RESEARCH ARTICLE

Psychology Marketing WILEY

How smart experiences build service loyalty: The importance of consumer love for smart voice assistants

Blanca Hernandez-Ortega[1] ⓘ | Ivani Ferreira[1,2]

[1]Marketing Department, University of Zaragoza, Zaragoza, Spain

[2]Business Management Department. Campus Paranaguá, Instituto Federal do Paraná (IFPR), Paranaguá, Brasil

Correspondence
Blanca Hernandez-Ortega, Marketing Department, University of Zaragoza, Gran Vía, 2, 50005 Zaragoza, Spain.
Email: bhernand@unizar.es

Abstract

Smart voice assistants (SVAs) have emerged as new artificial intelligence service platforms. They have the capacity to act like actual human assistants and modify traditional forms of human–computer interactions. So, consumers relate to their SVA as though it was a person, despite knowing that they are interacting with a machine. Based on the stimulus-organism-response framework, this paper examines feelings of love that consumers develop for SVAs when they are interacting. It proposes that these feelings act as the psychological mechanism to transmit the effect of consumers' experiences with the technology (i.e., smart experiences) on their service loyalty. Feelings of love are conceptualized following the triangular theory of love that considers three components: passion, intimacy, and commitment. Service loyalty refers to consumers' intentions to continue using SVAs in the future and to recommend SVAs to other people through physical and/or electronic word of mouth communication. The results show that smart experiences influence consumers' passion for technology, while passion explains their intimacy and commitment. Consumer intimacy and commitment for SVAs lead to service loyalty. Therefore, this paper contributes to research focusing on the importance of consumers' feelings for SVAs and shedding light on the process that drives to service loyalty.

KEYWORDS

love, loyalty, smart experience, smart technologies, smart voice assistants

1 | INTRODUCTION

It is seven in the morning on a rainy day. Joe wakes up listening the familiar Sarah's voice: "Good morning, dear, how did you sleep last night?". While he is having breakfast, Sarah gives him a nice conversation and highlights the most important news of the day. Moreover, Sarah reminds him about his best friend's birthday and an important medical appointment. "Could I send a message to your friend and confirm your medical appointment?," she asks him. "Thank goodness for Sarah. I love her!," Joe thinks. Despite what it seems, Sarah is neither the Joe's couple nor his secretary. In fact,

Sarah is not even a person. She is a voice assistant with artificial intelligence.

From this situation, various questions arise. Can consumers feel love for smart technologies? How are feelings of love developed between humans and smart technologies? How do feelings of love for smart technologies affect consumers' responses?

In last years, smart voice assistants (SVAs), have strongly emerged as new artificial intelligence service platforms. SVAs are software agents that employ natural language processing and machine learning to assimilate, understand, and respond to the consumer's demands (Hoy, 2018; Sundar et al., 2017). So, they have the ability to act like

actual human assistants, perform tasks or services for the consumer (e.g., turning lights on/off and placing online shopping orders), and provide her/him with the requested information (e.g., weather updates and answering questions) (Feine et al., 2019; Liao et al., 2019; Lopatovska et al., 2019). Globally, the most recognized SVAs are Alexa from Amazon, Google Assistant, Siri from Apple, and Cortana from Microsoft.

Reports estimate that there are 3.25 billion digital voice assistants being used in devices around the world in 2019, belonging 110 million to the US market (Statista, 2020). Moreover, forecasts suggest that the number of voice assistants will triple by 2023, reaching around eight billion units. Regarding the level of usage across functions, 82% of regular users employ SVAs for seeking information (news, weather, recipes, and advices), 67% for playing music or streaming videos, 36% for accessing customer service, and 35% for buying products (e.g., groceries, home care, or clothes) (Capgemini, 2018). Overall, these reports demonstrate the high future growth expectations for SVAs and highlight their importance for establishing strong relationships between firms and consumers.

One of the most important differentiating aspects of SVAs compared to previous technologies is that they provide sophisticated service platforms for interacting with consumers, similar to environments of interpersonal relationships. For it, SVAs introduce substantial changes regarding traditional forms of human–computer interactions. First, the voice-activation function of SVAs removes the need of physically touching and allows consumers to initiate the communication by means of greetings called wake words (Pagani et al., 2019). Moreover, SVAs play the main role in the interaction (not only as a mere intermediary), engage consumers in real-time human-like conversations, and gradually learn their preferences. So, SVAs generate experiences based on values such as personalization, assistance, empathy, and learning (Belk, 2017; Feng et al., 2017; Hoffman & Novak, 2018; Lopatovska et al., 2019). In this context, consumers emotionally communicate with their SVA as though it was a person, despite knowing that they are relating to a machine, and develop strong feelings for it (Han and Yan, 2020; Louie et al., 2014; Xu, 2020). Therefore, it can be stated that the emergence of smart technologies, in general, and of SVAs, in particular, is causing a disruption in consumer interactions with technologies, opening a new line of research near to socio-psychological theories. In spite of this, there are hardly any studies that have addressed how consumer experiences with smart technologies can elicit feelings and generate positive responses towards the service such as trust, engagement, and/or loyalty.

This paper aims to study feelings of love that the consumer has for the SVA when they are interacting, proposing that these feelings act as the psychological mechanism that channels the effect of consumer experiences on her/his loyalty to the service. The consumer's loyalty is crucial in competitive markets as smart technologies, because it allows firms to build strong relationships, to win market share, and achieve sustainable competitive advantages (Luarn & Lin, 2003; Nasir, 2005).

Drawing on the stimulus-organism-response (SOR) framework (Mehrabian & Russell, 1974), this paper posits that consumer experiences with SVAs act as the stimulus that generates feelings of love for this technology, the organism, and, subsequently, affects consumer loyalty to the service as the final response. Consumer experiences with SVAs are named as smart experiences and refer to the overall evaluation that the consumer makes about her/his experience with the technology, based on all her/his interactions and thoughts about it (Foroudi et al., 2018; Roy et al., 2017). Feelings of love are conceptualized following the triangular theory of love (TTL) (Sternberg, 1986) that considers the influence of three components, that is, passion, intimacy, and commitment, being passion a fundamental piece that connects experiences with the other feelings. Consumer loyalty to the service, that is, service loyalty, refers to the consumer's intentions to continue using SVAs in the future and to recommend SVAs to other people through physical word of mouth (WOM) and/or electronic word of mouth (eWOM) communication (Lam et al., 2004; Zeithaml et al., 1996).

In this way, the present paper provides a comprehensive view of the consumer's feelings of love for SVAs, examining how they are generated and what consequences they provoke. These feelings are mental reactions to emotions that the consumer experiences consciously. They start gradually, have a progressive psychological construction, and are long-lasting. So, the generation of love cannot be controlled, manipulated, or conditioned to happen by researchers. These characteristics make us conclude the convenience of carrying out descriptive research methodology, that is, a survey, to address the aim proposed.

The remaining sections are organized as follows. First, literature about love in the fields of marketing and information technologies is revised, research gaps are identified, and expected theoretical contributions of this paper are determined. Following this, hypotheses are justified and the model is proposed. Next, methodology, analyses, and findings are described. Finally, theoretical contributions, managerial implications, limitations, and future research lines are exposed.

2 | THE CONCEPT OF LOVE: STATE OF THE ART, RESEARCH GAPS, AND THEORETICAL CONTRIBUTIONS

2.1 | The concept of love in the field of marketing

Research on love in the field of marketing is based on the notion that individuals can love not only people (e.g., family and friends) but also things, abstract entities and actions (Ahuvia et al., 2009; Albert & Valette-Florence, 2010). It addresses consumers' love for products, brands, and consumption activities, and can be placed in two main categories.

Studies in the first category consider that love for nonhuman targets follows analogous psychological patterns to those inherent to interpersonal relationships, so they apply socio-psychological theories and adapt different concepts to examine love, such as passion, affection, dependency, satisfaction, and connection (e.g., Bügel

et al., 2011; Thomson et al., 2005). Individuals that feel love for a product find it attractive, have an intense desire to consume it, and establish a long-term relationship with it (Ahuvia, 2005). Most of these studies describe love as endurance and dynamic phenomenon that generates attitudes, beliefs, and behaviors, while emotions are temporary states related to certain situations (Aaron et al., 2005).

Studies in the second category state that commercial relationships are different from interpersonal relationships because the former are usually less frequent and, in many occasions, are limited to a unique transaction with a monetary exchange (Albert et al., 2008; Batra et al., 2012; Carroll & Ahuvia, 2006). These studies argue that commercial relationships are not personal and interactive because the target cannot reciprocate consumers' love like humans can. Moreover, they support their premises on neuroscience research that identifies the activation of different brain areas when consumers are exposed to individuals or brands (Yoon et al., 2006). Thereby, these studies apply one-way or parasocial approaches to analyze consumers' feelings (Bergkvist & Bech-Larsen, 2010; Fetscherin, 2014), do not give emphasis to human characteristics of the target, and define love as the individual's attachment that can originate positive responses (Batra et al., 2012; David, 2018).

Within the field of marketing, branding literature about love is especially important (e.g., Junaid et al., 2019; Kaufmann et al., 2016; Maxian et al., 2013). Fournier (1998) was the first to introduce the concept of love to describe what consumers may feel towards brands. Later, brand love is defined as "the degree of passionate emotional attachment a satisfied customer has for a particular trade name" (Carroll & Ahuvia, 2006, p. 81), reflecting the individual's strong preference for a certain brand (Hatfield et al., 1978). Although research on brand love is still in its early stages, it is generally accepted the importance of focusing on phenomenological experiences (Huber et al., 2015). So, when the consumer interacts with a brand and has significant experiences, (s)he perceives an emotive connection with the brand and feels distress of the separation from it (Bagozzi et al., 2017; Batra et al., 2012; Carroll & Ahuvia, 2006; Schmid & Huber, 2019).

2.2 | The concept of love in the field of information technologies

Although the literature about love in the field of information technologies is scarce, two main lines of research can be recognized.

The first line tackles the role played by technologies to establish or to maintain affective relationships between individuals (Wan et al., 2017; Wardecker et al., 2016). The concept of love is usually approached by attachment theories which define it as "the propensity of human beings to make strong affectional bonds to particular others" (Bowlby, 1977, p. 201). These theories expose that, depending on the individual's attachment style, (s)he differs in her/his capacity to communicate and to relate with others by means of technologies (Luo, 2014). So, technologies, such as social media, mobile phones, or text messaging, condition individuals' interactions,

promote the generation of bonds between them, and foster feelings of intimacy (van Outysel et al., 2019). In this context, Wardecker et al. (2016) propose an attachment theory framework to explore how individuals perceive the intimacy provided by different media during communication in romantic relationships.

