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**Let it flow: the role of seamlessness and the optimal experience on consumer word-of-mouth in omnichannel marketing.**

**Paula Rodríguez-Torrigo**, Department of Economics and Business Administration; Universidad de Burgos; Burgos; Spain.

**Rebeca San José Cabezudo**, Department of Business Administration and Marketing; Universidad de Valladolid; Valladolid; Spain.

**Sonia San-Martín**, Department of Economics and Business Administration; Universidad de Burgos; Burgos; Spain.

**Lauren Trabold Apadula**, Marketing and Management Department; Manhattan College; New York; New York; United States.

Corresponding author: Paula Rodríguez-Torrigo (prtorrico@ubu.es)

**Abstract**

**Purpose:** Omnichannel consumers are more proactive, engage in longer shopping journeys, and share their experiences. However, their post-purchase behavioral responses remain understudied. This paper aims to examine how a seamless omnichannel environment can contribute to a more optimal shopping experience (flow state) and the subsequent impact on the likelihood of generating mixed (positive and negative) word-of-mouth (WOM).

**Design/methodology/approach:** A controlled experiment was conducted with 220 participants to test the proposed model based on the S-O-R Model and Flow Theory. We conducted an analysis of variance, two regression analyses, and two mediation analyses to test the hypotheses.

**Findings:** The results confirm a positive direct effect of a seamless environment on consumers' flow state and a positive (negative) direct impact of flow on the likelihood of generating positive (negative) WOM. Additionally, the results suggest that flow mediates the effect of a seamless environment on WOM.

**Originality/value:** This study contributes to omnichannel and WOM literature by exploring the critical role of seamlessness in consumers' subjective experience (flow state) and post-purchase behaviors (mixed WOM). In conjunction with the relevant theoretical contributions, these findings also offer guidelines for practitioners to manage the seamless environment and mixed WOM in the omnichannel context.

**Keywords**

Omnichannel marketing; Seamless; Flow state; Word-of-mouth; Consumer; Environment

**Introduction**

The current omnichannel business ecosystem is more complex since consumers interact with brands across various platforms in the digital and physical worlds (Wang, 2021). Consequently, the omnichannel shopping episode is longer than a shopping experience using a single channel and does not end when consumers purchase (Hall *et al.*, 2017). However, little is known about how consumers engage in post-purchase behaviors in the omnichannel context. Firms must understand how to engage omnichannel customers (Cummins *et al.*, 2016, Lemon and Verhoef, 2016, Lopes *et al.*, in press). Lemon and Verhoef (2016) called for research exploring the impact of omnichannel marketing actions on customer behaviors, such as WOM. Recently, Lopes *et al.* (in press) recommended examining WOM in future omnichannel marketing investigations.

Literature has established the importance of positive and negative information shared by consumers on firms' success, performance, or growth (Nam and Kannan, 2020). Thus, in the omnichannel context, where consumers use a wide range of platforms to interact with firms and are more active, the post-purchase stage also needs to be explored for research to thoroughly examine the omnichannel behavior. WOM scholars have related the likelihood of sharing positive and negative WOM with the confirmation of consumer expectations, such that after an interaction experience, consumers are more likely to share positive WOM (negative WOM) if it is (not) in line with their expectancies (e.g., Nam and Kannan, 2020).

In the omnichannel context, consumers have become more demanding, and they expect an experience in which a firm's retail channels are integrated with one another (Bijmolt *et al.*, 2021), and synchronize the physical and digital worlds (Wang, 2021). The environment must be seamless, such that it provides an improved consumer experience during all the stages of the decision-making process (Verhoef *et al.*, 2015, Gao *et al.*, 2021). Consequently, consumers require a seamlessly integrated environment to achieve such superior experience (Huré *et al.*, 2017).

Past research similarly suggests that consumers have a positive experience when they enter a flow state (Drengner *et al.*, 2018, O'Cass and Carlson, 2010), which occurs when they are fully immersed in the shopping process (Triantafillidou *et al.*, 2017). Moreover, a superior omnichannel experience is related to flow state (Hilken *et al.*, 2018, Quach *et al.*, in press). Thus, a seamless environment across multiple touchpoints may facilitate consumers to enter into the flow state and achieve an optimal experience.

