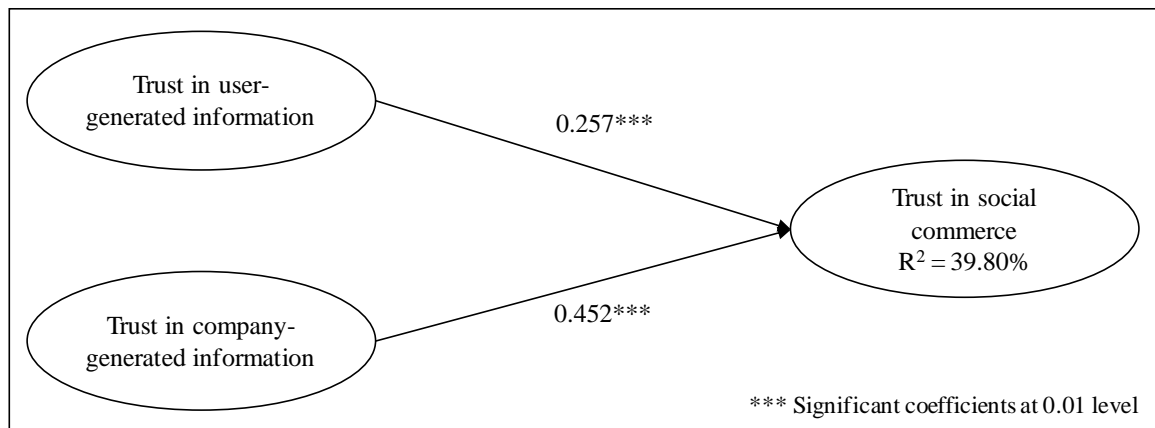
The validity of the model was assessed by analyzing the structural path coefficients and the percentage of variance explained, since PLS does not generate an overall goodness-of-fit index as does structural equation modeling. Bootstrapping was performed with 5,000 sub-samples to test the statistical significance. The empirical results (shown in Table 3.5 and Figure 3.3) confirm that the relationships of the parsimonious model are supported. Specifically, the findings show that trust in user-generated information ($\beta = 0.257$, $t = 4.997$, $p < 0.01$) and trust in company-generated information ($\beta = 0.452$, $t = 9.087$, $p < 0.01$) positively influence trust on social commerce websites. It is noteworthy that the effect of trust in company-generated information on trust in social commerce was greater than the effect of trust in user-generated information. The analyses explained 39.80% of the variance of trust in social

commerce. A blindfolding analysis, through cross-validated redundancy (Hair *et al.*, 2014), confirmed that the model has predictive relevance.

Table 3.5. Structural model results

Paths	Standardized coefficients (β)	T-Value (t) (bootstrapping)
Trust in user-generated information \rightarrow Trust in social commerce	0.257	4.997***
Trust in company-generated information \rightarrow Trust in social commerce	0.452	9.087***
Variance explained of trust in social commerce: $R^2 = 0.398$		
Blindfolding analysis: Q^2 (Trust in social commerce) = 0.333		
Level of significance: *** $p < 0.01$.		

Figure 3.3. Structural model



The empirical results show that trust in company-generated information is more important in boosting trust in social commerce than trust in user-generated information is. Next, the study examined the different generational cohorts' development of trust, through the moderating effects of age according to Generations X, Y and Z.

3.5.2. Moderating effects

A moderator variable is defined as one that systematically modifies the direction or strength of the relationship between an exogenous and an endogenous variable (Sharma *et al.*, 1981; Baron and Kenny, 1986). To analyze the following moderating effects, multi-group analyses were conducted to test the difference between means using t-tests. Furthermore, through the parametric approach, the significance of the parametric test was observed (Chin, 2000; Sánchez-Franco and Roldán, 2005) and the Welch-Satterhwaite test (Keil *et al.*, 2000); and through the non-parametric approach the significance of Henseler's Multigroup Analysis Test was determined (Henseler *et al.*, 2009).

According to the analysis of the effect on different types of trust in information (user- vs. company-generated information) of different generations (Generations X, Y and Z) in boosting trust in social commerce websites, there is support for the hypotheses H.X-ers and H.Z-ers, since X-ers do not transfer their trust in social commerce mainly from trust in user-generated information, but rather from trust in company-generated information (H.X-ers); and Z-ers transfer their trust in social commerce mainly from trust in user-generated information, rather than from trust in company-generated information (H.Z-ers). However, contrary to expectations, Y-ers' trust in social commerce is transferred mainly from trust in company-generated information, rather than from trust in user-generated information; thus, hypothesis H.Y-ers is not supported.

Table 3.6 shows the variations in the path coefficients for each of Generations X, Y and Z, for each of the proposed hypotheses. The results indicate potential differences between the three subsamples (Generations X, Y and Z). First, Generation X showed a similar pattern to the original structural model ($\beta_{\text{users}} = 0.257 < \beta_{\text{comp}} = 0.452$); for X-ers, trust in company-generated information (H.X-ers: $\beta_{\text{comp}} = 0.392$) is more important in the development of trust in social commerce than trust in user-generated information is (H.X-ers: $\beta_{\text{users}} = 0.275$), although this difference is even greater for Generation Y (H.Y-ers: $\beta_{\text{users}} = 0.167 < \beta_{\text{comp}} = 0.565$). However, the difference between the two subsamples (Generation X vs. Y) is not significant in the case of trust in user-generated information. Second, when comparing between Generations X and Z, Z-ers show opposite results compared to X-ers (H.Z-ers: $\beta_{\text{users}} = 0.492 < \beta_{\text{comp}} = 0.298$); for Z-ers, trust in user-generated information is more

important in boosting trust in social commerce than trust in company-generated information is. Third, by comparing between Generations Y and Z, differences in subsamples were detected. In response to the research questions, we can conclude that the younger the generation, the more trust in social commerce is transferred from trust in user-generated information. However, Generation Y's trust in social commerce is transferred from trust in company-generated information to a greater extent than for the older generation—that is, Generation X.

Table 3.6. Structural model results for the three subsamples

	Total		Difference			
	beta	(t-value)	beta	(t-value)	beta	(t-value)
UI → T	0.257	(4.997***)				
CI → T	0.452	(9.087***)				
	GEN X		GEN Y			
(UI → T)	0.275	(3.379***)	0.167	(2.464**)	0.108	(0.915)
(CI → T)	0.392	(5.081***)	0.565	(8.581***)	0.173	(3.500***)
	GEN Z		GEN X			
(UI → T)	0.492	(5.208***)	0.275	(3.341***)	0.216	(1.867**)
(CI → T)	0.298	(2.933***)	0.392	(5.092***)	0.094	(2.159**)
	GEN Y		GEN Z			
(UI → T)	0.167	(2.506**)	0.492	(5.176***)	0.325	(2.670***)
(CI → T)	0.565	(8.731***)	0.298	(2.942***)	0.267	(5.789***)

When the t value obtained using the bootstrap method is greater than Student's t value, the hypothesis is confirmed with a significance of 99%. *** $p < 0.01$ ($t = 2.6012$). ** $p < 0.05$ ($t = 1.9722$). UI = Trust in user-generated information; CI = Trust in company-generated information; T = Trust in social commerce.

As expected, trust in company-generated information is more important in boosting consumers' trust in social commerce contexts than trust in user-generated information is for the older generation (Gen.X: $\beta_{\text{users}} = 0.275 < \beta_{\text{comp}} = 0.392$), in comparison with the younger generation (Gen.Z: $\beta_{\text{users}} = 0.492 < \beta_{\text{comp}} = 0.298$). According to previous studies, younger people are more influenced by content

generated by other users (PricewaterhouseCoopers, 2016), perhaps because Z-ers are used to interact on social networks (Puro Marketing, 2015; Pieri and Diamantinir, 2010). However, contrary to the expected direction, it must be highlighted that the middle age group, Generation Y, showed a greater preference for trusting in content created by the company (Gen.Y: $\beta_{users} = 0.167 < \beta_{comp} = 0.565$), to an even greater extent than X-ers.

3.6. Conclusions and discussion

The aim of this study was to analyze which information type is more important in transferring trust in social commerce contexts, according to the different generational cohorts: content generated by users (user-generated information), or by the company (company-generated information). Following the idea that people are more likely to trust information that is shared by other consumers than by companies (Dabholkar and Sheng, 2012; Smith *et al.*, 2005; Dellarocas *et al.*, 2007), the study compared how trust in these two types of information is transferred to trust in social commerce. The empirical findings also suggest that trust in company-generated information is more important in boosting trust in social commerce contexts than trust in user-generated information is. After analyzing how trust in user- and company-generated information impact trust in social commerce in general, the moderating effect of the generational cohorts was tested.

Generational cohorts do not all act in the same manner (Meriac *et al.*, 2010), since consumers' behavior and attitudes vary with age (San-Martín *et al.*, 2015; PricewaterhouseCoopers, 2016). However, there are group similarities (Bilgihan, 2016; Parment, 2011; Parment, 2013). Thus, the role of age as a moderator variable was studied by considering Generations X, Y and Z in order to determine how trust in social commerce is impacted for these generations by trust in user-generated versus company-generated information. Although several studies have analyzed consumers' behavior based on one generation, there is a gap in the literature about the differences among generations.

Based on the idea that generations develop similar attitudes that differ from those of other age groups (Meriac *et al.*, 2010), it can be stated that the development of consumer trust in social commerce based on the type of information varies among

generational cohorts. As a rule of thumb, older generations prefer company-generated information, while younger cohorts are more influenced by user-generated information. Therefore, the general belief asserting that people are more likely to trust information shared by other consumers over that from companies (Dabholkar and Sheng, 2012; Dellarocas *et al.*, 2007; Smith *et al.*, 2005) must take age into consideration.

The data suggest that the youngest generation (Z-ers) develops trust in social commerce mainly based on trust in user-generated information, whereas the oldest generation (X-ers) relies on trust in company-generated information. Generation Z does not know a world without the Internet (Puro Marketing, 2015), while Generation X has lived in both (American Marketing Association, 2016b) offline and online worlds. In the latter, information comes mainly from companies or mass media, whereas in online environments, information can be accessed via websites, such as social commerce environments where users can buy, share content, exchange opinions, get advice, etc. (Ickler *et al.*, 2009; Kim *et al.*, 2012; Zhou *et al.*, 2013). According to the results of this study, while Generation Z considers trust in user-generated information as more important in boosting trust in social commerce, for Generation X trust in company-generated information is the most significant.

It is surprising that millennials, who have been the focus of several e-commerce studies, showed less trust in user-generated information in this study. This may be the result of concerns about paid and fake online reviews (Filieri, 2015). Nevertheless, it must be pointed out that Generation Y is currently considered to comprise millennials—i.e., those aged 25 to 34 years old—following the exclusion of Generation Z—those aged between 15 and 24 years old—who were previously also classified as millennials. Thus, Y-ers are grouped as the “medium age” generation and are characterized as expert Internet users (Palmer, 2009), which makes them more reflective when it comes to the credibility of the various kinds of information they find on the Internet. In a nutshell, according to the current classification of generational cohorts, we have to look beyond the former classification of millennials (which included everyone under 34 years old) in order to divide between Generation Z (the youngest) and Generation Y (medium age). Based on this understanding, in comparing between Z-ers and Y-ers, the empirical findings contribute to the assumption that the more experience a generation has with the Internet, the more important trust in company-generated information is when it comes to transferring this to trust in social commerce.