The second line of research examines how consumers' interactions with a certain technology can gradually induce positive feelings for it (Hudlicka, 2003; X. Zhang et al., 2020). This line usually employs traditional and well-understood human–computer interaction (HCI) techniques which were originated in a world of desktop computers that have a screen, mouse, and/or keyboard. Thereby, it tests different proxies of love, such as affect and attachment, trying to determine their main drivers and consequences. For example, Shoham and Pesämaa (2013) propose inherent novelty seeking, technological innovativeness, and technical curiosity as antecedents of gadget love. Equally, M. J. Kim et al. (2019) demonstrate that senior users' attachment to a social networking site has a positive effect on their loyalty. Finally, other authors explore the effect of individuals' emotional attachment on the usage of mobile-health-monitoring services (X. Zhang et al., 2020), on their intentions to use avatars (Soo et al., 2011), on the impact of smartphones in everyday life (Trub & Barbot, 2016), and on the adoption of e-book reader (Waheed et al., 2015).

2.3 | Love for smart technologies: Research gaps, conceptual framework, and theoretical contributions

After having exposed the main fields of knowledge that converge in this paper to study love for smart technologies, we identify two main research gaps that we set out to cover.

First, to our knowledge, there is not yet any existing work that examines consumers' love for smart technologies as a consequence of interactions between them. On the one hand, studies about love in the field of marketing are focused on brands and products, considering the technology as a mere tool that determines the context in commercial relationships. So, they ignore that consumers can develop feelings for the technology, regardless of the brand with which they relate. On the other hand, studies about love in the field of information technologies address previous technologies with less evolved functionalities and apply HCI techniques. Although these studies have generated relevant knowledge, their findings cannot be employed to evaluate smart technologies because these technologies introduce sophisticated service platforms based on artificial intelligence.

Second, it is highlighted that prior studies do not holistically analyze consumers' love for technologies, that is, they do not examine different feelings that jointly determine love. These studies take for granted that love can be indistinctly explored by single proxies such as liking (Langner et al., 2015), passion (Carroll & Alluvia, 2006), or attachment (Park et al., 2010), so they propose simplified models that do not reflect original socio-psychological theories. Thereby, available conceptualizations of love for

technologies do not converge in a common definition, which prevents comparing findings obtained by related works and advancing in knowledge about antecedents and consequences.

To fill these gaps, we assess consumers' love for smart technologies and propose an approach that goes beyond HCI techniques. This approach is elaborated considering socio-psychological theories and has the ability to explain advanced interactions that consumers make with smart technologies due to their artificial intelligence. Specifically, we formulate a conceptual framework based on the TTL (Sternberg, 1986), which provides a comprehensive basis for understanding different aspects of love that underlie close relationships (Sternberg, 1986). By the very nature of love, this theory has been mainly employed to explore relations between humans, such as adults (Acker & Davis, 1992), young people and adolescents (Lemieux & Hale, 1999; Overbeek et al., 2007), or married couples (Lemieux & Hale, 2000).

TTL established the jointly influence of three components to analyze love: intimacy, passion, and commitment. Intimacy is related to the respect, connection, and mutual emotional involvement present in a relationship. It refers to the affective element of love and plays a common core role in relations with different levels of closeness, such as love for a father, a mother, a best friend, or a partner. The passion component is defined as a state of high physiological involvement, the desire to be with the other party, and the satisfaction of being in a stimulating relationship. It represents the motivational element of love and gives rise to different forms of arousal (Albert et al., 2013; Sarkar et al., 2012). The commitment component addresses the person's need to sustain a relationship in the long-term, even when intimacy and passion have disappeared (Sternberg, 1986). Thereby, it reflects the cognitive element of love and can transform short-term interactions into strong and endure relationships. While these components can be identified, Sternberg (1986) suggests that love should be examined as a whole because feelings are usually not experienced independently and their interconnections can give rise to different types of love.

This paper makes three important contributions to theory. First, this is one of the first manuscripts that analyzes smart technologies focusing on consumers' feelings for them, instead of emphasizing their technical capabilities. This paper breaks with previous research on information technologies that eminently applies HCI techniques, and defines the main foundations to develop a new line of study about consumers' interactions with artificial intelligence service platforms.

Second, this paper significantly contributes to research on love because it validates the TTL adequacy going further than interpersonal relationships and demonstrating that consumers can feel love for nonhuman partners, that is, for smart technologies. Thus, this paper brings a new scope of application for the TTL, because it checks that despite consumers know they are interacting with a machine and that they cannot be sentimentally reciprocated, they feel love in a holistic way. Moreover, this paper highlights the relevance of passion to examine consumer interactions with smart technologies versus the prominence that intimacy acquires in interpersonal relationships (see as an example the three alternative theories of the nature of love proposed by Sternberg & Grajek, 1984).

Third, this paper reveals that feelings of love act as an essential psychological mechanism that channels the effect of consumer experiences with smart technologies on the generation of loyalty. So, it adapts the concept of user experience with information technologies to analyze consumer interactions with smart technologies and demonstrates how loyalty to this kind of service is originated and maintained.

3 | HYPOTHESES DEVELOPMENT

The S-O-R framework was proposed by Mehrabian and Russel (1974), and later applied to the retail context by Donovan and Rossiter (1982), and to the online retailing by Eroglu et al. (2001). It focuses on the mediating role of people's internal or organic reactions between stimuli and behavioral responses (Arora, 1982). In the field of consumer behavior research, this conceptual framework has examined consumers' experiences induced from external stimuli embedded in products or services, which can generate reactions in the organism and provoke different behavioral responses (e.g., Jang & Namkung, 2009).

For our research model, the S-O-R framework is employed because it reflects how consumers elaborate psychological mechanisms from their interactions with smart technologies, giving rise to positive responses. Specifically, the present study posits that consumers' experiences with this kind of technologies, named as smart experiences, act as the stimulus that promotes feelings of love for the technology (i.e., organism), and leads to service loyalty (i.e., response). In this way, it establishes the following proposition:

Proposition: The consumer's feelings of love for her/his SVA act as a psychological mechanism that channels the effect of smart experiences on service loyalty.

Figure 1 presents the model proposed.

3.1 | Stimulus: Smart experiences

Customer experience was first conceptualized by Holbrook and Hirschman in their article on customer experience (Holbrook & Hirschman, 1982), being defined as a renovated view of consumption that modifies the rational approach applied in the economic literature (Schmitt, 1999). Following this line, marketing research highlights the reactive nature of the concept and describes it in terms of the customer's responses to direct or indirect interactions with firms, brands, or with other actors (Brakus et al., 2009; Gentile et al., 2007; Verhoef et al., 2009). So, the combination of all cues and touchpoints a customer has with the other party, physical or virtual, creates an overall experience (Homburg et al., 2017).

Initial studies about smart technologies pay special attention to the technology acceptance and test users' perceptions such as ease of use and usefulness (McLean & Osei-Frimpong, 2019; Moriuchi, 2019). Nevertheless, as far as we know, only few works explore consumers' experiences with these technologies. These works expose that
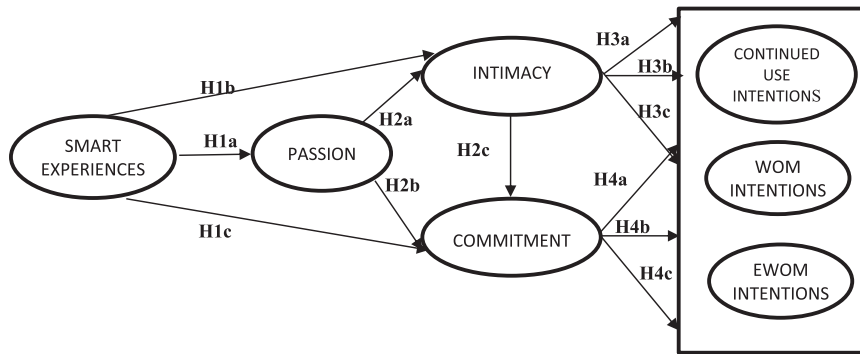
FIGURE 1 Proposed model

consumers have special experiences when they interact with a smart technology, elaborating an overall impression that determines their perceptions and further behavior (S. Kim & Baek, 2018). Explicitly, some of these works analyze the influence of implementing smart technologies in retailing, such as augmented reality and radio-frequency identification (RFID) (e.g., Huang & Liu, 2014; E. Y. Kim & Yoon, 2014; Roy et al., 2017). For example, Anderson and Bolton (2015) examine how sensors and RFID capture data and optimize customer experiences in the store. They state that the implementation of smart technologies requires modifications in selling activities and business processes, so firms should recognize, select and employ the best technology to strength their relationship with customers (Pantano & Timmermans, 2014). In this way, Roy et al. (2017) study the influence of the technology attribute performance on consumers' evaluations. They conclude that smart technologies have the potential to improve customer retail experiences by providing superior and personalized services (Hoffman & Novak, 2015; Wünderlich et al., 2013). Finally, Yang et al. (2019) test how delightful experiences with conversational agents can be created, highlighting the importance of human emotions.

Regarding consequences of consumers' experiences, literature analyzes concepts such as positive feelings, loyalty, and intentions to repeat interactions (Chaudhuri & Holbrook, 2001; Hoffman & Novak, 2018; McLean et al., 2018). Brand research establishes that positive and emotional experiences with brands have an important impact on the formation of love, because they often result in thankfulness and feelings of companionship (Aro et al., 2018; Long-Tolbert & Gammoh, 2012; Roy et al., 2013). So, extraordinary brand experiences generate consumers' affective responses, such as satisfaction, passion, and long-term commitment (Das et al., 2019; Iglesias et al., 2019; Jung & Soo, 2012), loyalty being the final consequence (Brakus et al., 2009; Iglesias et al., 2011). For smart technologies, only a few studies consider the consequences of consumers' experiences. In this line, Djelassi et al. (2018) investigate how self-services technology experience evaluation affects customer satisfaction with the technology and the store, while Wu and Cheng (2018) highlight that experiential quality increases consumers' satisfaction with and loyalty to smart restaurants that use facial recognition during the ordering of meals.