However, while extensive research has theorized and offered evidence about the importance of seamlessness (Hilken *et al.*, 2018, Shen *et al.*, 2018), there is a lack of literature examining how

a seamless omnichannel environment affects consumer engagement in all stages of the purchase process. In addition, post-purchase behaviors, such as positive and negative WOM, are necessary to explore since they are a critical outcome of the experience (Lopes *et al.*, in press, Manser Payne *et al.*, 2017). To fill this gap, this work aims to understand how a seamless environment contributes to the consumer's optimal experience, or flow state, and the impact that this may have on positive and negative WOM (PWOM and NWOM). To explain these relationships, we use an integrating theoretical framework based on two traditional theories: The Stimulus-Organism-Response (S-O-R) Model (Mehrabian and Russell, 1974) and The Flow Theory (Csikszentmihalyi, 1975). This paper focuses on the interactive experience in omnichannel marketing (Wang, 2021), and consequently, the results of this work will allow us to advance the knowledge of omnichannel marketing in this field. The analyses also show interesting results and expose the positive outcomes for the firms and the dark side of an underdeveloped seamless environment.

### **Theoretical background:**

#### *The Stimulus-Organism-Response Model*

The S-O-R Model was developed in environmental psychology by Mehrabian and Russell (1974) to offer a theoretical basis for studying the effects of contextual stimuli on people's behavior. The S-O-R model suggests that certain environmental cues act as stimuli that may influence an individual's internal states, which, in turn, affect behavioral intentions or responses (Mehrabian and Russell, 1974).

**Stimuli (S)** is defined as "an influence that arouses the individual" (Eroglu *et al.*, 2001, p. 179). They are external to the person and could consist of marketing mix variables and other

environmental inputs (Bagozzi, 1986), such as atmospheric cues, website design, or vendor information (Roschk *et al.*, 2017).

**Organism (O)** consists of internal processes and structures intervening between contextual stimuli on the person and the actions or responses emitted. These intervening or mediating processes comprise perceptual, physiological, feeling and thinking activities (Bagozzi, 1986), such as emotions or flow state (Huang, 2012, Eroglu *et al.*, 2001).

Finally, the **response (R)** is presented as an approach-avoidance behavior , “where approach behaviors refer to the positive actions that are directed toward a particular setting, while avoidance concerns the opposite” (Eroglu *et al.*, 2001, p. 182). Generally, prior studies have considered purchase-related behaviors (Roschk *et al.*, 2017) and relationship behaviors, such as loyalty or WOM intention (e.g., Islam and Rahman, 2017, Wu *et al.*, 2017) as outcome variables within the S-O-R Model.

The S-O-R model has dominated marketing literature and consumer behavior studies that seek to understand the impact of the environment on individual reactions and responses (e.g., Ettis, 2017). Moreover, the literature has amply proven S-O-R applicability in offline and online contexts (Eroglu *et al.*, 2001, Roschk *et al.*, 2017). In addition, the S-O-R model has offered promising results in showrooming and multichannel contexts (Arora *et al.*, 2020, Pantano and Viassone, 2015), as well as to study the effect of channel integration quality on omnichannel customer experiences (Le and Nguyen-Le, 2021). Thus, S-O-R is useful for exploring the omnichannel environment and understanding the interconnections among offline and online channels. Moreover, the S-O-R model is suitable to examine the individuals’ internal reactions and their subsequent participation as a result of the omnichannel marketing actions made by retailers, thus also considering the marketing management perspective (García-de-Frutos and Estrella-Ramón, 2021).

As a result, this paper proposes that the seamless omnichannel environment is a stimulus, flow state is the internal process or organism, and positive and negative WOM are the approach-avoidance behavioral responses, respectively. Figure 1 represents the application of the S-O-R Model to the current work.

[INSERT FIGURE 1 ABOUT HERE]

*Stimuli: The seamless omnichannel environment*

In the omnichannel context, consumers switch between or simultaneously use multiple channels when shopping, and they expect a unified experience in which they can easily transition between channels. Thus, the barriers between channels are blurred to provide a seamless environment (Shen *et al.*, 2018, Verhoef *et al.*, 2015).

Prior research has confirmed that, specifically, the seamlessness of the experience characterizes the omnichannel environment (e.g. Shen *et al.*, 2018, Verhoef *et al.*, 2015). A key aspect to creating seamlessness is channel integration (Hossain *et al.*, 2020, Shen *et al.*, 2018). The environment must allow consumers to consistently and freely move between parallel channels (Shen *et al.*, 2018) by coordinating processes and technologies (Saghiri *et al.*, 2017). Firms need to provide the resources for consumers to switch across channels and devices seamlessly (Verhoef *et al.*, 2015). Specifically, a seamless omnichannel environment should provide consistent information across channels, allow consumers to freely choose among all parallel channels at each stage of the shopping experience, and offer synchronization between channels, such that there is no rupture when moving from one touchpoint to another (Rodríguez-Torrico *et al.*, 2020).