Moreover, it is believed that Generation Y has influenced the evolution of social media as an important source of product information and is influenced by online reviews (Mangold and Smith, 2012). However, the data here show that Generation Y considers company-generated information as the most important type, even more so than does Generation X. The percentage of variance explained for each individual generational cohort model (R^2 of trust in social commerce for Y-ers = 43.5% and for X-ers = 35.8%) shows that the model fits better for Generation Y. Thus, we think that there are other factors involved in trust development related to quality of the information beyond the website itself. Hence, the unexpected result of Y-ers transferring trust in social commerce mainly from trust in company-generated information could also be due to the influence of other factors on trust in social commerce, as well as other factors that are not related to the online information, such as previous experience or familiarity with the brand. For future research, it would be interesting to observe which other website elements or persons can affect trust, such as trust in the information generated by influencers, as well as offline factors such as trust in the offline store or trust in the company's salespersons.

3.7. Implications for theory and practice

This study opens new horizons for both marketers and researchers. Regarding business implications, the findings show that trust in company-generated information influences trust in social commerce a great deal, what can be considered an important advantage for the company, since this kind of information can be controlled and thus adapted to the target generation. Depending on the website target—that is, only one, or several generational cohorts—companies must balance both types of information. However, it has been shown that users transfer trust from their trust in different types of information across generations. For instance, for companies whose target is X-ers, it would be advisable for the website to provide sufficient social commerce tools (e.g., ratings and recommendation systems, discussion boards, etc.) to enable users to rely on user-generated information; meanwhile, for companies whose target is Y-ers, websites must focus on providing high-quality and appropriate company-generated information. Likewise, companies that target different generations through the same website should create a balance of both types of information. Hence, apart from paying attention to the

management of user-generated content, websites must manage the content controlled and created by the company (which is also the easier information type to control). Nevertheless, consistent with the idea of the salience of user-generated content (Mangold and Smith, 2012), websites should define their user target carefully. If a website is aimed toward Z-ers, user-generated information should be taken into account, whereas websites focused on X-ers need to take greater account of content generated by the company. The most challenging generational cohort seems to be Y-ers that, during ages, have been labeled as the *millennial generation* consisting of techie digital natives (Bilgihan, 2016), however they behave as if they were not so interested in the online user-generated information. Nevertheless, according to the empirical results, it seems that Y-ers are changing and are becoming less influenced by user-generated content compared to previously (Mangold and Smith, 2012). This changing environment is a current concern for companies, since it indicates that Generation Y is a difficult cohort to understand. Nevertheless, under no circumstances should companies focus only on one source of information; they have to combine both kinds, while focusing on the one that is most relevant to their target generational cohort. Over time, the members of these generational cohorts will grow older and will also evolve as a group; thus, companies should track them and study how time and evolution affect the different generations' behavior. In the same line, other generational cohorts will appear. In fact, some media has started to discuss the “newcomer generation”—those who are currently under 15 years old—a cohort that has grown up surrounded by target advertising, influencers, ubiquity technology, smartphones, touchable screens and apps.

Thus, the theoretical contribution of this study is that both sources of information—user- and company-generated—generate trust, but in a different manner; we cannot consider users as a whole in social commerce contexts. It is necessary to segment generational cohorts and, depending on the target, try to boost the reliability of information from users or from the company. Trust in user-generated information is not easy for the company to control, but website managers should be proactive when it comes to dealing with consumers' concerns, demands and questions.

3.8. Limitations and future lines of research

This study is not without limitations. First, it studied the reliability of information stemming from recommendations and referrals, ratings and reviews, and forums and virtual communities as a whole, as a second-order reflective factor. Participants were asked to report their experience with trust in user-generated information and were asked about how frank, reliable and trustworthy the information is. However, it would be interesting to discriminate between positive and negative content, since some studies have highlighted that the valence of the content can affect users differently, with negative online reviews even being more useful than positive ones (Casaló *et al.*, 2015). Thus, future studies should consider how user-generated-information valence influences trust across generations. In the same line, some studies suggest that the level of involvement with the brand can also affect users' defensive behavior (Hassan and Casaló, 2016), what could also affect trust transferred.

Another line of research could focus on studying the role of influencers; that is, non-professional users who share their experiences and recommendations in blogs or social networks. Moreover, it is necessary to take into account information saturation—i.e., the amount of content on the website. It would be interesting to study how different information quantities affect users' perception of the information quality. Finally, it could be useful to explore the reason why Generation Y attitudes seem to be changing and whether this is also occurring within other generations.

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STUDY 4

Social commerce optimal experience across cultures

4.1. Introduction

Are we all cut from the same cloth? Hofstede predicted that “*new technologies will make societies more and more similar*” (Hofstede, 2011, p. 22). Online users can access the same websites all around the world: a user from Sweden can buy something online from Japan; and an Australian can share information about a French product on a Canadian discussion forum. At the same time, there are differences between countries regarding the way online users manage product returns, customer service or ways of payment (Forbes, 2017). Undoubtedly, globalization is advancing. However, does the era of interconnectivity take into account that individuals have different cultural backgrounds? Based on the assumption that culture influences consumer behavior (Luna and Gupta, 2001; McCort and Malhotra, 1993; Richard and Habibi, 2016; Schumann *et al.*, 2010; Triandis, 1972), those websites that do business in a global market have to engage with users from different cultural origins. *Should websites be designed, therefore, to target international users as a whole or should they be adapted to consider the cultural origins of their users?*

In addition to selling products, websites aim to create value by optimizing customer experience throughout the customer journey (McKinsey, 2016). Consequently, some of them have evolved to become social commerce websites, where users can socialize and interact with other users using different tools for rating reviews, making recommendations, participating on discussion boards, etc. (Huang and Benyoucef, 2013; Liang, Ho, Li, and Turban, 2011; Liang and Turban, 2011; Turban *et al.*, 2018; Wang and Herrando, 2019). Therefore, in the context of social commerce websites, a good user experience is crucial in purchasing processes. In these purchase contexts, where consumers also share their experiences with others, users may reach a state of optimal experience when they flow (Csikszentmihalyi, 1975). The importance of a user's flow state relies on the fact that it positively influences not only the intention to repurchase on the web, but also the intention to return and to comment the experience to others (Han, 2014; Kim and Han, 2014; O'Cass and Carlson, 2010; Richard and Chebat, 2016).

Previous literature has aimed to study how utilitarian website design features contribute to the generation of a good online experience depending on users' cultural backgrounds (Bagozzi and Yi, 1988; Cyr, Kindra, and Dash, 2008; Cyr, Head, and

Larios, 2010). However, in addition to utilitarian stimuli, new trends highlight the importance of affective or hedonic stimuli for enhancing positive experiences on a website. The Marketing Research Institute 2016-2018 research priorities (2016) call for research on the role of emotions on online experiences, as well as on understanding cultural differences. Hence, this study analyzes how these twofold stimuli (hedonic and utilitarian stimuli) affect users' flow experience depending on the intrinsic cultural dimension of the society, and specifically in relation to whether the society is oriented to emotions or to materialism (*feminine* versus *masculine*). Once users reach an optimal experience, they show positive behaviors toward the social commerce website (Gao and Bai, 2014; Zhang, Lu, Gupta, and Zhao, 2014). Therein lies flow potential to fruitfully affect users' loyalty. In particular, this study hypothesizes flow effect on emotional and behavioral loyalty (Ball, Coelho, and Vilares, 2006; Dick and Basu, 1994; Kassim and Asiah Abdullah, 2010; Kim and Lee, 2010; Zeithaml, 2000). However, outcomes of experiencing flow can change depending on the culture. For instance, high long-term societies are more oriented to the future and to learning from others than are low long-term societies (Hofstede, 2011). Thus, the level of long-term orientation might influence outcomes of experiencing flow, such as word of mouth in social commerce (sWOM) and user intentions to return and to repurchase.

It has been argued that to manage cross-cultural consumer experiences, companies should enable effective, easy and emotionally engaging experiences for a variety of cultures (Forrester, 2015). However, despite the globalization of markets, there is insufficient consumer research across cultures (see literature review of cross-cultural studies of Zhang, Beatty, and Walsh, 2008). In fact, the systematic literature review of Baethge, Klier and Klier (2016) call for research of culture in social commerce, as well as on analyzing the importance of hedonic and utilitarian components of this context. In particular, there is a lack of research analyzing how to address a multicultural target in order to create an optimal social commerce experience that increases users' loyalty. This investigation aims to address concerns about designing a multiculturally oriented or a culturally tailored social commerce website.

The value of this research lies in the importance for online business of understanding users' preferences in light of their diverse origins so that their online experience is enhanced. The main objective of this research is to analyze how culture affects customers' experience and loyalty intentions in a globalized context of social

commerce. There are two specific objectives. First, this study tests the degree to which hedonic stimulus (sPassion) and utilitarian stimulus (usability) determine the state of flow in relation to different cultural backgrounds (feminine versus masculine cultures). Second, this investigation analyzes the effect of experiencing flow across cultures on loyalty, emotion (sWOM intention) or behavior (intention to return and repurchase), depending on the level of long-term orientation. This work contributes to widening the research on social commerce across cultures, as well as to understanding both how the state of flow is generated and which consequences have to be experienced depending on users' cultural backgrounds.

The paper is organized as follows. We frame our theoretical background according to Hofstede's cultural dimensions and a description of the context where the study was carried out. Next, we present the factors of the conceptual model; then we hypothesize the relationships across cultures, considering the scores of different cultures according to Hofstede's ranges. After this, we explain the methodology employed and we conduct the cross-cultural analyses. We conclude with a discussion about the challenges and opportunities of the moderating role of culture in consumer behavior in social commerce, outlining a theoretical contribution and business implications. Finally, we explain the limitations of this research and we propose future research directions.

4.2. Theoretical background

4.2.1. Cultural dimensions

Culture has been defined as “*the collective programming of the mind that distinguishes the members of one group or category of people from others*” (Hofstede, 1980, p. 25), and it has been demonstrated that culture influences consumer behavior (Luna and Gupta, 2001; Luna, Peracchio, and de Juan, 2002; McCort and Malhotra, 1993; Schumann *et al.*, 2010; Triandis, 1972). Cross-cultural research has evolved from the introduction of the four cultural dimensions of power distance, individualism, uncertainty avoidance, and masculinity (Hofstede, 1980), to the six cultural dimensions of Hofstede (Hofstede, 2011), with the addition of long-term orientation and indulgence (see Table 4.1 for definitions of the dimensions). According to Hofstede, the degree to which a nation scores in each of the dimensions is inherent to each culture and the representation of this culture in individuals' behavior.

Table 4.1. Hofstede's cultural dimensions

Hofstede dimensions	Definitions (Hofstede, 2011)
Power distance	The extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally.
Uncertainty avoidance	Society's tolerance for ambiguity.
Individualism/Collectivism	The degree to which people in a society are integrated into groups.
Masculinity/Femininity	The distribution of values between the genders.
Long-term/Short-term orientation	The extent to which the society is future-oriented.
Indulgence/Restraint	Indulgence and restraint refer to the degree to which a society allows relatively free gratification of basic and natural human desires related to pleasure and enjoyment of life, or whether, in contrast, a society controls gratification of needs and regulates it by means of strict social norms.

Source: Author's elaboration based on Hofstede (2011).

In addition to Hofstede's six cultural dimensions, there are also cultural manifestations, represented through values, heroes, rituals, and symbols, and which take specific form in relation to different national cultures (Hofstede and Hofstede, 1991). These cultural manifestations are "forms in which culturally determined knowledge is stored and expressed" (Luna *et al.*, 2002, p. 398). According to Luna and Gupta (2001), cultural manifestations can be summarized under the central role of values, since heroes, rituals and symbols can be expressed through the cultural values of a specific culture. For example, one of the values associated with Japanese culture is concern about caring for customers as a cultural heritage (Zhang *et al.*, 2008). Hence, when examining WOM behavior, value manifestations may be relevant. Therefore, when researchers are trying to understand different cultures, they must adopt a wide perspective in order to comprehend the intrinsic values of each society.