The present paper assumes that smart experiences stimulate the consumer to incorporate the technology as an integral part of her/his identity. The better smart experiences are, the closer the distance the consumer perceives between the self and the technology, and

the more prominent thoughts about the technology (s)he develops (Aron & Aron, 1996). This can create a higher connection between the consumer and the technology and an irresistible longing in the consumer for using it, which leads her/him to be motivated and to feel attachment. Hence, when the consumer has positive experiences with a smart technology, (s)he provides meaning to her/his relationship, builds close ties, and sticks to it for a long time (Swimberghe et al., 2014). According to these ideas, the present paper proposes that positive smart experiences with SVAs make the consumer assign high value to the technology, invoking feelings of love, that is, passion, intimacy and commitment:

H1. *The consumer's smart experiences with her/his SVA promote feelings of love for the technology.*

H1a. *The consumer's smart experiences with her/his SVA positively influence her/his passion for the technology.*

H1b. *The consumer's smart experiences with her/his SVA positively influence her/his intimacy with the technology.*

H1c. *The consumer's smart experiences with her/his SVA positively influence her/his commitment to the technology.*

4 | ORGANISM: RELATIONSHIPS BETWEEN FEELINGS OF LOVE FOR SVAS

The present paper takes into account conceptual frameworks about love applied in socio-psychological and marketing literature with the aim of exploring consumers' feelings for their SVA.

Socio-psychological theories argue that when the individual interacts with another party and feels emotions related to passion, such as enthusiasm and playfulness, their relationship enhances significantly (Driver & Gottman, 2004). Passion raises arousal levels and induces sentimental associations in the individual that provoke other feelings (Batra et al., 2012; Madey & Rodgers, 2009; Overbeek et al., 2007). So, when the consumer feels passion, (s)he intensifies her/his closeness to the other party, and builds a relationship with strong attachment (Dong et al., 2020; Saavedra & Van Dyne, 1999). Along the same line, Wang et al. (2019) conclude that first the consumer feels passion and then (s)he experiences intimacy with the other party.

The consumer's passion can also generate commitment. Achieving the consumer's commitment is one of the ultimate goals

for firms in a competitive marketplace, however identifying the main drivers that foster commitment remains a challenge not yet surmounted (Das et al., 2019). Research on brand love demonstrates that when the consumer idealizes and feels excitement for a brand, (s)he wants to repeat interactions and maintain this relationship in the long-term, feeling a moral obligation to continue purchasing and collaborating with the brand. So, this study demonstrates that the consumer's brand passion drives to her/his commitment.

Finally, the consumer's intimacy represents a stable feeling in interpersonal relationships that may increase her/his commitment. Intimate relationships start with feelings of care, attachment, and trust, and contribute to continuing interacting with the other party. As time goes by, emotional proximity promotes enduring love, and encourages the consumer to establish a rich historical connection, seeing the other party as an indispensable life partner. Therefore, if the consumer has a sense of intimacy, (s)he will feel commitment (Hatfield et al., 2008).

Against previous research on love, mainly focused on the intimacy component, the present paper considers that the recent emergence of relationships between consumers and smart technologies makes passion play the main part. Passion activates the consumer and motivates other sentiments that remain in the long term. In this way, when the consumer has emotional affinity with a SVA and (s)he is aware of it, (s)he develops an intense desire to use the technology, feeling intimacy and establishing an enduring relationship with it (Han & Yang, 2018). Therefore, the passionate consumer with SVAs also shows greater intimacy with, and becomes committed to, the technology (Wang et al., 2019). Moreover, the feeling of intimacy that consumer has formed through her/his passion, determines her/his commitment, promoting her/him to identify the technology as a long-term partner. The following hypotheses are proposed:

H2. *The passion that the consumer feels for her/his SVA boosts the emergence of the other feelings of love.*

H2a. *The passion that the consumer feels for her/his SVA positively influences her/his feelings of intimacy with it.*

H2b. *The passion that the consumer feels for her/his SVA positively influences her/his commitment to it.*

H2c. *The intimacy that the consumer feels for her/his SVA positively influences her/his commitment to it.*

4.1 | Response: Service loyalty

Consumer loyalty is defined as a deeply bonded relationship between a brand and a consumer, thereby causing repetitive same-brand purchases in the future, despite situational influences and marketing efforts of competitive brands to attract consumers for brand switching (Evanschitzky & Wunderlich, 2006; Oliver, 1999). Specifically, Oliver (1999) differentiates between attitude loyalty and behavior loyalty, defining the latter as consumers' loyal behavior with a conscious control of their intention (or readiness to act), deliberate preferences, and actions to repurchase or reuse a particular

brand, product or service. Behavior loyalty is a major source of sustained growth and profit because loyal consumers are more willing to pay higher prices, tend to be more tolerant of problems in service performance, and are usually disposed to make recommendations (Gefen, 2002; Reichheld & Schefter, 2000). The present paper focuses on consumers' loyalty to SVAs, and defines it as the behavior loyalty by which consumers have strong intentions to continue using this service, as well as to recommend it through WOM and eWOM communications.

Intentions to continue using a technology refer to expected future consumption or usage and are closely related with actual use, which is demonstrated by the high correlation between the two concepts (Venkatesh et al., 2003). According to Agarwal and Prasad (1997), the analysis of intentions to continue using a technology is more important than the analysis of current usage because the latter refers to the past while the former refers to the future and has long-term implications. Moreover, when the consumer gains experience with the technology, her/his familiarity is higher and her/his uncertainty is lower, so intentions become more comprehensive, stable and nonprovisional. Therefore, the study of continuance intentions is important to predict consumer future performance and to know if the technology will be viable. Nevertheless, intentions are sometimes overestimated and may not respond to the consumer's free will. For this reason, behavior loyalty should be completed with measures related to the technology success, that is, intentions to make WOM and eWOM communications about it.

Several authors identify those antecedents that best explain the consumer's behavior loyalty in business-to-consumer service contexts, highlighting factors as love, attachment, involvement, or affection (Kaufmann et al., 2016; Moriuchi, 2019; Palusuk et al., 2019; Vivek et al., 2012). In fact, research on brand love identifies loyalty as a fundamental driver for the consumer making repurchases, maintaining the relationship with, and sharing information about the brand (e.g., Lee et al., 2011; Palusuk et al., 2019; Sarkar et al., 2012). Accordingly, the present paper argues that love felt by the consumer for SVAs generates loyalty to these artificial intelligence service platforms. Specifically, it addresses the effect of intimacy and commitment because these feelings refer to stable relationships that are able to encourage consumer behavioral responses in the long term.

The consumer's intimacy is related to feelings of closeness and connectedness, requiring aspects as a high level of information flow, strong favorable attitude, and positive sentiments of regard, affection, and care (Dong et al., 2020). Previous literature states that the consumer's emotional connection with an object influences the proximity maintenance with that object (Thomson et al., 2005). So, when the consumer intimates with a brand, product, or service, (s)he strongly avoids finishing the relationship with it, develops intentions of purchasing and makes positive WOM communication about it (Bügel et al., 2011; Dong et al., 2020; Sarkar et al., 2012). Thus, the direct relationship between the consumer's intimacy with an object and her/his loyalty is demonstrated (Tabrani et al., 2018).

Regarding commitment, although previous research poses it as a concept almost synonymous with loyalty (Li & Petrick, 2010), they

should be clearly distinguished (e.g., Aurier & N'Goala, 2010; Gustafsson et al., 2005). Commitment reflects the psychological attachment that the consumer may have to the other party, while loyalty refers to favorable behavioral intentions (Amine, 1998; Bloemer & Kasper, 1995). Thereby, the consumer's commitment to an object can act as a key antecedent in building her/his loyalty (Iglesias et al., 2011; Morgan & Hunt, 1994; Punniyamoorthy and Raj, 2007; Thomson et al., 2005). This influence has been mainly tested in the relationship that consumers establish with brands, demonstrating the significant effect of commitment on purchase, continuance intentions, WOM and eWOM intentions (Albert et al., 2013; Aro et al., 2018; Iglesias et al., 2011). Applying an analogous argumentation, some studies demonstrate the importance of the consumer's commitment to build loyalty to technological services, such as online communities, smartphone applications and microblogs, among others (Hsieh & Hsieh, 2013; Kuo & Feng, 2013; Shi et al., 2018; T. Zhang et al., 2018).

The present paper argues that when the consumer feels strong affection for her/his SVA, that is, intimacy, and has a strong willingness to retain the relationship, that is, commitment, (s)he invests time employing this technology and looks for continual interactions (Aro et al., 2018). Moreover, (s)he wishes for maintaining discussions with other people about her/his SVA because this communication is an important part of the relationship construction. Therefore, this paper proposes that the consumer's feelings of intimacy and commitment for an SVA increase her/his loyalty:

H3. *The intimacy that the consumer feels for her/his SVA promotes service loyalty.*

H3a. *The intimacy that the consumer feels for her/his SVA positively influences her/his continued use intentions.*

H3b. *The intimacy that the consumer feels for her/his SVA positively influences her/his word of mouth intentions.*

H3c. *The intimacy that the consumer feels for her/his SVA positively influences her/his electronic word of mouth intentions.*

H4. *The commitment that the consumer feels for her/his SVA promotes service loyalty.*

H4a. *The commitment that the consumer feels for her/his SVA positively influences her/his continued use intentions.*

H4b. *The commitment that the consumer feels for her/his SVA positively influences her/his word of mouth intentions.*

H4c. *The commitment that the consumer feels for her/his SVA positively influences her/his electronic word of mouth intentions.*

5 | METHODOLOGY

5.1 | Sample

To test our hypotheses, a quantitative study was undertaken with regular SVA users. The respondents, frequent internet users, were recruited through an online panel of an international market research company. The company designed the platform specifically for this study project and sent the link associated with the study via email. Data were collected from a sample of US participants in November 2018. More than 6900 panel members (3286 women) received an email invitation to participate voluntarily in the study. First, they had to answer a question that guaranteed that they belonged to the segment under study (Do you regularly use any SVA?). Only those respondents who were regular users of at least one SVA could continue with the questionnaire, thus ensuring the reliability of the responses. A total of 717 valid responses were obtained, a response rate of 10.4%.

