Journal of Business Research 92 (2018) 290–299

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

The smartness paradox: the moderating effect of brand quality reputation on consumers' reactions to RFID-based smart fitting rooms

Amaradri Mukherjee[a], Ronn J. Smith[b,*], Anna M. Turri[c]

[a] Department of Marketing, School of Business Administration, Portland State University, 631 SW Harrison St, Portland, OR 97201, United States of America
[b] Department of Marketing, Sam M. Walton College of Business, University of Arkansas, Business Building 302, Fayetteville, AR 72701, United States of America
[c] Department of Marketing, McCoy College of Business Administration, Texas State University, McCoy Hall 544, San Marcos, TX 78666, United States of America

ARTICLE INFO

Keywords:
Smart fitting rooms
RFID
Brand quality reputation
Perceived shopping satisfaction
Perceived privacy
Purchase intention

ABSTRACT

With the growing prevalence among retailers to create a unique shopping experience, RFID-based smart fitting rooms are gaining popularity. These RFID-based smart fitting rooms tend to gather consumer data for a better personalized experience. Drawing from cue congruity and cue scope literature, this research explores the impact of RFID-based smart fitting rooms on consumer perceptions of the shopping experience, privacy, and purchase intentions. Results from two studies indicate that RFID-based smart fitting rooms will only have a positive effect for brands with high-quality reputations. However, in the presence of Federal Trade Commission (FTC) data security disclosure, consumers react favorably towards RFID-based smart fitting rooms regardless of brand quality reputation. The findings indicate that perceived shopping satisfaction and perceived privacy will mediate these effects on purchase intention. The authors discuss implications of the findings, especially about the effective reach of RFID-based smart fitting rooms for brands with varying quality reputations.

1. Introduction

Today retailers are constantly seeking ways to more effectively capture consumers' attention and engage them (Grewal, Iyer, & Levy, 2004). Personalized services and interactive shopping experiences are some of the methods used to increase consumer engagement (Jones, Mothersbaugh, & Beatty, 2002). Smart fitting rooms based on radio frequency identification (RFID) are one such personalized experience that retailers are implementing with many examples emerging in the marketplace. Nordstrom has experimented with RFID technology in two of its stores in recent years (Wahba, 2014). Ralph Lauren also has launched new RFID-based interactive fitting rooms that provide consumers with the choice of different light settings (Fisher, 2015; Swedberg, 2015).

These RFID-based interactive fitting rooms use motion sensor technology to detect a customer's facial and body features and then activate a corresponding compliment stored within its system (Davies, 2015). Interactive smart fitting rooms create personalized experiences, such as providing clothing suggestions based on consumer data collected during shopping. Despite the rapid implementation of RFID technology for personalized services, research is sparse for how consumers will react to RFID-based changes in the shopping environment. Specifically, as RFID-based smart fitting rooms tend to gather consumer-specific information to create unique shopping experiences, the present research aims to develop a richer understanding of consumers' reactions to RFID-based smart fitting rooms and how they impact consumers' privacy, shopping satisfaction perceptions, and purchase intentions.

Technological advances are increasingly influencing consumers' shopping behavior (Rohm & Swaminathan, 2004; Senecal, Kalczynski, & Nantel, 2005). Thus, retailers have been using RFID technology to create personalized services, such as speedy checkouts and shopping carts, and implement "*smart*" fitting rooms to improve consumer experience. A 2015 GS1 US Survey shows that 48.2% of manufacturers have already implemented item-level RFID. In addition, 21.1% plan to implement RFID over the next year, and another 18.4% plan to implement RFID over the next two years. Although marketers have devoted a great amount of time and money to creating effective merchandise presentations, less is known about consumers' reactions to the RFID-based interactive shopping experiences. Previous literature has identified that consumers tend to associate their shopping experience with the quality reputations of brands and brand image (Brakus, Schmitt, & Zarantonello, 2009). Thus, understanding whether brand reputation moderates the effectiveness of an RFID-based shopping experience, specifically smart fitting rooms, is managerially, and theoretically, very relevant.

* Corresponding author.
E-mail addresses: amaradri@pdx.edu (A. Mukherjee), rjsmith@walton.uark.edu (R.J. Smith), aturri@txstate.edu (A.M. Turri).

https://doi.org/10.1016/j.jbusres.2018.07.057
Received 10 January 2017; Received in revised form 30 July 2018; Accepted 31 July 2018

Using both university students and a national sample across two main studies, we find convergent evidence that RFID-based smart fitting rooms positively influence consumers' purchase intention, primarily for brands with higher quality reputations. Further, we empirically test the psychological mechanisms of perceived shopping satisfaction and perceived privacy on purchase evaluations. Also, we test the impact of Federal Trade Commission (FTC) data security standards disclosure as a trust-building strategy in reducing privacy concerns of consumers. Data security standards are equally monitored by the FTC for all retailers. In the presence of such disclosures, consumer privacy concerns are attenuated, and disclosure increases overall purchase intentions of consumers regardless of retailers' quality reputations. Thus, we provide a better understanding of the effectiveness of RFID-based interactive shopping experiences for apparel retailers.

2. Conceptual model and hypotheses

When evaluating a product in a retail store, consumers are often faced with various cues and signals. Past research shows that consumers use these different cues to assess product quality and to make purchase decisions (Dawar & Parker, 1994; Purohit & Srivastava, 2001; Rao & Monroe, 1989). Purohit and Srivastava (2001) classified cues as either long-lasting (i.e., high-scope) or transient (i.e., low-scope) in nature. The long-lasting, or high-scope, cues are ones that have progressed over time with a valence that cannot be changed instantaneously. These cues are stable and strong, like a retailer's reputation, brand image, or brand quality perceptions. In contrast, transient, or low-scope, cues can change easily and quickly and include cues such as product warranty information. Consumers tend to use these low- and high-scope cues in a cumulative fashion to formulate an evaluation of the retailer and/or the product under consideration (Biswas, Pullig, Yagci, & Dean, 2002).