4.2.2. *Social commerce context*

Social commerce websites that do business in a global market have to engage users from different cultural origins. Such websites have evolved from electronic commerce—where users could buy online but could not interact and socialize with other users—by adding certain tools that allow users to rate products, make recommendations, get advice from others, or participate in discussion forums, among other social interactions (Lin, Li, and Wang, 2017; Turban *et al.*, 2018). Users from social commerce have utilitarian and hedonic needs (Osatuyi and Qin 2018; Farivar, Turel and Yuan, 2018); they want to know not only the utilitarian characteristics of a product, but also people emotional experiences within this product. This kind of online trade tries, therefore, to maximize usability in order to enhance users' chances to participate on the website, at the same time as appealing to users' emotions by offering the possibility of socializing and interacting with others. Social commerce websites have been classified into two groups (Ng, 2013; Wang and Herrando, 2019; Zhang and Benyoucef, 2016): first, companies, such as Amazon, AliExpress, Taobao, or Booking, who incorporate these interactivity and socializing tools in their commercial websites; and, second, social networks, such as Facebook or Pinterest, where users can also buy online. This study focuses on the first group of social commerce websites, because users can navigate in a social network solely for entertainment and socializing, whereas navigation in companies' website is always focused on the purchasing process.

Cross-cultural research has been undertaken in relation to mobile commerce (Harris, Rettie, and Cheung, 2005), virtual customer co-creation behaviors (Frasquet-Deltoro, Alarcón-del-Amo and Lorenzo-Romero, 2019), consumer involvement (Broderick, 2007), website navigation (Luna *et al.*, 2002), emotional experiences in hospitality (Serra-Cantalops, Ramon-Cardona and Salvi, 2018), electronic commerce (Chen, Yen, Pornpriphet, and Widjaja, 2015; Pavlov and Chai, 2002), flow experience (Asakawa and Yana, 2010; Moneta, 2004a; Richard and Habibi, 2016), passion (Albert, Merunka, and Valette-Florence, 2013; Burke, Astakhova, and Hang, 2015), website interactivity (Cho and Cheon, 2005), WOM (Fong and Burton, 2008; Lam, Lee, and Mizerski, 2009; Money, Gilly, and Graham, 1998) and social commerce (Ng, 2013; Sheikh, Islam, Rana, Hameed, and Saeed, 2017; Nakayama and Wan, 2019). Nevertheless, to the best of our knowledge, cross-cultural studies contextualized in relation to social commerce are still scarce and, given that cultural backgrounds of

social commerce website users can be very varied, it is interesting to study consumer behavior in this context.

4.3. Development of hypotheses

4.3.1. Hedonic and utilitarian stimuli

According to Batra and Ahtola (1991), stimuli can be divided into hedonic and utilitarian. Hedonic refers to the *experiential affect associated with the object* in terms of how pleasant and agreeable these feelings are; while utilitarian refers to *how useful of beneficial the object is* (Batra and Ahtola, 1991, p. 161). Hence, these two stimuli have been considered to contribute to the overall goodness of a consumer behavior (Batra and Ahtola, 1991). Drawn on the work of Batra and Ahtola (1991), this investigation studies the effect of utilitarian and hedonic stimuli on social commerce users' experience.

Preferences about utilitarian features of a website vary among cultures (Bagozzi and Yi, 1988; Cyr *et al.*, 2008; Cyr *et al.*, 2010). According to the work of Luna *et al.* (2002), in a cross-cultural context some website characteristics can lead users to experience flow. One of the utilitarian aspects to take into account when designing a website is usability (Casaló, Flavián, and Guinalú, 2008; Lee and Koubek, 2010). Casaló, Flavián and Guinalú (2008) define usability as the ease of understanding the structure of a website, its functions, interface and the contents that can be observed by the user, the simplicity of use, the speed with which the users can find what they are looking for, the perceived ease of site navigation, and the ability of the users to control what they are doing, and where they are, at any given moment. Moreover, online utilitarian features contribute to experiencing the state of flow (Bilgihan, Nusair, Okumus, and Cobanoglu, 2015; Bilgihan, 2016). Therefore, we consider that usability summarizes the utilitarian stimuli that can provide users with an optimal experience, resulting in loyal behaviors toward the website. Nevertheless, it has been said that apart from utilitarian cues, hedonic aspects on the website are need to optimize flow experience (Mahnke, Benlian, and Hess, 2015).

In recent years, it seems that there has been an increasing trend to study the emotional side of online consumers, since this is closely related to advocacy, evangelism, and loyal behaviors (Albert *et al.*, 2013; Carpentier, Mageau, and

Vallerand, 2012; MacInnis and Folkes, 2017; Wakefield and Wakefield, 2016). According to McKinsey (2016, p. 47), companies should consider emotions as a strategic priority, since “*emotionally engaged customers are typically three times more likely to recommend a product and to purchase it again.*” Thus, nowadays it seems that companies must not only enhance the utilitarian stimuli of their websites, but also appeal to emotions, to the hedonic stimuli.

Regarding the hedonic stimulus on social commerce websites, thanks to the interactivity, socialization and enjoyable atmosphere of this kind of website, users can experience a feeling of passion (called sPassion in reference to social commerce websites) that positively contributes to experiencing the state of flow, resulting in an increase of sWOM behavior (Herrando, Jimenez-Martinez, and Martin-De Hoyos, 2018). It has been argued that sPassion is a social and affective stimulus result of the interactivity and socializing tools inherent to social commerce (Herrando *et al.*, 2018). According to Thomson, MacInnis, and Park (2005), “*consumers can become emotionally attached to consumption objects, including brands*”. Therefore, it is to be expected that users can also be emotionally attached to a social commerce website. In the same way that individuals can be passionate toward a person, a website, or a brand (MacInnis and Folkes, 2017), they can experience passion specifically through a social commerce website (Herrando, Jiménez-Martínez, and Martín-De Hoyos, 2017). Likewise, culture affects how people define passionate love (Kim and Hatfield, 2004), so the way users experience sPassion can also vary across cultures. Inherent to social commerce environments, through social interactions users not only offer more information about a product, but also they share their emotions (Zhang, Wang, Chen and Guo, 2019; Chen, Lu and Wang, 2017; Herrando *et al.* 2017). Therefore, we consider that sPassion represents the hedonic stimulus in social commerce.

4.3.2. The state of flow

The state of flow is an enjoyable optimal experience where individuals are so concentrated on the activity they are performing that they can lose track of time and space (Csikszentmihalyi, 1975). In consumer behavior research, the state of flow stands out for its power to involve consumers and to drive them to seek repetition of this optimal experience, which translates into online returns and repurchases (Hausman and Siekpe, 2009; Kim and Han, 2014; Richard and Chebat, 2016). Moreover, flow state has

recently been used to understand users' behavior in social commerce contexts (Gao and Bai, 2014; Liu, Chu, Huang, and Chen, 2016; Zhang *et al.*, 2014). Apart from being related to behavioral loyalty (such as return and repurchase intentions), state of flow also affects WOM intention (Herrando *et al.*, 2018; O'Cass and Carlson, 2010) and so-called emotional loyalty (Ball *et al.*, 2006; Kim and Lee, 2010). Likewise, positive emotional experiences are closely related to WOM generation and loyalty (Serra-Cantalalops *et al.*, 2018).

Assuming that culture influences the likelihood of experiencing flow when navigating a website (Luna *et al.*, 2002), this investigation analyzes the effect of experiencing flow on intention to sWOM (emotional loyalty) and on intention to return and repurchase (behavioral loyalty) across cultures (see Figure 4.1). Some studies have tested the state of flow in relation to different cultural backgrounds (Asakawa and Yana, 2010; Moneta, 2004b; Richard and Habibi, 2016); however, to the best of our knowledge, there is no contextualized research on social commerce websites.

4.3.3. *Emotional and behavioral loyalty*

Several authors define online loyalty as the intention to return to the website or to consider repurchasing from it (Cyr, Bonanni, Bowes, and Ilsever, 2005; Lam *et al.*, 2009). Loyalty in online settings has also been defined as the intention to buy on a specific website and not to change to another one (Flavián, Guinalú, and Gurrea, 2006), and as the intention to revisit and repurchase (Cyr, Hassanein, Head, and Ivanov, 2007; Cyr *et al.*, 2008). Furthermore, other authors consider that, in addition to this kind of loyalty, which they term behavioral loyalty, there must also be taken into account another loyalty more linked to users' emotional side, which they term emotional loyalty (Ball *et al.*, 2006; Dick and Basu, 1994; Kassim and Asiah Abdullah, 2010; Kim and Lee, 2010; Zeithaml, 2000). In this study, we consider both types of loyalty: emotional loyalty, which refers to users' intentions to spread WOM; and behavioral loyalty, which refers to users' willingness to return to the website and to repurchase from it.

In the specific context of social commerce, it has been suggested that the main purpose of sellers is to convert customers into brand advocates (Ng, 2013). Likewise, it has been stated that individuals show an upward trend to rely on the information shared by others about their consumption experience to make their purchase decisions (Casaló, Flavián, and Guinalú, 2010). Hence, the study of the intention to WOM (i.e. emotional

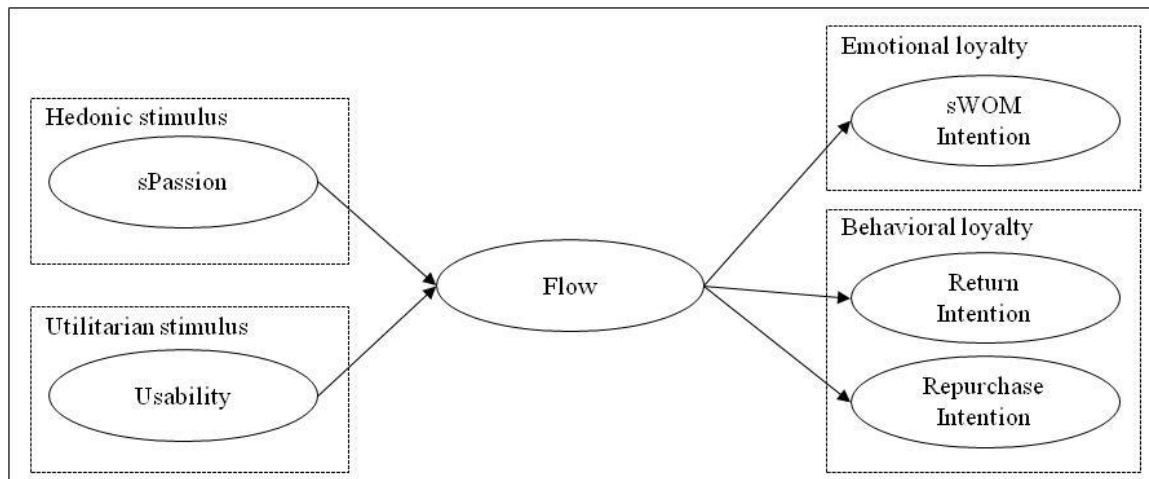
loyalty) is crucial in the context of social commerce because it is an inherent characteristic of this sort of trade. On social commerce websites, users can rate products, make recommendations, and share their opinion or information through different social tools, such as forums or discussion boards. In other words, users can easily share with others their emotional loyalty through the social commerce tools.

