THE RELATIONSHIP BETWEEN RETAILER APP USE, PERCEIVED SHOPPING VALUE AND LOYALTY: THE MODERATING ROLE OF DEAL-PRONENESS

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Purpose – This paper studies the effects of retailer app use on perceived shopping value and loyalty towards the retailer. It also investigates whether deal proneness moderates the relationship between app use and perceived shopping value.

Design/methodology/approach – A sample of 427 French consumers took part in an online survey enquiring about a recent shopping experience. We compared customers who used a retailer app during their shopping experience with those who did not. Mediation and moderated mediation using PROCESS were performed to identify whether retail app use improves loyalty intentions through perceived shopping value, with deal proneness used as a moderator.

Findings – Our results show a positive and direct effect of retailer app use on loyalty. The effect is also mediated by utilitarian and hedonic shopping values. We also highlight the fact that deal proneness moderates the mediation effect of both utilitarian and hedonic shopping values between retailer app use and loyalty. More specifically, retail app use significantly increases shopping value for deal-prone customers.

Originality – In the age of omnichannel retailing, this study offers potential contributions to improve our theoretical knowledge of the impact of retailer apps on retailer-customer relations, helping businesses to develop and implement appropriate app-related strategies.

Keywords: Deal proneness; retailer app; app use, loyalty to the retailer; perceived shopping value; omnichannel.

Introduction

Consumers increasingly use their mobile phones while shopping (Grewal *et al*., 2018; Fuentes *et al*., 2017) and retailers need to adapt accordingly (Holmes *et al.*, 2014) as mobile device technology transforms the retail shopping experience (Rippé *et al.,* 2017). Customers may use their mobiles in stores for several reasons (price comparisons, payment, etc.). Some uses, such as the Yuka app, are beyond a firm's control (Becker and Jaakkola, 2020). Conversely, in response to the increasingly competitive environment, retailers are developing their own apps – which can be viewed as a firm-controlled touchpoint.

Retailer apps provide customers with numerous services to enhance their shopping experience, enabling them to obtain product information, compare products, buy, share information on social networks, redeem coupons and locate stores, among other things (Molinillo *et al.,* 2020). Mobile app adoption is also changing the way customers interact with retailers (Kim *et al.,* 2015; McLean *et al.,* 2020). App adopters buy more items, more frequently, and spend more than non-adopters in the post app introduction period (Narang and Shankar, 2019).

Despite all the opportunities offered by retailers' apps, only 20% of French customers use such apps when grocery shopping, even though all the main retailers offer one (Nielsen study, 2019[1]). While the penetration rate of shopping apps varies across countries in the same way as digital use as a whole (Hootsuite, 2021[2]), more research is needed to help retailers exploit the potential of apps as a sales and engagement channel (Molinillo et al., 2020). This is all the more necessary for at least two reasons. Firstly, the role of mobile phones strengthened with the pandemic when self-service technologies were unavailable for security reasons.

[1] https://www.nielsen.com/fr/fr/insights/article/2019/apps-get-settled-in-everyday-races/
[2] https://wearesocial.com/digital-2021

Secondly, the introduction of 5G technology should offer new potentialities for retailers to enrich app use (e.g., augmented reality).

To date, mobile app studies have mainly focused on services, payment and banking, investigating topics related to app adoption (Japutra *et al*., 2021; Newman *et al.,* 2018), purchase behavior (Kim *et al.,* 2015; Liu and Sese, 2021; Wang *et al*., 2015) and satisfaction with apps (Molinillo *et al.* 2020; Japutra *et al.*, 2020; Iyer *et al.*, 2018). While a few studies have examined retailers' apps (Hew, 2017), little attention has been paid to how retailer app use influences customer–retailer relations, especially loyalty towards the retailer. Some studies have noted the interest of investigating this process, especially the impact of apps on customer loyalty, with satisfaction used as a mediating variable (Al-Nabhani *et al*., 2021; Iyer *et al.*, 2018; Molinillo *et al.*, 2020; Japutra *et al.*, 2021).

