Look at Me! Or Don't. . . : How Mere Social Presence Impacts Innovation Adoption

LIDAN XU, RAVI MEHTA, AND KELLY B. HERD

ABSTRACT While the adoption of innovative products offers an opportunity for consumers to stand out and signal their uniqueness, such adoption also may also be associated with social risk. The current research highlights how the mere presence of others can make these related and often conflicting factors salient and in turn impact consumers' willingness to fund or buy innovative products. Across three studies, we find that the mere social presence of others enhances consumers' willingness to fund innovative ideas (study 1) and buy innovative products (studies 2 and 3). However, when familiar others are present, the perceived social risk associated with such adoption outweighs the positive signaling effect of uniqueness, thereby attenuating the effect. Importantly, when innovativeness is presented as an accepted norm, the mere social presence of even familiar others leads to higher willingness to buy innovative products. Both theoretical and practical implications are discussed.

Positive consumer responses to innovative products impact both the consumers who purchase these products and the businesses that produce and market them. While innovative products, such as smart appliances that allow consumers to cook or do laundry via wearable technology, help consumers to solve everyday problems more efficiently, these products also benefit businesses by creating lucrative new product categories and revenue lines. Indeed, both academic research and real-world examples show that consumers' willingness to buy innovative products is imperative to the success of most firms (Chandy and Tellis 1998; Geroski, Machin, and Van Reenen 1993). In fact, Barczak, Griffin, and Kahn (2009) found that successful new product development firms generate around 49% of their profits from products launched in the previous five years.

In addition to providing functional benefits, innovative products can have social implications like conveying uniqueness through the adoption of cutting-edge solutions. For example, Wood and Hoeffler (2013) found that a consumer's personal adoption of technological products can act as a nonverbal impression management tactic. Interestingly though, while researchers studying innovation adoption have generally focused on the role of various other factors like product attributes (Moreau, Markman, and Lehmann 2001; Wood and Lynch 2002), motivation and personal characteristics (Mehta, Dahl, and Zhu 2017; Uhl, Andrus, and Poulsen 1970), contextual factors (Mehta, Zhu, and Cheema 2012; Mehta and Zhu 2016), and prior knowledge (Mehta, Hoegg, and Chakravarti 2011; Moreau et al. 2001) to better understand how or why consumers adopt innovative products, very little work has examined the social aspects of such adoption. Further, most of the research in this modest domain of work has predominantly examined the effect of social factors that represent long-term social influences over repeated encounters or active social engagement that is interactive in nature. For example, Cotte and Wood (2004) examined the influence of family on consumer innovativeness and found that intergenerational influence was greater than intragenerational influence on innovativeness. Along similar lines, Xie and Singh (2007) showed the impact of socialization (e.g., peers, media, parents) on consumer innovativeness in young adults, and Iyengar, Van den Bulte, and Valente (2011) demonstrated the contagion effect in innovation adoption and its moderation by perceptions of opinion leadership.

A quick overview of this literature then raises an interesting question as to whether passive social influences, such as mere social presence (i.e., when a social entity is present but is not involved nor attempts to engage/interact with the consumer in any way during the decision-making process),

Lidan Xu (lidan.xu@okstate.edu) is assistant professor of marketing at the Spears School of Business, Oklahoma State University, Stillwater, OK 74074. Ravi Mehta (mehtar@illinois.edu) is associate professor of business administration at Gies College of Business, University of Illinois at Urbana-Champaign, 350 Wohlers Hall, Champaign, IL 61820. Kelly B. Herd (kelly.herd@uconn.edu) is assistant professor of marketing at University of Connecticut School of Business, 2100 Hillside Road, Storrs, CT 06269.

JACR, volume 4, number 3. Published online May 16, 2019. http://dx.doi.org/10.1086/703565

can also have a significant impact on consumers' responses to innovative products. The current research delineates two inherent characteristics of innovation adoption and attempts to understand how and why passive social influence, specifically mere social presence, may impact consumer responses to innovative products. We suggest that because innovation adoption offers consumers an opportunity to stand out and demonstrate their uniqueness, even a passive noninteractive social influence, such as mere social presence during decision making, will enhance a consumer's positive response (e.g., willingness to buy) toward innovative products.

Importantly, we further argue that innovation adoption, which makes consumers stand out and signal uniqueness, may also carry an inherent social risk. Adopting innovative products can be judged as "bizarre" or "ridiculous" and may lead to social rejection or disapproval. For example, using wearable technology to control one's refrigerator or laundry settings may make a person appear either lazy or extravagant. We suggest that such perceived social risk will become prominent and outweigh the benefits of standing out and signaling uniqueness when the mere social presence is of familiar others. We expect this effect to occur because in social groups with meaningful social relationships, people have a heightened sensitivity toward approval and judgment, and conformity is usually emphasized (Mandel 2003).

This research makes several contributions. First, it advances the innovation adoption literature by demonstrating that innovative products can be a double-edged sword. While these products offer an opportunity for consumers to stand out and signal their uniqueness, they can also be a source of perceived social risk, which can counteract a consumer's propensity to purchase innovative products. Second, this research enhances our current understanding of the social aspects of adopting innovations by showing that even a passive social influence can impact innovation adoption. In addition, it further adds to existing knowledge by showing that the type of social presence (familiar versus unfamiliar others) can have a differential and significant impact on innovation adoption. Finally, the current work offers important practical implications by suggesting that companies and retail outlets can use social cues to influence innovation adoption. For example, using advertising appeals or store settings that lead to the real or implied social presence of others may impact sales of new and innovative products. This research also enables consumers to understand how simple social cues may unconsciously influence their decisions and attitudes toward innovative products.

THEORETICAL BACKGROUND

Innovation, the creation of products that challenge conventional norms and are new to the market (Ostlund 1974; Mehta et al. 2017), not only attracts consumers but also enables companies to develop business processes that lead to sustainable profits and long-term success (Tohidi and Jabbari 2012). While innovation is often explicitly highly valued, consumers and decision makers often reject innovative ideas (Staw 1995). Prior work has found that every year, 40%–90% of new products launched across different product categories fail (Faraji-Rad, Melumad, and Johar 2017). Importantly, researchers have identified several psychological factors that hinder consumers' willingness to adopt new and innovative ideas or products, including a high desire for control (Faraji-Rad et al. 2017) and certainty (Mueller, Melwani, and Goncalo 2012), and fear of social ostracism or peer ridicule (Ram and Sheth 1989).