As stated in the previous subsection, flow can positively influence the intention to return to a website and repurchase from it (Luna et al., 2002), and it also has a positive effect on WOM (Herrando et al., 2018; O'Cass and Carlson, 2010). Some researchers have studied e-commerce loyalty behaviors across cultures (Cyr *et al.*, 2008; Chen *et al.*, 2015) and it has been tested whether culture affects behaviors such as purchase intention or WOM (Fong and Burton, 2008; Frank, Enkawa, and Schvaneveldt, 2015; Hernandez-Ortega *et al.*, 2017; Lam *et al.*, 2009; Money *et al.*, 1998; Schumann *et al.*, 2010).

Table 4.2. Definitions of the variables of the conceptual model

Variables	Definitions
Usability	The extent to which the website is seen by users as useful, easy to navigate and well structured.
sPassion	The positive affective feeling toward a social commerce website that users experience as a result of interaction, socializing and enjoyment during navigation.
Flow	Optimal experience that users reach when they are fully concentrated, enjoying the navigation, and feeling a temporal distortion.
sWOM Intention	The intention to share a positive thought (make a recommendation, rate a product positively, give an opinion on the discussion forum, etc.) on a social commerce website.
Return Intention	The intention to revisit the same website.
Repurchase Intention	The intention to repurchase from the same website.

Source: Author's elaboration.

Figure 4.1. Conceptual framework

4.3.4. Hypotheses development: Cross-cultural analysis of online consumer behavior in social commerce

Consumers' behavior and emotions can be affected by culture. In feminine cultures, tender values prevail and there is a stronger relationship orientation compared with masculine cultures (Schumann *et al.*, 2010), so passion can be linked to higher feminine scores. In social commerce, sPassion is understood as a hedonic dimension within an affective process (Herrando *et al.*, 2017). Compared with masculine cultures, feminine cultures are oriented to help and take care of others (Hofstede, 2011). Feminine cultures are people oriented, whereas masculine cultures are oriented toward money and things (Hofstede, 1983). In societies that attach a great importance to the emotions, it is also expected that sPassion, as a hedonic stimulus, has a stronger effect on users' experiences than does usability, as a utilitarian stimulus. Moreover, following the argument that masculine societies are money and things oriented (Hofstede, 1983), it is expected that in these societies utilitarian stimuli, such as usability, will have a greater impact on flow than in feminine societies. Therefore, we hypothesize:

H1. (H1a) *In feminine societies, sPassion (hedonic stimulus) will have a stronger effect on experiencing the state of flow than in masculine societies; (H1b) while in masculine societies, usability (utilitarian stimulus) will have a stronger effect on experiencing the state of flow than in feminine societies.*

Long-term societies are oriented toward the future and people try to learn from others (Hofstede, 2011). In high long-term societies, past experiences affect present and future intentions (Hofstede InSights, 2018). Therefore, it is expected that long-term societies are more likely to show future intentions related to the purchasing process than those societies that score low in this dimension. Ng (2013) states that culture moderates the relationship between social interactions and purchase intentions in social commerce; however, her study is focused only on studying the influence of uncertainty avoidance and individualism. Moreover, due to the idea that long-term oriented societies are prone to learn from others (Hofstede, 2011), it is supposed that these intentions will also retain intention to sWOM, that is, the intentions of users to give and receive user-generated content, to make recommendations, to share opinions, to rate products, etc. Social commerce contexts are propitious for sharing WOM, since users can share common interests and concerns, such as on discussion boards (Fong and Burton, 2008). Culture influences the way individuals communicate, and it guides their behavior and communication process (Kim and Bonk, 2002). Therefore, it is expected that an optimal experience on a social commerce website—that is, one which reaches a flow state—would have positive effects on users' future intentions. Therefore, we hypothesize that:

***H2.** In high long-term oriented societies, users' flow experience will have a higher effect on (**H2a**) intention to sWOM (emotional loyalty), (**H2b**) intention to return (behavioral loyalty) and (**H2c**) intention to repurchase (behavioral loyalty) than in low long-term oriented societies.*

4.4. Methodology

4.4.1. Culture samples: Japan and Spain

This investigation has selected Spain and Japan for two main reasons: first, because, according to Hofstede's classification (see Table 4.3), Japan and Spain show significant differences in the dimensions studied (Japan scores high masculinity and high long-term orientation; Spain scores low masculinity and low long-term orientation); and second, because both countries have similar scores in the rest of the dimensions, so that we can try to avoid other dimensions' possible impacts on the model (see Table 4.1 for a definition of the dimensions). In a similar way, Nakayama and Wan

(2019) also compare in a broad sense Eastern versus Western nations collecting data from Japan and United States of America respectively to test cultural impact on social commerce.

According to Hofstede InSights (2018), with a score of 88, Japan is one of the most long-term-oriented societies, and the Japanese are characterized as taking their time to make decisions (see Table 4.3). Moreover, although it is the most masculine society in the world with a score of 95, Japanese people do not show competitive individual behavior due to its mild collectivist culture. According to the national value manifestations of Hofstede (2018), Spain is more linked to passion. With all these specific characteristics of each country in mind, the cross-cultural study analyzed the dimensions of masculinity and long-term orientation. Japan and Spain score high and low as long-term orientation cultures respectively, which is why we used these cultural backgrounds in the study. Hence, we considered that these two countries can help to understand how users' optimal experience in social commerce, based on utilitarian stimulus and hedonic stimulus, can positively affect their loyalty intentions.

Table 4.3. A comparison between Japan and Spain in relation to Hofstede's dimensions

	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long Term Orientation	Indulgence
Japan	54	46	95	92	88	42
Spain	57	51	42	86	48	44

Source: www.Geert-Hofstede.com

4.4.2. Data collection and procedure

The data used for this analysis were collected through an online survey. To carry out the study, participants were recruited through an online panel of a market research company. The individuals, who comprised this online panel and collaborated in the study, received a reward. The total number of responses was 590, distributed into two subsamples: Japanese ($n = 194$) and Spanish ($n = 396$) (see Table 4.4). Ages ranged from 18 to 34 years, representing generations Y (1981–1990) and Z (1991–2000), that

is, generations that grew up with technology and are savvy users (AMA, 2016; Bilgihan, 2016; Kantar Millward Brown, 2016). All respondents were online consumers who had recently bought from social commerce websites.

At the beginning of the questionnaire, after being given an explanation of the concept of social commerce, participants were selected from those who had recently purchased using a website with the characteristics of a social commerce platform. They were then asked to name the social commerce website from which they had bought. Among their answers were Amazon, AliExpress, and Booking, and many other websites rightly defined as social commerce. Throughout the questionnaire, the respondents were continuously asked to recall their experience on the website they had chosen.

Table 4.4. Detailed demographics of the participants

	Japan	Spain
Age: 18-34	194	396
Genre		
Women	85 (44%)	198 (50%)
Men	109 (56%)	198 (50%)

4.4.3. Common method bias

Common method bias was assessed using procedural and then statistical approaches (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). First, all respondents were informed about the anonymity of the questionnaire and the lack of right or wrong responses. Second, Harman's single-factor test shows that the variance of a single factor explained 41.588% of the total variance. Since it explained less than 50% of the total variance, it is therefore confirmed that the data does not suffer from common method bias.

4.4.4. Instrument development and validation

Before starting data collection, the survey instrument was checked by various experts in the different countries to ensure that all the items and text were understandable, assessing face and content validity. This pretest resulted in some minor

changes, most of which were intended to improve length and ease of completion. To ensure content validity, literature about the variables included in the model was thoroughly reviewed, and the variables were adapted to the social commerce context. The survey was checked by several experts. As adapted to the social commerce context by Herrando *et al.* (2017), and based on the scale of Baldus, Voorhees, and Calantone (2015), sPassion comprised six items. Usability consisted of three items based on the scale of Flavián *et al.* (2006). Flow was measured as a second-order reflective construct consisting of three sub-dimensions—concentration, enjoyment and temporal distortion—with three, three and six items respectively, adapted from the scales of Jackson and Marsh (1996), Koufaris (2002), Agarwal and Karahanna (2000), and Novak, Hoffman, and Yung (2000), and further adapted to the social commerce context by Herrando *et al.* (2017). sWOM consisted of three items based on Kim and Park (2013). Finally, return and repurchase intention were measured with two and three items respectively based on the scales of Hausman and Siekpe (2009) and Kim and Park (2013) (see Table 4.5). All survey variables were measured on a seven-point Likert scale, with the lowest score being 1 (strongly disagree), and the highest 7 (strongly agree).

Table 4.5. Scale

<i>sPassion</i> – Based on Herrando <i>et al.</i> (2017):	
sPASS1	I am motivated to participate on this social commerce website because I am passionate about it.
sPASS2	I participate on this social commerce website because I care about it.
sPASS3	My passion for this social commerce website's products makes me want to participate in its community.
sPASS4	I like participating on this social commerce website because I can use my experience to help other people.
sPASS5	I really like helping other users with their questions.
sPASS6	I feel good when I can help answer other users' questions.
<i>Usability</i> – Based on Flavián <i>et al.</i> (2006):	
USA1	The content of this social commerce website is easy to understand.
USA2	On this social commerce website, it is easy to find the information I need.
USA3	The structure of this social commerce website is easy to understand.
<i>State of flow</i> :	
<i>Concentration</i> – Based on Jackson and Marsh (1996):	
CON1	My attention was focused entirely on what I was doing.
CON2	I was totally absorbed in what I was doing.
CON3	I had total concentration.
<i>Enjoyment</i> – Based on Koufaris (2002):	
ENJ1	I found my visit interesting.
ENJ2	I found my visit enjoyable.
ENJ3	I found my visit fun.
<i>Temporal distortion</i> - Based on Agarwal and Karahanna (2000); Novak <i>et al.</i> (2000):	
TD1	Time seemed to go by very quickly when I used this social commerce website.
TD2	When I used this social commerce website, I tended to lose track of time.
TD3	I often spend more time on this social commerce website than I had intended.
TD4	I feel I am in a world created by the social commerce website I visit.
TD5	Using this social commerce website often makes me forget where I am.
TD6	The world generated by the social commerce website I visit is more real for me than the "real world".

<i>sWOM Intention</i> – Adapted from Kim and Park (2013):	
IsWOM1	I am likely to provide others with positive information on this social commerce website.
IsWOM2	I am likely to make recommendations on this social commerce website.
IsWOM3	I am likely to encourage others to consider this social commerce website.
<i>Return Intention</i> – Based on Hausman and Siekpe (2009):	
RET1	I am likely to revisit this social commerce website in the near future.
RET2	I am encouraged to revisit this social commerce website in the near future.
<i>Repurchase Intention</i> - Based on Kim and Park (2013); Hausman and Siekpe (2009):	
REP1	I am likely to purchase on this social commerce website.
REP2	Given the opportunity, I intend to purchase on this social commerce website.
REP3	I intend to purchase through this social commerce website in the near future.

4.4.5. Validation of the measurement models: Convergent, construct and discriminant validity

The focus of this study was on analyzing the effect of culture on social commerce users' experience. To do so, first, we ran the measurement and the structural model in order to test the relationship between sPassion (hedonic stimulus) and usability (utilitarian design stimulus) on the state of flow and consequently its effect on intention to sWOM (emotional loyalty) and on the intention to return and repurchase (behavioral loyalty). Second, we analyzed the moderating effect of culture.

To ensure the validity and reliability of the measurement scale, construct validity was analyzed using partial least squares (PLS) with the statistical software Smart PLS 3 (Ringle, Wende, and Becker, 2015). Construct validity determines whether there are high correlations between measures of the same construct—i.e., convergent validity—and low correlations between measures of constructs that are expected to differ—i.e., discriminant validity (Campbell and Fiske, 1959; Straub, 1989).