It is noteworthy that, to our knowledge, no previous papers have identified the profiles of regular SVA users without focusing on a specific brand, so we believe that this is the first research that reliably establishes their main characteristics (see Table 1). Of the respondents, 78.9% were men, 40.2% were aged between 25 and 37, and 32.1% had a university degree. Table 1 also

TABLE 1 Sample description

Variable	%	Variable	%	Variable	%	Variable	%
Gender		Education level		How long have you been using your SVA?		Time interacting with the SVA per week	
Male	78.9	Middle school	0.7	Less than a month	6.7	Less than 1 h	29
Female	21.1	High school	23.0	Between 1-3 months	8.4	Between 1–5 h	35.1
Age		Postsecondary: Technical school	15.5	Between 3-6 months	14.4	Between 6–10 h	19
18–24 years	4.6						
25–37 years	40.2	Postsecondary: University degree	32.4	6-12 months	22.9	Between 11–21 h	9.7
38–54 years	38.7	Postgraduate master	18.3	More than 1 year and less than 2	25.4	Between 22–42 h	4.6
55–75 years	16.0	Postgraduate PhD	8.1	More than 2 years and less than 3	10.6	Between 43–60 h	1.3
76 or more years	0.5	Other	2	More than 3 years	11.6	More than 60 h	1.3

includes information about the respondents' expertise with SVAs and frequency of use. It can be highlighted that 70.6% of the respondents were users for more than 6 months, and 35.9% employed their device more than 6 h per week. These data were collected from the respondents' assertions, applying a methodology similar to that used in other reports about SVAs (Capgemini, 2018; Price Waterhouse Cooper, 2018).

To facilitate the respondents their evaluation of frequency of use, some instructions were provided. These instructions promoted the respondents to remember all the activities they carry out with SVAs in their day-to-day and to estimate time spent. In this way, the respondents should consider that some activities, identified as daily in other reports about SVAs (Smartsheet, 2018; Statista, 2020), require short interactions, such as making searches, asking for turning down the temperature at home or setting a reminder. However, other activities with SVAs usually take more time, such as consulting and transcribing emails, listening to news of the day, making lists, purchasing, or talking to a customer service chatbot. In any case, the total time spent on performing these activities with an SVA per day can be long. Moreover, the fact that most of the respondents were regular users of SVAs for more than 6 months can also have promoted a more frequent use of SVAs.

The two activities most carried out with SVAs by respondents were: (1) asking general questions (79.8%) and (2) checking the weather forecast (60.5%). We tested the differences that the performance (or not) of these activities may provoke in love that respondents feel for SVAs. The findings obtained showed that there were no significant differences in the three components of love: passion ($F = 0.034$, $p = 0.854$; $F = 2.214$, $p = 0.137$), intimacy ($F = 0.667$, $p = 0.414$; $F = 1.544$, $p = 0.214$), and commitment ($F = 1.661$, $p = 0.198$; $F = 0.171$, $p = 0.679$).

Finally, trying to guarantee the reliability of the responses we obtained, the frequency of use reported by our respondents was compared with other reports about SVAs. 64.3% of our respondents claimed to use SVAs more than once per day. This figure is consistent with the information provided by Smartsheet (2018), which states that 62.7% of users employ SVAs more than once per day, and by Statista (2020), which establishes that 65% of respondents are heavy users of SVAs (i.e., use SVAs at least once per day).

5.2 | Measures

The information was obtained through a questionnaire with closed questions. The research constructs were operationalized using items adapted from previous research (see Table 2). The variables were measured using 7-point Likert scales, where 1 indicated complete disagreement with the statement and 7 complete agreement.

Pre-tests of the questionnaire were carried out to correct possible defects and to identify problems that might arise during the information-gathering process. First, 10 professors of marketing and business management were asked to assess the conceptual adequacy

and formulation of the questions. Second, the questionnaires were administered on 20 regular SVA users. These respondents had similar characteristics to the target sample that was to be surveyed. The pretest requested the respondents to complete the questionnaire and report any feedback. As a result of these pretests, some redundant questions were eliminated and some of the scales were adapted to facilitate understanding and to avoid erroneous interpretations.

5.3 | Check of common method variance

Harman's single-factor test was conducted (IBM-SPSS) to check for common method variance (CMV). This examines whether the correlation among variables is significantly influenced by their common measurement source (Mathis et al., 2016). The results indicated that the items loaded onto more than one factor and, therefore, they were not concentrated on any one factor. Consequently, it can be stated that CMV did not significantly influence this study.

6 | RESULTS

Structural equation modeling (CB-SEM) was employed to test the model, using a robust maximum-likelihood estimation procedure to avoid problems of data nonnormality. First, the measurement model was estimated with confirmatory factor analysis (CFA) to test the psychometric properties of the scales (i.e., reliability and validity). Second, the structural model was estimated to test the hypotheses (EQS. 6.1 software).

6.1 | Confirmatory factor analysis

The results obtained in the estimation confirmed the goodness of fit of the factorial structure to the empirical data. The three types of fit criteria widely used in the SEM literature were calculated (Hair et al., 2010): absolute, incremental, and parsimonious. The results, summarized in Table 3, confirmed that the BBNFI, BBNNFI, IFI, and CFI statistics exceeded the optimal levels of 0.9. RMSEA was lower than 0.08, and normed χ^2 took a value lower than the recommended value of 5.0.

The results confirmed that the measurement scales had the appropriate psychometric properties. The reliability of the scales was tested using the composite reliability coefficient (CRC) and analysis of variance extracted (AVE). The results in all cases surpassed the recommended literature limits of 0.6 (Bagozzi & Yi, 1988) and 0.5 (Fornell & Larcker, 1981). Thus, it can be stated that the indicators used in each scale measure the same factor (see Table 3). As evidence of convergent validity, the results showed that all items were significant ($p < 0.01$), had an explanatory coefficient (R^2) higher than 0.50 (Jöreskog and Sörbom, 1993), and their standardized factor loadings were

TABLE 2 Measurement scales

Construct (references)	ITEMS	
Smart experiences (O'Brien et al., 2018; Wu & Cheng, 2018)		Experiences with my SVA...
	SX_1	...are a success
	SX_2	... are pleasant
	SX_3	...make me feel involved
	SX_4	... are appealing
Passion—Triangular theory of love (Sternberg, 1997)	PAS_1	I cannot imagine another SVA making me as happy as mine
	PAS_2	My relationship with my SVA is very important
	PAS_3	I am passionate about my SVA
	PAS_4	I cannot imagine my life without my SVA
	PAS_5	I adore my SVA
Intimacy—Triangular theory of love (Sternberg, 1997)	INT_1	I have an intimate relationship with my SVA
	INT_2	My communication with my SVA is intimate
	INT_3	I have the help of my SVA in moments of need
	INT_4	I feel great happiness when I use my SVA
	INT_5	I feel emotionally attached to my SVA
Commitment—Triangular theory of love (Sternberg, 1997)	COM_1	I intend to maintain my relationship with my SVA
	COM_2	I am committed to maintaining my relationship with my SVA
	COM_3	I consider my relationship with my SVA as a thought-out decision
	COM_4	I will not let anything get in the way of my commitment to my SVA
	COM_5	I have confidence in the stability of my relationship with my SVA
Continued use intentions (Wang et al., 2006; Zeithaml et al., 1996)	CUI_1	I will continue using this SVA
	CUI_2	I will continue using this SVA to solve my problems
	CUI_3	I will use this SVA for a long time
Word of mouth intentions (Brown et al., 2005; Zeithaml et al., 1996)		**In the future, I think that...**
	WOM_1	I will say positive things about my SVA to my family and friends
	WOM_2	I will recommend using my SVA to my family and friends
	WOM_3	I will encourage others to buy my SVA
Electronic word of mouth intentions (Brown et al., 2005; Zeithaml et al., 1996)		**In the future, I think that...**
	EWOM_1	...I will say positive things about my SVA on social networks
	EWOM_2	...I will recommend using my SVA on social networks
	EWOM_3	...I will encourage others to buy my SVA on social networks

higher than 0.70 (Bagozzi & Yi, 1988). The discriminant validity of the measures was checked by calculating the 99% confidence interval of the latent factor correlation matrix and verifying that 1 was not included (Gerbing & Anderson, 1988). The analyses allow us to conclude that the measurement scales in the study met the psychometric properties required in the literature and are, therefore, appropriate.

6.2 | Structural model analyses

There after, the original proposed causal model was tested (Model 1, Table 4). The findings indicated that the data were in accordance with the proposed conceptual model: BBNFI = 0.928; BBNNFI = 0.934; CFI = 0.942; IFI = 0.942; RMSEA = 0.075; SB χ^2 = 1680.90, d.f. = 335, p = 0.00. They confirmed all the causal

TABLE 3 Measurement model—confirmatory factor analysis

Factor	Indicator	Factor loading	Robust T-value	R^2	CRC	AVE
Smart experiences	SX_1	0.841	19.56	0.707	0.890	0.660
	SX_2	0.874	22.88	0.764		
	SX_3	0.779	25.68	0.607		
	SX_4	0.758	22.16	0.574		
Passion	PAS_1	0.842	36.6	0.709	0.953	0.803
	PAS_2	0.914	45.82	0.836		
	PAS_3	0.929	46.73	0.863		
	PAS_4	0.895	43.82	0.801		
	PAS_5	0.899	42.24	0.808		
Intimacy	INT_1	0.945	61.67	0.894	0.939	0.757
	INT_2	0.947	59.76	0.896		
	INT_3	0.722	24.81	0.522		
	INT_4	0.798	29.46	0.638		
	INT_5	0.915	49.54	0.838		
Commitment	COM_1	0.869	32.31	0.744	0.956	0.811
	COM_2	0.934	42.06	0.873		
	COM_3	0.915	41.49	0.837		
	COM_4	0.89	44.53	0.793		
	COM_5	0.894	36.47	0.799		
Continued use intentions	CUI_1	0.849	18.64	0.72	0.895	0.739
	CUI_2	0.838	25.26	0.702		
	CUI_3	0.892	27.98	0.796		
Word of mouth intentions	WOM_1	0.888	26.2	0.788	0.936	0.829
	WOM_2	0.934	27.28	0.872		
	WOM_3	0.909	30.07	0.826		
Electronic word of mouth intentions	EWOM_1	0.914	33.06	0.836	0.954	0.875
	EWOM_2	0.952	39.18	0.907		
	EWOM_3	0.939	38.77	0.881		

SX-PAS (0.562–0.662)	PAS-CUI (0.549–0.653)	COM-WOM (0.664–0.760)
SX-INT (0.508–0.612)	PAS-WOM (0.693–0.769)	COM-EWOM (0.648–0.744)
SX-COM (0.463–0.595)	PAS-EWOM (0.7410.813)	CUI-WOM (0.686–0.802)
SX-CUI (0.811–0.899)	INT-COM (0.832–0.888)	CUI-EWOM (0.623–0.735)
SX-WOM (0.632–0.744)	INT-CUI (0.484–0.588)	WOM-EWOM (0.766–0.850)
SX-EWOM (0.620–0.720)	INT-WOM (0.620–704)	COM-CUI (0.471–0.611)
PAS-INT (0.905–0.945)	INT-EWOM (0.712–0.784)	PAS-COM (0.913–0.949)

BBNFI = 0.939; BBNNFI = 0.946; IFI = 0.953; CFI = 0.953; RMSEA = 0.068; SB χ^2 = 1422.7 d.f. 329, p = 0.00

Note: Factor loading based on standardized estimates.

