Smart technologies and shopping experience: Are gamification interfaces effective? The case of the Smartstore

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ABSTRACT

The emergence of smart technologies is increasingly catching the attention of researchers and practitioners, especially in retailing contexts. However, empirical studies investigating the impact of technologies' design on customers' shopping experience remain limited. In response to this gap, this research analyzes the impact of gamification mechanics, a widely used tool to design smart technologies, on customers' experience, emotions and the resulting behavioral intentions. Therefore, we first examine the impact of two gamification mechanics, challenge and fantasy, on customer experience and patronage intentions. Then, we specifically study the case of the Smartstore, a smart innovative technology used to personalize items in retailing contexts and combining these two gamification mechanics in comparison with a classical interface without any gamification mechanics. Based on those two experimental studies, our findings confirm that personalizing a product through a gamified interface might have a positive impact in terms of experience during the process but also on patronage intentions. Hence this research also shows that solely adding gamification mechanics such as challenge and fantasy in a smart interface is not enough to significantly enhance the quality of the perceived experience.

1. Introduction

The evolution of multimedia technologies has created new perspectives and rich user experiences online but also in-store. Retailers consider using smart technologies in-store, still those require further attention from scholars and practitioners (Demirkan and Spohrer, 2014; Hristov and Reynolds, 2015). Bodhani (2013) investigated how digital technologies can reinvent retail shopping and observed that leading retailers are turning to these technologies to drive sales as well as to improve customer relationship and the overall shopping experience. Some previous researches have tested the effect of some of these technologies in retailing contexts (Pantano and Servidio, 2012; Poncin and Ben Mimoun, 2014). It appears that experiential aspects of new technologies in the store may attract more customers to visit the sales point and eventually increase sales. In that respect, Blázquez (2014) argues that in-store shopping experience promoting the use of technology is a way to create an engaging and integrated experience among channels. Hence smart technologies are able to enhance emotional engagement through highly realistic and interactive interfaces and entertaining scenarios (Pantano and Timmermans, 2014).

Therefore gamification emerges as a widely used practice to design smart technologies (Werbach and Hunter, 2012; Zichermann and Linder, 2013). Since the article of Deterding et al. (2011, p.9) that proposed to define the gamification concept—that is "*the use of game design elements in non-game contexts*", marketing executives seem to agree that the potential impact of gamification techniques in marketing is promising and the adoption rate is expected to accelerate in the near future (Lucassen and Jansen, 2014). In this line, the service perspective has defined gamification as "*a process of enhancing a service with affordances for gameful experience in order to support user's overall value creation*" (Huotari and Hamari, 2012). This service perspective highlights the experience that gamification is attempting to give rise to. It points out that a gameful design is not always carried out by concrete elements and rather results from the experience that is lived by users (Huotari and Hamari, 2012; Hamari, 2013). Though, despite the increased use of gamification mechanics in marketing, it is still unclear how they influence customer experience (Hamari et al., 2014). We therefore need to develop a better understanding of gamification mechanics and how they work, especially in the retailing context (Insley and Nunan, 2014).

Lucassen and Jansen (2014) have called for a better understanding and appropriate management of gamification mechanics. However, the literature that relates to this emerging concept remains conceptual, and there is a lack of empirical studies analyzing the impact of gamification mechanics on user experience and subsequent patronage intentions. If recent works by Robson et al. (2014, 2015) have provided some initial valuable insights, the marketing literature is still lacking a

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conceptual framework and empirical insights to describe and forecast how the gamification mechanics impact customer experience, particularly in a retailing context. Therefore, marketing researchers have to try getting a better understanding of what contributes to the experience within a gameful shopping context (Insley and Nunan, 2014). The central question that arises is: "Smart Interactions with consumers: Is it possible to enhance shopping experience thanks to gamification techniques?"

In particular, this research aims at examining the impact of using gamification mechanics in the interface design of an in-store technology, as compared with a classical online interface, in order to personalize a product. In line with Pantano and Timmermans (2014), the use of this technology becomes smart by involving retailers and clients with the common goal of achieving a gameful experience and a customized product. Specifically, the quality of the experience that is felt by the consumer during the personalization process, behavioral intents and customers' intention to shop at the retailer are studied.

To investigate our research hypotheses, two experimental lab studies were implemented. The first experiment focuses on assessing the causal impact of gamification (fantasy and challenge mechanics as we will develop later) on customer's experience and patronage intentions. Then the second experiment focuses on the impact of different levels of gamified interface (Smartstore—that is the most gamified interface combining fantasy and challenge mechanics, versus a less gamified interface (fantasy mechanic only) versus a control interface (classical online interface without gamification mechanic).

If our results show interesting impacts of these gamification mechanics in the retailing context, they also confirm that gamification should not be a goal in itself and necessitates a diligent execution in order to reach the intended goals (Lucassen and Jansen, 2014). Thanks to a better understanding of gamification mechanics (challenge and fantasy) and how they work in the retailing context, this research yields important insights and implications for marketers and retailers regarding the conception of gameful shopping experiences and the use of in-store smart technologies.