Based on Fornell and Larcker (1981), to assess convergent validity the reliability of each item was examined, and it was deemed to show internal consistency when the Cronbach's alpha values were higher than 0.70 (Nunnally, 1978; Nunnally and Bernstein, 1994). The composite reliability of each construct was also considered, with

values greater than 0.60 deemed acceptable (Bagozzi and Yi, 1988; Fornell and Larcker, 1981), along with the average variance extracted (AVE), which had to exceed the value of 0.50 (Fornell and Larcker, 1981) and, advisably, be greater than 0.70 (Hair, Hult, Ringle, and Sarstedt, 2014).

The discriminant validity was tested to confirm that the constructs differed from each other. To do so, first, the cross-loadings were analyzed (Hair, Anderson, Tatham, and Black, 1999). Second, a symmetric matrix was used to corroborate that the AVE on the diagonal was larger than its corresponding squared correlation coefficients in its rows and columns (Fornell and Larcker, 1981; Hair *et al.*, 1999). The measurement model results of the three subsamples and the full sample are shown in Tables 4.6–9.

Table 4.6. Factorial loadings and t-values of the bootstrapping

Variable	Total		Japan		Spain	
	λ	t-value	λ	t-value	λ	t-value
sPassion						
sPASS1	.854	70.595***	.805	30.787***	.868	60.199***
sPASS2	.784	35.954***	.666	12.829***	.853	39.473***
sPASS3	.831	47.574***	.698	12.432***	.852	46.335***
sPASS4	.877	71.894***	.830	20.565***	.870	56.996***
sPASS5	.861	51.984***	.806	14.625***	.852	40.143***
sPASS6	.825	47.338***	.732	13.403***	.822	36.852***
Usability						
USA1	.904	81.646***	.895	33.522***	.900	62.588***
USA2	.910	78.839***	.876	29.404***	.928	79.954***
USA3	.896	59.722***	.877	21.318***	.898	47.446***
Flow						
CON1	.890	73.851***	.809	22.156***	.668	20.619***
CON2	.925	91.271***	.853	44.671***	.785	30.824***
CON3	.923	128.846***	.861	42.439***	.797	41.438***
ENJ1	.850	49.998***	.620	12.391***	.657	21.559***
ENJ2	.913	89.548***	.671	14.849***	.730	26.619***
ENJ3	.935	154.110***	.676	14.831***	.738	21.027***
TD1	.879	80.170***	.717	14.671***	.809	36.187***
TD2	.903	104.952***	.739	16.644***	.789	33.342***
TD3	.811	49.983***	.677	13.767***	.717	23.827***
TD4	.839	51.992***	.790	18.122***	.765	28.107***
TD5	.867	66.570***	.477	5.915***	.794	35.121***
TD6	.818	47.889***	.467	5.766***	.689	21.599***
sWOM Intention						
IsWOM1	.929	96.750***	.927	64.211***	.920	62.186***
IsWOM2	.936	110.778***	.931	68.966***	.935	88.123***
IsWOM3	.933	102.882***	.948	96.121***	.917	88.123***
Return Intention						
RI1	.956	135.750***	.948	81.891***	.953	78.102***

RI2	.969	307.502***	.957	122.087***	.975	272.544***
Repurchase Intention						
PI1	.900	65.701***	.910	57.852***	.881	39.441***
PI2	.948	180.133***	.918	56.320***	.957	185.584***
PI3	.926	105.535***	.913	55.203***	.929	81.257***

Note: sPASS = sPASSION; USA = Usability; Second-order model of flow is composed of: CON = Concentration, ENJ = Enjoyment and TD = Temporal Distortion; IsWOM = sWOM Intention; RET = Return Intention; REP = Repurchase Intention. *** $p < 0.01$ ($t = 2.6012$).

Table 4.7. Means and standard deviations of the full sample and the two subsamples

Variable	Total		Japan		Spain	
	Mean	SD	Mean	SD	Mean	SD
sPASS1	3.56	1.679	2.97	1.549	3.85	1.667
sPASS2	3.39	1.689	3.08	1.660	3.55	1.684
sPASS3	3.58	1.769	2.87	1.658	3.93	1.718
sPASS4	3.61	1.855	2.59	1.621	4.11	1.756
sPASS5	3.67	1.839	2.69	1.602	4.15	1.759
sPASS6	3.85	1.833	2.81	1.593	4.36	1.726
USA1	5.42	1.356	5.01	1.377	5.64	1.298
USA2	5.29	1.339	4.92	1.423	5.48	1.258
USA3	5.36	1.382	4.98	1.358	5.55	1.199
CON1	4.71	1.478	4.11	1.452	5.01	1.400
CON2	4.31	1.583	4.01	1.518	4.46	1.595
CON3	4.21	1.639	3.72	1.605	4.45	1.604
ENJ1	4.81	1.434	4.34	1.481	5.05	1.352
ENJ2	4.57	1.489	4.63	1.452	4.54	1.508
ENJ3	4.82	1.437	4.65	1.407	4.90	1.446
TD1	3.54	1.780	3.36	1.620	3.82	1.898
TD2	3.10	1.832	2.69	1.619	3.70	1.941
TD3	2.72	1.878	2.42	1.443	3.89	2.015
TD4	3.73	1.834	3.55	1.685	3.63	1.849

TD5	3.55	1.888	3.25	1.743	3.31	1.896
TD6	3.78	1.959	3.55	1.824	2.86	2.005
IsWOM1	5.03	1.532	4.53	1.407	5.35	1.392
IsWOM2	4.76	1.699	4.45	1.418	5.22	1.524
IsWOM3	4.86	1.652	4.38	1.450	5.35	1.402
RET1	5.51	1.426	4.80	1.419	5.66	1.299
RET2	4.88	1.674	4.76	1.420	5.54	1.354
REP1	5.42	1.472	4.59	1.382	5.63	1.371
REP2	5.25	1.521	4.57	1.388	5.33	1.461
REP3	5.06	1.636	4.62	1.506	5.31	1.511

Note: sPASS = sPASSION; USA = Usability; Second-order model of flow is composed of: CON = Concentration, ENJ = Enjoyment and TD = Temporal Distortion; IsWOM = sWOM Intention; RET = Return Intention; REP = Repurchase Intention.

Table 4.8. Reliability and convergent validity of the measurement model

Variable	Item	CA	CR	AVE
sPassion	Total	0.916	0.934	0.704
	Japan	0.854	0.890	0.575
	Spain	0.926	0.941	0.728
Usability	Total	0.888	0.930	0.817
	Japan	0.859	0.914	0.779
	Spain	0.895	0.934	0.826
Flow	Total	0.923	0.943	0.543
	Japan	0.907	0.921	0.500
	Spain	0.927	0.938	0.557
IsWOM	Total	0.925	0.953	0.870
	Japan	0.929	0.955	0.875
	Spain	0.914	0.946	0.854
Return Intention	Total	0.922	0.962	0.927
	Japan	0.898	0.951	0.907
	Spain	0.925	0.963	0.929
Repurchase Intention	Total	0.915	0.949	0.855
	Japan	0.901	0.938	0.834

Spain	0.913	0.945	0.851
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Note: CA = Cronbach Alpha; CR = Composite Reliability; AVE = Average variance explained.

Table 4.9. Discriminant validity of the full sample and the two subsamples

	sPASS	USA	Flow	IsWOM	RET	REP
sPassion (Total)	0.839					
Japan	0.759					
Spain	0.853					
Usability (Total)	0.246	0.904				
Japan	0.068	0.883				
Spain	0.238	0.909				
Flow (Total)	0.628	0.309	0.737			
Japan	0.509	0.322	0.707			
Spain	0.657	0.269	0.747			
IsWOM (Total)	0.456	0.516	0.488	0.933		
Japan	0.277	0.508	0.533	0.936		
Spain	0.449	0.470	0.439	0.924		
Return Intention (Total)	0.324	0.591	0.407	0.695	0.963	
Japan	0.115	0.590	0.531	0.664	0.953	
Spain	0.314	0.547	0.317	0.672	0.964	
Repurchase Intention (Total)	0.424	0.521	0.517	0.705	0.775	0.925
Japan	0.242	0.497	0.606	0.662	0.747	0.913
Spain	0.417	0.480	0.457	0.689	0.758	0.923

Note: Diagonal values are AVE squared roots. Below the diagonal: correlations among factors. Note: sPASS = sPASSION; USA = Usability; Second-order model of flow is composed of: CON = Concentration, ENJ = Enjoyment and TD = Temporal Distortion; IsWOM = sWOM Intention; RET = Return Intention; REP = Repurchase Intention.

4.5. Results

4.5.1. Testing of hypotheses of the single models

The validity of the model was assessed by analyzing the structural path coefficients and the percentage of variance explained. Bootstrapping was performed

with 5,000 subsamples to test the statistical significance. The empirical results (shown in Table 4.10) confirm that the relationships of the model are supported. A blindfolding analysis, through cross-validated redundancy (Hair *et al.*, 2014), confirmed that the model has predictive relevance.

Table 4.10. Structural model of the full sample and the two subsamples

Studied relationships	Total		Japan		Spain	
	beta	t-value	beta	t-value	beta	t-value
H1a: sPASS → Flow	.587	(19.355***)	.489	(8.534***)	.628	(18.814***)
H1b: USA → Flow	.165	(4.759***)	.288	(4.734***)	.120	(2.812***)
H2a: Flow → IsWOM	.488	(13.798***)	.533	(8.754***)	.439	(9.220***)
H2b: Flow → RET	.407	(11.145***)	.531	(8.868***)	.317	(6.619***)
H2c: Flow → REP	.517	(15.183***)	.606	(10.870***)	.457	(10.384***)
R² Adjusted / Q²	R²	Q²	R²	Q²	R²	Q²
Flow	41.7%	0.222	33.5%	0.163	44.2%	0.239
IsWOM	23.7%	0.205	28.1%	0.245	19.1%	0.162
RET	16.4%	0.149	27.9%	0.247	9.8%	0.089
REP	26.6%	0.227	36.4%	0.301	20.7%	0.175

Note: *** $p < 0.01$ ($t = 2.6012$). When the t value obtained using the bootstrap method is greater than Student's t value, the hypothesis is confirmed with a significance of 99%. ** $p < 0.05$ ($t = 1.9722$). sPASS = sPASSION; USA = Usability; IsWOM = sWOM Intention; RET = Return Intention; REP = Repurchase Intention.

4.5.2. Measurement invariance

Measurement invariance refers to “whether or not, under different conditions of observing and studying phenomena, measurement operations yield measures of the same attribute” (Horn and McArdle, 1992, p. 117). Hence, before conducting any multigroup analysis, it is necessary to test measurement invariance (Hair *et al.*, 2014). Steenkamp and Baumgartner (1998) proposed four levels for assessing measurement invariance: configural invariance, metric invariance, scalar invariance, and error variance invariance. First, configural invariance requires that the number of constructs and items in each group have the same structure, which is confirmed by the researchers; second, metric invariance requires that items' loadings are invariant in all the groups;

third, scalar invariance requires the equality of measurement intercepts; and, fourth, error variance invariance requires that items' measurement errors are invariant in all the groups. However, although the Steenkamp and Baumgartner (1998) proposal has been widely used, it is adequate for common factor models in structural equation modeling (SEM); but not for partial least squares structural equation modeling (PLS-SEM) because it works with composite models. Hence, Henseler, Ringle and Sarstedt (2016) suggested testing measurement invariance of composites models (MICOM) because they are conceptually different from common factor models. In line with prior research (Steenkamp and Baumgartner, 1998), the MICOM procedure is also based on three steps or levels that have to be assessed one after the other: (1) configural invariance; (2) compositional invariance; and (3a) equal means and (3b) equal variances assessment (Henseler *et al.*, 2016). Results of the MICOM analyses can be seen in Table 4.11.

