

# Imagine, feel “there”, and flow! Immersive experiences on m-Facebook, and their affective and behavioural effects

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921

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Received 26 October 2017  
Revised 15 May 2018  
6 August 2018  
Accepted 15 August 2018

## Abstract

**Purpose** – Mobile Facebook (m-Facebook) creates many business opportunities for brands and firms while increasingly drawing interest in scientific literature. However, research is scarce on the immersive experiences prompted by m-Facebook, and how these experiences facilitate users’ engagement, their positive attitude towards Facebook and their continued use of it. The paper aims to discuss these issues.

**Design/methodology/approach** – This paper theoretically and empirically analyses m-Facebook users’ immersive experiences, along with their affective and behavioural effects.

**Findings** – The results reveal the important role of imagery, presence and flow in the context of m-Facebook; the interplay between these three immersive phenomena; and the influence the user’s optimum stimulation level has on them.

**Originality/value** – The investigation offers a foundation for understanding users’ immersive experiences on m-Facebook, and informs practitioners who aim to enhance users’ engagement with, attitude towards, and continued use of m-Facebook content.

**Keywords** OSL, Imagery, Presence, Flow, Engagement, Social networking site, Facebook, Structural equation modelling

**Paper type** Research paper

## 1. Introduction

Facebook, for the most part, is used over mobile technologies (see Goggin, 2014). As of March 2017, mobile Facebook (m-Facebook) had a monthly average of approximately 1.784bn active users worldwide (Facebook, 2017), meaning that this mobile social networking site (MSNS) accounted for roughly 50 per cent of all internet users in the world (Internet Live Stats, 2017). The rise of m-Facebook has been accompanied by a corresponding increase in the phenomenal opportunities it offers to practitioners. Through m-Facebook groups, pages and customer reviews, brands and organisations have found a worthwhile way to build and cultivate profitable links with users – from more conventional, yet highly targeted, ads, to content that is attractive and interesting to the user’s eye, brand communities and novel modes of ubiquitous social shopping.

At the same time, m-Facebook has become an important issue for theory-driven empirical research. As users’ immersive subjective experiences have a potentially strong role in explaining their attitudes and behaviours (Bilgihan *et al.*, 2016; Lin and Lu, 2011; Shin, 2018), the study of m-Facebookers’ immersive experiences can give insight into

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This work was partly supported by the Spanish Government, under Grant No. ECO2014-53837-R, and by the Universitat Oberta de Catalunya (IN3-UOC Resident Researchers Programme 2013).



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and lead to a better understanding of online behaviour, simultaneously offering a range of business opportunities for those brands and organisations that want to be easily accessible to consumers anytime and anywhere.

Interestingly, m-Facebook is capable of prompting immersive experiences in its users (Sashittal *et al.*, 2012; Schulze *et al.*, 2014). When using m-Facebook, users plunge into an entertaining and highly engrossing environment, one that allows them to discover what is happening around them, share stories and life experiences with their personal social networks, and express and feel better about themselves (Kim and Lee, 2011; Li *et al.*, 2015). At the psychological, subjective level, Facebookers' experiences can be particularly enthralling. This is because the exploration of and interaction within the medium can unleash positive inner mechanisms (e.g. Alba and Williams, 2013). On a hedonic platform such as m-Facebook (Yang and Lin, 2014), users are more likely to feel comfortable seeking out and discovering new interaction opportunities (Anderson *et al.*, 2012; Gu *et al.*, 2016), employing mental imagery to picture stories and events presented in the medium and imagining their outcomes (Overmars and Poels, 2015; Rodríguez-Ardura and Martínez-López, 2014). Also, they might feel virtually present in the environment or the events depicted on m-Facebook (Makransky *et al.*, 2017; Mennecke *et al.*, 2011), becoming so absorbed on the actions happening online that they might very well disengage and withdraw from their immediate surroundings and go through cognitive episodes of flow (Bachen *et al.*, 2016; Kwak *et al.*, 2014; Pelet *et al.*, 2017).

However, so far, the literature has not shown a great deal of interest in users' immersive experiences on m-Facebook *per se* (Goggin, 2014). Research has mainly focused on studying the effectiveness of brands' communication initiatives on m-Facebook (e.g. Barreto, 2013; Duffett, 2015; Sanz-Blas *et al.*, 2017); the privacy and risks perceived on m-Facebook (e.g. Blachnio *et al.*, 2016; Wang *et al.*, 2016); the usage and gratifications of m-Facebook (e.g. Chaouali, 2016; Ha *et al.*, 2015; Lin *et al.*, 2017); and the influence wielded by m-Facebookers' personal social networks (e.g. Kwak *et al.*, 2014; Lin *et al.*, 2017; Seo *et al.*, 2016). Furthermore, research into immersive experiences in the broader area of online media has mostly centred on non-hedonic, non-entertaining focal contexts (e.g. Bilgihan *et al.*, 2016; Kumar and Kashyap, 2018; Liu *et al.*, 2018; McLean and Wilson, 2016). Also, the existing body of knowledge of immersive experiences is limited by the fact that most previous studies have only examined a particular sort of immersive experiences, either feelings of being present in the online environment (e.g. Cummings and Bailenson, 2016; Vonkeman *et al.*, 2017) or episodes of flow online (e.g. Kaur, Dhir and Rajala, 2016; Kaur, Dhir, Chen and Rajala, 2016; Liu *et al.*, 2016), and, it is important to note, they have disregarded the psychological experiences of imagery. Even though the knowledge being accumulated in the aforementioned areas provides a good starting point from which to study m-Facebookers' immersive experiences, there is still much to learn about the interplay of these internal, underlying mechanisms and how this explains an individual's feelings and behaviour on m-Facebook.

Therefore, the main purpose of this paper is to expand the thus far limited amount of knowledge of the aggregate of users' immersive experiences on m-Facebook. With this goal in mind, we examine three distinct immersive phenomena, all potentially raised by the individual's use of m-Facebook: imagery, presence feelings and absorption episodes of flow. We model and test the interplay between these three immersive experiences, and we further study their impact on the m-Facebooker's engagement, attitude and continuance behaviour.

The following sections of the paper present the background on the concept of users' immersive experiences, discuss the theoretical foundations for the proposed model and describe the research design used in this study. A report of the findings from a survey of m-Facebookers is then given. The paper concludes with a discussion of the contributions, practical implications and limitations of the study and potential avenues for further research.