We argue that innovation adoption encompasses two inherent characteristics that impact consumer response. While such adoption makes one stand out and signal uniqueness, it also induces perceptions of social risk. Because possessions are often extensions of the self (Belk 1988), product acquisition can play a key role in helping consumers construct and communicate their identities to both themselves and others (Belk 1988; Richins 1994). Following this line of thought, we suggest preference for innovative products can impact both self-identity and how others see us. Innovative products rarely gain immediate and widespread acceptance, but rather are first adopted by a relatively small group of consumers who then influence later adopters (Robertson 1971; Rogers 1983). Thus, adopting innovative products before others do is one way to signal uniqueness and differentiate oneself from others (Burns and Krampf 1992). For example, Burns (1987) found that consumers with strong uniqueness motives displayed a greater awareness of, interest in, and/or willingness to consider adopting innovative products than did consumers with weaker uniqueness motives. Similarly, Harris and Lynn (1996) found a positive relationship between the self-attributed need for uniqueness and the tendency to be an early adopter of innovative products.

While innovative products can be highly appealing to consumers and are associated with psychologically rewarding symbolic characteristics (Fisher and Price 1992), the uniqueness associated with adopting innovative products may also raise concerns about exposure to social risks (Ram and Sheth 1989). These social risks include embarrassment and expectation of disapproval from others and have been shown as possible outcomes of purchasing and consuming certain prod-

ucts (Mandel 2003). Innovative and original ideas or concepts are often contradictory to social norms, and such deviance usually has a stigma attached to it (Runco 1999; Rudowicz and Ng 2003; Kim 2007). For example, in a society that is tightly organized, collectivistic, and values saving face, people put great emphasis on social order and harmony, making it hard to think, feel, and act creatively (Ng 2001). Similarly, when there are expectations to meet social norms and doing so is important to consumers, consumers act in accordance with these norms and are less drawn to being original, and they are less likely to demonstrate positive responses to innovative ideas and products (Mehta et al. 2017). Thus, we suggest that compared to more traditional products, innovative products are perceived to carry social risk because of their non-normative nature, which may lead consumers to resist adopting or buying them, as such adoption may lead to social ostracism or peer ridicule (Ram and Sheth 1989; Mehta et al. 2017).

To summarize the above arguments, we propose that innovation adoption can be both socially rewarding, as it provides an effective means to demonstrate uniqueness, and socially risky because it might lead to rejection from others, especially in a context in which meeting social norms is important. Such inherent characteristics of innovation adoption, we suggest, have significant implications for the consumer's response to innovative products when there is passive social influence (i.e., mere social presence) at the time of decision making.

Mere Social Presence and Innovation Adoption

Social influence has been shown to play an important role in the consumption process (Moschis 1976; Bearden and Etzel 1982). While extensive research has focused on interactive social influence, such as being greeted by salespeople or debating a group purchase (Childers and Rao 1992), research has started to show that passive and noninteractive social situations, such as mere social presence, whether real, imagined, or even virtual, may also affect consumers' purchase behaviors (Dahl, Manchanda, and Argo 2001; Argo, Dahl, and Manchanda 2005; Naylor, Lamberton, and West 2012). For example, Dahl et al. (2001) showed that mere social presence, both real and imagined, impacts how people make potentially embarrassing product purchases. Similarly, Luo (2005) found that the imagined presence of others had significant implications for impulsive purchases. Specifically, the author found that the impact of mere social influence on an impulsive purchase may depend on the norms and values of the group such that the presence of peers increases the urge to purchase, while that of family members reduces it. Interestingly, Naylor et al. (2012) found that the effect of mere social presence exerted itself even in virtual environments. The authors found that even in such environments where spatial proximity is absent, exposure is only passive, and no future relationship is likely to exist among consumers, mere virtual presence still had a substantial effect on consumer brand evaluations and purchase intentions.

Extending the above argument, we propose that the mere presence of others may also have significant implications for the willingness to buy innovative products. Interestingly, even when other people around us are not paying attention to our behaviors, we tend to focus on ourselves and overestimate the extent to which our actions and behaviors are noticed by others (Gilovich, Medvec, and Savitsky 2000). Further, prior research has argued that consumers have a high desire to be viewed in a positive light (Leary and Kowalski 1990), and when other people are present, consumers engage in impression management behaviors (Argo et al. 2005). Hence, we suggest that the mere presence of others, even in the absence of any meaningful interpersonal interaction, will activate impression management concerns as consumers tend to think that they are in the spotlight and overestimate the extent to which others notice what they are doing. In addition, it has been argued that most consumers are driven to differentiate themselves from others and often make choices that diverge from others (Fromkin 1972; Snyder and Fromkin 1980; Berger and Heath 2007) to gain psychological and social advantage. Since one of the inherent characteristics of innovation adoption is that it provides a means for consumers to perceive that they stand out, we propose that in the mere social presence, specifically that of unfamiliar others, consumers will have higher motivation to stand out and will prefer innovative (vs. more traditional) products. Thus, under such conditions, mere social presence will lead to higher willingness to buy innovative products than when there is no mere social presence.

Further, we argue that such positive effect of mere social presence on innovation adoption will only hold when the social presence pertains to unfamiliar others. As discussed previously, while innovation adoption provides an opportunity for consumers to stand out, it is also associated with perceived social risk. Innovation by definition is a deviance from the existing social norms, and the adoption of such products may lead to social ostracism or peer ridicule (Ram and Sheth 1989; Mehta et al. 2017). We propose that this perceived risk would be heightened if the mere social presence was of familiar (vs. unfamiliar) others, thereby nega-

tively impacting innovation adoption. While people often have a need to stand out (a differentiation goal), they also have a need to fit in (an assimilation goal; Chan, Berger, and Van Boven 2012). Prior research recognizes that social conformity supports the basic human need for validation (Brewer 1991) and helps people maintain a favorable self-identity, especially when the goal is to be assimilated into a community of people with whom they share meaningful social relationships (Bond and Smith 1996; Pool, Wood, and Leck 1998). The motivation to conform, thus, may be strongest when the mere social presence during a purchase event is of familiar others such as peers or coworkers. This is when we would expect that the perceived social risk associated with innovation adoption would become salient and override the motivation to stand out, rendering innovation adoption less desirable and reducing the willingness to buy innovative products.