In the present study, we examine shopping value as a mediating variable between app use and loyalty towards the retailer since perceived value is considered a better predictor of loyalty than satisfaction (James *et al*., 2019; Jones *et al.,* 2006; Mencarelli and Lombart, 2017; Overby and Lee, 2006). To our knowledge, no previous studies on retailer apps have examined shopping value as an antecedent of loyalty, despite Voropanova's (2015) call for more research to examine the impact of retailer app use on key variables for retailers such as shopping value and loyalty. The positive relationship between perceived value and loyalty was first empirically supported in traditional brick-and-mortar retail settings where the main focus was on store loyalty (e.g., Adapa *et al*., 2020; Diallo *et al*., 2015; Mencarelli and Lombart, 2017). Other studies, such as Parasuraman *et al.* (2005), argue that the perceived value of an internet retailer has a significant and positive impact on customer loyalty intention towards the retailer in question. While Bui and Kemp (2013) show that hedonic shopping value influences repeat purchase intention for online music, more research is needed in the omnichannel area to capture the impact of perceived value on loyalty towards retailers. This would help retailers to provide

their customers with a seamless shopping experience by allowing them to shape their own consumption experience (Le and Nguyen-Le, 2021).

To address these research gaps, the present study aims to: 1) investigate how in-store retailer app use affects loyalty to retailers directly or indirectly via the mediation of perceived shopping value and 2) investigate whether the impact of retail app use on perceived shopping value is greater for deal-prone consumers. The context of hypermarket and supermarket grocery shopping experiences provides an interesting setting in which to examine these relations as the sector is highly competitive and grocery shopping is often perceived as a chore for consumers (Smith and Carsky, 1996). In this context consumers have varying price sensitivity and deals play a major role in creating value (Shukla and Babin, 2013; Kwon and Kwon, 2013). Pursuant to Oh and Kwon (2008)'s study on consumer responses to price promotions in stores and on internet channels, it is important to understand whether consumers respond differently in an omnichannel context in which they can use their mobile in-store.

Overall, this study contributes to our understanding of the impact of apps on retailer-customer relations, potentially helping to guide businesses in developing and implementing appropriate app-related strategies in the post-Covid area. It extends the literature pertaining to perceived value as a means to predict loyalty towards the retailer and underscores the importance of the simultaneous consideration of hedonic and utilitarian value in consumption. We also highlight the role played by deal proneness. Understanding value creation at the intersection of the physical store and retailer apps, together with its impact on loyalty, is crucial to understanding and adapting to technology-driven customers in the omnichannel context.

Conceptual framework

Customer loyalty and mobile apps

Customer loyalty is a crucial issue for retailers. Loyalty towards retailers reflects customers' willingness to consider the retailer as their first choice, give the retailer positive reviews and recommend the retailer to other people (Zeithaml *et al.,* 1996). Despite numerous studies, retailers need more insights into loyalty antecedents and the building mechanisms, especially in the omnichannel context (Molinillo *et al.,* 2019; Rokonuzzaman *et al*., 2020).

A key feature of retailer apps is their capacity to provide anytime anyway information (Narang and Shankar, 2019). Information searches develop consumer knowledge and engagement and reduce perceived risk, thereby improving loyalty intentions (Rokonuzzaman *et al.,* 2020). Mobile use during in-store shopping activity increases customer satisfaction (Grewal *et al.,* 2018) and also has a positive and direct impact on store loyalty (Collin Lachaud and Diallo, 2021).

At the post-purchase stage, mobile apps offer customers more flexibility and control of retailer rewards programs and can have a positive impact on customer loyalty (Roggeveen and Sethuraman, 2020). Mobile apps can help consumers to take control of their omnichannel shopping experience (de Haan *et al.,* 2018) and make it frictionless, with a positive impact on loyalty in the context of online grocery shopping (Singh, 2019). In view of previous studies, we can assume that:

H1: Retailer app use during the shopping experience (versus no use) has a positive effect on customer loyalty intention.

