

Does Augmented Reality really engage consumers? Exploring AR driven consumer engagement

Ziyou Jiang, Yoo-Kyoung Seock, Jewon Lyu, University of Georgia

Keywords: Augmented Reality, consumer m-store engagement, mobile store, usage intention

Introduction. Adopting mobile AR technology such as Sephora Virtual Artist, IKEA Place, Gucci, AR is an increasing trend for retailers to attract more consumers by providing further visualized experiences when browsing products (Park & Yoo, 2020). Vertebrae.com and the BRP reported that three out of four Americans would like to be involved in AR experiences, and 48% of consumers are more willing to shop and buy products from online and offline shops that offered AR experiences. The novel AR technology provides consumers the similar "in-store" shopping experiences, so several benefits, including elevated shopping experience, improved shopping efficiency, and reduced return rates, are expected (Braslavskaia, 2020). By creating immersive and interactive shopping experiences, AR is expected to maximize consumer engagement (Scholz & Smith, 2016). Consumer Brand Engagement (CBE) refers to the process of developing consumers' cognitive, affective and behavioral activities related to an active specific interaction (Demangeot & Broderick, 2016; Hollebeek et al., 2014). Researchers have explored CBE in different contexts, including marketing context (e.g., Vivek et al., 2012), tourism context (e.g., Harrigan et al., 2018), and banking context (e.g., Khan et al., 2016) to understand consumers' continuing involvement in a particular retailer/brand. However, AR research that has investigated antecedents and consequences of using AR is limited in the fashion retailing realm. Derived from Hollebeek et al.'s (2014) consumer brand engagement (CBE) model, the present study aims to investigate factors that may lead consumers to use mobile stores (m-store) through AR apps and examine its effects on usage intention. The current study offers theoretical implications by assessing the consumer m-store engagement (CSE) in the AR retailing context and provides practical managerial implications based on the findings.

Hypotheses development. Conceptually grounded in Hollebeek et al.'s (2014) approach, the proposed relationships were developed to validate the application of CBE in the context of AR mobile shopping experience. Hollebeek et al. (2014) proposed three consumer brand engagement constructs: cognitive, emotional, and behavioral activities, which, in turn, promote positive outcomes to brands. AR m-store can be considered the same feature as a brand that offers interactions offline, and we expected increased involvement might affect more mobile stores' engagement. Consumer involvement refers to "a person's perceived relevance of the object based on inherent needs, values, and interests" (Zaichkowsky, 1985, p. 342). In an online shopping context, consumer involvement and how the content is presented can be facilitated by the interface (Griffith et al., 2001). Consumer involvement is crucial since it would result in consequences for consumers' intentions (Griffith et al., 2001). Drawing on AR context, the technology attributes (i.e., interactivity and virtuality) also lead to higher involvement which elicits consumers' behavioral responses (Javornik, 2016). Harrigan et al. (2018) indicated that as consumers perceive AR apps (i.e., interface, virtuality, and interactivity) more related to them, they are likely to engage in the app cognitively and emotionally. The difference between

involvement from engagement is whether consumers participate in activities (Wang et al., 2020). Involvement enables consumers to have intellectual responses that emerge from mental process feedback and generate emotional responses from consumer interaction with the subject (Zhang et al., 2015). Accordingly, involvement displays a motivation processing about an object to elicit activation (Harrigan et al., 2018). Based on Harrigan et al.'s (2018) study, when consumers shop using the AR app, involvement with the AR app leads consumers to think that the AR app is interesting, relevant, or needed at the cognitive level (H1a). At the affective level, involvement with the AR app leads consumers to have positive experiences of excitement, appeal, or fascination (H1b). Finally, at the activation level, m-store engagement activities will be generated (H1c). Hollebeek (2011) suggested that the more consumers engage with a brand, the more they are likely to develop brand usage intention. Bringing the concept to the AR retailing context, we expected that CSE might affect consumer usage intention of m-store with AR app by three different levels (cognitive processing, affection, and activation). According to Qing et al.'s (2021) study in the context of branded apps, the three different levels of CBE enable consumers to consider developing a relationship with a brand, have positive experiences through emotional benefits, own a positive relationship with a brand based on consumers' satisfaction, and thus generate consumers' usage intention. Similarly, CSE with AR apps might generate positive outcomes in strengthening the relationship between consumers and m-stores and positively influence the usage intention of m-store with AR app by the similar processing through three different levels of CSE (H2-H4).

Methodology. A quantitative deductive survey method was utilized. The data were collected using a convenient sample in a Southeastern University (n=164). After excluding incomplete responses (n=2), a total of 162 usable responses were retained and used to analyze the suggested relationships. The participants were asked to try the AR app, Wanna Kicks, with his/her mobile phone and given the task of finding a pair of new sneakers. The participants also were requested to upload the photo to validate his/her activity and interaction with the app. A series of statistical analyses using SPSS and MPlus 8 were utilized to test model fit and suggested relationships.