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## 2. Theoretical framework

### 2.1 Users' immersive experiences

Immersive experiences have been conceived as internal and subjective episodes brought about by the user's interaction with, and exploration of, the brand's online value proposition (Lemon and Verhoef, 2016; McLean and Wilson, 2016; Shin and Biocca, 2018). In synchrony with the service-dominant logic of marketing (Vargo and Lusch, 2004, 2016), it has been argued that customers' experiences are co-created by organisations and users, and result from the interplay between the user's objectives and the brand's value proposition (Lemke *et al.*, 2010; Lemon and Verhoef, 2016). We use the expression “user immersive experience” rather than “customer experience” to mean the user's holistic, inner mechanisms to assign meaning and generate a response to online value propositions.

There are three characteristics that have been most frequently suggested as constitutive of users' immersive experiences (see e.g. Lemon and Verhoef, 2016; Meyer and Schwager, 2007; Rose *et al.*, 2012). First, immersive experiences are highly personal, insofar as they are based on the individual's processing of the incoming sensory data from the brand's value proposition (McLean and Wilson, 2016; Petermans *et al.*, 2013). Second, immersive experiences emerge from the interactions between the user and the value proposition (Bolton *et al.*, 2014; Rose *et al.*, 2012). And third, they generate positive effects in the form of the user's emotional engagement with the value proposition and his or her affective and behavioural responses (Brodie *et al.*, 2011; Gentile *et al.*, 2007; Kumar and Reinartz, 2016).

A user's immersive experiences, brought about through exploration and interaction within m-Facebook, are particularly compelling. Literature on hedonic consumption (Alba and Williams, 2013; Hirschman and Holbrook, 1982; Holbrook and Hirschman, 1982; Wu and Holsapple, 2014) gives theoretical grounds for understanding why and how m-Facebook can captivate users to such an extent. The use of a hedonic medium like m-Facebook arouses sensory stimuli (Pöyry *et al.*, 2013; Yang and Lin, 2014), which in turn trigger imagery and other positive psychological mechanisms (Hirschman and Holbrook, 1982; Holbrook and Hirschman, 1982; Wu and Holsapple, 2014). When utilising a hedonic medium, the user can feel free to interact with and seek out new sensations (Gu *et al.*, 2016; McDaniel *et al.*, 2001). He or she might turn to imagery to picture the characters and events mentioned in the medium, involve themselves in projective fantasies or construct augmented reality (Hirschman, 1983; Overmars and Poels, 2015; Rodríguez-Ardura and Martínez-López, 2014). In addition to this, users can become so involved in the hedonic activities occurring online that they feel they have been “placed” in an alternative realm, different from their surrounding physical environment (Cheung *et al.*, 2011; Makransky *et al.*, 2017; Mennecke *et al.*, 2011), becoming totally absorbed in the ongoing online activity (Bachen *et al.*, 2016; Kaur, Dhir and Rajala, 2016; Kaur, Dhir, Chen and Rajala, 2016; Kwak *et al.*, 2014; Pelet *et al.*, 2017).

We aim to examine the nature of these immersive, hedonic experiences within the context of m-Facebook usage. To achieve this goal, the ideal scenario would be to conceive the m-Facebooker's experience as a unique, composite construct and consider the experiential facets that are its core dimensions. However, there is no *a priori* basis for proceeding in such a way because, unlike with utilitarian online consumption, there is very little accumulated knowledge on hedonic behaviour online (Ben-Ur *et al.*, 2015; Martínez-López *et al.*, 2014). To the best of our knowledge, only Rose *et al.*'s (2012) study delved into online user experiences as holistic gestalts. But these authors exclusively focused on online non-hedonic contexts, so the operationalised construct of user experience they built is based on the more abundant knowledge held on online utilitarian consumption. This lack of previous knowledge does not allow a workable construct of an m-Facebook user's experience to be properly designed, and thus its dimensions would be speculative. Therefore, here we examine the interplay of three distinct immersive experiences (imagery, presence, flow).

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Their substantive role in hedonic usage of social networking sites (SNSs), mobile and new media has been pointed out by previous studies (Huang, 2012; Kwak *et al.*, 2014; Pelet *et al.*, 2017; Rodríguez-Ardura and Martínez-López, 2014).

### 2.2 *The personality trait of OSL*

Optimum stimulation level (OSL) has been suggested as being a key personality construct in hedonic consumption situations (Fiore *et al.*, 2005; Helm and Landschulze, 2009; Mahatanakoon, 2007). This is because OSL is deemed to influence the extent to which individuals become involved in novel, non-functional and exploratory behaviours “just for the sake of such experiences” (Zuckerman, 1979, p. 10). OSL theorists argue that each individual is intrinsically motivated to obtain a specific desired level of stimulation (Hebb, 1955; Leuba, 1955; Raju, 1980; Steenkamp and Baumgartner, 1992), the so-called optimum stimulation. And this stimulation can be achieved either from the external environment or via inner mechanisms (Steenkamp and Baumgartner, 1992).

According to OSL theory, people with high-OSL scores are more likely to seek high levels of activation or arousal, while showing a greater aversion to boredom (Helm and Landschulze, 2009; Pizam *et al.*, 2004; Steenkamp and Burgess, 2002). They are eager to expose themselves to new and positive stimuli and situations, insofar as this allows them to fulfil their need for excitement, novelty and adventure. In contrast, people with low levels of OSL prefer and feel comfortable with low levels of activation (Raju, 1980; Richard and Chebat, 2016). This notion has been confirmed by empirical research, which has found that individuals with higher levels of OSL are more likely to become involved in novel, complex, intense or recreational activities than those individuals with low levels of OSL (Chang, 2017; Cho and Workman, 2014; Gu *et al.*, 2016, 2018).

### 2.3 *The immersive experience of imagery*

Imagery (also known as mental imagery) has been outlined as an immersive experience that very much resembles an actual experience (Albers *et al.*, 2013; Cumming and Ramsey, 2009; Pearson *et al.*, 2015). More specifically, the construct of imagery captures the subjective experiences users might have when, stimulated by incoming cues from a medium, they evoke sensory images or emotions in their minds (Josiassen *et al.*, 2016; MacInnis and Price, 1987; Yuille and Catchpole, 1977). Individuals are assumed to build, via imagery experiences, mental representations of the situations and the people they interact with (Rodríguez-Ardura and Meseguer-Artola, 2018). These representations are raised by perception and by memory (Naselaris *et al.*, 2015; Pearson and Westbrook, 2015), and they lead users to re-experience the original external stimuli they are exposed to, and to create new combinations of them (Albers *et al.*, 2013; Pearson *et al.*, 2015).

Imagery might also be understood as an immersive experience that provides the individual with stimuli with which to reach his or her preferred level of stimulation. This is because imagery episodes generate content that is not limited in any way – so they might shape novel, complex or unrealistic scenarios (MacInnis and Price, 1987; Rodríguez-Ardura and Martínez-López, 2014; Wu and Holsapple, 2014).