Shopping value and its mediation effect on loyalty

Customer perceived value has its roots in equity theory, which considers that consumers will feel fairly treated if their outcome/input correlates with the service provider's outcome/input (Oliver and De Sarbo, 1988). Perceived value is the result of consumers' overall assessment of what they receive in exchange for what they give, including monetary payment and non-

monetary sacrifices (Zeithaml, 1988). Perceived value as a key outcome variable in the general model of consumer experience, called shopping value, results from the interaction between the consumer and the shopping environment (Babin *et al.,* 1994; Jones *et al.,* 2006). The literature often identifies two dimensions of shopping value. The same act of purchase can combine these two dimensions in higher or lower proportions (Babin *et al.,* 1994). Utilitarian shopping value involves fulfilment of the instrumental expectations consumers may have for a product or service. It can be associated with rational motives related to time, place and possession. As a result, it is often linked to shopping efficiency, and utilitarian shoppers are viewed as rational problem solvers and value seekers (Parsad *et al.,* 2021). Holbrook and Hirschman (1982) raised the issue of human needs as variety, novelty and surprise factors. Hedonic shopping helps to fulfill fantasies and provides a sense of fun during the purchase process rather than simply buying for its own sake (Holbrook and Hirschman, 1982). Hedonic value is therefore more subjective and personal. Shopping value is essential in explaining loyalty behavior (Mencarelli and Lombart, 2017; Parasuraman and Grewal, 2000). This positive relationship has frequently been empirically supported in traditional brick-and-mortar retail settings (e.g., Jones *et al.,* 2006; Diallo *et al*., 2015; Mencarelli and Lombart, 2017; Vieira *et al*., 2018).

Smartphones offer consumers both utilitarian and hedonic benefits (Ha and Park, 2013). In the retailing context, Voropanova (2015) suggests that the use of a mobile during shopping improves aspects of shopping productivity (time/effort savings, money savings, right purchase, and emotional benefits from shopping), which in turn lead to higher shopping value. Molinillo *et al*. (2019) and Hamouda (2021) conceptualize the consumer app experience around two dimensions (i.e., cognitive and affective). As some studies note that customer experience overlaps with outcome variables such as value (Becker and Jaakkola, 2020), we consider that retailer app use can improve utilitarian and hedonic shopping value. In the context of mobile

apps, Picot-Coupey *et al.* (2020) suggest that despite changes in purchasing behavior, the search for utilitarian and hedonic value in consumer experiences persists.

Collin-Lachaud and Diallo (2021) investigate the relationship between in-store smartphone use, store value and store loyalty, arguing that this effect is significantly mediated by the store's hedonic value dimension, but not by its utilitarian value. Van Heerde *et al.* (2019) confirm the utilitarian value of retailer apps and their role as a segmentation strategy to enhance customer engagement. As retailer apps differ from other apps due to their firm-controlled touchpoint, we can expect both dimensions of shopping value to mediate the relationship between retailer app use and retailer loyalty. In the case of smart retail technologies, Adapa *et al.* (2020) argue that both utilitarian and hedonic benefits drive consumers towards shopping activities and that perceived shopping value has a positive influence on retail store loyalty. We thus hypothesize that:

H2. Retailer app use during the shopping experience has a positive effect on customer loyalty intention through the mediation of perceived utilitarian value.

H3. Retailer app use during the shopping experience has a positive effect on customer loyalty intention through the mediation of perceived hedonic value.

Deal proneness

The omnichannel environment leads to channel proliferation for promotions. The grocery industry uses promotions extensively. Apps are the primary source of deals used by the "mobile-to-store deal shoppers" segment and physical stores are the primary channel for their usage (Valentini *et al.,* 2020). Deal proneness is defined as responsiveness to promotions and deals (Blattberg and Neslin, 1990) such as coupons, rebates and sales (Kwon and Kwon, 2013). It is often conceptualized at a deal-specific level (e.g., coupon proneness, flyer proneness) or at a general level (Lichtenstein *et al.,* 1997). We conceptualize it at a general level since customers

who modify their purchase behavior for one type of promotion are likely to do the same for other promotions (Price *et al*., 1988).