Abbreviations: AVE, average variance extracted; CRC, construct reliability coefficient.

TABLE 4 Results and comparison between rival models technique

	Hypothesis	Model 1 Original model β	Model 2 Resultant model β	Model 3 Without passion β	Model 4 Extended model β
Main relationships					
Smart experiences—Passion	H1a	0.617**	0.614**	–	0.623**
Smart experiences—Intimacy	H1b	n.s.	–	0.663**	–
Smart experiences— Commitment	H1c	n.s.	–	0.644**	–
Passion—Intimacy	H2a	0.925**	0.929**	–	0.929**
Passion—Commitment	H2b	0.992**	0.931**	–	0.930**
Intimacy—Commitment	H2c	n.s.	–	–	–
Intimacy—Continued use intentions	H3a	0.307**	0.279**	0.290**	0.533**
Intimacy—WOM intentions	H3b	0.213**	0.198*	0.227**	0.266**
Intimacy—eWOM intentions	H3c	0.594**	0.583**	0.570**	0.630**
Commitment—Continued use intentions	H4a	0.291**	0.320**	0.345**	0.272**
Commitment—WOM intentions	H4b	0.534**	0.550**	0.568**	0.525**
Commitment—eWOM intentions	H4c	0.193*	0.204*	0.272**	0.182*
Control relationships					
Gender—Continued use intentions					0.313**
Gender—WOM intentions					0.176**
Gender—eWOM intentions					0.134**
Age—Continued use intentions					0.345**
Age—WOM intentions					0.112**
Age—eWOM intentions					0.089*
Expertise—Continued use intentions					0.170**
Expertise—WOM intentions					n.s.
Expertise—eWOM intentions					n.s.
Frequency—Continued use intentions					n.s.
Frequency—WOM intentions					0.178**
Frequency—eWOM intentions					0.150**

RIVAL MODELS TESTS	Preferred Value	Model 1 Original model	Model 2 Resultant model	Model 3 Without passion	Model 4 Extended model
Model fit indicators					
CFI	Highest	0.942	0.942	0.908	0.912
Normed χ^2	Lowest	5.01	4.97	7.98	4.45
AIC	Lowest	1010.90	1005.10	1311.83	1042.39
R^2 statistics	Highest				
Passion		0.380	0.376	–	0.388
Intimacy		0.865	0.863	0.440	0.864
Commitment		0.870	0.866	0.415	0.865
Continued use intentions		0.332	0.334	0.288	0.551
WOM intentions		0.528	0.530	0.485	0.582
eWOM intentions		0.587	0.586	0.531	0.616

Abbreviation: n.s., nonsignificant.

*$p < 0.05$; **$p < 0.01$.

FIGURE 2 Findings

** p<0.01; * p < 0.05; n.s.: non-significant
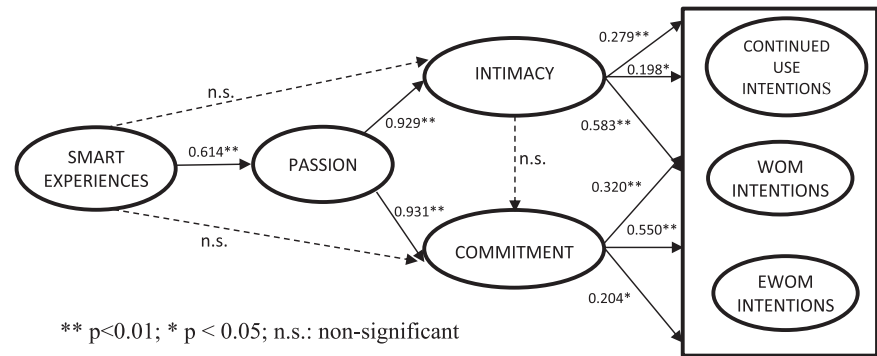
effects proposed in the model except the influences of smart experiences on intimacy and commitment (H1b and H1c), and the influence of intimacy on commitment (H2c). Thus, the proposed model was reformulated excluding the nonsignificant relationships (Figure 2). The resultant model by eliminating these relationships was tested. The LM Test verified the convenience of including significant relationships and did not suggest the inclusion of any other direct link between factors.

The new model fit indicators presented acceptable values: normed BBNFI = 0.928; BBNNFI = 0.935; CFI = 0.942; IFI = 0.942; RMSEA = 0.070; SB χ^2 = 1681.10, d.f. = 338 p = 0.00. All the relationships tested were significant and the explanatory power for dependent variables is largely explained (Model 2, Table 4). The R^2 statistic took values of 0.376, 0.863, and 0.866 for passion, intimacy, and commitment, respectively. These values demonstrated the relevance of smart experiences to determine the consumer's feelings of love. Moreover, the R^2 statistics for constructs that compose service loyalty obtained values of 0.334 for continued use intentions, 0.530 for WOM intentions, and 0.586 for eWOM intentions.

According to the findings summarized in Figure 2 (Model 2, Table 4), smart experiences influence passion in a positive and direct way (β = 0.614; p < 0.01). H1a is supported. Nevertheless, experiences that the consumer has during her/his interactions with the SVA do not make a direct effect on intimacy and commitment. H1b and H1c are rejected. H1 is only confirmed in a partial way.

Concerning the relationships between the components of love, passion influences intimacy (β = 0.929; p < 0.01) and commitment (β = 0.931; p < 0.01). H2a and H2b are verified. Nevertheless, the consumer's intimacy does not make any effect on commitment, so H2c is rejected. These findings demonstrate that the consumer's passion has a full mediating effect regarding smart experiences and the other feelings of love, confirming H2.

Finally, the consequences related to the consumer's service loyalty are examined. The consumer's intimacy positively influences her/his continued use intentions (β = 0.279; p < 0.01), WOM intentions (β = 0.198; p < 0.05) and eWOM intentions (β = 0.583; p < 0.01). H3a, H3b and H3c are supported. Furthermore, the consumer's commitment positively influences her/his continued use intentions (β = 0.320; p < 0.01), WOM intentions (β = 0.550; p < 0.01) and eWOM intentions (β = 0.204; p < 0.05). H4a, H4b, and H4c are

verified. Therefore, the findings check that intimacy and commitment promote service loyalty, corroborating H3 and H4.

To verify the robustness of the resultant model (Model 2, Table 4), we compare findings obtained with two rival models. Model 1 is the one originally proposed that includes the direct effects of smart experiences on intimacy and commitment, testing the partial mediating effect of passion. Model 3 removes passion from the model and establishes the direct effects of smart experiences on intimacy and commitment. To do this robustness check, structural equation modeling was chosen since it allows us to compare several models (Mitchell, 1992).

According to Morgan and Hunt (1994), models were compared following four criteria: (1) overall fit, as measured by the CFI indicator, (2) parsimony, as measured by two indicators: normed χ^2 (i.e., ratio of chi-square to degrees of freedom) and the Akaike Information Criterion (i.e., AIC), (3) percentage of the model paths that are statically significant, and (4) the ability to explain the variance of the final dependent variables (R^2 statistics). Table 4 shows findings. The overall fit (CFI indicator) and the ability to explain the variance of the final dependent variables (R^2) are satisfactory and similar for the three models, so these criteria are inapplicable to determine the best model. On the contrary, findings reveal that the resultant model based on the full mediating effect of passion (Model 2, Table 4) is better than the alternative ones in terms of parsimony indicators: normed χ^2 and AIC. Moreover, findings for the rival model 1, that is, the one that was initially proposed, include several nonsignificant relationships (p > 0.01). Therefore, these findings support that the resultant model based on the full mediation effect of passion (Model 2) is preferred to alternative rival specifications to address the influence of smart experiences on the development of feelings of love and the generation of service loyalty.

Then, stability of the resultant model was tested in terms of consumers' demographic and usage characteristics. In this way, individual differences in modelling were controlled. The resultant model was extended including the effect of control variables on service loyalty: gender, age, expertise in SVAs, and frequency of use per week. So, the extended model including control variables (Model 4, Table 4) was compared with the resultant model (Model 2, Table 4). Although the inclusion of control variables obtains slightly less favorable CFI and AIC indicators, it improves the normed χ^2

indicator and R^2 statistics for constructs that compose service loyalty.

Regarding the direct effects of control variables on service loyalty, findings demonstrate that gender and age significantly influence consumers' continued use intentions, WOM and eWOM intentions. So, behavioral intentions show higher values for women and for older consumers. These findings are consistent with previous reports about SVAs that indicate that the youngest consumers are adopting voice technologies at a faster rate but making less use of them (Price Waterhouse Cooper, 2018). Consumers' expertise in SVAs increases continued use intentions of SVAs but it does not modify WOM and eWOM intentions. On the contrary, frequency of use per week improves WOM and eWOM intentions but it does not affect continued use intentions. Moreover, findings in the extended model (Model 4, Table 4) reveal that the inclusion of these control variables does not change the significance of the effects made by smart experiences and the three components of love. Therefore, we can state the stability of the resultant model regardless consumers' demographic and usage characteristics.

Overall, findings obtained provide two interesting inferences. First, passion acts as a full mediating variable between the stimuli that the consumer experiences during her/his interactions with an SVA and the other feelings of love. Thus, smart experiences must generate passion to achieve that the consumer feels other stable and permanent feelings, that is, intimacy and commitment, for the technology. The absence of this passion implies that smart experiences do not generate any behavioral consequence. Second, it is remarkable that the components of love do not have the same effects on service loyalty. While the consumer's intimacy is especially important to determine eWOM intentions, her/his commitment to the SVA is predominant to develop WOM intentions. If the resultant model is evaluated, continued use intentions are explained in a similar way by intimacy and commitment, but if the extended model is considered, intimacy acquires a predominant influence, being commitment also significant.