Three studies were conducted to test the proposed hypotheses. Study 1 examined the effect of mere social presence (of unfamiliar others vs. familiar others vs. no presence) on innovation adoption, while study 2 tested the role of social risk and motivation to stand out as the underlying processes driving the proposed effect. Study 3 further examined the effect of reducing perceived social risk associated with innovation adoption, on mere social presence and innovation adoption relationship.

STUDY 1

Study 1 was conducted to test our focal proposition that mere social presence of unfamiliar others as compared to both familiar others and no presence of others will enhance the willingness to support innovative ideas. Further, this study adapted a crowdfunding context that has become a mainstream money-raising platform to bring entrepreneurs and consumers (or backers) together to help groundbreaking ideas take shape.

Method

Two hundred and twenty students (119 women) at Oklahoma State University completed this study in exchange for course credit. Mere social presence was manipulated through the setup of the study. For the two social presence conditions, roughly 16 participants completed the study in each behavioral lab session, with only either familiar or unfamiliar mere social presence condition being run in a particular session. For the familiar mere social presence condition, participants were randomly assigned into groups of two and completed a communication task, adopted from Small and Simonsohn (2008), to induce familiarity (see app. A for the complete procedure; apps. A–H are available online). After finishing the communication task, participants completed the rest of the study individually on their assigned computers. For the unfamiliar social presence condition, participants completed the study on their respective computers in the behavioral lab, where although other participants were present, no interaction between them took place. For the no social presence condition, each participant completed the study alone in a private room without anyone else present.

The study began by informing participants that they would be completing a crowdfunding task and then presented the mere social presence manipulation instructions. Specifically, participants in the familiar condition were reminded of their prior interaction with another participant and that the people they may know are around them in the room. Those in the unfamiliar social presence condition were simply told that we often have to make choices when other people are present and to keep in mind that people are around them in this room (see app. B for the exact instructions). No such instructions were presented to the participants in the no social presence condition. Next, all participants were presented with a crowdfunding task where they were told that the Riata Center for Entrepreneurship (an actual center at the business school) was hosting a crowdfunding opportunity for the student entrepreneurs. They were then presented with five innovative ideas, one at a time, that were actually seeking crowdfunding on Indiegogo.com (see app. C for product list and details) and were asked to assume the role of a potential investor and indicate their willingness to fund the ideas on 7-point scales (1 = not at all, 7 = very much).

Finally, participants completed manipulation checks on mere social presence (How much did you feel that your behavior was observed by others around you?; How much did you feel that your behavior was visible to others around you?; and How much did you feel that there were other people around you while you were making the crowdfunding decisions?; $\alpha = .86$) and familiarity (How familiar do you think you are with people in the room in this study?), before reporting their age and gender.

Results

Manipulation Check. As expected, a one-way ANOVA ($F(2, 217) = 14.46, p < .001$) showed that those in the mere social presence conditions felt that there were other people around them who could observe their behavior signifi-

cantly more than those in the no social presence condition ($M_{\text{no presence}} = 2.17$, SD = 1.56 vs. $M_{\text{unfam. presence}} = 3.48$, SD = 1.55, $t(217) = 5.28$, $p < .001$; $M_{\text{no presence}} = 2.17$, SD = 1.56 vs. $M_{\text{fam. presence}} = 3.07$, SD = 1.44, $t(217) = 3.53$, $p = .001$). However, there was no difference between the two mere social presence conditions ($t(217) = 1.65$, $p = .101$). Another one-way ANOVA ($F(2, 217) = 21.11$, $p < .001$) confirmed that those in the familiar mere social presence condition ($M_{\text{fam. presence}} = 3.67$, $SD = 1.75$) indicated being more familiar with people in the room than those in either the unfamiliar ($M_{\text{unfam. presence}} = 1.92$, SD = 1.57, $t(217) = 6.09$, $p < .001$) or the no social presence condition ($M_{\text{no presence}} = 2.19$, SD = 1.89, $t(217) = 5.09$, $p < .001$). No difference emerged between the unfamiliar and no social presence conditions ($t < 1$).

Willingness to Fund. A 3 (mere social presence: none vs. unfamiliar vs. familiar) × 5 (idea types) mixed-design ANOVA with idea type as a within-subject variable returned a nonsignificant two-way interaction ($F < 1$), indicating that different idea types did not influence participant willingness to fund innovative ideas. However, one-way ANOVA revealed a significant effect of mere social presence on willingness to fund innovative ideas ($F(2, 217) = 3.49$, $p = .032$, $\eta_p^2 = .031$), such that those in the mere presence of unfamiliar others ($M = 4.68$, SD = .96) indicated higher willingness to fund innovative ideas than those in the familiar others ($M = 4.30$, SD = .90, $t(217) = 2.35$, $p = .02$, Cohen's $d = .41$) and no presence ($M = 4.33$, SD = 1.04, $t(217) = 2.19$, $p = .029$, Cohen's $d = .35$) conditions. Also, no significant difference was observed between the familiar others and no presence conditions ($t < 1$). In addition, no significant interaction between age or gender and social presence or the main effects of either age or gender emerged for willingness to fund innovative ideas in this or any of the following studies. Hence, for brevity, we do not discuss related results any further.

Discussion

Using a real crowdfunding context, the results from study 1 provide support for our focal proposition that mere social presence can enhance one's willingness to fund innovative ideas and that this positive effect is attenuated when the mere social presence pertains to familiar others. We have argued that although innovation adoption can signal uniqueness, depending on the type of mere social presence, it can also be associated with higher perceived social risk, leading to differences in willingness to buy innovative products. In the next study, we directly examine the roles of perceived social risk and motivation to stand out in the relationship between mere social presence and willingness to buy innovative products. In addition, as we did not observe any difference between "familiar others social presence" and "no social presence" conditions in study 1, we dropped the control (i.e., no social presence) condition in subsequent studies.

STUDY 2

Study 2 was conducted to test the mediating role of perceived social risk and motivation to stand out in the relationship between the type of mere social presence (i.e., familiar vs. unfamiliar others) and willingness to adopt innovative products. In this study, we manipulated mere social presence by simply asking participants to imagine the social presence of others. Previous research has shown that people can easily imagine a social audience (Ratner and Kahn 2002; Luo 2005) and that the effect of the imagined social presence of others is no different from the effect of actual social presence (Dahl et al. 2001). Thus, such manipulation offered two main advantages without losing any benefits of actual social presence. First, the utilization of imagined mere social presence offered a cleaner and a more conservative test of our hypotheses, as it has been shown to reduce social desirability biases (Luo 2005). Second, this type of imagined context may have significant implications for virtual consumption environments, which will be discussed later in the general discussion section (Hassanein and Head 2007; Naylor et al. 2012).