Deal proneness influences mobile service adoption such as payment (Handarkho and Harjoseputro, 2020) and M-coupon applications (Liu *et al.,* 2015). Consumers with higher coupon proneness appear to be more likely to use M-coupon applications.

Shukla and Babin (2013) examine deal proneness as an antecedent of value creation. Considering deal proneness at store level to be associated with both exposure and usage of promotions, they show a positive impact of deal proneness on utilitarian value, but no impact on hedonic value. They thus call for further examination of the relation between deal proneness and shopping value. However, while Arnold and Reynolds (2003) suggest there is a positive link between price sensitivity and hedonic value, Lee *et al.* (2009) point to a negative relationship between the two. Furthermore, Lee *et al.* (2009) observe no relationship between price sensitivity and utilitarian value. These contrasting findings argue in favor of new research on the impact of deal proneness on perceived shopping value.

The grocery shopping activity is often described as stressful and unpleasant (Smith and Carsky, 1996). As a result, retailer app use may confer both utilitarian and hedonic value on consumers who are sensitive to deals. While deal-prone segments are often described as heavy users, lower income or non-loyal to retailers, Valentini *et al.* (2020) identify other variables to describe them. For example, customers can be motivated by quality upgrade, exploration or entertainment, which are associated with hedonic motives to a greater extent. This confirms the different levels of hedonic (opportunities for value expression, entertainment and exploration) and utilitarian benefits (savings, better product quality and improved shopping convenience) of promotions identified by Chandon *et al.* (2000). Many consumers spend considerable time and effort hunting for deals and enjoy getting bargains as well as the price savings (Talukdar *et al.*, 2010). This suggests that buying items on promotion has psychological benefits, irrespective of

the utilitarian outcomes. Deal proneness can therefore be a moderator of customer experience and its consequences as suggested by Verhoef *et al.* (2009). In their conceptual framework of customer experience management, these authors show that price sensitivity can be a moderator of customer experience and its consequences. We thus hypothesize that:

H4. When customers are sensitive to deals, retail app use significantly increases utilitarian shopping value.

H5. When customers are sensitive to deals, retail app use significantly increases hedonic shopping value.

Our proposed research model is presented in Figure 1 and is tested empirically in the grocery retailing sector where all the main retailers offer such apps to their customers.

[Insert Figure 1 here]

Method

A total of 455 French consumers took part in an online survey enquiring about a recent shopping experience (appendix A). The invitation with the URL link to the online survey was posted on social networks and sent by email to consumers who had previously given their consent to participate in academic research. Following Molinillo *et al.* (2020), a snowball sampling procedure was used because it facilitated the distribution of the survey among the target population. The data were collected in January 2021. All participation was voluntary, and no credits were given. We excluded 28 participants for failing the attention checks (e.g., "*If you are reading this, please select disagree*"), resulting in the final sample made up of 427 participants (68.5% female; 59.6% over 25 years of age). Half of the participants declared that

they used the retailer's mobile app when visiting the store. The sample frame primarily included Millennials, consistent with the retail environment where these customers are most likely to use retailer apps (Iyer *et al*., 2018). In the same vein, women are over-represented as it is still predominantly women (63%) who manage the shopping activity in France (In-Store Media – Ipsos Barometer, 2019).

We used previously validated scales to measure each investigated construct. The measures are presented in full in appendix B. Utilitarian value was measured with 3 items ($\alpha = 0.71$) and hedonic value with 8 items ($\alpha = 0.94$) adapted from Picot-Coupey *et al.* (2020) who recently validated the seminal scale of Babin *et al.* (1994) in the context of mobile apps. To measure loyalty intention towards the retailer ($\alpha = 0.87$), we adopted the scale developed by Zeithaml *et al.* (1996), validated in the French context by Mencarelli and Lombart (2017). Deal proneness ($\alpha = 0.86$) was measured by the scale of Shukla and Babin (2013). All the question items employed seven-point Likert-type scales (1 = strongly disagree, and 7 = strongly agree).