### 2.4 *The experience of presence*

The notion of presence suggests that individuals, when exposed to cues from a technological device, might temporarily suspend their disbelief in the realness of the simulated virtual environment depicted by the medium and build an “illusion” in their minds through which they feel physically located in this alternative virtual environment (for a historical review see Lombard and Jones, 2015). Presence has been consistently portrayed as an immersive phenomenon through which the individual feels he or she is actually present in the

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alternative environment suggested by the technology (e.g. Cummings and Bailenson, 2016; Makransky *et al.*, 2017; Sas and O'Hare, 2003; Slater *et al.*, 1994).

Cognitive theories of presence describe how presence emerges after the individual creates credible representations in their mind, which are a particular “place” depicted by the technology (Saunders *et al.*, 2011; Schubert *et al.*, 2001; Schubert, 2009; Wirth *et al.*, 2007). A well accepted cognitive theory on the formation of presence is the two-level model of spatial presence (Wirth *et al.*, 2007). This model suggests that there are two key steps towards the experience of presence. In the first step, the user, in their mind, generates a cognitive space of the environment or situation suggested by the technology; and in the second step, they feel self-placed in this simulated realm. Therefore, it is not until the user builds a vivid mental representation of the reality suggested by the technology that they feel placed in there.

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### 2.5 Flow

Of the three immersive experiences considered in this investigation (imagery, presence and flow), flow appears to be the closest to what might be considered the “quintessence” of a hedonic immersive experience (Rodríguez-Ardura and Meseguer-Artola, 2016, p. 508). This is because, from the m-Facebooker’s viewpoint, flow experiences can be extremely gratifying; have no utilitarian or functional purposes; and, instead of being a means to achieving some other purposes, can become ends in themselves (Csikszentmihalyi, 1975a, b, 2008).

There is a certain degree of consensus (see review by Engeser and Schiepe-Tiska, 2012) on defining flow as proposed by Csikszentmihalyi’ (1975a, b, 1997, 2008) seminal work. Consistent with this, flow is conceived as a highly positive state that individuals might enter into when, in their endeavour to overcome the challenges raised by a complex or demanding activity, they take their skills to the next level to master said activity (e.g. Csikszentmihalyi, 2008; Rodríguez-Ardura and Meseguer-Artola, 2017). In states of flow, individuals feel such bliss that the activity becomes beneficial and compelling for its own sake (Csikszentmihalyi, 2008; Nakamura and Csikszentmihalyi, 2009). Furthermore, online users under flow plunge so thoroughly and deeply into the virtual environment depicted by the technological device that they give their full attention to the online task, ignoring stimuli from their physical surroundings (Fang *et al.*, 2013).

### 2.6 Engagement

An emerging stream of research is promoting the notion that there is a construct mediating the effects of the individual’s immersion in social media on attitudinal and behavioural outcomes (Huang and Chen, 2018; Mollen and Wilson, 2010; Park *et al.*, 2010); and that construct corresponds to what managers, marketers and IT practitioners call “engagement”. Put differently, engagement is increasingly being conceived not as an outcome, but as an underlying subjective episode that facilitates a favourable attitude towards a brand, as well as positive behaviours such as a higher intention to continue using that brand (Algesheimer *et al.*, 2005; Harrigan *et al.*, 2017). For example, So *et al.* (2016) treated a positive evaluation of a brand and a commitment to re-patronise the brand as outcomes of engagement in their research on brand loyalty formation. Similarly, Huang and Chen (2018) suggested that users’ engagement with a brand fan page in Facebook plays a part in their satisfaction with the service provided by the brand page and their intention to purchase the brand’s products.

However, while it is easy to intuitively characterise “engaged” users as those individuals who have a positive and steady connection with the online value proposition, it is much harder to convey a formal working definition of engagement. There are some conceptualisations that place significant emphasis on what one could call the behavioural

outcomes of engagement, rather than on the engagement *per se* (see Calder *et al.*, 2009). For example, Park *et al.* (2010) operationally defined engagement in terms of generating ideas and finding solutions, Lee, Kim and Kim (2011) and Lee, Kwak, Lim, Pedersen and Miloch (2011) as active participation in online settings, and Harmeling *et al.* (2017) as a user's positive and voluntary contribution "outside the core transaction" (p. 314).

Even though the aforementioned conceptualisations are more in line with the way in which the industry often measures engagement (Plummer *et al.*, 2007), we concur with Calder *et al.* (2009) that they do not put the spotlight on the nature and meaning of engagement. Rather, we regard engagement as an intrinsic motivational force to interact and cooperate online (Algesheimer *et al.*, 2005; Baldus *et al.*, 2015; Hsu *et al.*, 2012). This inner motivation is highly dependent on the context (Day *et al.*, 1995; Dessart *et al.*, 2016; Hollebeek, 2011) insofar as it is built upon the particular interaction between the user and the value proposition; and it is so compelling that it might orient the person in affective or behavioural ways (Brodie *et al.*, 2013; Zheng *et al.*, 2015).

### 3. Research model and hypotheses

Based on the theoretical background discussed above, we assume that m-Facebookers' immersive experiences of imagery, presence and flow are all psychological phenomena generated by the user's accumulated interaction and exploration within m-Facebook. We further study the links between these subjective phenomena and the personality construct of OSL, engagement and attitudinal and behavioural outcomes online (Figure 1).

New media users and non-users differ with respect to their needs for novelty and arousal or OSL (López-Bonilla and López-Bonilla, 2008; Richard and Chandra, 2005). In line with this, scientific inquiry into Facebookers' motivations has noted that, on this particular SNS, individuals pursue positive subjective experiences through elements that are new, intricate or diverse (Baek *et al.*, 2011; Sashittal *et al.*, 2012).

There have been conflicting results concerning a potential connection between OSL and imagery. Some studies have effectively observed that OSL is positively related to imagery (Franken and Rowland, 1990; Macrae *et al.*, 2014; McDaniel *et al.*, 2001), while others could not verify a presumed link between imagery and OSL (Lee, Kim and Kim, 2011; Lee, Kwak, Lim, Pedersen and Miloch, 2011; Parra and Argibay, 2012). However, the difficulties these latter studies encountered in finding a positive OSL-imagery connection could stem from the particular operationalisation used for imagery. In fact, they employ imagery-related measures (e.g. the frequency of imagery evocations of the usage of a certain product, the content of imagery, or the individual's proneness to fantasy) rather than centring on the imagery experience in and of itself (Franken and Rowland, 1990; McDaniel *et al.*, 2001).