Method

One hundred and sixty students (67 women) at the University of Illinois at Urbana-Champaign completed this study in exchange for course credit. Participants were first presented with the mere social presence manipulation task, in which they were asked to imagine that they had recently moved to a new town to take a new job and were in the process of buying household items and furnishings for their rented apartment. They had learned of a really nice department store in a mall near their office, which they decided to visit after their work hours on a weekday. In the unfamiliar (vs. familiar) others mere social presence condition, participants were further told that, being a weekday evening, there were quite a few other shoppers present. In fact, as they looked through the aisles and examined the products, they noticed that there were quite a few people (vs. quite a few people from their workplace) around them in the aisles where they were browsing. After participants read the description of this scenario, they were asked to close their

eyes and take about 30 seconds to imagine themselves in the scenario.

After completing the imagination task, participants were presented with a willingness-to-buy task and told: "Now imagine that you decide to buy a vacuum cleaner, a chair, a t-shirt, a bike, an electronic fan, and a pair of running shoes. However, for each product you will be presented with two choices and asked to indicate which one you would be willing to buy, if you were in the scenario you just imagined." Next, all participants were presented with six pairs of products. In each pair, one product was more traditional and the other more innovative (see app. D for product details). After reading the product descriptions, participants were told to indicate which of the two products they would be willing to buy at that moment in time on a 7-point scale (1 = surely the traditional one, 7 = surely the innovative one; Mehta et al. 2012).

Next, we asked participants to think back to the time when they made the purchase decisions and indicate the extent of their agreement with ten items, five of which measured perceived social risk associated with buying innovative products (e.g., At that moment, I felt that purchasing the innovative products might result in embarrassment in front of others who may have been present in the store [Stone and Grauhaug 1993; Dholakia 2001; Mandel 2003]), and five that assessed their motivation to stand out (e.g., At that moment, I felt that purchasing the innovative products would help make me be different from other people [Sundar, Tamul, and Wu 2014; see app. E for all items]).

Finally, all participants completed manipulation check questions, which captured how much they thought the innovative products were innovative (original, unique, out of the ordinary, apart from similar products, novel, catered to their own needs, and were never seen before [1 = not at all, 7 = very much]; Sundar et al. 2014), followed by demographic information as in study 1.

Results

Manipulation Check. As expected, the participants' average score on the innovativeness index ($\alpha = .77$) was significantly above the midpoint ($M = 4.69$, SD = .97, $t(159) = 8.96$, $p < .001$), indicating that innovative products were indeed perceived as innovative. Further, to ensure that the innovative products were also considered more innovative than their more traditional counterparts, we conducted another brief study with an independent sample of 107 students (59 women), which also confirmed that the innovative products ($M = 4.61$, SD = .85) were considered to be more innovative than the traditional products ($M = 2.76$, SD = .99, $t(106) = 19.55$, $p < .001$. (For the mean innovativeness of each product, please see the appendixes).

Willingness to Buy. A 2 (mere social presence: unfamiliar others vs. familiar others) × 6 (product types) mixed-design ANOVA revealed a nonsignificant two-way interaction ($F(1, 158) = 1.81$, $p = .18$), indicating null effect of product type on participants' willingness to buy. A one-way ANOVA, conducted with data collapsed across product type, returned a significant main effect of mere social presence on willingness to buy innovative products ($F(1, 158) = 4.58$, $p = .034$, Cohen's $d = .35$). Those who imagined mere presence of unfamiliar ($M = 3.92$, SD = .93) versus familiar ($M = 3.57$, SD = 1.09) others indicated a higher willingness to buy innovative products.

Perceived Social Risk and Motivation to Stand Out. Participants' responses to perceived social risk scale items ($\alpha = .79$) indicated that imagining mere presence of unfamiliar ($M = 2.46$, SD = 1.14) as compared to familiar others ($M = 2.85$, SD = 1.30) induced lower perceived social risk associated with buying innovative products ($F(1, 158) = 4.08$, $p = .045$, Cohen's $d = .32$). However, imagining mere presence of unfamiliar ($M = 3.55$, SD = 1.46) versus familiar others ($M = 3.06$, SD = 1.45) led to higher motivation to stand out ($\alpha = .93$; $F(1, 158) = 4.50$, $p = .035$, Cohen's $d = .34$).

Mediation Analysis. To test our proposed underlying process, we conducted a mediation analysis adopting a bootstrap approach and included type of mere social presence as the independent variable, perceived social risk and motivation to stand out as serial mediators, and willingness to buy innovative products as the dependent variable in the model (model 6, Preacher, Rucker, and Hayes 2007). A bias-corrected bootstrap confidence interval obtained by resampling the data 10,000 times did not include zero, thereby indicating a significant total indirect (i.e., multiple mediation) effect ($\beta = .04$, SE = .024, bias-corrected 95% CI = $[.004, .105]$).

Discussion

The results obtained from study 2 provide support for our hypothesis that perceived social risk and motivation to stand out drive the relationship between type of social presence and willingness to buy innovative products, such that imagining mere presence of unfamiliar (vs. familiar) others

leads to lower perceived social risk associated with adoption of innovative products and thereby enhances motivation to stand out, leading to higher willingness to buy innovative products.

Although no difference was found among the effects of six different products used in this study, two of the products are generally used in a private setting (vacuum cleaner, electronic fan) while the other four generally in a public setting (t-shirt, bike, pair of running shoes, chair). It could be argued that the effect should have emerged only for the public-use products, as no perceived social risk should exist for private-use products because others cannot observe usage of such products. Although this argument may seem logical, the observed results demonstrate that mere social presence at the time of purchase equally impacts innovation adoption for private- and public-use products. This suggests that the point of purchase decisions for even private-use products is deemed to be public in nature in the mere social presence of others. We elaborate on this argument further in the general discussion section and also broaden the number of innovative products to specifically include both private- and public-use products in study 3. In addition, in study 3, we use a moderation model and examine the effect of reducing perceived social risk on the relationship between mere social presence and willingness to buy innovative products.