Results. Cronbach's alpha for all constructs ranged from 0.756 and 0.947, and the composite reliability ranged from 0.758 to 0.947, demonstrating good reliability. Validities were also assessed through investigation of factor loadings (convergent validity), comparisons of squared correlations, and AVE (discriminant validity). The initial confirmatory analysis results ($\chi^2/df = 2.158$, RMSEA = 0.085, CFI = 0.898, TLI = 0.884, SRMR = 0.069) was slightly below of the threshold; thus, five items with low factor loading were dropped and improved the fit ($\chi^2/df = 2.093$, CFI = 0.931, TLI = 0.918, RMSEA = 0.082, SRMR = 0.054). All suggested relationships were supported (H1a: $\beta = 0.477$, $p < 0.01$, H1b: $\beta = 0.644$, $p < 0.01$, H1c: $\beta = 0.501$, $p < 0.01$, H3: $\beta = 0.220$, $p < 0.01$, H4: $\beta = 0.398$, $p < 0.01$) except for H2 ($\beta = 0.132$, $p > 0.05$). Thus, consumer involvement with AR app was a significant predictor of the each of three dimensions of CSE, and the affective and behavioral factors of CSE were both significant predictors of usage intention of m-store. In addition to the direct effect, the results also showed the mediation effect of CSE on the relationship between consumer involvement of AR app and usage intention of m-

store with AR app except for cognitive processing dimension ($\beta = 0.063$, $p > 0.05$). The total indirect effect of CSE ($\beta = 0.404$, $p < 0.001$), affection ($\beta = 0.142$, $p < 0.05$) and activation ($\beta = 0.199$, $p < 0.01$) on the relationship between involvement and usage intention are statistically significant. The findings showed that CSE partially mediates the relationship between involvement and usage intention.

Discussion. The results of this study contribute to the existing literature by confirming that Hollenbeck's (2014) CBE model in AR shopping experience applies to the fashion retailing context. Our findings demonstrate that AR supports consumers' engagement with the retailers and their products, enabling retailers to develop a solid relationship with consumers. Retailers would increase the likelihood of consumers' use of AR apps by focusing on developing CSE. Thus, retailers should incorporate AR apps to add value to the consumers (Mclean et al., 2019). Our findings also provide an insight to retailers that interactive technology may serve as a new tool to engage consumers emotionally and cognitively in the digital era.

Reference:

- Braslavskaia, S. (2020, July 21). Augmented Reality Retail Trends Disrupting the Industry. *Softengi.Com*. <https://softengi.com/blog/augmented-reality-retail-trends-disrupting-the-industry/>
- Demangeot, C., & Broderick, A. J. (2016b). Engaging customers during a website visit: a model of website customer engagement. *International Journal of Retail & Distribution Management*, 44(8), 814–839. <https://doi.org/10.1108/ijrdm-08-2015-0124>
- Griffith, D. A., Krampf, R. F., & Palmer, J. W. (2001). The Role of Interface in Electronic Commerce: Consumer Involvement with Print Versus Online Catalogs. *International Journal of Electronic Commerce*, 5(4), 135–153. <https://doi.org/10.1080/10864415.2001.11044219>
- Harrigan, P., Evers, U., Miles, M. P., & Daly, T. (2018). Customer engagement and the relationship between involvement, engagement, self-brand connection and brand usage intent. *Journal of Business Research*, 88, 388–396. <https://doi.org/10.1016/j.jbusres.2017.11.046>
- Harmeling, C. M., Moffett, J. W., Arnold, M. J., & Carlson, B. D. (2017). Toward a theory of customer engagement marketing. *Journal of the Academy of Marketing Science*, 45, 312–335. <https://doi.org/10.1007/s11747-016-0509-2>
- Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer Brand Engagement in Social Media: Conceptualization, Scale Development and Validation. *Journal of Interactive Marketing*, 28(2), 149–165. <https://doi.org/10.1016/j.intmar.2013.12.002>
- Hollebeek, L. (2011). Exploring customer brand engagement: definition and themes. *Journal of Strategic Marketing*, 19(7), 555–573. <https://doi.org/10.1080/0965254x.2011.599493>
- Javornik, A. (2016). Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. *Journal of Retailing and Consumer Services*, 30, 252–261. <https://doi.org/10.1016/j.jretconser.2016.02.004>

- Khan, I., Rahman, Z., & Fatma, M. (2016). The role of customer brand engagement and brand experience in online banking. *International Journal of Bank Marketing*, 34(7), 1025–1041. <https://doi.org/10.1108/ijbm-07-2015-0110>
- Park, M., & Yoo, J. (2020). Effects of perceived interactivity of augmented reality on consumer responses: A mental imagery perspective. *Journal of Retailing and Consumer Services*, 52. <https://doi.org/10.1016/j.jretconser>
- Qing, T., & Haiying, D. (2021). How to achieve consumer continuance intention toward branded apps—from the consumer–brand engagement perspective. *Journal of Retailing and Consumer Services*, 60, 102486. <https://doi.org/10.1016/j.jretconser.2021.102486>
- Scholz, J., & Smith, A. N. (2016). Augmented reality: Designing immersive experiences that maximize consumer engagement. *Business Horizons*, 59(2), 149–161. <https://doi.org/10.1016/j.bushor.2015.10.003>
- Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer Engagement: Exploring Customer Relationships Beyond Purchase. *Journal of Marketing Theory and Practice*, 20(2), 122–146. <https://doi.org/10.2753/mtp1069-6679200201>
- Wang, Y., Wang, J., Yao, T., Li, M., & Wang, X. (2020). How does social support promote consumers' engagement in the social commerce community? The mediating effect of consumer involvement. *Information Processing & Management*, 57(5), 102272. <https://doi.org/10.1016/j.ipm.2020.102272>