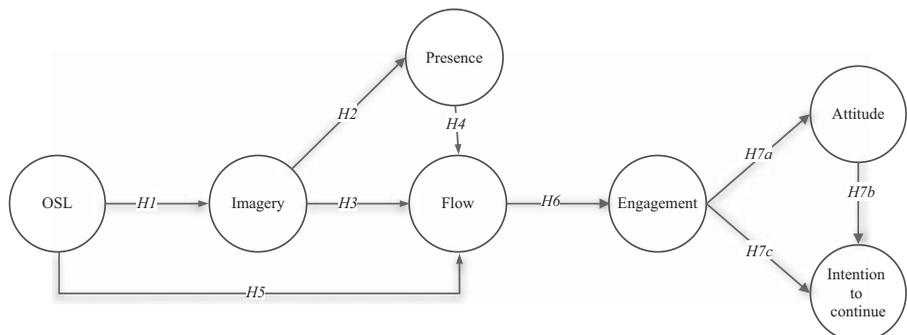


Figure 1.  
Theoretical model

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Besides, imagery experiences have two important characteristics that are in synchrony with the kind of stimuli (new, complex, diverse) sought by individuals who score highly in OSL (Gu *et al.*, 2018; Richard and Chandra, 2005). First, imagery leads people to represent or create new, illusory situations in their minds (Rodríguez-Ardura and Martínez-López, 2014; Wu and Holsapple, 2014). Also, imagery is used to work successfully through burdensome situations (Cumming and Ramsey, 2009; Mattie and Munroe-Chandler, 2012). This leads us to hypothesise that m-Facebookers' OSL is a determinant of their imagery experiences:

*H1.* A higher OSL leads to a more intense imagery experience.

We also propose that stimuli coming from m-Facebook are underlying drivers of presence experiences, but they are mediated by imagery (Pillai *et al.*, 2013; Rodríguez-Ardura and Martínez-López, 2014). This reasoning is grounded in cognitive theories of presence, which defend that the user's experience of presence is preceded by the evocation of a simulated realm in his or her mind (Saunders *et al.*, 2011; Schubert, 2009; Wirth *et al.*, 2007). Based on Rodríguez-Ardura and Martínez-López (2014) and Rodríguez-Ardura and Meseguer-Artola (2016), we complement this view by suggesting that m-Facebookers build the mental representations of virtual spaces through inner experiences of imagery. Otherwise, m-Facebookers will only perceive what their senses capture from the SNS: a technological recreation of images, text and sounds (Franceschi *et al.*, 2009; Rodríguez-Ardura and Martínez-López, 2014). In line with this, we put forward the hypothesis that the evocation of a simulated realm in the m-Facebooker's mind, via vivid mental imagery, leads to the experience of presence:

*H2.* A more intense imagery experience leads to a more intense presence experience.

There is an emerging stream that defends a connection between imagery and flow. The first evidence of this link was provided by several papers that reported successful imagery interventions in sports and their impact on enhancing flow (i.e. Jeong, 2012; Koehn *et al.*, 2013; Nicholls *et al.*, 2005; Pates *et al.*, 2001) and a positive connection between imagery and flow in e-learning settings (Rodríguez-Ardura and Meseguer-Artola, 2016). An explanation may be offered on the basis of Paivio's (1985) analytical framework of imagery effects. This is because imagery can serve two functions: cognitive and motivational. So imagery might facilitate learning and memory processes (Mousa *et al.*, 2013; Slagter *et al.*, 2011), while helping individuals remain focused on the task at hand (Bodeck *et al.*, 2015; Calmels *et al.*, 2004; Kuan *et al.*, 2018), feel confident in their personal skills (Koehn *et al.*, 2013) and deal with challenges (Briley *et al.*, 2017; Munroe *et al.*, 2000). These mechanisms are indeed closely related to the skill-challenge and the focused attention aspects of flow. In accordance with these arguments, we suggest that the evocation of a simulated reality on m-Facebook, by way of vivid mental imagery, prompts flow:

*H3.* A more intense imagery experience leads to a more intense flow experience.

Presence experiences might also have a relevant role in flow. This is because, once the user has accepted the spatial dimensions of the alternative realm depicted by m-Facebook (via feelings of presence), their total absorption in the activity on this particular MSNS becomes much more attainable. This interpretation of the role of presence is theoretically supported by research on the phenomenon, which acknowledges two distinct facets in presence (Schubert, 2009; Wirth *et al.*, 2007): a compelling feeling of being physically located in the environment depicted by the technology (Lombard and Ditton, 1997; Makransky *et al.*, 2017), and an awareness of only those actions that can be performed in this virtual environment (Faiola *et al.*, 2013; Sas and O'Hare, 2003). To put it another way: coupled with the individual's sense of being “inside” an alternative environment, the

individual in presence feels that he or she has left the immediate realm behind. In turn, this makes it more likely for the person to become engrossed in the online activity with active involvement and intrinsic interest – which are core components of flow (Csikszentmihalyi and Asakawa, 2016; Ho and Kuo, 2010).

Regardless of the strength of the abovementioned reasoning, a challenge to the potential relationship between presence and flow has been raised. Some researchers contend that presence is one of the key dimensions of flow (Kwak *et al.*, 2014; Park *et al.*, 2010; Shim *et al.*, 2015). This can be attributed to the fact that presence and flow share some core elements, such as focused attention (Jin, 2011; Kim, 2011; Kim *et al.*, 2011; Rodríguez-Ardura *et al.*, 2016) and perceived control (Csikszentmihalyi *et al.*, 2005; Klein, 2003; Rodríguez-Ardura *et al.*, 2016); so, on the basis of these similarities, in a number of studies presence has been assimilated into the conceptualisation of flow experiences.

Nevertheless, our interpretation of presence as a separate, distinct experience is supported by several lines of evidence which, acknowledging the elements that presence and flow have in common, also highlight the uniqueness of each construct (Faiola *et al.*, 2013; Huang *et al.*, 2010; Piyathananan *et al.*, 2014). Moreover, a number of empirical enquires have reported that presence contributes to the formation of flow (e.g. Animesh *et al.*, 2011; Bachen *et al.*, 2016; Jin, 2011; Pelet *et al.*, 2017; Rodríguez-Ardura *et al.*, 2016). Consistent with this, we hypothesise that if users feel “present” in the environment depicted by m-Facebook, then they will report a greater likelihood of having experienced flow:

*H4.* A more intense presence experience leads to a more intense flow experience.

As seen before, the central idea of OSL theory (e.g. Steenkamp and Baumgartner, 1992; Zuckerman, 1979) is that high-OSL individuals are curiosity motivated and show exploratory behaviours. When exposed to complex and challenging stimuli online, they will be less likely to feel overwhelmed; rather, they will perceive their skills to be in balance with the demands raised by the virtual environment. They will also show more autotelic personality traits (Hoffman and Novak, 1996; Richard and Chebat, 2016). Therefore, it seems reasonable to presume that high-OSL m-Facebookers, in order to meet their heightened preferred level of stimulation, will be more inclined to interact intensively within m-Facebook so as to find and face demanding, complex activities. Insofar as these activities will require their full attention and will be enjoyable in and of themselves, they will trigger flow:

*H5.* A higher OSL leads to a more intense flow experience.