STUDY 3

Study 3 was conducted to provide further insight into the proposed mechanism underlying the effect of type of mere social presence on new product adoption and how it might operate when the perceived social risk associated with innovativeness is mitigated. Hence, this study utilized a 2 (mere social presence: unfamiliar others vs. familiar others) $\times$ 2 (perceived social risk: mitigated vs. control) between-subject design. We hypothesize that when the perceived social risk associated with innovation adoption is minimized, the willingness to buy innovative products will be high regardless of the type of social presence. However, under the control condition, the results observed in previous studies will replicate.

Method

One hundred and ninety-six students (114 women) at Oklahoma State University completed this study in exchange for course credit. To begin, approximately half the participants were exposed to the familiarity manipulation, following exactly the same procedure as in study 1. Also, as in study 1, only one social presence condition was run in a particular session. Once participants completed the communication task (familiar condition) or were seated (unfamiliar condition), they were presented with the same social presence manipulation instructions as in study 1. Next, we manipulated the perceived social risk associated with adoption of innovative products, by asking participants to imagine that innovativeness was an accepted social norm within their social circles and that they were known for their creativity among friends and fellow students (Mehta et al. 2017). Before these instructions were used in the study, a pretest was conducted to confirm their effectiveness in successfully mitigating perceived social risk (see app. F for details). Participants in the control condition received no such instructions.

Next, all participants were presented with a product choice task similar to that used in study 2, where they read the provided descriptions and indicated their willingness to buy the innovative products. To reduce perceptual bias, we did not use the words "traditional" and "innovative" in product descriptions and simply presented the product names as labels in the study (e.g., backpack-style household vacuum cleaner). Also, we ensured that the information provided about the two products was comparable in length. Further, we added four more product pairs for a total of ten measures in order to explore a wider range of product categories, and more importantly, to examine whether there may be any difference between public- and private-use products. Of the ten product pairs used in the study, five are typically used in public settings (t-shirt, bicycle, running shoes, chair, and pen), while the other five are typically used in private settings (toothbrush, toothpaste, fan, stylus, and vacuum cleaner; see app. G for product details). In addition, two separate pretests confirmed that the used innovative products were indeed considered more innovative than the respective traditional products and that the public-use products were indeed perceived to be more public as compared to the private-use products (see app. H for details). Finally, all participants completed the manipulation check questions and provided demographic information as in study 1.

Results

Manipulation Check. A one-way ANOVA indicated that those in the familiar ($M_{\text{fam. presence}} = 3.56$, SD $= 1.72$) versus the unfamiliar ($M_{\text{unfam. presence}} = 2.00$, SD $= 1.36$) mere social presence condition reported being more familiar with people in the room ($F(1, 194) = 49.04$, $p < .001$). However, as desired, no difference was observed between the two mere

social presence conditions on the degree to which participants thought there were others around them ($\alpha = .85$; $M_{\text{unfam. presence}} = 2.85$, SD = 1.43 vs. $M_{\text{fam. presence}} = 3.13$, SD = 1.54; $F(1, 194) = 1.66$, $p = .20$).

Willingness to Buy. A 2 (mere social presence: unfamiliar others vs. familiar others) × 2 (perceived social risk: mitigated vs. control) × 2 (product type: public vs. private) mixed-design ANOVA returned a nonsignificant three-way interaction ($F < 1$), indicating nonsignificant impact of product type (public vs. private use) on innovation adoption. In addition, a 2 (mere social presence: unfamiliar others vs. familiar others) × 2 (perceived social risk: mitigated vs. control) × 10 (product types) mixed-design ANOVA returned a nonsignificant three-way interaction ($F < 1$), indicating that individual products also did not affect participants' willingness to buy innovative products. However, as hypothesized, a two-way ANOVA revealed a significant interaction between mere social presence and perceived social risk on willingness to buy innovative products ($F(1, 192) = 5.25$, $p = .023$, $h_p^2 = .03$; see fig. 1). Replicating the results from our previous studies, when innovativeness was not explicitly mentioned as a socially normative behavior, the mere presence of unfamiliar others ($M = 3.75$, SD = 1.02) led to significantly greater innovation adoption than the mere presence of familiar others ($M = 3.34$, SD = .68; $t(192) = 2.32$, $p = .021$, Cohen's $d = .47$). By contrast, when the perceived social risk was mitigated, the adoption of innovation was high regardless of the type of mere social presence ($M_{\text{unfam. presence}} = 3.61$, SD = .76 vs. $M_{\text{fam. presence}} = 3.78$, SD = .98; $t < 1$, Cohen's $d = .19$). Further contrast analyses showed that when mere presence was of unfamiliar others, innovation adoption was high regardless of whether perceived social risk was mitigated ($M = 3.61$, SD = .76) or not ($M = 3.75$, SD = 1.02; $t < 1$). However, when in the mere presence of familiar others, lower perceived social risk led to higher adoption of innovation ($M_{\text{mit. soc. risk}} = 3.78$, SD = .98 vs. $M_{\text{control}} = 3.34$, SD = .68; $t(192) = 2.53$, $p = .012$, Cohen's $d = .52$).

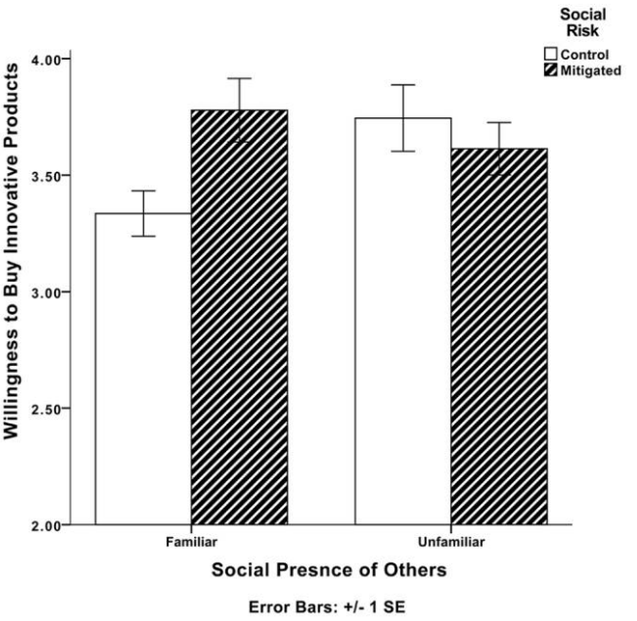

Figure 1. The joint effect of type of mere social presence and perceived social risk on participants' willingness to buy innovative products. Under control condition (i.e., when perceived social risk associated with innovation adoption was not externally mitigated), the mere presence of unfamiliar others led to significantly greater innovation adoption than that of familiar others. However, externally reducing perceived social risk associated with innovation adoption attenuated the effect, such that participants' willingness to buy innovative products was high irrespective of the type of mere social presence.