Table 4.11. Results of measurement invariance of composite models (MICOM)

Constructs	sPASS	USA	FLOW	IsWOM	RET	REP
1. Configural Invariance	Yes	Yes	Yes	Yes	Yes	Yes
2. Compositional Invariance						
Original correlation	0.998	1.000	0.998	1.000	1.000	0.998
5%	0.999	0.997	0.999	0.999	0.999	0.999
Partial measurement invariance established						
3a. Equal Mean Assessment						
Mean-Original Difference	0.750	0.490	0.379	0.615	0.601	0.600
95% Confidence Interval	[-0.173, 0.173]	[-0.167, 0.173]	[-0.170, 0.171]	[-0.169, 0.170]	[-0.170, 0.173]	[-0.178, 0.169]
3b. Equal Variance Assessment						
Variance-Original Difference	-0.372	0.142	0.211	-0.002	-0.105	0.058
95% Confidence Interval	[-0.169, 0.182]	[-0.257, 0.267]	[-0.201, 0.219]	[-0.229, 0.238]	[-0.233, 0.240]	[-0.234, 0.255]
Partial measurement invariance established						

Note: MICOM running with 5000 permutations. sPASS = sPASSION; USA = Usability; FLOW = State of Flow; IsWOM = sWOM Intention; RET = Return Intention; REP = Repurchase Intention.

4.5.3. Multigroup analyses: Moderating effects

A moderator variable is defined as one that systematically modifies the direction or strength of the relationship between an exogenous and an endogenous variable (Baron and Kenny, 1986; Sharma, Durand, and Gur-Arie, 1981). To analyze the following moderating effects, multigroup analyses were conducted to test the difference between means using t-tests. Furthermore, through the parametric approach, the significance of the parametric test was observed (Chin, 2000; Sánchez-Franco and Roldán, 2005). Table 4.12 shows the variations in the path coefficients for each culture and for each of the studied relationships, and Table 4.13 summarizes the results of the hypotheses. The results indicate potential differences between the two subsamples.

First, in feminine societies, sPassion has a stronger effect on experiencing flow state than usability does. Nevertheless, although the two studied countries show an important influence of hedonic stimulus on flow state, there is a significant difference between them (sPassion: $\beta_{\text{Japan}} = 0.489 < \beta_{\text{Spain}} = 0.628$), with the higher effect in the feminine society, therefore supporting H1a. Second, there is a significant relationship between usability and the state of flow (usability: $\beta_{\text{Japan}} = 0.288 < \beta_{\text{Spain}} = 0.120$) and, in this case, the effect is significantly higher in the masculine society, thus supporting H1b. Third, the experience of the state of flow has a positive effect on intention regarding sWOM (sWOM intention: $\beta_{\text{Japan}} = 0.533 > \beta_{\text{Spain}} = 0.436$), but there are no significant differences between the countries; thus, H2a is not supported. Fourth, when comparing the intention to return, significant differences are detected (return intention: $\beta_{\text{Japan}} = 0.531 > \beta_{\text{Spain}} = 0.317$), supporting H2b. Finally, there are also significant effects of the state of flow in the intention to repurchase (repurchase intention: $\beta_{\text{Japan}} = 0.606 > \beta_{\text{Spain}} = 0.457$), supporting H2c. In the next section, the empirical findings will be concluded by discussing Hofstede's dimensions in each of the hypothesized relationships (see the summary of hypotheses in Table 4.13).

Table 4.12. Multigroup analyses

					Parametric Test Difference	
	beta	t-value	beta	t-value	beta	t-value
Japan vs Spain	Japan		Spain			
H1a: sPASS → Flow	.489 (8.841***)		.628 (18.759***)		0.139 (2.261***)	
H1b: USA → Flow	.288 (4.746***)		.120 (2.816***)		0.169 (2.280**)	
H2a: Flow → IsWOM	.533 (8.590***)		.439 (9.282***)		0.094 (1.172)	
H2b: Flow → RET	.531 (8.861***)		.317 (6.692***)		0.214 (2.692***)	
H2c: Flow → REP	.606 (10.987***)		.457 (10.311***)		0.148 (2.001**)	

Note: *** $p < 0.01$ ($t = 2.6012$). When the t value obtained using the bootstrap method is greater than Student's t value, the hypothesis is confirmed with a significance of 99%. ** $p < 0.05$ ($t = 1.9722$). Note: USA = Usability; sPASS = sPASSION; FLOW = State of Flow; IsWOM = sWOM Intention; RET = Return Intention; REP = Repurchase Intention.

Table 4.13. Summary of hypotheses

Hypotheses	Supported?
H1. (H1a) In feminine societies, sPassion (hedonic stimulus) will have a stronger effect on experiencing the state of flow than in masculine societies; (H1b) while in masculine societies, usability (utilitarian stimulus) will have a stronger effect on experiencing the state of flow than in feminine societies.	✓
H2. In high long-term oriented societies users' flow experience will have a higher effect on (H2a) intention to sWOM (emotional loyalty) than in low long-term oriented societies.	✗
H2. In high long-term oriented societies users' flow experience will have a higher effect on (H2b) intention to return (behavioral loyalty) than in low long-term oriented societies.	✓
H2. In high long-term oriented societies users' flow experience will have a higher effect on (H2c) intention to repurchase (behavioral loyalty) than in low long-term oriented societies.	✓

4.6. Conclusions and discussion

The empirical results allow us to reach the following conclusions. First, the results show that hedonic stimulus has a strong importance on users' flow experience; indeed, it is higher than utilitarian stimulus, at least in the countries of our study. But the influence of this hedonic stimulus is higher in feminine than in masculine countries; that is, sPassion has a significantly stronger effect on users' flow experience in feminine societies, such as Spain, than it does in masculine societies (H1a); while usability has a stronger effect on users' flow experience in masculine societies, such as Japan, than it does in feminine societies (H1b). From these significant findings, therefore, we conclude that it is not only utilitarian website aspects, such as usability, that drive users to reach an optimal experience, but also hedonic stimuli, such as passion, do so. Indeed, both cultures show that the hedonic stimulus (sPassion) has a bigger impact on experiencing flow than does the utilitarian stimulus (usability). Thus, in a comparison between hedonic and utilitarian stimuli, flow state is more influenced by sPassion no matter cultural origin. Moreover, according to the empirical results, sPassion in Spain has the strongest effect on flow state, which could be due to the cultural values of Spanish society that characterize Spain as a passionate country. Therefore, in line with McKinsey (2016), a focus on the hedonic stimulus seems to be an important marketing strategy when it comes to enhancing customer experience.

Second, overall, the effect of experiencing flow has a greater effect on users' intentions in high than in low long-term-oriented societies; that is, it is greater in Japan than in Spain. However, this assumption is significant for the relation between flow and return and repurchase intention (H2b and H2c), whereas we find no significant difference between cultures in the relationship between flow and sWOM intention and, therefore, no support for H2a. Considering all the dimensions as a whole, different parts of each culture affect emotional behavior, but it is clear that experiencing flow increases the intention to sWOM in social commerce as a rule of thumb, no matter the culture. This result has a very important implication for business, since the goal of each social commerce website that trades internationally should be to offer as global an online platform as possible in order to avoid seeing differences across cultures (this implication will be elaborated below, in the section on business implications).

As a general conclusion we can state that the effect of experiencing flow affects users' intentions in Japan more than in Spain; and that, while both societies show the salience of sPassion, the latter has a stronger effect on the experience of flow in Spain. (Since Spain is a low long-term orientation society, this raises the question of whether the outcome of experiencing flow for the Spanish will also be linked to immediate responses, such as impulsive purchases.) Although there are some significant differences among the samples in regard to the intentions (emotional and behavioral loyalty), the two studied cultures show that the state of flow brings positive customer intentions in social commerce contexts. As a whole, the major conclusions should drive marketers and academics to understand social commerce from an international perspective, considering that they have to face the inherent idiosyncrasy of diverse cultures. The empirical findings state that the studied societies show a strong effect of the hedonic stimulus on the state of flow, and that users' loyalty intentions vary across cultures after this optimal customer experience.

4.7. Theoretical Implications

This work helps to bridge the gap in cross-cultural studies on social commerce research. Specifically, it contributes to the discussion about whether it is preferable to design a multiculturally oriented or a culturally tailored social commerce website in order to enhance users' experience and loyalty. Moreover, it sheds light on several theoretical implications. First, this study contributes to widening the research on flow in social commerce and to understanding how this optimal state is generated. Second, although many online consumer behavior studies have long focused on analyzing how website interfaces affect users, the emergence of Web 2.0 technologies and social networks in electronic commerce, giving birth to social commerce, has created a new scenario where interaction and socialization seem to be key. Given this, our study has compared how utilitarian versus hedonic stimuli contribute to experiencing flow, and it has concluded that users' sPassion carries significant weight in social commerce. Finally, this study adds to research on the consequences of experiencing flow depending on users' cultural background: it not only makes theoretical contributions, but also raises some notable business implications in relation to social commerce trade.

4.8. Business Implications

Following the vision of Luna and Gupta (2001), for several years companies have been witnessing the demands of market globalization and international competition in multicultural trade environments. Hence, when it comes to understanding online consumer behavior in a social commerce context, cross-cultural studies can be regarded as a necessity. With this research, we have responded to some business challenges that derive from the inclusion of social commerce in the globalized digital world. This study highlights the importance of hedonic stimulus on websites, because, in comparison with utilitarian aspects (such as usability) of a website, it is strongly shown that appealing to users' emotions, such as sPassion, is more effective in generating an optimal navigation experience, no matter the cultural background of users. As we have discussed in the conclusions of this research, this assumption should also bear in mind that users in the digital era perhaps take for granted that all websites must offer an adequate, useful, and informative web page. Therefore, those companies looking to enhance users' optimal experience have to not only carefully design usability, but also move users' emotions, such as sPassion. According to the empirical findings, companies can design social commerce websites for a global audience by focusing on moving sPassion and offering a useful design in order to improve customer experience.

Once companies have generated an optimal customer experience through their social commerce websites, users' intentions within the website will vary depending on their cultural background. Long-term-oriented societies show more loyalty intentions after experiencing flow. Therefore, companies have to know that boosting the state of flow in a long-term-oriented society can result in positive loyalty intentions, such as return and repurchase intentions. Nevertheless, results show that culture does not influence sWOM intention, which can help companies when it comes to fostering users' active participation in social commerce.

Having outlined the business implications, we can conclude that, although there are differences among cultures which may exist indefinitely, it seems that there is a tendency to understand social commerce through an international and multicultural perspective. The most important business implication of this study is that companies can disregard culture when it comes to generating an optimal customer experience, since

both the societies studied show a strong effect of sPassion on the state of flow. Once in flow, users will show loyalty intentions, although their intensity will vary across cultures. In short, based on this study, we can say that we are more “cut from the same cloth” than we thought, since, although there are significant differences between the studied countries, both follow similar behavioral patterns. Therefore, Hofstede’s (2011) forecast seems to be right: new technologies are making societies more similar. In particular, even though societies are culturally different, globalization and social interactions inherent to social commerce websites make users more similar and generate common online experiences.