7 | CONCLUSIONS

7.1 | Theoretical contributions

This study makes three important contributions to the literature.

First, this is one of the first empirical papers that addresses smart technologies focusing on the importance of consumers' feelings. Previous research has given prevalence to technical capabilities, testing HCI techniques, and has considered technologies as mere intermediaries in commercial exchanges. On the contrary, the present study discloses advanced interactions that consumers establish with smart technologies and demonstrates that artificial intelligence leads consumers to connect with the technology as if the machine were a person. Therefore, smart technologies become social actors, consumers going through several affective states towards them and elaborating intimate connections.

Second, this paper contributes to research on love because it verifies that the theoretical foundations of TTL can be applied to examine the nature of relationships between consumers and smart technologies. So, it shows the suitability of this theory beyond interpersonal relationships and provides a holistic view of consumers' love for these technologies. Unlike previous studies focused on the main role of intimacy between humans, passion for technology emerges as the most relevant component of love because it plays an essential full mediating role between smart experiences and enduring feelings, that is, intimacy and commitment. It is also noteworthy that the effect of enduring feelings is not the same on all behavioral intentions: while intimacy is predominant for virtual communication, commitment is crucial for physical communication.

Third, this paper sheds conceptual light on the process that drives the consumer to develop service loyalty to smart technologies, establishing feelings of love as an essential psychological mechanism that channels the effect of consumer experiences with SVAs on service loyalty. So, it adapts customer experiences to study consumers' interactions with smart technologies and validates a model that demonstrates that these interactions arouse behavioral intentions as long as they generate consumers' feelings of love for the technology.

7.2 | Managerial implications

From the practitioner's point of view, the findings of this study allow us to make several recommendations for improving the consumer's experiences and relationships with SVAs.

Developers and producers of SVAs should promote new features going beyond technical attributes and focusing their attention on the generation of pleasant consumer experiences. During the initial development of SVAs, producers incorporated technical attributes that significantly improved previous technologies based on screens (Biele et al., 2019; Pagani et al., 2019). Nevertheless, they overlooked that these attributes should aim to optimize interactions with consumers and avoid bad experiences. In this context, developers and producers should design SVAs as if they were creating the consumer's life partner. So, they should provide SVAs with additional features, such as gender, name, age, and even personality, to humanize the service and to make consumers perceive that they are sharing personnel experiences with a new best friend. Moreover, SVAs should have the ability to detect consumers' emotions, to discern their thoughts and to show empathy, by interpreting voices and applying previously acquired knowledge. In this way, artificial intelligence allows SVAs to find out consumers' likes, to anticipate their needs and expectations, and to establish a specific code with each consumer, offering personalized services and generating positive smart experiences.

Developers and producers should implement "passion-oriented" strategies to encourage consumers to fall in love with their SVA. Complementing previous strategies focused on the usefulness that consumers perceive during the employment of SVAs, this paper demonstrates the importance of influencing their feelings. So, SVAs

should know and refer to consumers' personal circumstances (e.g., likes, birthdays, special dates), and contribute with resources that help consumers to enjoy their hobbies (e.g., yoga, cooking, music, or gardening). Moreover, SVAs should speak in a colloquial language, add humor to conversations through shared pleasantries, and provide information that stimulates consumers' curiosity. In this way, consumers will feel that interactions with SVAs are not only useful but also enjoyable, the technology becoming a socially desirable partner.

Passion-oriented strategies channel the effect of consumers' experiences with their SVAs and boost enduring feelings (i.e., intimacy and commitment). Thereby, consumers should perceive that their SVA establishes a genuine and special relationship with them, which fosters consumers' feelings for the SVA and minimizes pain points. These feelings will change the consumer decision-making process and turn SVAs into important influencers. So, if consumers fall in love with their SVA, they will consider that the SVA's suggestions are almost norms that they should fulfill, looking for and buying those brands that the technology recommends. It should be also taken into account that passion is contagious, so managers should stimulate consumers to share their own experiences with SVAs. The act of sharing fulfilling experiences enhances consumers' excitement and leads them to continue sharing these experiences. In this way, consumers can confirm their passion for SVAs and connect with others who understand their feelings.

Developers and producers should promote consumer service loyalty to SVAs by improving intimacy and commitment. Loyal consumers build their relationships with SVAs from enduring feelings that promote different behavioral intentions such as continued use and recommendations to others. So, they consider using only SVAs when a need for this service arises and seek to make additional businesses with the service provider. Moreover, loyal consumers exhibit WOM behaviors, generating and disseminating information that affects other current and potential consumers' perceptions. Loyal consumers improve the firm's reputation, contribute to the brand recognition and give access to new markets. It is recommendable that developers and producers encourage consumer communication about SVAs through the creation of communities in social networks that boost collaboration and positive feelings.

7.3 | Limitations and next steps for future research

Although the findings of this paper provide meaningful insights into the consumer's experiences with SVAs, several limitations should be taken into account.

First, findings have been obtained from a single questionnaire data, so the development of additional analyses is needed to verify findings and to check the robustness of the theory in this context. Future research should explore smart experiences not only comparing with objective data directly recorded, but also conducting other methodologies, such as experiments. In this way, experiments will allow researchers to

manipulate some variables and to test the effect that smart experiences make on consumers' immediate reactions. For example, future research can study the emergence of consumer emotions caused by differences in SVA characteristics (e.g., voice, language, etc.), or by the employment of SVAs to carry out different activities (e.g., asking questions vs. purchase). These emotions may determine consumers' feelings of love in the medium-long term.

Second, data were collected from regular SVA users in the United States market. Future research should test the model proposed in different countries to assess the generalizability of findings. In this line, it would be interesting to compare smart experiences in countries with different levels of technological development, determining how the TTL evolves and how different kinds of love emerge depending on the consumer's expertise.

Third, this study examines SVA user behavior, but does not differentiate between brands or types of assistants. Future research might compare consumers' experiences with smartphone-based SVAs, such as Siri and Google Assistant, and their experiences with in-home voice assistants, such as Amazon Echo and Google Home. Consumer interactions with SVAs in each case, as well as the humanization of SVAs, can vary, which might cause consumers to experience different feelings for the technology.

Finally, future research should analyze new uses of SVAs that are changing traditional ways to make activities. It should evaluate how consumers change their behavior and evolve with their SVA, learning new functionalities and acquiring new routines. Moreover, future research should identify key variables that condition consumers' interactions with the technology for each kind of activity, such as trust and privacy. These variables can act as important boundaries that prevent consumers from acceptance or as drivers that promote personalized experiences.

DATA AVAILABILITY STATEMENT

Research data are not shared.

ORCID

Blanca Hernandez-Ortega http://orcid.org/0000-0003-0752-3202

REFERENCES

Aaron, A., Fisher, H., Mashek, D. J., Strong, G., Li, H., & Brown, L. L. (2005). Reward, motivation, and emotion systems associated with early-stage intense romantic love. *Journal of Neurophysiology*, *94*, 327–337.

Acker, M., & Davis, M. H. (1992). Intimacy, passion and commitment in adult romantic relationships: A test of the triangular theory of love. *Journal of Social and Personal Relationships*, *9*(1), 21–50.

Agarwal, R., & Prasad, J. (1997). The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies. *Decision Sciences*, 28(3), 557–582.

Ahuvia, A. C. (2005). Beyond the extended self: Loved objects and consumers' identity narratives. *Journal of Consumer Research*, 32(1), 171–184.

Ahuvia, A. C., Batra, R., & Bagozzi, R. (2009). Love, desire and identity: A conditional integration theory of the love of things. In D. J. MacInnis, C. W. Park, & J. R. Priester (Eds.), *The Handbook of Brand Relationships* (pp. 342–357). M.E.Sharpe.

Albert, N., Merunka, D., & Valette-Florence, P. (2008). When consumers love their brands: Exploring the concept and its dimensions. *Journal of Business Research*, 61(10), 1062–1075.

Albert, N., Merunka, D., & Valette-Florence, P. (2013). Brand passion: Antecedents and consequences. *Journal of Business Research*, 66(7), 904–909.

Albert, N., & Valette-Florence, P. (2010). Measuring the love feeling for a brand using interpersonal love items. *Journal of Marketing Development and Competitiveness*, 5(1), 57–63.

Amine, A. (1998). Consumers' true brand loyalty: The central role of commitment. *Journal of Strategic Marketing*, 6(4), 305–319.

Anderson, M., & Bolton, J. (2015). Integration of sensors to improve customer experience: Implementing device integration for the retail sector. *2015 IEEE 12th International Conference on e-Business Engineering*, October (pp. 382–386).

Aro, K., Suomi, K., & Saraniemi, S. (2018). Antecedents and consequences of destination brand love—A case study from Finnish Lapland. *Tourism Management*, 67, 71–81.

Aron, E. N., & Aron, A. (1996). Love and expansion of the self: The state of the model. *Personal Relationships*, 3(1), 45–58.

Arora, R. (1982). Validation of an S-O-R model for situation, enduring, and response components of involvement. *Journal of Marketing*, 19(4), 505–516.

Aurier, P., & N'Goala, G. (2010). The differing and mediating roles of trust and relationship commitment in service relationship maintenance and development. *Journal of the Academy of Marketing Science*, 38(3), 303–325.

Bagozzi, R., Batra, R., & Ahuvia, A. (2017). Brand love: Development and validation of a practical scale. *Marketing Letters*, 28, 1–4.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.

Batra, R., Ahuvia, A., & Bagozzi, R. P. (2012). Brand love. *Journal of Marketing*, 76(2), 1–16.

Belk, R. (2017). The soul and the machine: Human like machines and machine like humans. In A. Gneezy, V. Griskevicius, & P. Williams (Eds.), *NA—advances in consumer research* (Vol. 45, pp. 164–169). Association for Consumer Research.

Bergkvist, L., & Bech-Larsen, T. (2010). Two studies of consequences and actionable antecedents of brand love. *Journal of Brand Management*, 17(7), 504–518.

Biele, C., Jaskulska, A., Kopec, W., Kowalski, J., Skorupska, K., & Zdrodowska, A. (2019). How might voice assistants raise our children? In Intern. *Conf. on Intel-ligent Human Systems Integration*, 162–167. Springer.