*Organism: Flow state*

The **Flow Theory**, also called the optimal experience theory, was developed to investigate the nature and conditions of the subjective phenomenon of intrinsically motivated activity (i.e. flow) (Nakamura and Csikszentmihalyi, 2002). Flow is defined as the “holistic sensation that people feel when they act with total involvement” (Csikszentmihalyi, 1975, p. 36), and it describes an optimal state during which an individual is intensely engaged in an activity, with no attention left over to engage in irrelevant thoughts (Csikszentmihalyi, 1990). As a result, under flow conditions, an “experience seamlessly unfolds from moment to moment, and people enter a subjective state” (Nakamura and Csikszentmihalyi, 2002, p. 90).

Moreover, Flow Theory posits that an optimal experience (i.e., flow state) will be achieved when a person perceives that the environment contains great enough opportunities for action, which are matched with the person’s capacities to act (Csikszentmihalyi, 1990). Therefore, to analyze flow, it is necessary to consider the person-environment interactions (Nakamura and Csikszentmihalyi, 2002).

#### *Response: Positive and Negative Word of Mouth*

WOM communication entails “any information about a target object (e.g., company, brand) transferred from one individual to another either in person or via some communication medium” (Brown *et al.*, 2005, p. 125). Increasingly scholars are acknowledging the existence of mixed WOM, which includes both PWOM and NWOM. This variable is critical for firms because consumers view WOM as one of the most trusted and reliable information sources (Burnham and Leary, 2018) shared by unbiased peers (Nam and Kannan, 2020). Importantly, depending on its valence, it might have a different impact on firms. PWOM may be valuable for firms since it predicts consumer purchase intentions (Yusuf *et al.*, 2018). This could contribute to an increase in a firm’s financial performance (Keiningham *et al.*, 2018). On the

contrary, NWOM may dissuade such purchase intentions (Balaji *et al.*, 2016), negatively affect product attitude, firm trust, or brand equity (Balaji *et al.*, 2016), or increase switching behaviors (Azemi *et al.*, 2020).

WOM behavior has been analyzed as an activity that reflects customer engagement, which is proposed as a vehicle for creating and maintaining customer-firm relationships (Brodie *et al.*, 2013). Thus, engagement is materialized in the interactions between the consumer with a brand that go beyond the purchase or transaction (Jaakkola and Alexander, 2014) and affect a firm's performance (Kumar *et al.*, 2010). However, this occurs as long as WOM is positive. Prior literature has shown that NWOM can occur when firms do not meet consumer expectations or when consumers experience frustration or negative emotions, which produces dissatisfaction (Nam and Kannan, 2020).

### **Research hypotheses**

#### *Seamlessness and flow state (S-O relationship)*

The omnichannel environment offers a seamless interaction if consumers have the opportunity to freely and effortlessly switch between channels and touchpoints during the different phases of the customer journey, without any information loss or reiteration (Rodríguez-Torraco *et al.*, 2020, p. 1732). A seamless omnichannel environment reduces barriers between channels and enables customers to select their preferred channel with less effort (Gao *et al.*, 2021). Therefore, firms' decisions regarding seamless channel integration impact the consumers' omnichannel experience (Le and Nguyen-Le, 2021), and firms must optimize all touchpoints to create a unified experience for omnichannel consumers (Verhoef *et al.*, 2015).

In this sense, firms are critical facilitators of the state of flow, since an optimal shopping environment can immerse the consumer in the experience (Drengner *et al.*, 2018, O'Cass and Carlson, 2010) and allow them to become intensely engaged in an activity, with no attention



left over to engage in irrelevant thoughts (Csikszentmihalyi, 1990). Flow state is a valuable indicator of individuals' superior experiences when navigating in the online environment (Huang *et al.*, 2012). In the omnichannel context, when the consumer-firm interactions are seamless and integrated, the environment facilitates a high degree of flow (Parise *et al.*, 2016), which leads to an optimal user experience (Drengner *et al.*, 2018). When the service is integrated –consistent and transparent– across channels, consumers achieve a superior omnichannel experience, that is, they enter into flow state (Quach *et al.*, in press). Consequently,

H1: A seamless omnichannel environment will have a direct and positive effect on flow state.

#### *Flow state and WOM (O-R relationship)*

The post-purchase stage is a critical part of fully understanding the omnichannel experience. Research has called for exploration into this stage, including variables such as WOM (Lemon and Verhoef, 2016). Since WOM is a highly trusted source of information (Burnham and Leary, 2018), firms should identify aspects of the omnichannel experience that can subsequently encourage consumers to generate PWOM and avoid sharing NWOM.