Past literature has shown divergent findings on a consumer's simultaneous usage of low-scope and high-scope cues (Alford & Biswas, 2002; Goodstein, 1993; Purohit & Srivastava, 2001). Some research has shown that low-scope cues work only in conjunction with a positive high-scope cue, whereas other research has highlighted that low-scope cues work only when high-scope cues are negative in valence (Alford & Biswas, 2002; Dodds, Monroe, & Grewal, 1991; Purohit & Srivastava, 2001). This discrepancy in research was resolved by the congruity-based model (Roggeveen, Goodstein, & Grewal, 2014), which suggests that the low-scope cues, as well as high-scope cues, impact consumers' evaluations only when they are moderately incongruent in domain and high-scope cues have a positive valence (Roggeveen et al., 2014). Moderate domain incongruity between cues leads to positive reactions due to the proper processing of cues (Noseworthy & Trudel, 2011; Stayman, Alden, & Smith, 1992). For example, when a reputed brand known for great quality (i.e., high-scope cue of quality domain) promotes interactive services (i.e., low-scope cue of service domain), it enhances evaluations because the valence of the high-scope cue is positive (Dodds et al., 1991). This leads to an interesting research question: Can the presence of multiple high-scope cues of differing valences alter the predictions mentioned above?

2.1. Interaction of incongruent cue and cue scope

Surprisingly, not much research has looked into the effect of multiple cues interacting with varying levels of valence and domain incongruity (Purohit & Srivastava, 2001; Roggeveen et al., 2014). In this research, we test the interaction effect of multiple high-scope cues, along with a low-scope cue. In addition, we include valence and domain incongruity to explore their interactive influence on consumer outcome variables. Drawing from the congruity-based model and cue scope literature, we build our framework to assess the effects of retailer quality reputation and other domain incongruent cues on consumer perceptions and purchase intention (see Fig. 1). We propose that when a positive low-scope cue (i.e., RFID-based smart fitting room) is present in conjunction with a high-scope cue of different domain (i.e., brand quality reputation), its effect depends on the valence of the high-scope cue. This is because if the valence of the high-scope cue is negative (i.e., low-quality brand), there is extreme incongruity among the cues, and consumers will discard the positive low-scope cue (i.e., RFID-based fitting room) as irrelevant (Meyers-Levy & Tybout, 1989; Sengupta & Johar, 2002). Whereas when the valence of the high-scope cue is positive (i.e., high-quality brand), the domain incongruity of the positive low-scope cue will push consumers to more intricately process the cue (Boush & Loken, 1991; Meyers-Levy & Tybout, 1989). This will lead to positive evaluations from a consumer. Hence, we hypothesize:

H1. An RFID-based smart fitting room, compared to a standard fitting room, will lead to higher purchase intention for a high-quality brand, but these effects are attenuated for a low-quality brand.

2.2. Competing high-scope cues and low-scope cue

Online, as well as offline, retailers regularly engage in personalization strategies by incorporating users' past behaviors by collecting some unique individual information (Montgomery & Smith, 2009). This strategy is beneficial in that it requires very little effort by the consumers, who rely mostly on the marketer to identify and meet their specific needs. RFID-based interactive fitting rooms are able to collect this unique consumer information to create unique profiles, which helps to provide exclusive experiences for each consumer (Storm, 2015).

With consumer data collection increasing in the retail landscape, there is a growing concern for data security and consumer privacy (Bhatnagar & Ghose, 2004). Although there is a negative relationship between transaction security concerns and consumers' overall experience (Miyazaki & Fernandez, 2001), brand reputation tends to positively influence consumers' overall trust in data security (Eastlick, Lotz, & Warrington, 2006; McCole, Ramsey, & Williams, 2010; Morgan-Thomas & Veloutsou, 2013). Further, previous research has shown that data security disclosures tend to make consumers feel more confident to share information (Pan & Zinkhan, 2006; Schoenbachler & Gordon, 2002), and retailers that have used some form of data security and privacy disclosures have seen positive reactions from consumers (Miyazaki & Fernandez, 2000).

Drawing from these findings, and consistent with our earlier arguments, we believe that when consumers are faced with two cues of differing scope (i.e., RFID-based smart fitting room and brand quality reputation), they will feel their privacy is protected and will share information for a better experience – leading to higher purchase intention – when a higher-quality brand implements an RFID-based smart fitting room. In other words, consumers' perceived privacy will not be affected by the extra information required by an RFID-based smart fitting room for brands with a high-quality reputation. In contrast, when a low-quality brand implements an RFID-based smart fitting room, consumers will feel that their privacy is less protected and will be hesitant to share information for a better experience. Hence, one can state that for a brand with high-quality reputation, an RFID-based smart fitting room, compared to standard fitting room, will enhance perceived shopping satisfaction and purchase intentions. Whereas for brands with low-quality reputations, consumers' will feel hesitant to share private data, and hence RFID-based smart fitting rooms will fail to enhance shopping satisfaction and purchase intentions.

However, contrary to most consumers' expectations, the Federal Trade Commission (FTC) monitors data security enforcement and audits retailers to ensure consumers' personal information is secure and protected (Federal Trade Commission, 2015). When presented with this objective information, consumers will use this as a high-scope cue (i.e., the regulatory reputation of the FTC) and integrate this with other cues to make evaluations. When presented with FTC disclosure about data security of retailers following regulatory standards, consumers most likely will use this high-scope cue along with the two other cues (i.e.,