2. Conceptual background

The development of e-commerce has further accentuated retailers' fascination with experiential retailing. Creating a superior customer experience seems to be one of the central objectives in today's retailing environments (Verhoef et al., 2009). Digital technologies offer those opportunities to enhance in-store experience.

2.1. Consumer experience—compelling experience

To develop a competitive advantage, retailers increasingly promise to offer an enjoyable experience to their consumers (Antéblian et al., 2013). Therefore the importance of understanding consumers' experience has never been so important for retailers (Puccinelli et al., 2009). Retailers can use different elements in the store environment to influence customer experience (e.g. music, color, store layout, merchandise presentation etc.). Kaltcheva and Weitz (2006) summarize research investigating environmental effects on shopping behavior to conclude that a pleasant shopping environment positively affect shopping-behavior variables. Previous research shows that creating a compelling environment for consumers also have positive consequences for the retailer. For instance, Novak et al. (2000) highlighted consumers' perception of their own skills and the extent to which they feel challenged by the required task as factors generating a compelling online experience, namely an intrinsically enjoyable experience motivating customers to further interact with the technology. Also, numerous research has been devoted to study and show the link between in-store experience, positive patronage intentions and loyalty (Pullman and Gross, 2004; Arnold et al., 2005; Rose et al., 2012; Foster and McLelland, 2015). Hence, while intuition suggests that the use of smart technologies would allow retailers to provide superior—compelling and playful—in-store experience to consumers and might become a competitive advantage, this hypothesis still needs to be tested.

2.2. Consumer experience—playfulness

Customers want to have positive experiences and they require a company to succeed in delivering them (Garrett, 2006). As stated previously, they look for a compelling, enjoyable, playful experience. The playful design refers to the use of ludic interfaces to enrich users' experience. Rather than considering the task completion, playfulness then relates to the experience lived by participants (Holbrook, 2006). In the context of online shopping, Mathwick et al. (2001) presented escapism and intrinsic enjoyment as the two dimensions of playfulness (Mathwick et al., 2001). Referring to the works of Babin et al. (1994) and Huizinga (1955), they presented escapism as "the aspect of playfulness that allows the customer to temporarily get away from it all" (Mathwick et al., 2001 p 44.) while considering intrinsic enjoyment as "an end unto itself". Emerging from the research body on play, playfulness is then considered as an appropriate construct in the study of human-computer/technology interactions because computers/technologies incorporate playful features such as multimedia, graphics and animation (Serenko and Turel, 2007).

Mathwick et al. (2001) argued that playfulness is reflected in the intrinsic enjoyment that comes from engaging in activities that are absorbing to the point of temporarily "getting away from it all". Indeed, an individual can feel more or less playful at various points during his/her interaction with the technology. Hackbarth et al. (2003) indicated that playfulness depends on the level of "system experience". Moon and Kim (2001) presented the "state" of playfulness as "*a temporary state at some specific time*" that "*can be can be influenced by situational factors and the interactions between the individual and the situation*" (Moon and Kim, 2001, p. 219). Shobeiri et al. (2013) for example indicated that task oriented consumers (due to time constraints) pay little attention to playful aspects (escapism/enjoyment) of a web site considering them as unnecessary and unpleasant. Playfulness then reflects short-lived cognitive or affective experiences felt by the individual. This consumer experience might be influenced by individual characteristics, situational factors and interactions between the individual characteristics and the situation.

In this paper, adopting the approach of Moon and Kim (2001), playfulness is considered as an experience that people might feel during their use of a smart technology when personalizing a product. Regarding the effect of playfulness, past studies have revealed that attitudinal outcomes of emotion, pleasure and satisfaction are the result of playfulness. In 1982, Donovan and Rossiter found that arousal related to playfulness has a positive effect on most dependent variables in pleasant retail environments.

In the context of online shopping, insights on the effects of playfulness are numerous. Moon and Kim (2001) found that perceived playfulness was positively related to behavioral intention to use and perceived ease of use. Likewise, Sledgianowski and Kulviwat (2009) indicated that for social network sites users, playfulness has a direct effect on the behavioral response of using a web site, and in a similar context, Zolkepli and Kamarulzaman (2015) highlighted that the effect of playfulness on social media adoption is mediated by innovativeness. Ahn et al. (2007) demonstrated a positive relationship between playfulness and customers' intention, and attitude toward the use of online retailing. Lee and Park (2005) emphasized that richer technologies lead to greater customers' enjoyment, that is considered by Pantano and her co-authors (2012,2014) as positively related to user's intentions. Finally, Turel et al. (2010) indicated that playfulness is positively related to the overall perceived value of a hedonic digital mechanism (information technologies offering exclusively enjoyment-oriented environment). Though, in contrast to previous literature, Shobeiri et al. (2013) emphasized that playfulness may have mixed (both positive and negative)