Previous literature on WOM has found that consumers engage in positive and negative WOM after their experiences with brands (Nam and Kannan, 2020). In other words, literature has confirmed the importance of the customer experience in enhancing WOM (Zhang *et al.*, 2017). Considering that flow state (the optimal experience) is part of the consumer experience in omnichannel contexts (Hilken *et al.*, 2018, Quach *et al.*, in press), it appears to be a potential antecedent of WOM. When consumers are in flow, they are more likely to share their experiences and give recommendations to others (Herrando *et al.*, 2018). Moreover, consumers experience flow when they are satisfied with the task being performed (Lloyd *et al.*, 2014).

However, consumers may also share a negative experience to reduce the bad feelings associated with it (Liang *et al.*, 2013).

Considering that a satisfied (dissatisfied) experience determines consumers engaging in PWOM (NWOM) (Nam and Kannan, 2020), flow is, therefore, a crucial facilitator of consumers telling others about their experiences and, consequently, a determinant of WOM (O'Cass and Carlson, 2010). A functional (dysfunctional) immersive experience will stimulate PWOM(NWOM). Thus,

H2: A (a) high degree of flow and (b) low degree of flow will increase the likelihood of sharing (a) PWOM and (b) NWOM.

#### *The mediating effect of flow state (S-O-R relationship)*

In the S-O-R model, the organism is an internal state that intervenes and mediates between contextual stimuli and the response emitted (Mehrabian and Russell, 1974). Thus, the organism, flow state, acts as a mediator between the environmental cues and the consumer response. Flow has been confirmed as a mediating variable between different stimuli and responses in literature (e.g., Huang, 2012, Ettis, 2017). Recently, Ameen *et al.* (in press) confirmed that flow state mediates the relationship between consumer encounters in different channel environments and their behavioral intentions in the context of smart shopping malls. Similarly, research by Quach *et al.* (in press) suggests that flow state mediates the relationship between channel integration and customer relationship outcomes (in their case, loyalty).

In a seamless environment, consumers are more likely to engage with the brand across multiple touchpoints (Shen *et al.*, 2018). As the number of touchpoints increases, seamlessness is critical to offer superior experiences that will improve WOM (Lemon and Verhoef, 2016). In the omnichannel context, literature has stated that omnichannel consumers are more proactive in sharing their shopping opinions (Sands *et al.*, 2016).

Moreover, previous research has found that consumers engage in positive (negative) WOM if their expectations are (not) confirmed (Nam and Kannan, 2020). Furthermore, in the omnichannel context, where consumers expect touchpoints to be connected, having a superior experience (in this case, the optimal experience) makes them prone to share their positive (negative) experience if it is (is not) aligned with their expectations. Therefore, following the S-O-R Model theoretical basis, we conjecture a significant indirect relationship between a seamless environment, flow state, and WOM. Formally,

H3: Flow state will mediate the relationship between a seamless omnichannel environment and the likelihood of sharing PWOM and NWOM.

### **Materials and Methods**

The influence of a seamless environment on consumers' reactions was tested in a controlled experimental setting following the procedure of Rodríguez-Torrice *et al.* (2020). A shopping scenario was created using a fictitious fashion brand. A between-subjects experimental design was used to control the seamlessness of the omnichannel environment and insulate its causal effect on the dependent variables. It does not rely on participants' memory of past shopping experiences and creates an identical omnichannel environment for all participants in which all aspects of the experience are held constant, except how seamlessly the channels are integrated. Further, using a fictitious brand allows participants' impressions of the brand to be constructed entirely through the experimental stimuli. This is in line with previous consumer behavior research to remove the biases and confounds that may result from the use of real brands (see Guèvremont and Grohmann, 2016, Morhart *et al.*, 2015).

Three consumer touchpoints (website, social media profile, and physical store) were created to simulate an omnichannel environment. Participants imagined speaking to a sales associate in a store about a black t-shirt. A simple clothing item was chosen because it is a common, staple

piece of clothing that is unisex. They were also presented with a mock website and social media post depicting the t-shirt (see materials in Appendix A).