Findings

Preliminary analysis

The two groups (use of retailer's app *versus* no use of the app during the shopping experience) can be considered as comparable (appendix A) insofar as no difference was observable between them at the 5% threshold in terms of gender ($\chi2 = 0.31$, $p = 0.58$), age ($\chi2 = 1.23$, $p = 0.74$), social classification ($\chi2 = 1.00$, $p = 0.80$), education level ($\chi2 = 0.13$, $p = 0.93$), retailer ($\chi2 = 1.46$, $p = 0.917$), store visit frequency ($\chi2 = 1.34$, $p = 0.51$) and timeframe ($\chi2 = 32.74$, $p = 0.25$).

The first step was to determine whether app use or not during the shopping experience affected the dependent measures differently. We conducted an independent *t-test* with the two different scenarios as independent variables and utilitarian value, hedonic value, deal proneness and customer loyalty as dependent variables. The results showed a significant difference for hedonic value, deal proneness and customer loyalty when the customers used the retailer's mobile app during their shopping experience (Table I).

[Insert Table I here]

We used a linear regression analysis to investigate whether retailer app use during the shopping experience (versus no use) affected customers' loyalty intention (H1). The antecedent variable (app use) was scored using two values (0 = no use, 1 = use). The model was significant, $R = 0.24$, $R^2 = 0.06$, $F(1,425) = 26.30$, $p < .001$, meaning that retailer app use during the shopping experience affected loyalty towards the retailer both directly and positively. Therefore, H1 was supported.

Testing mediation effects

Hypotheses 2 and 3 suggest that retailer app use has a positive effect on customers' loyalty intention through the mediation of perceived utilitarian value (H2) and hedonic value (H3). The bootstrapping method of 5000 resamples using Hayes (2018)'s PROCESS macro for SPSS with Model 4 was employed to investigate the mediation effects. The results show that app use significantly and positively influences both perceived utilitarian value ($B = 0.31$, $t(1, 425) = 2.63$, $p < 0.01$) and perceived hedonic value ($B = 0.80$, $t(1, 425) = 5.77$, $p < 0.001$) (Table II).

The total effect (i.e., the effect of X on Y before including the mediators in the model) of app use on loyalty intentions was significant (B = 0.64, t(1,425) = 5.13, p < 0.001, 95% CI [0.39, 0.88]) (c path). After including the mediators in the model, the direct effect of app use on loyalty intention remains significant (B = 0.31, t(1, 425) = 2.95, p < 0.01, 95% CI [0.10, 0.52]) (c′ path) (see Table II for the respective direct effects and regression coefficients). There is a significant indirect effect of app use on loyalty intention through perceived utilitarian value as CI values do not include zero (B = 0.16, 95% CI [0.03, 0.29]). H2 is therefore supported. There is also a significant indirect effect of app use on loyalty intention through perceived hedonic value (B = 0.17, 95% CI [0.09, 0.26]). As a result, H3 is supported. Lastly, the indirect effect contrast indicates that the indirect effect through utilitarian value is not significantly different from the indirect effect through hedonic value (B = -0.01, 95% CI [-0.15, 0.15]).

To confirm the robustness of the results, a check incrementally added consumer characteristics as control variables. The results remain significant, with gender not affecting utilitarian value (B = -0.12, t(1, 425) = -0.93, p = 0.35), hedonic value (B = -0.11, t(1, 425) = -0.73, p = 0.46) or loyalty intention (B = 0.09, t(1, 425) = 0.84, p = 0.40). The same lack of effect was observed with age ($B_{\text{Utilitarian}}$ = -0.04, t(1, 425) = -0.70, p = 0.48; B_{Hedonic} = 0.06, t(1, 425) = 0.80, p = 0.43; B_{Loyalty} = -0.03, t(1, 425) = -0.63, p = 0.53) or social classification ($B_{\text{Utilitarian}}$ = 0.02, t(1, 425) = 0.27, p = 0.78; B_{Hedonic} = 0.05, t(1, 425) = -0.60, p = 0.55; B_{Loyalty} = -0.01, t(1, 425) = -0.02, p = 0.98).