Discussion

The results obtained from study 3 demonstrated that reducing the social risk associated with buying innovative products led to higher innovation adoption irrespective of the type of social presence. These results provide additional support for social risk as the underlying process that drives the effect of mere social presence on innovation adoption. This study also ruled out several alternative explanations of our demonstrated effect. Our focal stimuli included product pairs that were either predominately private or public use in nature, but we found that neither the consumption setting (private vs. public) nor the product type influenced consumers' willingness to buy innovative products.

GENERAL DISCUSSION

The present research examined the effect of mere social presence on innovation adoption. Three experiments demonstrated that mere social presence during a decision/purchase event positively affects consumer willingness to fund or buy innovative products. However, such a positive effect is attenuated when the social presence pertains to familiar others. The current research offers several important theoretical and practical implications. First, we explicate the role of social influence on innovative product adoption. While most of the previous research in the domain has examined product-related factors, very little research has studied the role of social cues on a consumer's propensity

to buy innovative products (for exceptions, see Cotte and Wood 2004; Xie and Singh 2007). Our research extends this line of work and shows that mere social presence can have important implications for innovative product adoption. Second, the current work advances extant literature beyond its primary focus on the positive signaling associated with innovation adoption (e.g., Wood and Hoeffler 2013) by demonstrating that innovation adoption can be a double-edged sword. While adoption of innovative products offers an opportunity for consumers to signal uniqueness, it may also be associated with perceived social risk. The latter is particularly true in the presence of familiar others where social norms are more meaningful and valued, unless the accepted social norms clearly favor innovation adoption. We found that mere social presence enhanced consumer willingness to buy innovative products because the adoption of such products signals uniqueness and differentiates individuals from the crowd. However, when the audience is of familiar others, the perceived social risk associated with such adoption outweighs the positive signaling effect of uniqueness, thereby attenuating its positive effect on innovation adoption. The current research is one of the first to argue and demonstrate these two often contradictory identity signals associated with innovation adoption. In doing so, this research offers a deeper understanding of the social context of innovation adoption. Third, this work extends prior research that has been limited to examining the effect of mere social presence on usage and purchase intentions of products that have negative connotations (e.g., nerdy and uncool, embarrassing). For example, Dahl et al. (2001) demonstrated that when making an embarrassing product purchase, consumers experience a higher level of embarrassment when a real or imagined social presence exists. In the context of innovative products, mere social presence may provide some social reward to consumers, as it offers them an opportunity to showcase their "innovativeness," as long as this "innovativeness" does not come across as breaking the norms of their social circle.

Managerially, our research offers insights for marketers seeking to encourage new product adoption. Marketers often highlight the differentiation value inherent in innovative products but may fail to recognize associated perceived social risk. This social risk and the consumer's desire to conform to social expectations is one reason given for the disappointing sales of marketplace innovations such as Google Glass and the Segway (Hartung 2015; Polgar 2017). Some reporters testing Google Glass reported embarrassment, awkwardness, and discomfort, what they called the "Glasshole" effect, such that wearing the highly innovative product serves as a negative identity signal, particularly around family and friends (Whittaker 2014). This suggests that researchers and practitioners may leverage the benefits of mitigating perceived social risk, for example, by emphasizing innovativeness as a social norm. The propensity to adopt innovative products can also be enhanced by creating a mere social presence context in which consumers feel that they have an audience of strangers or unfamiliar people, such as mere virtual social presence (Naylor et al. 2012). In fact, the prevalent use of social media offers many possibilities of creating such virtual social presence. For example, interest-based message boards and Facebook Connect enable consumers to connect with strangers. Such interaction, particularly in the discussion of innovative products, may increase adoption of such products. This research will also be of interest to consumers, as it enables them to understand how simple social cues may unconsciously influence their willingness to accept innovative products.

The current work also opens up avenues for future research. In particular, it provides a platform for researchers to understand identity signaling effects as it relates to different types of innovative products. In doing so, these findings can help future research to develop a deeper understanding of how consumers may make decisions to adopt innovative products within a given social context. In the current research, we utilized different types of products (e.g., functional and hedonic) in a variety of categories (e.g., electronic, fashion and apparel, office products) and found consistent results across all studies. Importantly, we found the seemingly counterintuitive result that mere social presence similarly impacted both public- and private-use innovative products. Products used in public, as compared to those used in private, more strongly signal identity (Childers and Rao 1992). Hence, one may expect our hypothesized effect to hold only for public-use products and to be attenuated or absent for private-use products. However, our work captured signaling effect at the time of decision making when usage signaling may be less salient. In addition, prior research suggests that individuals tend to overestimate the likelihood that others are observing them (i.e., the spotlight effect; Gilovich et al. 2000). As such, our effect should hold in purchase contexts when others are simply present, and may or may not be observing consumers, as is often the case in the marketplace. Our work thus highlights the importance of mere social presence and demonstrates that it can override the effect of product type on consumer willingness to fund or buy innovative products. Interestingly, however, there may

be other product types where our effect does not hold. For example, innovative products that might induce embarrassment at the time of purchase, such as feminine hygiene products, incontinence medication, or condoms (Moore et al. 2006), may be particularly impacted negatively under social presence (both real and imagined) conditions. In these contexts, the social risk may inherently outweigh uniqueness signaling benefits, thereby making consumers more likely to reject innovative products. Interestingly, this may be one reason that companies show tentativeness to innovate in such highly embarrassing product contexts (Hay 2018). We leave this for future research to explore.

Further, we demonstrated that the type of mere social presence (unfamiliar vs. familiar others) moderated our focal effect, such that mere social presence of familiar others attenuated the positive effect on innovation adoption. However, one interesting question to pursue pertains to the level of familiarity. In our research, participants became familiar with others through a communication task, so the level of familiarity was low to medium at best. What if the familiar others were family and close friends? Social risks might be most salient for this group because consumers will probably care more about what their family and close friends think of them, and will be especially concerned about social disapproval from this group. We might observe an even stronger attenuation of innovation adoption in the presence of highly familiar others. It is also possible that a highly familiar group (such as family and close friends) may also provide a social cushion, enabling consumers to take even higher risks, and thus be willing to adopt innovative products. It will be interesting to examine the role that such high levels of familiarity may play in the relationship between mere social presence and innovation adoption.