Past research regarding the critical aspects of a seamless environment was consulted to manipulate the level of seamlessness across conditions. The attributes of the stimuli that differed between conditions were based on the items in the scales used to measure consistency, synchronization, and freedom in channel selection (Rodríguez-Torraco *et al.*, 2020). In the seamless condition, the information presented about the price, inventory, and available discounts were consistent across channels (Saghiri *et al.*, 2017, Shen *et al.*, 2018) (e.g., same logo and promotions), the channels were shown to be synchronized, and consumers could freely choose among and switch between them for all aspects of the purchase process without rupture (Huré *et al.*, 2017, Shen *et al.*, 2018) (e.g., in the website the “in-store pickup” button allows consumers to seamlessly change among channels during the purchase-pick up stages). In the non-seamless condition, there were discrepancies across channels for these attributes (e.g., the brand logo differs among the Instagram and the website), there were restrictions regarding the purchase and return process, and it was not possible to use them in a synchronized way (i.e., to start the decision-making process in different channels) (e.g., “The associate tells you that you cannot pick up, or exchange or return the t-shirt in the store because the sales channels are different”).

After the imagined shopping scenario, participants were asked questions regarding their interaction with the fictitious brand. Participants responded to four items (adapted from Brown *et al.*, 2005) and two items (adapted from Bougie *et al.*, 2003) to measure the participants’ likelihood of engaging in PWOM and NWOM activities, respectively and four items (adapted from O’Cass and Carlson, 2010) to measure their flow state during the shopping experience. All scales were measured on a 5-point Likert scale from strongly disagree (1) to strongly agree

(5). Finally, respondents were asked about their frequency of engaging in omnichannel shopping and their demographics (see scales and psychometric properties in Appendix B).

To ensure the realism of the experimental stimuli (the visual materials and the described scenarios) and the correct understanding of the instructions, the experimental design was independently assessed by three research experts in omnichannel marketing who are also omnichannel shoppers. Additionally, the correct perception of the manipulation checks was both qualitatively assessed by the experts and quantitatively assessed with a pre-test using participants representative of the population for whom the study was designed.

### **Data analysis and results**

#### *Pre-test: Manipulation checks*

An exploratory study was performed to ensure that the stimuli evoked perceptions of either a seamless or non-seamless omnichannel interaction. Respondents were recruited from Amazon Mechanical Turk (MTurk) (N = 31, mean age 38.9 years, 67% male) to participate in a 2-cell between-subjects experiment. MTurk workers received \$.50 upon completion. Participants were required to be MTurk Master Workers and with a past survey approval rating of at least 95% (Sheehan, 2018).

Respondents were randomly assigned to either the seamless or non-seamless condition and presented with a hypothetical omnichannel environment. After imagining this scenario, participants responded to scales validated in previous literature assessing the seamlessness of the omnichannel interaction by assessing consistency, freedom in channel selection, and synchronization (Rodríguez-Torrico *et al.*, 2020). In all cases, responses were given on a 5-point Likert scale from strongly disagree (1) to strongly agree (5) (see scales in Appendix C). The measures of each dimension were averaged to create three indices for consistency ( $\alpha = .973$ ), freedom in channel selection ( $\alpha = .924$ ) and synchronization ( $\alpha = .967$ ). A multivariate

analysis of variance (MANOVA) was performed to determine if the three dimensions differed significantly between conditions. Results suggest that the shopping scenarios were perceived to be significantly different across the three dimensions of the seamlessness: consistency ( $M_{seamless} = 4.32$ ,  $M_{nonseamless} = 2.31$ ,  $F(1, 29) = 24.653$ ,  $p < .001$ ), freedom in channel selection ( $M_{seamless} = 4.33$ ,  $M_{nonseamless} = 2.61$ ,  $F(1, 29) = 19.437$ ,  $p < .001$ ), and synchronization ( $M_{seamless} = 4.33$ ,  $M_{nonseamless} = 2.29$ ,  $F(1, 29) = 26.760$ ,  $p < .001$ ). Thus, the stimuli presented omnichannel environments that differed in how seamless they were perceived.

### *Experiment*

Using MTurk, 220 respondents participated in a 2 (environment: seamless vs. non-seamless) between-subjects design. Participants were randomly assigned to the seamless or non-seamless condition automatically upon opening the online survey. Then they were presented with the respective touchpoints and its associated shopping scenario. After the imagined shopping scenario (see Appendix A), participants were asked a series of questions regarding their interaction, namely their likelihood of engaging in WOM activities and flow state during the shopping experience. For ease of analysis, the items of PWOM, NWOM, and flow were averaged into three indices ( $\alpha = .900$ ;  $\alpha = .857$ ;  $\alpha = .823$ , respectively).

### *Results*

To examine the proposed hypotheses, an analysis of variance (ANOVA), two regression analyses, and a mediation analysis were conducted using IBM SPSS Statistics.

The results of the ANOVA indicated that the participants in the seamless condition achieved higher immersion in the shopping experience and therefore were more likely to enter a flow state than participants in the non-seamless condition (Table I), supporting H1.