Bloemer, J. M., & Kasper, H. D. (1995). The complex relationship between consumer satisfaction and brand loyalty. *Journal of Economic Psychology*, 16(2), 311–329.

Bowlby, J. (1977). The making and breaking of affectional bonds. I. Aetiology and psychopathology in the light of attachment theory. *The British Journal of Psychiatry*, 130, 201–210.

Brakus, J. J., Schmitt, B. H., & Zarantonello, L. (2009). Brand experience: What is it? How is it measured? Does it affect loyalty? *Journal of Marketing*, 73(3), 52–68.

Brown, T. J., Barry, T. E., Dacin, P. A., & Gunst, R. F. (2005). Spreading the word: Investigating antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context. *Journal of the Academy of Marketing Science*, 33(2), 123–138.

Bügel, M. S., Verhoef, P. C., & Buunk, A. P. (2011). Customer intimacy and commitment to relationships with firms in five different sectors: Preliminary evidence. *Journal of Retailing and Consumer Services*, 18(4), 247–258.

Capgemini (2018). How are virtual assistants affecting the customer experience? https://www.capgemini.com/2018/12/how-are-virtual-assistants-affecting-the-customer-experience/

Carroll, B. A., & Ahuvia, A. C. (2006). Some antecedents and outcomes of brand love. *Marketing Letters*, 17(2), 79–89.

Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing*, 65(2), 81–93.

Das, G., Agarwal, J., Malhotra, N. K., & Varshneya, G. (2019). Does brand experience translate into brand commitment? A mediated-moderation model of brand passion and perceived brand ethicality. *Journal of Business Research*, 95, 479–490.

David, M. (2018). I love the product but will you? The role of interpersonal attachment styles in social projection. *Psychology & Marketing*, 35, 197–209.

Djelassi, S., Diallo, M. F., & Zielke, S. (2018). How self-service technology experience evaluation affects waiting time and customer satisfaction? A moderated mediation model. *Decision Support Systems*, 111, 38–47.

Dong, X., Liu, S., Li, H., Yang, Z., Liang, S., & Deng, N. (2020). Love of nature as a mediator between connectedness to nature and sustainable consumption behavior. *Journal of Cleaner Production*, 242, 118451. https://doi.org/10.1016/j.jclepro.2019.118451

Donovan, R. J., & Rossiter, J. R. (1982). Store atmosphere: An environmental psychology approach. *Journal of Retailing*, 58(1), 34–57.

Driver, J. L., & Gottman, J. M. (2004). Daily marital interactions and positive affect during marital conflict among newlywed couples. *Family Process*, 43(3), 301–314.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research*, 54(2), 177–184.

Evanschitzky, H., & Wunderlich, M. (2006). An examination of moderator effects in the four-stage loyalty model. *Journal of Service Research*, 8(4), 330–345.

Feine, J., Gnewuch, U., Morana, S., & Maedche, A. (2019). A taxonomy of social cues for conversational agents. *International Journal of Human-Computer Studies*, 132, 138–161.

Feng, H., Fawaz, K., & Shin, K. G. (2017). Continuous authentication for voice assistants. *Proceedings of the 23rd Annual International Conference on Mobile Computing and Networking* (pp. 343–355).

Fetscherin, M. (2014). What type of relationship do we have with loved brands? *Journal of Consumer Marketing*, 31, 430–440.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.

Foroudi, P., Gupta, S., Sivarajah, U., & Broderick, A. (2018). Investigating the effects of smart technology on customer dynamics and customer experience. *Computers in Human Behavior*, 80, 271–282.

Fournier, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research*, 24(4), 343–373.

Gefen, D. (2002). Customer loyalty in eCommerce. *Journal of the Association for Information Systems*, 3, 1–53.

Gentile, C., Spiller, N., & Noci, G. (2007). How to sustain the customer experience: An overview of experience components that co-create

value with the customer. *European Management Journal*, *25*(5), 395–410.

Gerbing, D. W., & Anderson, J. C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research*, *25*(2), 186–192.

Gustafsson, A., Johnson, M. D., & Roos, I. (2005). The effects of customer satisfaction, relationship commitment dimensions, and triggers on customer retention. *Journal of Marketing*, *69*(4), 210–218.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Advanced diagnostics for multiple regression: A supplement to multivariate data analysis*. Pearson Prentice Hall Publishing.

Han, S., & Yang, H. (2020). Understanding adoption of intelligent personal assistants. *Industrial Management & Data Systems*, *118*(3), 618–636.

Hatfield, E. C., Pillemer, J. T., O'Brien, M., & Le, Y. C. L. (2008). The endurance of love: Passionate and companionate love in newlywed and long-term marriages. *Interpersona: An International Journal on Personal Relationships*, *2*(1), 35–64.

Hatfield, E. C., Walster, G. M., & Piliavin, J. A. (1978). Equity theory and helping relationships. In L. Wispé (Ed.), *Altruism, sympathy, and helping*. Academic Press.

Hoffman, D. L., & Novak, T. (2015). Emergent experience and the connected consumer in the smart home assemblage and the internet of things. *SSRN Electronic Journal*. http://doi.org/10.2139/ssrn.2648786

Hoffman, D. L., & Novak, T. P. (2018). Consumer and object experience in the internet of things: An assemblage theory approach. *Journal of Consumer Research*, *44*(6), 1178–1204.

Holbrook, M. B., & Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *Journal of Consumer Research*, *9*(2), 132–140.

Homburg, C., Jozić, D., & Kuehnl, C. (2017). Customer experience management: Toward implementing an evolving marketing concept. *Journal of the Academy of Marketing Science*, *45*(3), 377–401.

Hoy, M. B. (2018). Alexa, Siri, Cortana, and more: An introduction to voice assistants. *Medical Reference Services Quarterly*, *37*(1), 81–88.

Hsieh, J. K., & Hsieh, Y. C. (2013). Appealing to Internet-based freelance developers in smartphone application marketplaces. *International Journal of Information Management*, *33*(2), 308–317.

Huang, T. L., & Liu, F. H. (2014). Formation of augmented-reality interactive technology's persuasive effects from the perspective of experiential value. *Internet Research*, *24*(1), 82–109.

Huber, F., Meyer, F., & Schmid, D. A. (2015). Brand love in progress- The interdependence of brand love antecedents in consideration. *Journal of Product & Brand Management*, *24*, 567–579.

Hudlicka, E. (2003). To feel or not to feel: The role of affect in human–computer interaction. *International Journal of Human-Computer Studies*, *59*(1-2), 1–32.

Iglesias, O., Markovic, S., & Rialp, J. (2019). How does sensory brand experience influence brand equity? Considering the roles of customer satisfaction, customer affective commitment, and employee empathy. *Journal of Business Research*, *96*, 343–354.

Iglesias, O., Singh, J. J., & Batista-Foguet, J. M. (2011). The role of brand experience and affective commitment in determining brand loyalty. *Journal of Brand Management*, *18*(8), 570–582.

Jang, S., & Namkung, Y. (2009). Perceived quality, emotions, and behavioral intentions: Application of an extended Mehrabian–Russell model to restaurants. *Journal of Business Research*, *62*(4), 451–460.

Jöreskog, K., & Sörbom, D. (1993). LISREL 8 structural equation modeling with the simplis comand language. Chicago-Illinois: Scientific Software International.

Junaid, M., Hou, F., Hussain, K., & Kirmani, A. A. (2019). Brand love: The emotional bridge between experience and engagement, generation-

M perspective. *Journal of Product & Brand Management*, *28*(2), 200–215.

Jung, L. H., & Soo, K. M. (2012). The effect of brand experience on brand relationship quality. *Academy of Marketing Studies Journal*, *16*(1), 87.

Kaufmann, H. R., Loureiro, S. M. C., & Manarioti, A. (2016). Exploring behavioural branding, brand love and brand co-creation. *Journal of Product & Brand Management*, *25*(6), 516–526. https://doi.org/10.1108/JPBM-06-2015-0919

Kim, E. Y., & Yoon, N. (2014). A dual path model of intention to use QR code virtual stores-the moderating effect of consumer use experience. *Journal of the Korean Society of Clothing and Textiles*, *38*(6), 913–928.

Kim, M. J., Lee, C.-K., & Preis, M. W. (2019). Seniors' loyalty to social network sites: Effects of social capital and attachment. *International Journal of Information Management*, *36*, 1020–1032.

Kim, S., & Baek, T. H. (2018). Examining the antecedents and consequences of mobile app engagement. *Telematics and Informatics*, *35*(1), 148–158.

Kuo, Y.-F., & Feng, L.-H. (2013). Relationships among community interaction interaction characteristics, perceived benefits, community commitment, and oppositional brand loyalty in online brand communities. *International Journal of Information Management*, *33*, 948–962.

Lam, S. Y., Shankar, V., Erramilli, M. K., & Murthy, B. (2004). Customer value, satisfaction, loyalty, and switching costs: An illustration from a business-to-business service context. *Journal of the Academy of Marketing Science*, *32*(3), 293–311.

Langner, T., Schmidt, J., & Fischer, A. (2015). Is it really love? A comparative investigation of the emotional nature of brand and interpersonal love. *Psychology & Marketing*, *32*(6), 624–634.

Lee, H. J., Lee, D. H., Taylor, C. R., & Lee, J. H. (2011). Do online brand communities help build and maintain relationships with consumers? A network theory approach. *Journal of Brand Management*, *19*(3), 213–227.

Lemieux, R., & Hale, J. L. (1999). Intimacy, passion, and commitment in young romantic relationships: Successfully measuring the triangular theory of love. *Psychological Reports*, *85*(2), 497–503.

Lemieux, R., & Hale, J. L. (2000). Intimacy, passion, and commitment among married individuals: Further testing of the triangular theory of love. *Psychological Reports*, *87*(3), 941–948.

Li, X., & Petrick, J. F. (2010). Revisiting the commitment-loyalty distinction in a cruising context. *Journal of Leisure Research*, *42*(1), 67–90.

Liao, Y., Vitak, J., Kumar, P., Zimmer, M., & Kritikos, K. (2019). Understanding the role of privacy and trust in intelligent personal assistant adoption. *International Conference on Information*. Springer, Cham, 102-113.

Long-Tolbert, S. J., & Gammoh, B. S. (2012). In good and bad times: The interpersonal nature of brand love in service relationships. *Journal of Services Marketing*, *26*(6), 391–402.