REFERENCES

Argo, Jennifer J., Darren W. Dahl, and Rajesh V. Manchanda (2005), "The Influence of a Mere Social Presence in a Retail Context," *Journal of Consumer Research*, 32 (2), 207–12.

Barczak, Gloria, Abbie Griffin, and Kenneth B. Kahn (2009), "Perspective: Trends and Drivers of Success in NPD Practices: Results of the 2003 PDMA Best Practices Study," *Journal of Product Innovation Management*, 26 (1), 3–23.

Bearden, William O., and Michael J. Etzel (1982), "Reference Group Influence on Product and Brand Purchase Decisions," *Journal of Consumer Research*, 9 (2), 183–94.

Belk, Russell W. (1988), "Possessions and the Extended Self," *Journal of Consumer Research*, 15 (2), 139–68.

Berger, Jonah, and Chip Heath (2007), "Where Consumers Diverge from Others: Identity Signaling and Product Domains," *Journal of Consumer Research*, 34 (2), 121–34.

Bond, Rod, and Peter B. Smith (1996), "Culture and Conformity: A Meta-analysis of Studies Using Asch's (1952b, 1956) Line Judgment Task," *Psychological Bulletin*, 119 (1), 111–37.

Brewer, Marilynn B. (1991), "The Social Self: On Being the Same and Different at the Same Time," *Personality and Social Psychology Bulletin*, 17 (5), 475–82.

Burns, David J. (1987), "The Effects of Uniqueness Seeking and Sensation Seeking upon Innovative Behavior and the Adoption Process," unpublished doctoral dissertation, Kent State University.

Burns, David J., and Robert F. Krampf (1992), "Explaining Innovative Behaviour: Uniqueness-Seeking and Sensation-Seeking," *International Journal of Advertising*, 11 (3), 227–37.

Chan, Cindy, Jonah Berger, and Leaf Van Boven (2012), "Identifiable but Not Identical: Combining Social Identity and Uniqueness Motives in Choice," *Journal of Consumer Research*, 39 (3), 561–73.

Chandy, Rajesh K., and Gerard J. Tellis (1998), "Organizing for Radical Product Innovation: The Overlooked Role of Willingness to Cannibalize," *Journal of Marketing Research*, 35 (4), 474–87.

Childers, Terry L., and Akshay R. Rao (1992), "The Influence of Familial and Peer-Based Reference Groups on Consumer Decisions," *Journal of Consumer Research*, 19 (2), 198–211.

Cotte, June, and Stacy L. Wood (2004), "Families and Innovative Consumer Behavior: A Triadic Analysis of Sibling and Parental Influence," *Journal of Consumer Research*, 31 (1), 78–86.

Dahl, Darren W., Rajesh V. Manchanda, and Jennifer J. Argo (2001), "Embarrassment in Consumer Purchase: The Roles of Social Presence and Purchase Familiarity," *Journal of Consumer Research*, 28 (3), 473–81.

Dholakia, Utpal M. (2001), "A Motivational Process Model of Product Involvement and Consumer Risk Perception," *European Journal of Marketing*, 35, 1340–62.

Faraji-Rad, Ali, Shiri Melumad, and Gita Venkataramani Johar (2017), "Consumer Desire for Control as a Barrier to New Product Adoption," *Journal of Consumer Psychology*, 27 (3), 347–54.

Fisher, Robert J., and Linda L. Price (1992), "An Investigation into the Social Context of Early Adoption Behavior," *Journal of Consumer Research*, 19 (3), 477–86.

Fromkin, Howard L. (1972), "Feelings of Interpersonal Undistinctiveness: An Unpleasant Affective State," *Journal of Experimental Research in Personality*, 6, 178–82.

Geroski, Paul, Steve Machin, and John Van Reenen (1993), "The Profitability of Innovating Firms," *The RAND Journal of Economics*, 198–211.

Gilovich, Thomas, Victoria Husted Medvec, and Kenneth Savitsky (2000), "The Spotlight Effect in Social Judgment: An Egocentric Bias in Estimates of the Salience of One's Own Actions and Appearance," *Journal of Personality and Social Psychology*, 78 (2), 211–22.

Harris, J., and M. Lynn (1996), "Manifestations of the Desire for Unique Consumer Products," paper presented at AMA Winter Educators' Conference, Hilton Head, South Carolina.

Hartung, Adam (2015), "The Reason Why Google Glass, Amazon Fire Phone and Segway All Failed," *Forbes*, https://www.forbes.com/sites/adamhartung/2015/02/12/the-reason-why-google-glass-amazon-firephone-and-segway-all-failed/#151b1c4c05c4.

Hassanein, Khaled, and Milena Head (2007), "Manipulating Perceived Social Presence through the Web Interface and Its Impact on Attitude towards Online Shopping," *International Journal of Human-Computer Studies*, 65 (8), 689–708.

Hay, Mark (2018), "Why Big Condom Makers Aren't Interested in Big Condom Innovations," *Forbes*, https://www.forbes.com/sites/markhay

/2018/10/29/why-big-condom-makers-arent-interested-in-big-condom-innovations/#1fd781a06b8b.

Iyengar, Raghuram, Christophe Van den Bulte, and Thomas W. Valente (2011), "Opinion Leadership and Social Contagion in New Product Diffusion," *Marketing Science*, 30 (2), 195–212.

Kim, Kyung Hee (2007), "Exploring the Interactions between Asian Culture (Confucianism) and Creativity," *Journal of Creative Behavior*, 41 (March), 28–53.

Leary, Mark R., and Robin M. Kowalski (1990), "Impression Management: A Literature Review and Two-Component Model," *Psychological Bulletin*, 107 (1), 34–47.

Luo, Xueming (2005), "How Does Shopping with Others Influence Impulsive Purchasing?" *Journal of Consumer Psychology*, 15 (4), 288–94.

Mandel, Naomi (2003), "Shifting Selves and Decision Making: The Effects of Self-Construal Priming on Consumer Risk-Taking," *Journal of Consumer Research*, 30 (1), 30–40.