4.9. Limitations and future lines of research

This study has some limitations. First, as a cross-cultural study in the globalized context of social commerce, it should contain more subsamples representing some other cultures, such as Latin American, North American, African, Oceanian, and Middle Eastern countries. Specifically, it would be worth comparing the studied societies with low uncertainty avoidance and individualistic cultures. Budget restrictions did not allow for conducting a larger cross-cultural investigation; however, future lines of research will try to expand the study. Second, the sample consists of people between the ages of 18 and 34 years. Although several studies have confirmed that people in this age range are an important percentage of global online users, it should be beneficial to collect data from other generational cohorts, not only to widen the samples, but also because cultural values may be different in a society depending on the generational cohort. Third, due to the open borders of social commerce, it would be also interesting to study users’ cultural sensitivity to check whether users from different origins are also prone towards cross-cultural interaction (Beerli-Palacio and Martín-Santana, 2018). Finally, following the proposition presented by Gelfand, Li, and Gordon (2017), the future of cross-cultural studies in consumer behavior should consider the tightness–looseness framework. As the authors exemplify, in a mainly tight culture such as that of Japan, after sunset businessmen forget the pressure of their daily routine by going for dinner and drinks to an *Izakaya*, which is considered a haven of looseness. Therefore, the tightness–looseness approach can affect the different cultural values.

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CONCLUSIONS

5.1. Conclusions and discussion

This doctoral dissertation has aimed to understand how to optimize online customer experience in the highly interactive environment of social commerce. In an attempt to go beyond online commercial transactions and to support a consumer-centered and social-oriented perspective (Huang and Benyoucef, 2017), social commerce offers users the necessary tools (e.g., recommendations, referrals, ratings and forums) for fostering social interactions during the online purchasing process (Zhang, Wang, Chen and Guo, 2019). User-generated content, the fruit of these social interactions, can affect and help users in their decision-making process (Kaplan and Haenlein, 2010).

Apart from its social-interactive tools, one of the inherent characteristics of social commerce is that it offers users a context for their purchasing decisions that draws on information generated by the company and information generated by other users. Hence, an optimal experience not only boosts the experience of a single user but, indirectly through sWOM, influences the experience of others; if users reach a state of optimal experience (flow), they will demonstrate positive attitudes and behaviors (Liu, Chu, Huang and Chen, 2016; Gao and Bai, 2014; Zhang, Lu, Gupta and Zhao, 2014; Csikszentmihalyi, 1975). Drawn from the field of positive psychology (Csikszentmihalyi, 1975), flow theory has been used to study how the utilitarian cues of a website help users to reach an optimal experience (Gao and Bai, 2014) and to understand how hedonic cues, in the form of social interaction on a social commerce website, can affect flow state (Zhang *et al.*, 2014). Taking into account the research priorities of the MSI (2016–2018) concerning the role of emotions in online environments and the continuing call for research to achieve a better understanding of customer experience with digital technologies (Kannan and Li, 2017; Lemon and Verhoef, 2016), this dissertation has analyzed customer experience in the social commerce context in depth, considering both utilitarian and emotional stimuli.

As mentioned in the Introduction, the evolution of e-commerce, Web 2.0 and social media toward this new social commerce environment has resulted in an online tradeoff. Apart from strengthening relationships and bonds between companies and their customers (Zhang, Zhao and Gupta, 2018; Huang and Benyoucef, 2017), social commerce brings benefits to users. Social commerce empowers users, allowing them to

play active roles in their purchasing journey (Ko, 2018; Li, Liang and Li, 2018; Curty and Zhang, 2013). Therefore, companies have to make great efforts to offer social commerce websites that are adapted to user needs in terms of usability platforms and that facilitate socialization and participation online, regardless of user age and cultural origin, since any website can be accessed directly from the user's sofa with a smartphone, tablet or laptop.

In response to the MSI's call for further research (2016–2018) and to the gaps in the literature of social commerce, the present dissertation offers four studies focused on finding a better understanding of online consumer behavior.

Study 1 aimed *to investigate the customer engagement behavior literature in depth, analyzing the cognitive, affective and behavioral dimensions of the engagement generation process in social commerce and the role of emotions within that process.* This study proposed a model of the cognitive, affective and behavioral dimensions of the engagement generation process. The model analyzed how interactivity, social presence and enjoyment affect sPassion and result in positive sWOM. The results confirm empirically that cognitive experience and emotional feelings derived from the process boost user participation. At the core of the process, sPassion positively affects the spread of sWOM.

Study 2 had the objective of *reaching a wider understanding of optimal user experience in social commerce and its mediating effect between emotions and behavior.* Accordingly, the study was divided into two parts: first, *to analyze the dimensionality, structure and measurement of the state of flow*; and second, *to test how websites can improve user experience to boost positive sWOM while avoiding negative sWOM.*

Flow has been widely studied in different disciplines and contexts, but there is a lack of consensus about its dimensionality, measurement and structure. Our research theorizes flow as a second-order multidimensional factor composed of concentration, enjoyment and temporal distortion. The empirical results confirm the three-dimensional nature of the concept and support its second-order reflective structure, thereby helping to establish the basis for measuring state of flow, its structure and factors.

In the second part of Study 2, the empirical results confirmed that passionate users are likely to experience a state of flow and, as a consequence, to share positive

sWOM. This study contributes to the literature on customer online participation, and the findings will help companies to develop social commerce websites that boost user exchange of information.

Study 3 investigated *how user-generated versus company-generated information contributes to trust in the social commerce site, at the same time analyzing how user-generational cohorts behave (Generations X, Y and Z)*. Social commerce websites offer content created by the company itself and by its users, and this content is accessible without time and space constraints; therefore, everyone, regardless of age, can access social commerce information. The mission of social commerce is to boost tradeoffs while offering users the chance to share their own experiences and to obtain information from the experiences of others. Hence, trust transferred in this part of the purchasing decision process will be influenced by trust in the type of information available. Thus, Study 3 analyzed how user-generated and company-generated information contribute to trust in social commerce. The younger the generation, the more trust in social commerce is transferred from trust in user-generated information; the older the generation, the more trust in social commerce is transferred from trust in company-generated information.

The empirical results show different patterns for different generational cohorts. Generation X transfers trust to social commerce websites mainly from trust in information generated by companies, while Generation Z transfers trust mainly from information generated by users. Finally, in contrast to previous findings about the so-called millennial generation, Study 3 found that Generation Y develops trust based on company-generated information to an even greater extent than Generation X. The originality of Study 3 lies in its analysis of generational differences in trusting one type of information over another. It confirms that users cannot be considered as a single group and must be segmented into generational cohorts.

Study 4 investigated *user experience across cultures, analyzing the effect of hedonic and utilitarian antecedents on optimal user experience and its consequences on user intention*. Taking into account the salience of emotions within experiences of digital technologies (Kannan and Li, 2017), this study had a twofold purpose. First, it analyzed how emotions such as sPassion compared with flow state affected by usability,

resulting in a positive impact on emotional and behavioral loyalty. Second, as the main focus of the study, cultural background was tested as a moderating effect.

The findings confirm that, even though societies are culturally different, the globalization and social interactions inherent to social commerce websites make users more similar through their sharing of common online experiences. The major conclusions of this study recommend that marketers and academics understand social commerce from an international perspective, taking into account the inherent idiosyncrasy of diverse cultures. In particular, the empirical findings indicate that, in the societies under study, sPassion has a strong effect on the state of flow; despite some variation across cultures, the state of flow leads to positive customer intentions in social commerce contexts.

This dissertation allows us to draw a number of main conclusions regarding the study of online consumer experience in social commerce. First, on the basis of the importance of emotion in customer experience (Kannan and Li, 2017; Lemon and Verhoef, 2016; MSI, 2016–2018), this dissertation supports the primary role of emotions in shaping optimal user experience in social commerce. Second, once users are engaged and have reached an optimal experience (state of flow), this situation drives positive changes in their behavior, positively affecting their decision-making process. Third, it is necessary to take into account the fact that generational cohorts behave differently, since they trust information in different ways. Last, but not least, despite the fact that culture influences decision-making processes, the internationalization of markets and multiculturalism is making users more and more similar.

5.2. Theoretical implications

In accordance with the purpose of gaining a deeper understanding of online customer experience in social commerce, the four studies that form this doctoral dissertation have important theoretical implications.

Study 1 supports the following of the line of research that considers engagement as a result of a process that consists of three stages: cognitive, affective and behavioral (Brodie *et al.*, 2013; Groeger, Moroko and Hollebeek, 2016; Hollebeek, 2013; Vivek, Beatty and Morgan, 2012). The role of the affective dimension is the cornerstone of the process of engagement generation (Hollebeek, 2013, 2011). Because of the social-interactive relationships that are intrinsic to social commerce, this study

proposed the term sPassion. The introduction of the concept of sPassion brings new challenges and opportunities to research in marketing, helping to develop the concept of engagement and stimulating further research on sWOM valence. Study 1 highlights the importance of emotions for customer experience and contributes to bridging the research gap identified by the MSI (MSI, 2016–2018) when it called for further research into the role of positive emotions in customer experience. In the context of social commerce, socialization and interactivity on the website facilitate the experience of positive emotions of enjoyment and sPassion that drive the spread of positive sWOM.

Study 2 goes a step further in customer experience research and optimal customer experience by examining thoroughly the state of flow. The first part of this study has academic implications for the establishment of guidelines for the use of flow theory in the specific context of social commerce. This research supports the multidimensional structure of flow since, in social commerce contexts, the state of optimal experience is reached when users are concentrating and enjoying a temporal distortion. Hence, Study 2 contributes to the literature on the measurement instruments, factorial composition and structure of flow. The second part of the study also confirms the role of affective stimuli, such as sPassion, in fostering optimal customer experience, with flow acting as a mediator between sPassion and sWOM.

Study 3 has two theoretical implications. First, it builds on the literature on user-generated content by comparing trust transfer from user-generated information and company-generated information. Second – and this is its main contribution – the study highlights the importance of targeting social commerce users grouped by generational cohort. Specifically, this study distributes the focus onto three generational cohorts (Generations X, Y and Z) and identifies how members of each generation behave differently than those of other generations. Until now, it was believed that people were more likely to trust information shared by other consumers than information shared by companies (Dabholkar and Sheng, 2012; Smith, Menon and Sivakumar, 2005; Dellarocas *et al.*, 2007). However, this study establishes that this phenomenon is generation-specific. In particular, the findings show that the younger the generation (Generation Z), the more their members trust user-generated information, whereas the older the generation (Generation X), the more their members trust company-generated information. However, it should be noted that Generation Y (the millennial generation) behaves in an unexpected way by trusting more in information shared by the company

than in information shared by other users. Hence, further research should focus on achieving a better understanding of Generation Y.

Study 4 has two main implications for academic research. On the one hand, it broadens research on the emotions by testing how hedonic stimuli and utilitarian stimuli impact flow in social commerce, highlighting the role of emotions such as sPassion. In this way, Study 4 helps to bridge two of the gaps identified in the systematic literature review of Baethge, Klier and Klier (2016) when they called for further research testing culture in social commerce and analyzing the importance of hedonic and utilitarian components of the social commerce context. On the other hand, because globalization of markets makes it possible for users to access and take part in any website around the world, it is essential to test cross-cultural effects on optimal user experience, its antecedents and its outcomes. Therefore, this study emphasizes that, despite cultural differences, social commerce users are becoming more and more global and can be addressed from a multicultural perspective.

5.3. Business implications

This doctoral dissertation has several business implications, and aims to meet the MSI (2016–2018) research priorities on which the research objectives of the work are based. Nevertheless, within the dissertation, each study (studies 1, 2, 3 and 4) includes its own section regarding business implications.