Lopatovska, I., Rink, K., Knight, I., Raines, K., Cosenza, K., Williams, H., Sorsche, P., Hirsch, D., Li, Q., & Martinez, A. (2019). Talk to me: Exploring user interactions with the Amazon Alexa. *Journal of Librarianship and Information Science*, *51*(4), 984–997.

Louie, W. Y. G., McColl, D., & Nejat, G. (2014). Acceptance and attitudes toward a human-like socially assistive robot by older adults. *Assistive Technology*, *26*(3), 140–150.

Luarn, P., & Lin, H. H. (2003). A customer loyalty model for e-service context. *Journal of Electronic Commerce Research*, *4*(4), 156–167.

Luo, S. (2014). Effects of texting on satisfaction in romantic relationships: The role of attachment. *Computers in Human Behavior*, *33*, 145–152.

Madey, S. F., & Rodgers, L. (2009). The effect of attachment and Sternberg's triangular theory of love on relationship satisfaction. *Individual Differences Research*, *7*(2), 76–84.

Mathis, E. F., Kim, H. L., Uysal, M., Sirgy, J. M., & Prebensen, N. K. (2016). The effect of co-creation experience on outcome variable. *Annals of Tourism Research*, 57, 62–75.

Maxian, W., Bradley, S. D., Wise, W., & Toulouse, E. N. (2013). Brand love is in the heart: Physiological responding to advertised brands. *Psychology & Marketing*, 30(6), 469–478.

McLean, G., Al-Nabhani, K., & Wilson, A. (2018). Developing a mobile applications customer experience model (MACE)-implications for retailers. *Journal of Business Research*, 85, 325–336.

McLean, G., & Osei-Frimpong, K. (2019). Hey Alexa… examine the variables influencing the use of artificial intelligent in-home voice assistants. *Computers in Human Behavior*, 99, 28–37.

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.

Mitchell, R. J. (1992). Testing evolutionary and ecological hypotheses using path analysis and structural equation modelling. *Functional Ecology*, 6, 123–129.

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20–38.

Moriuchi, E. (2019). Okay, Google! An empirical study on voice assistants on consumer engagement and loyalty. *Psychology & Marketing*, 36(5), 489–501.

Nasir, S. (2005). The development, change, and transformation of Management Information Systems (MIS): A content analysis of articles published in business and marketing journals. *International Journal of Information Management*, 25(5), 442–457.

O'Brien, H. L., Cairns, P., & Hall, M. (2018). A practical approach to measuring user engagement with the refined user engagement scale (UES) and new UES short form. *International Journal of Human-Computer Studies*, 112, 28–39.

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, 63(4_suppl1), 33–44.

van Outysel, Walrave, M., & Ponnet, K. (2019). Sexting within adolescents' romantic relationships: How is it related to perceptions of love and verbal conflict? *Computers in Human Behavior*, 97, 216–221.

Overbeek, G., Ha, T., Scholte, R., de Kemp, R., & Engels, R. C. (2007). Brief report: Intimacy, passion, and commitment in romantic relationships—Validation of a 'triangular love scale'for adolescents. *Journal of Adolescence*, 30(3), 523–528.

Pagani, M., Racat, M., & Hofacker, C. F. (2019). Adding voice to the omnichannel and how that affects brand trust. *Journal of Interactive Marketing*, 48, 89–105.

Palusuk, N., Koles, B., & Hasan, R. (2019). All you need is brand love': A critical review and comprehensive conceptual framework for brand love. *Journal of Marketing Management*, 35, 97–129.

Pantano, E., & Timmermans, H. (2014). What is smart for retailing? *Procedia Environmental Sciences*, 22, 101–107.

Park, C., Whan, D., MacInnis, J., Priester, J., Eisingerich, A. B., & Iacobucci, D. (2010). Brand attachment and brand attitude strength: Conceptual and empirical differentiation of two critical brand equity drivers. *Journal of Marketing*, 74, 1–17.

Price Waterhouse Cooper (2018). Consumer intelligence series: Prepare for the voice revolution. https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/voice-assistants.html

Punniyamoorthy, M., & Raj, M. P. M. (2007). An empirical model for brand loyalty measurement. *Journal of Targeting Measurement and Analysis for Marketing*, 15(4), 222–233.

Reichheld, F. F., & Schefter, P. (2000). E-loyalty: Your secret weapon on the web. *Harvard Business Review*, 78(4), 105–113.

Roy, S. K., Balaji, M. S., Sadeque, S., Nguyen, B., & Melewar, T. C. (2017). Constituents and consequences of smart customer experience in retailing. *Technological Forecasting and Social Change*, 124, 257–270.

Roy, S. K., Eshghi, A., & Sarkar, A. (2013). Antecedents and consequences of brand love. *Journal of Brand Management*, 20(4), 325–332.

Saavedra, R., & Van Dyne, L. (1999). Social exchange and emotional investment in work groups. *Motivation and emotion*, 23(2), 105–123.

Sarkar, A., Ponnam, A., & Murthy, B. K. (2012). Understanding and measuring romantic brand love. *Journal of Customer Behaviour*, 11(4), 324–347.

Schmid, D. A., & Huber, F. (2019). Brand love: Emotionality and development of its elements across the relationship lifecycle, *Psychology & Marketing*, 36, 305–320.

Schmitt, B. (1999). Experiential marketing. *Journal of Marketing Management*, 15(1-3), 53–67.

Shi, X., Lin, Z., Liu, J., & Hui, Y. K. (2018). Consumer loyalty toward smartphone brands: The determining roles of deliberate inertia and cognitive lock-in. *Information & Management*, 55(7), 866–876.

Shoham, A., & Pesämaa, O. (2013). Gadget loving: A test of an integrative model. *Psychology & Marketing*, 30(3), 247–262.

Smartsheet. (2018). Voice assistants: How artificial intelligence assistants are changing our lives every day. https://www.smartsheet.com/voice-assistants-artificial-intelligence

Soo, K., Hongki, K., & Eung Kyo, S. (2011). What if your avatar looks like you? Dual congruity perspectives for avatar use. *MIS Quarterly*, 35(3), 711–729.

Statista. (2020). Smart speakers. https://www.statista.com/study/53329/smart-speakers/

Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review*, 93(2), 119–135.

Sternberg, R. J. (1997). The concept of intelligence and its role in lifelong learning and success. *American Psychologist*, 52(10), 1030–1037. https://doi.org/10.1037/0003-066X.52.10.1030

Sternberg, R. J., & Grajek, S. (1984). The nature of love. *Journal of Personality and Social Psychology*, 47, 312–329.

Sundar, S. S., Jung, E. H., Waddell, T. F., & Kim, K. J. (2017). Cheery companions or serious assistants? Role and demeanor congruity as predictors of robot attraction and use intentions among senior citizens. *International Journal of Human-Computer Studies*, 97, 88–97.

Swimberghe, K. R., Astakhova, M., & Wooldridge, B. R. (2014). A new dualistic approach to brand passion: Harmonious and obsessive. *Journal of Business Research*, 67(12), 2657–2665.

Tabrani, M., Amin, M., & Nizam, A. (2018). Trust, commitment, customer intimacy and customer loyalty in Islamic banking relationships. *International Journal of Bank Marketing*, 36, 823–848.

Thomson, M., MacInnis, D. J., & Whan Park, C. (2005). The ties that bind: Measuring the strength of consumers' emotional attachments to brands. *Journal of Consumer Psychology*, 15(1), 77–91.

Trub, L., & Barbot, B. (2016). The paradox of phone attachment: Development and validation of the Young Adult Attachment to Phone Scale (YAPS). *Computers in Human Behavior*, 64, 663–672.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27, 425–478.

Verhoef, P. C., Lemon, K. N., Parasuraman, A., Roggeveen, A., Tsiros, M., & Schlesinger, L. A. (2009). Customer experience creation: Determinants, dynamics and management strategies. *Journal of Retailing*, 85(1), 31–41.

Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *Journal of Marketing Theory and Practice*, 20(2), 122–146.

Waheed, M., Kaur, K., Ain, N., & Sanni, S. (2015). Emotional attachment and multidimensional selfefficacy: extension of innovation diffusion theory in the context of eBook reader. *Behaviour & Information Technology*, 34, 1–13.

Wan, J., Lu, Y., Wang, B., & Zhao, L. (2017). How attachment influences users' willingness to donate to content creators in social media: A socio-technical systems perspective. *Information & Management*, *54*, 837–850.

Wang, Y. C., Qu, H., & Yang, J. (2019). The formation of sub-brand love and corporate brand love in hotel brand portfolios. *International Journal of Hospitality Management*, *77*, 375–384.

Wang, Y. S., Lin, H. H., & Luarn, P. (2006). Predicting consumer intention to use mobile service. *Information Systems Journal*, *16*(2), 157–179.

Wardecker, B. M., Chopik, W. J., Boyer, M. P., & Edelstein, R. S. (2016). Individual differences in attachment are associated with usage and perceived intimacy of different communication media. *Computers in Human Behavior*, *59*, 18–27.

Wu, H. C., & Cheng, C. C. (2018). What drives experiential loyalty toward smart restaurants? The case study of KFC in Beijing. *Journal of Hospitality Marketing & Management*, *27*(2), 151–177.

Wünderlich, N. V., Wangenheim, F. V., & Bitner, M. J. (2013). High tech and high touch: a framework for understanding user attitudes and behaviors related to smart interactive services. *Journal of Service Research*, *16*(1), 3–20.

Xu, K. (2020). Language, modality, and mobile media use experiences: social responses to martphone cues in a task-oriented context. *Telematics and Informatics*, *48*, 1–13.

Yang, X., Aurisicchio, M., & Baxter, W. (2019). Understanding affective experiences with conversational agents. *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, May, 1–12.

Yoon, C., Gutchess, A. H., Feinberg, F., & Polk, T. A. (2006). A functional magnetic resonance imaging study of neural dissociations between brand and person judgments. *Journal of Consumer Research*, *33*(1), 31–40.

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, *60*(2), 31–46.

Zhang, T., Bilgihan, A., Kandampully, J., & Lu, C. (2018). Building stronger hospitality brands through online communities. *Journal of Hospitality and Tourism Technology*, *9*(2), 158–171.

Zhang, X., Guo, X., Ho, S. Y., Lai, K., & Voger, D. (2020). Effects of emotional attachment on mobile health-monitoring service usage: An affect transfer perspective. *Information & Management* (in press).