Testing moderated mediation effects

H4 and H5 respectively suggest that deal proneness moderates the mediation effect of utilitarian and hedonic value between app use during the shopping experience and customer loyalty. The bootstrapping method of 5000 resamples using Hayes (2018)'s PROCESS macro for SPSS with Model 7 was employed to investigate the moderated mediation effect. To probe the moderation

of the indirect effect, the bootstrap method provides estimates of the conditional indirect effect of app use (X) on customer loyalty (Y) through utilitarian value (Med1) and hedonic value (Med2) at various values of deal proneness (Mod). First, our analysis reveals a significant interaction effect ($B = 0.18$, 95% CI [0.01, 0.35], $t(1, 425) = 2.11$, $p = 0.03$), indicating that deal proneness moderates the relationship between app use and perceived utilitarian value, which supports H4. Second, the analysis also reveals that deal proneness moderates the relationship between app use and perceived hedonic value, supporting H5 ($B = 0.20$, 95% CI [0.02, 0.38], $t(1, 425) = 2.13$, $p = 0.03$). To further clarify the two-way interaction, spotlight analyses were conducted at one standard deviation above and below the mean deal proneness score. As Table III shows, we found a significant indirect effect of app use on customer loyalty through utilitarian value only when the deal proneness level is equal to the mean ($B = 0.29$, 95% CI [0.05, 0.53], $t(1, 425) = 2.38$, $p = 0.02$) or one standard deviation above the mean ($B = 0.47$, 95% CI [0.16, 0.79], $t(1, 425) = 2.94$, $p = 0.01$). We also found that hedonic value is a significant mediator between app use and customer loyalty only when the deal proneness level is equal to the mean ($B = 0.57$, 95% CI [0.31, 0.83], $t(1, 425) = 4.35$, $p < 0.001$) or one standard deviation above the mean ($B = 0.77$, 95% CI [0.43, 1.11], $t(1, 425) = 4.46$, $p < 0.001$). In short, we observe an additive effect of app use and deal proneness on both utilitarian and hedonic values as, when customers use a retailer app while shopping, the more they are deal prone, the higher their utilitarian and hedonic values.

[Insert Table II here]

[Insert Table III here]

Discussion and conclusions

Theoretical contributions

The aim of this study was to investigate how retailer app use influences customer loyalty directly and indirectly through the mediation effect of shopping value dimensions. We provide a first contribution to the literature on in-store smartphone use and, more specifically, on existing research both on retailer app use and customer loyalty in an omnichannel retail context (Grewal *et al.,* 2018; van Heerde *et al.,* 2019).

Our findings confirm that retailer app use affects customers' loyalty towards the retailer both directly and indirectly through the mediation of both utilitarian and hedonic values.

The direct effect can be explained by the cognitive benefit of apps evoked by previous authors such as Narang and Shankar (2019) or Fuentes *et al*. (2017). This extended access to information develops customer knowledge, reduces perceived risk due to information asymmetry and improves engagement towards the retailer (Rokonuzzaman *et al.,* 2020).

The findings concerning the indirect effect of app use on loyalty show no significant difference between utilitarian and hedonic values. However, retailer app use has a greater effect on hedonic value, while utilitarian value has a greater effect on customer loyalty. Our findings differ from Collin Lachaud and Diallo (2021) who noted a low mediating impact of utilitarian value on store loyalty. However, they did not investigate the specific case of retailer app use which can offer promotions compared to other apps such as Yuka.

The positive indirect effect between app use and loyalty through hedonic value suggests that customers who enjoy a pleasant shopping experience when using a retailer app are more likely to subsequently stay loyal to the retailer. Contrary to Picot Coupey *et al.* (2020)'s suggestion that customers do not look for experiential experiences when using mobile apps, we consider in-store retailer app use to have a significant impact on hedonic value. This is

consistent with previous studies in both offline and online contexts (Diallo *et al.*, 2015; Mencarelli and Lombard, 2017; Parasuraman *et al.*, (2005) and the work of Collin-Lachaud and Diallo (2021) on app use. Positive emotional responses (fun, pleasure, evasion, excitement) tend to lead to stronger consumer commitment to the retailer (Jones *et al.,* 2006). Thus, this study contributes to our understanding of shopping value in an omnichannel context as it empirically demonstrates the effects of retailer app use on shopping value.