In the focal context of m-Facebook interaction, engagement might facilitate the m-Facebooker thinking about the brand’s or organisation’s value proposition, perceiving it as relevant, or embracing a positive and active bond with the brand (Hollebeek *et al.*, 2014; Potdar *et al.*, 2018). Our stance is that the motivational force of engagement might be triggered by the m-Facebooker’s episodes of flow (Pagani and Mirabello, 2011; Shin, 2018). This is because flow, while leading users to become fully engrossed in online tasks, also motivates them to pursue these tasks (Hollebeek, 2011; Landhäußer and Keller, 2012; Rodríguez-Ardura and Meseguer-Artola, 2017). Flow translates into peak cognitive processing, which is so captivating that it generates more persistent motivational drivers. Evidence from engagement literature, although not abundant, provides support for this link (Medhurst and Albrecht, 2016; Mollen and Wilson, 2010; Park *et al.*, 2010). Therefore, it is reasonable to hypothesise that:

*H6.* A more intense flow experience leads to a higher level of engagement.

As mentioned above, engagement may have substantial attitudinal and behavioural consequences (Huang and Chen, 2018; So *et al.*, 2016). This is because engagement relates to how a brand's value proposition is motivationally relevant for the individual and, therefore, becomes an intrinsic path for committing to a positive and enduring relationship with the brand (Calder *et al.*, 2009; van Doorn *et al.*, 2010). For brands and organisations with a presence in m-Facebook, the potential connection of engagement with attitude and re-usage intention is critical (Harrigan *et al.*, 2017). The fragmentation of media usage has made it hard for many brands to find effective means of communication and interaction (Truong *et al.*, 2010; Vernuccio and Ceccotti, 2015). So, in their attempt to generate favourable attitudes and retain users, they intensively employ m-Facebook and other SNSs (Harrigan *et al.*, 2018) that allow users to contribute to the firm's marketing functions (Harmeling *et al.*, 2017; Sanz-Blas *et al.*, 2017).

An individual's engagement with m-Facebook might create a favourable attitude towards this MSNS. One rationale that helps to explain how engagement influences attitude formation is the elaboration likelihood model of persuasion, or ELM (Cacioppo and Petty, 1984; Petty and Cacioppo, 1981). ELM defends the assertion that, under conditions of high engagement, the individual generates their beliefs and attitudes using personally relevant information (Petty *et al.*, 1983; Petty and Cacioppo, 1981, 1990). Engaged individuals, insofar as they are more committed to elaborating information, show a greater willingness to retrieve their personal mental models and compare them with the new pieces of information to which they are exposed. This supports the association of the new pieces of external information with the subjectively evaluative representations made by the individual, and leads them to form more accessible, consistent and enduring attitudes (Cyr *et al.*, 2018; Petty and Cacioppo, 1986; SanJosé-Cabezudo *et al.*, 2009). Once an attitude is built or modified through the described extensive elaboration process, this attitude will be more accessible and, therefore, might have a greater effect on the individual's behaviour (Kokkinaki and Lunt, 1997; Pierro *et al.*, 2012).

Based on all of this, the position is that engagement brought about by the individual's experience on m-Facebook might be associated with favourable attitudes towards the medium; and also that both attitude and engagement can prompt continuance on m-Facebook:

*H7a.* A more intense engagement leads to a more favourable attitude.

*H7b.* A more favourable attitude leads to a greater willingness to continue.

*H7c.* A more intense engagement leads to a greater willingness to continue.

## 4. Methodology

### 4.1 Participants

Data were collected from adults who had accessed Facebook Spain at least once in the month prior to the period in which the fieldwork was carried out. Due to the lack of Facebook member lists, it was not possible to identify and reach the members of the sample frame in order to obtain a probability sample. Therefore, we recruited participants by snowball sampling (Handcock and Gile, 2011); we drew the initial sample through a convenience method, and used chain-referral to obtain the rest of the sample. We ran this sampling method on Facebook, thereby benefitting from each respondent's personal social network to make referrals and recruit new respondents until a desirable sample size was reached. The advantages of this approach were reduced recruiting costs (Fang *et al.*, 2014) and the potential respondent's increased willingness to participate in the survey and give truthful information (Baltar and Brunet, 2012). It is important to point out that snowball sampling on Facebook cannot be considered an entirely non-random technique, as even

though it may start from a convenience sample, in the following waves it involves a semi-random selection of participants (Baltar and Brunet, 2012).

In order to minimise the time and cost of data gathering and further increase the participation rate, we used an online survey (Baltar and Brunet, 2012). We requested survey participants to provide their e-mail addresses. For selected cases, we checked the e-mail address provided to ensure the reliability of the data collected. During a period spanning two months, a total of 778 participants accessed the online survey. We excluded from the analysis all questionnaires with empty data fields, which resulted in a final sample of 416 valid questionnaires. For the purpose of our study, we used only those questionnaires (356 in total) in which participants reported that they regularly access Facebook via mobile devices.

The main concern about snowball sampling relates to sample selection bias. This is because individuals with larger personal social networks might recruit more peers, who may have similar characteristics (Johnston and Sabin, 2010); thus the sample might over-represent cohesive social networks. The demographic detail of the respondents' profile is shown in Table I. A total of 94.4 per cent of Facebookers who completed the questionnaire were over 25 years old, 64.4 per cent were women and 90.3 per cent used Spanish as their primary language. They provided a diverse sample, which potentially included Facebookers who were hard to recruit through conventional sampling methods, such as Spanish nationals travelling abroad and foreign residents with a preference for English rather than Spanish.

To examine non-response bias in the valid sample, we compared the respondents' age, gender and primary language spoken with those of the target population. While we detected significant differences between the distribution of males and females, for age and language the correlation indexes between the distributions of the total population and those in the sample were 0.85 and 1.00, respectively. Furthermore, we discarded the potential moderating effect of the gender dimension on the causal paths included in the model. The multi-group comparison technique (Sarstedt *et al.*, 2011) yielded no significant moderating effect of gender. This implies that the sample exhibited acceptable representativeness.