- *What is the science of emotion in the digital, mobile, always on, always connected age? What is the role of emotions in experience? How do we design customer experiences that lead to maximal enjoyment, happiness and utility?*

Studies 1, 2 and 4 tested the role of emotions in user experience. In particular, this dissertation analyzed the role of sPassion as an affective stimulus for social commerce users. Knowing how sPassion is formed and what factors are crucial to its creation will enable companies to take the steps necessary to enhance user participation in social commerce contexts. Companies that want to generate the feeling of sPassion must facilitate interaction, socialization and enjoyment on their social commerce websites. The importance of the role of sPassion for companies lies in the fact that it helps users to reach the state of flow or optimal experience, which results in positive outcomes such as emotional loyalty and behavioral loyalty.

- *How marketing can drive positive change in behavior: new approaches to help consumers make “good” decisions and “smarter choices”?*

The empirical findings of this dissertation suggest that companies seeking to achieve positive changes in user behavior should foster flow (optimal user experience) as part of their social commerce strategies. In social commerce websites, users take for granted the presence of usability stimuli that enable them to share their opinions, rate products and obtain information from other users; however, social commerce websites must also foster the socialization and interactions that drive positive emotions.

In terms of purchase decision-making, the emergent social commerce environments offer users two types of information: user-generated information and company-generated information. Thus, the role of users has evolved from passive to active behavior. Now, more than ever, users can play an active role in their own and other people's decision-making processes. Decision-making in social commerce is notable for offering users a richer environment in terms of interaction, participation and sociability; users are thereby more and more informed. Nevertheless, given the moderating role of generational cohorts, firms must bear in mind that users regard online information differently depending on their age.

- *How does engaging in technology change consumers? How does it influence emotions, decision making, and behavior?*

Study 1 analyzed the engagement generation process in social commerce. The empirical findings inform companies that the cornerstone of the process is shaped by emotions such as enjoyment and sPassion, and that the latter is the booster of the process. The intrinsic characteristics of social commerce websites frame socialization and interaction in an environment where purchasing experiences are shared using both utilitarian and hedonic cues. There is no doubt that personal opinions are present in social commerce and, consequently, that shared emotions affect user decision-making and behavior. Users experience sPassion when they interact on a social commerce website, enjoying the moment and perceiving socialization. When social commerce users are engaged, their responses are reflected positively in their behavior in terms of positive sWOM. Social commerce tools, which enable users to exchange opinions, share experiences and obtain information from others, create a suitable scenario for helping companies to seek customer engagement.

- *How do life stage differences, generational issues, and culture influence decision processes and path to purchase?*

Social commerce is the global tradeoff environment par excellence. Users can access social commerce websites from anywhere, but most importantly, they can also buy, obtain and share information about products and their experiences. Hence, it is necessary to study how culture influences decision processes. Study 4 tackles this issue, and the findings recommend that companies address their users from a multicultural perspective; that is, despite the fact that user cultural background affects behavior, the ways users behave in social commerce contexts are becoming more and more similar. Furthermore, it is important to emphasize the importance of emotions such as sPassion in achieving an optimal experience that positively affects users' emotional and behavioral loyalty.

However, Study 3 points out that users have to be addressed in ways that take account of their generational cohorts, as individual cohorts show patterns regarding likes, attitudes and behavior (Bilgihan, 2016; San-Martín, Prodanova and Jiménez, 2015; Parment, 2013), and, according to the result of the present study, there are also within-cohort similarities when it comes to building trust on the basis of information they can find on the social commerce website. First, for companies who target Generation Z, user-generated information transfers more trust to users than company-generated information. Second, for companies who target Generations X and Y, company-generated information transfers more trust to users than user-generated information. Generation Y (the so-called millennial generation) seems to be the most challenging generation for companies, since they do not behave as expected. Nevertheless, some social commerce websites may have to address a wide age-range target; therefore, companies have to learn how to make their websites suitable for different generations.

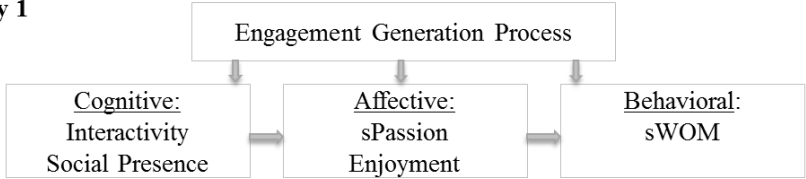
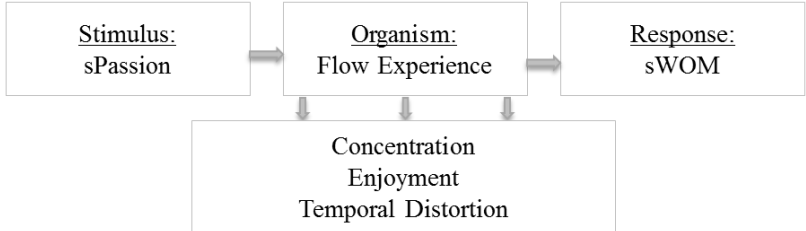
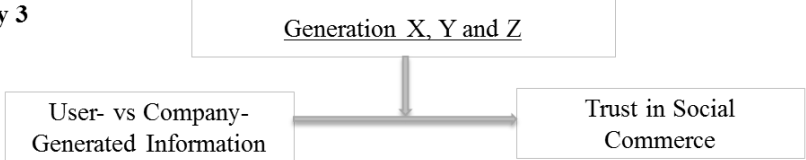
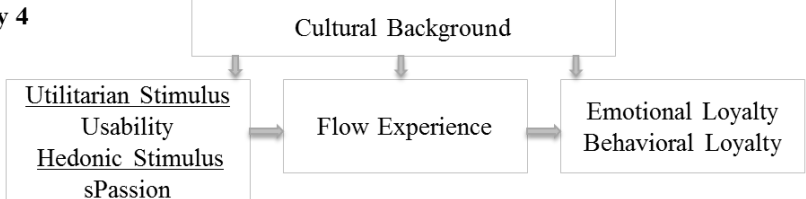
- *Given the extent to which customers can search for information on their own, do we need to change the way we market to and sell to knowledgeable customers?*

Social commerce is definitely social and customer-centered (Huang and Benyoucef, 2017; Li and Ku, 2017), and companies have to accept that social commerce users are empowered. They play active roles. They gain control while companies lose it. They are more informed than ever. They share their positive, neutral and negative

opinions based on their experiences. In this uncontrolled environment, business efforts should focus on generating optimal experiences that result in positive changes in behavior, engage users, boost positive sWOM, increase loyalty and increase willingness to return to the website to purchase and repurchase.

In summary, this doctoral dissertation recommends that companies foster optimal user experience in order to have a positive impact on online consumer behavior. Likewise, it encourages companies to know their target in terms of generation and culture and to offer social-interactive environments that enable user participation and sharing of content. Table 5.1 summarizes the theoretical and business implications of each study.

Table 5.1 Summary of the main conclusions and implications for theory and practice

Conceptual Framework	Conclusions and Implications for Theory and Practice
<p>Study 1</p> 	<ul style="list-style-type: none"> - Study 1 supports the multidimensionality of engagement. - It coins the term sPassion and confirms the importance of emotions for customer experience. - Companies that want to generate the feeling of sPassion must facilitate interaction, socialization and enjoyment in their social commerce websites. - Engaged social commerce users' response is positively reflected in their behavior by affecting positive sWOM.
<p>Study 2</p> 	<ul style="list-style-type: none"> - Study 2 sets the guidelines for using flow theory in the specific context of social commerce. - It confirms the three-dimensionality of the concept (concentration, enjoyment and temporal distortion) and supports the second-order reflective structure, establishing the basis for measuring the state of flow, its structure and its factors. - Study 2 highlights the role of affective stimuli, such as sPassion, in fostering optimal customer experience, with flow acting as a mediator between sPassion and sWOM.
<p>Study 3</p> 	<ul style="list-style-type: none"> - Study 3 underlines the importance of generational cohorts – generations X, Y and Z. - For companies who target Generation Z, user-generated information transfers more trust to users than company-generated information. - For companies who target Generations X and Y, company-generated information transfers more trust to users than user-generated information.
<p>Study 4</p> 	<ul style="list-style-type: none"> - Study 4 recommends that marketers and academics understand social commerce from an international perspective. - Business efforts should focus on generating optimal experiences that result in positive changes in behavior, engage users, boost positive sWOM, increase loyalty and increase willingness to return to the website to purchase and repurchase."

5.4. Limitations and future lines of research

The four studies that form this doctoral dissertation have several limitations. Each study contains a specific description of its own limitations and the future lines of research that it opens up. Thus, in this section, we highlight four main limitations of the dissertation as whole and how they can be addressed in future research.

The first limitation concerns types of social commerce. As stated in the Introduction, social commerce can be grouped into two types depending on the main focus of the website (Ko, 2018; Lin, Li and Wang, 2017; Zhang and Benyoucef, 2016): social commerce from the point of view of e-commerce websites with social interaction tools (e.g., Amazon and Booking.com) and from the point of view of social networks with commercial functions. This dissertation has focused on the first type of social commerce and has disregarded the social network perspective. Therefore, future lines of research should consider social commerce in which social networks are the foundation of the website and should study how users behave in each of the two types of commerce when faced with the same product.

The second limitation concerns the measurement of flow. This dissertation measured flow using quantitative techniques, in line with many other studies of online consumer behavior studies that use flow theory (Gao and Bai, 2014; Zhang *et al.*, 2014). The limitation of using an online survey as a quantitative technique is that it measures flow in a retrospective way, even when the interest of the investigation is in the perception of the flow experience; thus, some participants in the present study were not able to recall the relevant past experience clearly. A way of dealing with this concern is to combine quantitative data with neurophysiological data collected directly from participants' bodily reactions to certain stimuli. Neuromarketing technologies in flow research, although still scarce, allow researchers to understand the states of mind – boredom, flow and anxiety – of the flow-channel model introduced by Csikszentmihalyi (1975). By analyzing heart rate variability, galvanic skin response, electroencephalogram waves, salivary cortisol, blood pressure and other psychophysiological measures, researchers can better understand individual patterns of people in flow (Harmat *et al.*, 2015; Tozman *et al.*, 2015; Peifer *et al.*, 2014; Keller *et al.*, 2011; De Manzano *et al.*, 2010). Therefore, the follow-up study to this dissertation will analyze flow from a neurophysiological perspective to triangulate data and increase

robustness. Future lines of research should consider boredom, anxiety and flow as states of mind in order to study how they affect online consumer behavior physiologically.

The third limitation of this dissertation is that only three generational cohorts have been taken into account. Future research should consider all social commerce generational cohorts, with special interest paid to the youngest generation (that is, those who have grown up with the Internet and smartphones who are purchasing with their parents' money). Moreover, it must be considered that generation cohabitants also become older and will therefore jump over to another generation.

The fourth and final imitation is that this cross-cultural study has collected data from only two cultures. Future research should broaden the basis of the data by taking other countries into account. Above all, it must be emphasized that the two countries under study in this dissertation have similar scores in terms of uncertainty avoidance, indulgence, power distance and individualism; therefore, there is a need to include other cultures with different scores. It would be of particular interest to analyze different levels of uncertainty avoidance because of the relationship of this variable with trust in social commerce; likewise, comparison of different degrees of individualism and collectivism will shed led on sWOM behavior. In the present study, we did not have enough data to split the Spanish and Japanese samples into three generational cohorts, so future studies would benefit from using a cross-cultural across-generations research design.

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