[INSERT TABLE I ABOUT HERE]

*Covariates.* An analysis of variance (ANOVA) was run to test the impact of the seamlessness on flow state with the addition of covariates, including age, gender, income, and omnichannel frequency. Results suggest no meaningful impact of customer age, gender, and income (all  $p$ 's  $> .05$ ). However, omnichannel frequency was a significant covariate of flow state ( $F(1, 214) = 20.963, p < .001$ ).

To test H2, the impact of flow state on WOM, two regression analyses were implemented. Results revealed full support for the hypothesis, such that participants who experienced flow indicated that they were more likely to share PWOM after their purchase experience (H2a), and those who experienced a lower degree of flow are more likely to engage in NWOM (H2b) (Table II and Table III). Moreover, as in the previous analysis, age, gender, income, and omnichannel frequency were included as covariates. Similarly, results show a significant effect of omnichannel frequency on PWOM but not on NWOM.

[INSERT TABLE II ABOUT HERE]

[INSERT TABLE III ABOUT HERE]

To examine the mediating relationships among the variables (H3), the indirect effect of seamlessness on WOM through flow state was tested. Process Macro (Hayes, 2013) Model 4 was employed (10,000 bootstrap samples bias-corrected), with seamless condition as the independent variable (non-seamless condition coded 1 and the seamless condition coded 2), PWOM and NWOM as the dependent variables, and flow state as the mediator. Results in Table 4 confirm the significant indirect effect of seamlessness on PWOM and NWOM through flow state. As the environment became more (less) seamless, participants experienced greater (less) flow, and were subsequently more likely to engage in PWOM (NWOM), confirming H3.

[INSERT TABLE 4 ABOUT HERE]

Due to the effect of omnichannel frequency in the ANOVA and regression analysis above, omnichannel frequency was included in Model 4 as a covariate to control its effect on the main relationships. This variable has positive and significant impact on flow state (Effect = .2637) and PWOM (Effect = .2426), but the indirect effect of seamlessness on PWOM through flow state is still significant, as illustrated by the 95% confidence interval (.5241, .9232). This suggests that while the effect of seamlessness on PWOM and NWOM through flow state occurs as predicted in H3, the frequency with which a consumer engages in omnichannel shopping behavior also has a positive impact on both PWOM and the experience of flow state in an omnichannel context. On the contrary, omnichannel frequency is not relevant in the case of engaging in NWOM.

### **Discussion and implications**

This research aims to empirically examine how marketing actions regarding seamlessness can affect consumers' internal reactions and post-purchase behavioral behaviors, represented by positive and negative WOM. The results of this experiment provide support for the hypothesized theoretical relationships. The findings confirm that a more seamless omnichannel environment positively influences consumers' likelihood of entering a flow state, empirically confirming previous literature that suggested the importance of a seamless and integrated environment to create an optimal experience (Parise et al., 2016). We pioneer the manipulation of a hypothetical omnichannel encounter using three different touchpoints and analyze how specific omnichannel marketing decisions regarding seamlessness influence the optimal experience. This advances literature that proposed some integration activities as determinants of the customer experience in this context (Quach *et al.*, in press).

Flow state is also confirmed as an antecedent of WOM. This finding extends previous literature that confirmed positive WOM as a result of flow (O'Cass and Carlson, 2010) to the domain of



omnichannel marketing, confirming the positive impact of flow on the likelihood of sharing PWOM (Herrando *et al.*, 2018). It also introduces NWOM as part of this behavioral outcome and highlights the ability of the omnichannel environment to stimulate NWOM when flow is lacking. In addition, our results show that flow state has a greater influence on PWOM than lack of flow does on NWOM. This could indicate current consumer experiences regarding seamless omnichannel integration and could suggest that firms widely have underdeveloped the seamlessness across channels. A seamless experience is uniquely positive and creates a large desire amongst consumers to spread PWOM. However, as a seamless experience becomes the norm, the impact of flow in NWOM may change.

In addition to these direct relationships, our results confirm a mediation, so when consumers interact with a seamless (non-seamless) environment, they are more (less) likely to enter a flow state, and subsequently, their likelihood of sharing PWOM (NWOM) increases. This result confirms previous statements that suggested that offering a seamless experience will increase consumers' engagement (Mosquera *et al.*, 2017). Moreover, these results support previous research that found that consumers engage in positive and negative WOM after both satisfied and dissatisfied experiences, respectively (Nam and Kannan, 2020). Relatedly, in the omnichannel context, consumers' expectations are confirmed when the environment is consistent and allows them to freely choose their preferred channel and move fluently across touchpoints, which results in PWOM.