#### 4.2 Measurement

We measured the constructs in the model with multi-item scales previously validated in relevant literature, and adapted to our study context (Table II). To improve content validity, we pre-tested the scales among eight scholars in the field. These scholars were asked to comment on: the domain of the constructs, the wording precision and readability of

Measure	Category	Population <sup>a</sup>	Sample
Age	18–24	17.9	9.6
	25–34	26.8	25.5
	35–44	26.3	41.1
	45–54	17.0	22.4
	≥55	12.0	1.4
Gender	Male	45.4	35.6
	Female	54.6	64.4
Language	Spanish	90.9	90.3
	English	10.5	6.3
	Catalan	3.6	0.7

**Table I.**  
Descriptive statistics  
of the sample

**Note:** <sup>a</sup>Owloo (2015)

Constructs	Original scales	Adapted questionnaire scales	Cronbach's $\alpha$	Item-total correlation
OSL	Steenkamp and Baumgartner (1995)	OSL1: I like to try new and different things rather than continue doing the same old things	0.856	0.685
		OSL2: I like a job that offers change, variety and travel, even if it involves some danger		0.651
		OSL3: I like continually changing activities		0.739
		OSL4: when things get boring, I like to find some new and unfamiliar experience		0.695
		OSL5: I prefer an unpredictable way of life, full of change, to a routine one		0.691
Imagery	Babin and Burns (1998), Walters <i>et al.</i> (2012)	MI1: many images come to my mind	0.929	0.813
		MI2: the mental images that come to mind are very clear		0.881
		MI3: the mental images that come to mind form a series of events in my mind which I am a part of		0.872
Presence	Novak <i>et al.</i> (2000)	P1: I forget about my immediate surroundings when I use Facebook	0.837	0.629
		P2: after using Facebook, I feel like I come back to the “real world” after a journey		0.722
		P3: when I use Facebook, I feel I am in a world created by Facebook pages and resources		0.676
		P4: when I use Facebook, my body is in the room, but my mind is inside the world created by the pages and resources I explore		0.764
Flow	Novak <i>et al.</i> (2000)	(Description of flow and instructions)	0.883	
		F1: I have experienced flow on Facebook		0.795
		F2: most of the time I use Facebook I feel that I am in flow		0.775
		F3: in general, how frequently would you say you have experienced “flow” when using Facebook?		0.846
Engagement	McQuarrie and Munson (1992)	E1: is important	0.886	0.795
		E2: is relevant		0.779
		E3: means a lot to me		0.762
Attitude	Childers <i>et al.</i> (2001)	A1: inferior – superior	0.828	0.637
		A2: poor – excellent		0.695
		A3: not worthwhile – worthwhile		0.731
Intention to continue	Moon and Kim (2001)	IC1: I will use Facebook on a regular basis in the future	0.870	0.803
		IC2: I will frequently use Facebook in the future		0.816
		IC3: I will strongly recommend others to use Facebook		0.646

**Table II.**  
Questionnaire measurement scales and internal reliability of the constructs

individual items, the item response form, and the sequence and consistency of items. On the basis of the feedback they provided, the wording and the sequence of a few items were refined. The questionnaire was made available in the three languages most used by users of Facebook Spain (Spanish, English and Catalan).

## 5. Analysis and results

### 5.1 Measurement model

The initial exploratory factor analysis showed that there were seven factors with an eigenvalue greater than 1, which all together explained 76.54 per cent of the information. These factors corresponded to the constructs in the model, as all item loadings associated

with the expected factor were higher than 0.7 (see Table III). These results give support to the convergent validity.

The confirmatory factor analysis showed that the measures of the constructs were robust in terms of their convergent validity (Table IV). The CR of each construct exceeded 0.7, and in all cases the AVE was greater than 0.50. Furthermore, CR was always greater than AVE.

	OSL $\lambda = 6.846$ Var: 28.53%	Imagery $\lambda = 2.966$ Var: 12.36%	Presence $\lambda = 3.248$ Var: 13.53%	Flow $\lambda = 1.837$ Var: 7.66%	Engagement $\lambda = 1.164$ Var: 4.85%	Attitude $\lambda = 1.001$ Var: 4.17%	Intention to continue $\lambda = 1.306$ Var: 5.44%
OSL1	0.716	0.099	-0.029	0.010	0.008	0.153	0.093
OSL2	0.777	0.077	-0.008	0.019	0.055	-0.020	0.021
OSL3	0.835	0.055	0.034	0.117	0.028	-0.070	0.104
OSL4	0.823	-0.014	0.041	0.021	0.053	-0.023	-0.050
OSL5	0.808	0.011	0.107	0.075	0.002	0.052	0.003
MI1	0.053	0.871	0.155	0.141	0.096	0.128	0.069
MI2	0.080	0.897	0.164	0.138	0.120	0.118	0.127
MI3	0.101	0.906	0.118	0.086	0.107	0.139	0.096
P1	0.017	0.078	0.723	0.286	0.110	-0.047	0.048
P2	0.021	0.098	0.827	0.209	0.041	0.020	0.114
P3	0.069	0.108	0.776	0.048	0.015	0.131	-0.079
P4	0.025	0.185	0.773	0.349	0.137	0.047	-0.026
F1	0.077	0.207	0.228	0.850	0.125	-0.009	0.074
F2	0.093	0.094	0.382	0.789	0.127	0.093	0.015
F3	0.101	0.091	0.293	0.859	0.123	0.075	0.119
E1	0.043	0.118	0.118	0.053	0.853	0.192	0.212
E2	0.085	0.140	0.063	0.138	0.854	0.208	0.123
E3	0.028	0.089	0.114	0.210	0.773	0.162	0.339
A1	0.017	0.168	0.048	0.076	0.107	0.781	0.184
A2	0.050	0.118	0.028	0.016	0.166	0.829	0.143
A3	0.013	0.078	0.074	0.035	0.235	0.813	0.245
IC1	0.096	0.102	-0.063	0.068	0.206	0.168	0.875
IC2	0.081	0.117	0.019	0.070	0.154	0.171	0.896
IC3	-0.011	0.075	0.094	0.052	0.250	0.311	0.712

**Table III.** Item cross-loadings, construct eigenvalues and variance explained

Notes:  $\lambda$ , construct eigenvalues; Var, variance explained

**Table IV.** Convergent validity, discriminant validity and bivariate correlations of latent constructs

Construct	CR	AVE	MSV	ASV	OSL	Imagery	Presence	Flow	Engagement	Attitude	Intention to continue
OSL	0.857	0.548	0.047	0.024	0.740 <sup>a</sup>						
Imagery	0.931	0.817	0.151	0.108	0.178	0.904 <sup>a</sup>					
Presence	0.842	0.576	0.466	0.129	0.124	0.388	0.759 <sup>a</sup>				
Flow	0.905	0.761	0.466	0.148	0.216	0.361	0.683	0.873 <sup>a</sup>			
Engagement	0.887	0.723	0.295	0.163	0.139	0.354	0.317	0.388	0.850 <sup>a</sup>		
Attitude	0.831	0.623	0.295	0.128	0.072	0.348	0.184	0.207	0.543	0.789 <sup>a</sup>	
Intention to continue	0.883	0.719	0.289	0.121	0.155	0.294	0.092	0.225	0.538	0.519	0.848 <sup>a</sup>

Notes: CR, composite reliability; AVE, average variance extracted; MSV, maximum shared squared variance; ASV, average squared variance. <sup>a</sup>Square root of AVEs

Our results lend support to the discriminant validity of all the constructs: the MSV and the ASV of each construct are both below its AVE; and the square root of each construct’s AVE is greater than the values of the correlations between that construct and the remaining constructs.