Our results also enrich the literature on deal proneness. Deal proneness plays a central moderating role between retailer app use, shopping value and loyalty. For customers who are most sensitive to promotions, app use can deliver greater utilitarian and hedonic value, which in turn leads to stronger loyalty towards the retailer. These results contradict those of Shukla and Babin (2013) who only suggest a positive relationship between deal proneness and utilitarian value. The difference can be explained by the fact that these authors were only interested in the store environment and not in retailer app use which can provide customers with both information and entertainment (van Heerde *et al*., 2019).

Practical implications

Our findings offer important insights for managers and retail owners. We show that a retailer app can be a powerful tool in increasing customer loyalty to the retailer both directly and indirectly through the mediation effect of not only utilitarian but also hedonic shopping values, adding the benefits of online shopping to the in-store shopping experience. As a result, retailers should not be afraid to invest in such an app with the objective to improve its penetration rate among their customers. Moreover, it is also important to note that when customers are using the retailer's app, it reduces the likelihood of third-party apps being used, such as Yuka or Open Food Facts which are beyond a firm's control (Becker and Jaakkola, 2020). Finally, this allows retailers to regain control over the in-store shopping experience and is in line with omnichannel

literature which suggests that retailers should integrate touchpoints across channels to promote seamless experiences

Retailers obviously need to offer apps that meet basic functions such as managing promotional coupons, finding information, organizing shopping lists and allowing customers to have fun and enjoy positive emotions, as previously argued by Iyer *et al*. (2018). As a result, managers should use gamification tactics in order to offer a more immersive shopping experience to app users. Nevertheless, such apps must meet the usability condition (in terms of ease of use, usefulness, personalization and enjoyment) as this plays a critical role in developing customer loyalty (Baek and Yoo, 2018; Mclean *et al.,* 2020).

Finally, retailers could encourage their customers to use their app by rewarding them via a loyalty program. The strong moderating effect of deal proneness suggests that managers should not consider consumers as a homogeneous group. Both utilitarian and hedonic shopping values of retailer app use are greater for promotion-sensitive customers. This finding invites managers to ensure they understand the personas of their customers well. Van Heerde *et al.* (2019) highlighted the role of retailer apps as a segmentation strategy to enhance customer engagement. Exclusive offers could be proposed only on the app to improve the utilitarian value for shoppers looking for easy savings. The app could also improve hedonic value for customers interested in exploration (Valentini *et al.,* 2020). Lastly, much the same as Carrefour's app, which gives its customers the option to choose the product categories where they can get promotions, the present study suggests that retailers can benefit from customizing promotions to match consumers' shopping interests (Büttner *et al.*, 2015).

Limitations and future research

We believe our study offers useful insights in the field of retailer apps. Nonetheless, some limitations need to be acknowledged that we present in this section along with several

suggestions for future research. First, the study was carried out in France. A cross-cultural comparison would therefore be interesting as cultural differences may be significant, both in terms of app use (Hootsuite, 2021) and deal proneness (Sharma and Singh, 2018). In addition, we only looked at whether or not customers used the retailer's app during their shopping experience. However, we did not include other uses they might make of it (i.e., consulting the balance of points, benefiting from a promotion, scanning products, consulting a shopping list, paying, playing, etc.). Holmes *et al.* (2014) suggest that use of mobiles may vary at different stages of a consumer's decision-making process. Moreover, not all retailer apps offer the same services. Overall, future research could contribute further by identifying and investigating specific situations in which retailer app use has a positive effect on shopping value. Finally, our perception of shopping value takes the two most frequently used dimensions into account but does not consider the social interactions that take place in an omnichannel context (Huré *et al*., 2017). A future study could address social value as a third dimension of shopping value.

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