This result offers a response to the open question proposed by Cummins *et al.* (2016) and Lemon and Verhoef (2016) regarding how omnichannel marketing actions influence WOM. Additionally, it supports prior literature that has stated that consumers may be more proactive in sharing PWOM if the context offers them seamless and positive experiences (Mosquera *et*

*al.*, 2017), and extends these findings by illustrating that seamlessness is also crucial in the case of NWOM.

Moreover, after additional analysis, an unexpected relationship was also found regarding omnichannel frequency. As a consumer's omnichannel frequency increases, their likelihood of entering a flow state during the omnichannel interaction and their PWOM intentions are enhanced. More research is needed to explore the influence of omnichannel frequency; however, this finding supports the Flow Theory propositions: the flow state occurs when both the environmental opportunities and the individual capacities are in balance (Csikszentmihalyi, 1975). In prior literature, little is known about the influence of experience in the context on the likelihood of sharing PWOM, although it has been briefly mentioned (de Matos and Vargas Rossi, 2008). In the case of flow, Quach *et al.* (in press) tested the moderating role of showrooming behaviors on service integration and customer experience relationship. Thus, our results show a potential line of research within flow state and WOM behaviors.

#### *Theoretical implications*

This work contributes to omnichannel marketing research by exploring how a seamless environment may create an optimal experience and how both impact engagement behaviors. This research also adds to WOM literature by examining antecedents of WOM and also contributes generally to the theory by broadening the scope of the S-O-R Model and Flow Theory.

First, omnichannel literature has emphasized that the key differentiating component of omnichannel is the seamlessness of the transition between retail channels (Huré *et al.*, 2017, Verhoef *et al.*, 2015). However, research that explores the effects of a seamless environment is still limited. Some exceptions include the recent work of Quach *et al.* (in press) that examines

service integration actions, the work of Gao *et al.* (2021) that introduces customer experience incongruence, or the work of Ameen *et al.* (2021) that separately analyzes the elements of the physical and digital environments. The current research first examines the seamless environment's influence on both an optimal experience (flow state) and consumer brand-related behavior (represented by positive and negative WOM). We advance the literature by filling a gap in understanding the impact of seamlessness and introducing a way to control the underlying elements of what makes the omnichannel environment seamless. Concretely, the experimental design created a realistic shopping encounter (Ellett, 2018) while allowing the effect of seamlessness to be isolated.

Second, this work also contributes to omnichannel marketing and WOM literature by responding to calls by scholars to deepen the knowledge of the post-purchase stage within the omnichannel context (Cummins *et al.*, 2016, Lemon and Verhoef, 2016, Lopes *et al.*, in press). Specifically, this research addresses a gap in the literature regarding the impact of omnichannel marketing efforts on WOM. Even though this variable has been critical for understanding consumer behavior in offline and online contexts, its role in omnichannel retailing is currently understudied (Manser Payne *et al.*, 2017, Rodríguez-Torrice *et al.*, 2020). Some exceptions have studied the effect of channel integration quality on engaging in positive WOM (Lee *et al.*, 2019). We extend this line of research on sharing WOM behaviors by considering both PWOM and NWOM. Therefore, our research goes a step forward in this domain, supporting the relationship between marketing efforts for seamlessness on post-purchase behaviors like positive and negative WOM, as well as highlighting the mediating role of consumer internal states. Concretely, our results confirm that seamlessness contributes to WOM directly and indirectly through flow state.

Third, this paper contributes to theory by deepening the understanding of the S-O-R Model and Flow Theory in the omnichannel domain. Regarding the S-O-R Model, this work builds on environmental psychology literature and confirms the suitability of this theory in the omnichannel marketing domain (Le and Nguyen-Le, 2021). In the omnichannel context, there is a confluence of several environments related to each channel, and these channels are used in combination with one another. Thus, the stimuli are the result of the integration of the environments across different channels. In previous research, stimuli were captured by asking about perceptions of channels separately (Arora *et al.*, 2020, Pantano and Viassone, 2015). In this research, we broaden the scope of environmental stimuli by presenting channels as interrelated and integrated to offer a more realistic picture of the omnichannel environment.

Finally, this paper advances research on flow state by extending the study of flow into the omnichannel context. Prior omnichannel literature has explored flow without considering a shopping encounter where a consumer expects to interact with different channels seamlessly (Ameen *et al.*, in press, Quach *et al.*, in press). However, as the number of channels increases, the interactions become more complex. Thus, creating an optimal environment that facilitates entering a flow state becomes more difficult because, by nature, each customer may fluctuate between channels at their discretion. Consequently, the challenge is to facilitate flow state on each available channel and cohesively as consumers move between channels. Flow Theory proposes that flow depends on achieving a perfect balance between perceived action capacities and perceived action opportunities (Nakamura and Csikszentmihalyi, 2002). Our results reveal that this equilibrium is achieved in the omnichannel context when firms offer a seamless environment (the opportunity for action) and consumers present high omnichannel frequency (the individual capacities to act).