Internal reliability of the constructs was also examined (see Table II). In every case, Cronbach’s  $\alpha$  value is greater than 0.70, and the item-to-total correlation is above 0.60.

### 5.2 Common method variance (CMV)

CMV can cause systematic issues in the measurement of the covariance between constructs and threaten the validity of the findings. In order to avoid misinterpreting scale items and reduce random responses, we adapted the scale items to the particular environment of Facebook. In addition, we refined the items on the basis of in-depth interviews with scholars in the field. To diminish the survey respondents’ reluctance to being evaluated and make them less likely to report consistent and socially desirable answers, the anonymity of all respondents was guaranteed.

We checked the effectiveness of these preventive measures using two tests: Harman’s single factor test, and the Bagozzi test. First, the factorial analysis showed a seven-factor solution (Table III), in which seven components had an eigenvalue greater than 1 and the explained aggregate variance was 75.54 per cent. Second, the highest correlation observed was between the flow and presence constructs (see Table III), which is clearly lower than 0.90. These results support the idea that our analyses do not have significant CMV biases.

### 5.3 Structural model

If we adjust the  $\chi^2$  statistic to the degrees of freedom of the model, we get an acceptable result of 1.65 (see Table V). In addition, GFI and AGFI were both greater than the minimum acceptable value, and SRMR and RMSEA were under the upper threshold. These good measures of fit allow us to assert that the model represents 91.5 per cent of the variance associated with the sample’s variance-covariance matrix.

Fit index	Value	Recommended cut-off value
<i>Absolute fit measures</i>		
$\chi^2/df$	1.653	< 5.000
GFI	0.915	> 0.800
AGFI	0.895	> 0.800
SRMR	0.071	< 0.080
RMSEA	0.043	< 0.080
<i>Incremental fit measures</i>		
TLI	0.965	> 0.900
NFI	0.926	> 0.900
CFI	0.969	> 0.950
<i>Parsimonious fit measures</i>		
PGFI	0.741	> 0.500
PNFI	0.816	> 0.500
PCFI	0.853	> 0.500

**Notes:** df, degrees of freedom; GFI, goodness-of-fit index; AGFI, adjusted goodness-of-fit index; SRMR, standardised root mean square residual; RMSEA, root mean square error of approximation; TLI, Tucker–Lewis index; NFI, normed fit index; CFI, comparative fit index; PGFI, parsimonious goodness-of-fit index; PNFI, parsimonious normed fit index; PCFI, parsimonious comparative fit index

**Table V.**  
Fit indexes for  
the model

When compared with the null model, the hypothesised model yielded a better incremental fit. The NFI and the TLI surpassed the minimum required value, and the CFI was greater than the suggested lower threshold. The parsimonious fit measures were also good: the PGFI, the PNFI and the PCFI were all greater than the recommended levels.

We used the results of the parameters' estimation associated with each causal link to examine the validity of our hypotheses (Table VI). All the estimates were positive and significantly different from zero, so our hypotheses are supported.

We obtained the coefficient of the indirect effect between imagery and flow mediated by presence, and confirmed its significance through the *z*-test (see Table VII). Taking into account that there was a significant direct effect from imagery and flow, the result of the *z*-test implies that presence complementarily mediates the association between imagery and flow. Following the same steps, we confirmed the indirect link of engagement to intention to continue through attitude.

## 6. Discussion

### 6.1 Theoretical implications

Overall, this paper contributes to the search for a better understanding of users' immersive experiences in hedonic media products. This is because studies on user immersive experiences in the broader spectrum of online media have not delved deeply into the imaginative and sensation-seeking facets of hedonic experiences raised by virtual environments. In fact, most of these studies have been situated in utilitarian usage contexts, or have adopted a generic approach to the hedonic value of media products (Bilgihan *et al.*, 2015; Pöyry *et al.*, 2013; Yang and Lin, 2014). Furthermore, they have largely considered only a single type of user immersive experience, either the cognitive states of flow or the feelings of presence, and they have overlooked the inner experiences of imagery (Cummings and Bailenson, 2016; Kaur, Dhir and Rajala, 2016; Kaur, Dhir, Chen and Rajala, 2016; Liu *et al.*, 2016; Vonkeman *et al.*, 2017). Our study expands on this previous research by

<i>H<sub>i</sub></i>	Relationships	$\beta$	$\beta^*$	SE	CV	<i>p</i> -value
<i>H1</i> (+)	OSL → imagery	0.340	0.179	0.113	0.006	0.003
<i>H2</i> (+)	Imagery → presence	0.285	0.388	0.044	6.486	0.000
<i>H3</i> (+)	Imagery → flow	0.117	0.105	0.056	2.084	0.037
<i>H4</i> (+)	Presence → flow	0.964	0.633	0.098	9.846	0.000
<i>H5</i> (+)	OSL → flow	0.270	0.127	0.102	2.655	0.008
<i>H6</i> (+)	Flow → engagement	0.346	0.399	0.050	6.933	0.000
<i>H7a</i> (+)	Engagement → attitude	0.408	0.543	0.044	9.321	0.000
<i>H7b</i> (+)	Attitude → intention to continue	0.402	0.320	0.081	4.961	0.000
<i>H7c</i> (+)	Engagement → intention to continue	0.345	0.366	0.060	5.775	0.000

**Table VI.**  
Hypotheses, path coefficients and results

**Notes:**  $\beta$ , estimates;  $\beta^*$ , standardised estimates; SE, standard error of the regression weight; CV, critical ratio value for regression weight

Relationships	$\beta$	SE	Indirect effect	<i>z</i>	<i>p</i> -value
Imagery → presence	0.285	0.044	0.275	2.883	0.004
Presence → flow	0.964	0.098			
Engagement → attitude	0.408	0.044	0.164	4.411	0.000
Attitude → intention to continue	0.402	0.081			

**Table VII.**  
Significance of the indirect effects

exploring the sensation-seeking and imagery facets of hedonic consumption online, along with their interplay with online flow and presence. By so doing, it offers a coherent picture of the complexity of the experiential elements of a user’s hedonic usage of mobile products.

This research also contributes to an understanding of users’ imagery online, which can be a key experiential facet of online hedonic consumption. We provide evidence that links imagery not only with sensation-seeking, but also with immersive experiences of presence and flow. These findings suggest that the user’s personality trait of OSL becomes a driving force of online hedonic consumption, and that the imaginative, inner constructions of reality generated by user interaction in the medium unleash immersive experiences. The findings echo those of Rodríguez-Ardura and Meseguer-Artola (2016) in the context of e-learning continuance, in that inner multi-sensory representations, raised by way of imagery, facilitate the individual’s sense of spatial immersion in the virtual environment as well as their full absorption in the activity and the events happening online.

Furthermore, this study complements Faiola *et al.* (2013), Rodríguez-Ardura *et al.* (2016) and Shin’s (2018) findings that presence and flow are distinct constructs. Indeed, we show, within the context of m-Facebook usage, that flow has a mediating role between users’ presence feelings and their engagement with the media. The latter result is indeed in synchrony with a recent study by Shin (2018), who found that, in virtual reality, presence does not steer users towards engagement; instead, it is mediated by flow. We further concur with Shin (2018) that users form immersive experiences on their own and do so because they want to become immersed. In other words, the intentional and active nature of presence, flow and engagement and the connections between them suggest that, when plunged into immersive experiences with digital technologies, users are active agents that willingly put cognitive effort into processing content and interacting with other users in meaningful and ongoing ways. Hence, immersive experiences can be regarded as thoughtful processes of a very dynamic nature.

Finally, but importantly, this study provides the first line of evidence of the driving force of OSL in immersive experiences of flow. The OSL-flow connection had been proposed by Hoffman and Novak (1996) and Woszczynski *et al.* (2002), but unfortunately, and to the best of our knowledge, no previous study had explored this link empirically until now. Our findings indicate that users who have high-OSL scores, insofar as they are more likely to exhibit sensation-seeking behaviours and show autotelic personality traits, tend to explore and interact more within the virtual environment. Consequently, they are more willing to enjoy the challenges and stimulation of virtual environments, which ultimately leads to flow. This is also consistent with the findings of recent studies, which have reported that users’ general disposition to undergo immersive experiences is dependent on personality traits (Chesney *et al.*, 2016; Shin and Biocca, 2018).

## 6.2 Practical implications

The increasing use of m-Facebook and other hedonic MSNS and mobile products encourages managers and practitioners to try to understand a user’s immersive experiences on the new hedonic media, no longer regarding users’ inner experiences as black boxes. Our study provides an understanding that meets these practitioners’ goals.

Chua and Chua (2017) suggest that the user’s personality profile is related to Facebook usage, even though other factors, apart from personality, might also be relevant. In line with this, we show that the user’s personality trait of OSL is directly connected to two relevant facets of the user’s immersive experience on m-Facebook (i.e. imagery and flow); and that is how it ultimately prompts user engagement and positive intentional behaviours towards Facebook.

The virtual environments depicted by m-Facebook are imagined (and imaginary) realms. In their minds, m-Facebookers construe representations about situations and personal

connections they learn about on this MSNS. They imagine what other Facebookers look like in real life and how events will develop; and they place their own self-images in those events. An emphasis on content and configurations that foster m-Facebookers' imaginations and their sense of being "there", within the virtual environment, are key to building a superior value proposition online.

Accordingly, we suggest that brands and organisations enhance users' immersive experiences with narratives, interactions and sensorial resources that lead users to form impressive and memorable mental images, coupled with information structures and designs that provide spatial cues and direction to the user's endeavour (instructions to imagine, informational signals that elicit memories and spatial dimensions, etc.). Content and functionalities should be capable of transporting users and making them feel they are part of a virtual environment. In addition, they should be rewarding by themselves either because of the realm they give access to, or because of the mechanisms they provide for exploration and socialisation. In addition to this, they should offer activities that provide a sense of challenge while users perceive they are in control and can meet the demands.

Our model might be of further use at an operational level, as it encourages exploration of the appropriate content and functionalities of each new value proposition on m-Facebook. Indeed, the set of measures of immersive experiences we offer can serve as evaluative tools to examine the experiential capacity of the brand's/organisation's pages on m-Facebook.

### 6.3 *Limitations and further research*

The contributions of this paper are constrained by three unresolved questions, which offer avenues for future research. First, we have not delineated an operational construct of the user's immersive experience on m-Facebook as a whole. Instead, we have taken a less risky scientific approach consisting of examining the validity and interplay of three immersive experiences (i.e. imagery, presence and flow), already identified in relevant, albeit scattered, literature on consumer behaviour and human-computer interaction. Therefore, we regard our model as a first step towards the aim of having a validated construct of the m-Facebook immersive experience.

Second, the predictive generalisation of the findings is limited, since participants were recruited with a snowball sampling technique and all of them came from the same target population (i.e. users of Facebook Spain). Despite the unlikely possibility that spurious correlations could exist due to common method bias, it would be useful if future studies extended the external validity of the causal paths included in our model, confirming them in various samples. Spanish society, characterised by being neither very collectivist nor extremely individualist and with values traditionally associated with feminine roles (Spector *et al.*, 2001), might influence individuals' interactions and social relationships online. Therefore, further research is needed to consider more comprehensive samples and examine whether cultural differences moderate key relationships in our model. Furthermore, MSNSs differ in their levels of media richness, amount of self-presentation, social interaction functionalities and hedonic value. Because our survey respondents were m-Facebookers, it would be interesting to examine the reasons for engagement among users of other MSNSs (e.g. Twitter, Instagram, YouTube) and compare those findings with the insights obtained from our model.

Third, our operationalisation of engagement is limited to one dimension (i.e. importance); thus, it might not capture all the construct's properties. So far, the multidimensional measures of engagement that have been developed (Balduis *et al.*, 2015; Dessart *et al.*, 2016; Hollebeek *et al.*, 2014; So *et al.*, 2014) are very different from one another and have not been validated yet across a range of contexts and product media, so none of them has become a benchmark. Therefore, researchers might wish to explore the composite nature of engagement, validate a pioneering composite scale, and use it in our model.

## 7. Conclusion

This is one of the first studies to tackle m-Facebookers' immersive experiences at the individual level, and to investigate their psychological nature and interplay. The findings are of particular significance because they offer a close look at the individual's inner experiences of imagery, presence and flow and show their distinct, immersive nature and interconnections. The model predicts that these three immersive experiences lead to the m-Facebooker's engagement and continuance, and the empirical test supports this prediction. Also, the study shows that flow experiences mediate the presence-engagement relationship, and that the personality trait of OSL facilitates the emergence of both imagery and flow experiences. An additional contribution of this paper lies in confirming the role of engagement as a subjective episode that mediates the effects of users' immersive experiences and their attitudes and behavioural intentions towards m-Facebook. In the future, further research will be conducted to develop and validate an integrative construct of a higher order that captures the key characteristics of immersive experiences at the psychological level.

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flow!