*Managerial implications*

This study presents relevant managerial implications for developing innovative omnichannel strategies. First, omnichannel marketing practitioners should conceive all channels as unified to fully integrate all consumer touchpoints so that consumers perceive a single seamless channel. To that end, marketers should assess the level of seamlessness that they provide across channels. Then, marketing actions should ensure consistency, freedom to select channels, and synchronization across the available channels (Rodríguez-Torraco *et al.*, 2020). According to our findings, these elements make the omnichannel environment seamless, allowing consumers to be fully immersed in the shopping process and enter a flow state. To achieve such an environment, it is necessary to develop cohesive brand image, prices, promotions, products, and services across all touchpoints, and the touchpoints must also be synchronized, creating a unified way of interacting with customers in all channels. If there are inconsistencies across channels, the experience will not flow, and thus the customer is more prone to share the negative experience as a result.

Second, firms should focus on promoting the omnichannel shopping processes among those consumers who are prone to combine channels. Our results show that the likelihood of entering flow and sharing positive WOM rises for those consumers who are frequent omnichannel shoppers. Thus, it is recommended for firms to design activities that enhance consumer use of the available channels interchangeably and, in this way, they will encourage the omniconsumers to increase their omnichannel frequency. For example, firms could offer promotions for customers to buy a product in the physical store and receive a digital ticket that could be stored in the app. To do so, firms need to ensure that each channel is designed to allow consumers to continue their purchase process at any stage so that consumers can use them interchangeably, while maintaining flow as they switch between them. This may also be applied in other contexts, such as public policy since omnichannel behavior is typical for C2A

(Consumer to Administration) commerce. Such firms could invest in increasing the availability of different channels, manage them to avoid repetitive information, train employees and users how to navigate across several channels or create guides explaining how to do the procedures through different channels.

Third, a firm should pay special attention to the optimal consumer experience. The present research results suggest that flow state facilitates PWOM, which is critical for a firm's performance and a free method of reliable communication that can reduce communication expenses. However, our findings also emphasize the importance of a low degree of flow in stimulating NWOM. So, facilitating the optimal experience could prevent costly actions to address the potential damages produced by NWOM communications. Therefore, in addition to focusing on the objective and controllable aspects (i.e., the environment), firms should strive to create a subjective and enjoyable experience (i.e., flow state), which, jointly, will improve consumer responses (i.e., WOM). Consequently, companies should create a seamless environment that is both appealing to consumers and allows them appropriate opportunities to act and, as a result, enter a flow state. Managers should understand the channel preferences of their customers and ensure that the firm's channels enable customers to act following their preferences.

#### *Limitations and Future Research*

There are some limitations of the current research. A hypothetical shopping scenario was provided to participants, so the product being purchased and channels used during the shopping experience were restricted to what was provided in the experimental stimuli. An experiment allows for the systematic manipulation of the stimuli, but, on the contrary, it has limitations regarding the realism of the purchase process. Future research may assess the realism score of

the stimuli used or examine this phenomenon using more dynamic stimuli that allow consumers to organically navigate the channels as they would in a real shopping situation. Other external factors that could affect the experience (e.g., internet speed; type of device) may be considered. Additionally, as in prior research (e.g., O'Cass and Carlson, 2010), flow state was measured through a scale, which is a declarative technique. As this technique can influence the results, future research could apply some neuromarketing tools, such as electroencephalographic (EEG), which may allow the observation of internal processes and better address this variable or complement its measurement.

Finally, concerning WOM, a scale measuring the likelihood of engaging in WOM was used to assess this outcome instead of measuring the natural behavior. This paper has only considered mixed WOM as behavioral outcomes; further studies may include other behavioral responses such as repurchase intention, brand love, and consumer empowerment. In addition, it could be useful to continue to study WOM as they may evolve –firms may continue to increase seamlessness, so changes in consumer expectations might have a different impact on PWOM or NWOM and change what we currently found. Similarly, future research is necessary to study the role of omnichannel frequency as an explicative variable and to fully understand how it influences consumer engagement with a firm in the omnichannel domain, considering both omni-consumers and those who do not seek to use multiple channels during the purchase process. Moreover, future research could also identify a boundary condition that could moderate the relationships found here.

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