Mehta, Ravi, Darren W. Dahl, and Rui Juliet Zhu (2017), "Social-Recognition versus Financial Incentives? Exploring the Effects of Creativity-Contingent External Rewards on Creative Performance," *Journal of Consumer Research*, 44 (3), 536–53.

Mehta, Ravi, Joandrea Hoegg, and Amitav Chakravarti (2011), "Knowing Too Much: Expertise-Induced False Recall Effects in Product Comparison," *Journal of Consumer Research*, 38 (October), 535–54.

Mehta, Ravi, and Meng Zhu (2016), "Creating When You Have Less: The Impact of Resource Scarcity on Product Use Creativity," *Journal of Consumer Research*, 42 (February), 767–82.

Mehta, Ravi, Rui Zhu, and Amar Cheema (2012), "Is Noise Always Bad? Exploring the Effects of Ambient Noise on Creative Cognition," *Journal of Consumer Research*, 39 (4), 784–99.

Moore, Sarah G., Darren W. Dahl, Gerald J. Gorn, and Charles B. Weinberg (2006), "Coping with Condom Embarrassment," *Psychology, Health & Medicine*, 11 (1), 70–79.

Moreau, C. Page, Arthur B. Markman, and Donald R. Lehmann (2001), "'What is it?' Categorization Flexibility and Consumers' Responses to Really New Products," *Journal of Consumer Research*, 27 (4), 489–98.

Moschis, George P. (1976), "Social Comparison and Informal Group Influence," *Journal of Marketing Research*, 52 (6), 237–44.

Mueller, Jennifer S., Shimul Melwani, and Jack A. Goncalo (2012), "The Bias against Creativity: Why People Desire but Reject Creative Ideas," *Psychological Science*, 23 (1), 13–17.

Naylor, Rebecca Walker, Cait Poynor Lamberton, and Patricia M. West (2012), "Beyond the "Like" Button: The Impact of Mere Virtual Presence on Brand Evaluations and Purchase Intentions in Social Media Settings," *Journal of Marketing*, 76 (6), 105–20.

Ng, Aik Kwang (2001), *Why Asians Are Less Creative than Westerners*, Upper Saddle River, NJ: Prentice Hall.

Ostlund, Lyman E. (1974), "Perceived Innovation Attributes as Predictors of Innovativeness," *Journal of Consumer Research*, 1 (2), 23–29.

Polgar, David Ryan (2017), "Google Glass and Segway Failed Because They Forgot about Humans," *The Next Web*, https://thenextweb.com/syndication/2017/12/23/google-glass-segway-failed-forgot-humans/.

Pool, Gregory J., Wendy Wood, and Kira Leck (1998), "The Self-Esteem Motive in Social Influence: Agreement with Valued Majorities and Disagreement with Derogated Minorities," *Journal of Personality and Social Psychology*, 75 (4), 967–75.

Preacher, Kristopher J., Derek D. Rucker, and Andrew F. Hayes (2007), "Addressing Moderated Mediation Hypotheses: Theory, Methods, and Prescriptions," *Multivariate Behavioral Research*, 42 (1), 185–227.

Ram, Sundaresan, and Jagdish N. Sheth (1989), "Consumer Resistance to Innovations: The Marketing Problem and Its Solutions," *Journal of Consumer Marketing*, 6 (2), 5–14.

Ratner, Rebecca K., and Barbara E. Kahn (2002), "The Impact of Private Versus Public Consumption on Variety-Seeking Behavior," *Journal of Consumer Research*, 29 (2), 246–57.

Richins, Marsha L. (1994), "Special Possessions and the Expression of Material Values," *Journal of Consumer Research*, 21 (3), 522–33.

Robertson, Thomas S. (1971), *Innovative Behavior and Communication*, New York: Holt McDougal.

Rogers, Everett, M. (1983), *Diffusion of Innovations*, 3rd ed., New York: Free Press.

Rudowicz, Elisabeth, and Teresa T. S. Ng (2003), "On Ng's Why Asians Are Less Creative than Westerners," *Creativity Research Journal*, 15 (2), 301–2.

Runco, Mark A. (1999), "A Longitudinal Study of Exceptional Giftedness and Creativity," *Creativity Research Journal*, 12 (2), 161–64.

Small, Deborah A., and Uri Simonsohn (2008), "Friends of Victims: Personal Experience and Prosocial Behavior," *Journal of Consumer Research*, 35 (3), 532–42.

Snyder, C. R., and Howard L. Fromkin (1980), *Uniqueness: The Human Pursuit of Difference*, New York: Plenum.

Staw, Barry M. (1995), "Why No One Really Wants Creativity," in *Organizations: Ivory Tower Visions & Real World Voices*, ed. C. M. Ford and D. A. Gioia, Thousand Oaks, CA: Sage, 161–72.

Stone, Robert N., and Kjell Grønhaug (1993), "Perceived Risk: Further Considerations for the Marketing Discipline," *European Journal of Marketing*, 27 (3), 39–50.

Sundar, S. Shyam, Daniel J. Tamul, and Mu Wu (2014), "Capturing "Cool": Measures for Assessing Coolness of Technological Products," *International Journal of Human-Computer Studies*, 72 (2), 169–80.

Tohidi, Hamid, and Mohammad Mehdi Jabbari (2012), "Innovation as a Success Key for Organizations," *Procedia Technology*, 1, 560–64.

Uhl, Kenneth, Roman Andrus, and Lance Poulsen (1970), "How Are Laggards Different? An Empirical Inquiry," *Journal of Marketing Research*, 7 (1), 51–54.

Whittaker, Zack (2014), "OK, Glass: How Do I Stop People Calling Me a 'Glasshole'?" *ZDNet*, https://www.zdnet.com/article/ok-glass-how-do-i-stop-people-calling-me-a-glasshole/.

Wood, Stacy, and Steve Hoeffler (2013), "Looking Innovative: Exploring the Role of Impression Management in High-Tech Product Adoption and Use," *Journal of Product Innovation Management*, 30 (6), 1254–70.

Wood, Stacy L., and John G. Lynch Jr. (2002), "Prior Knowledge and Complacency in New Product Learning," *Journal of Consumer Research*, 29 (3), 416–26.

Xie, Yu Henry, and Nitish Singh (2007), "The Impact of Young Adults' Socialisation on Consumer Innovativeness," *Journal of Customer Behaviour*, 6 (3), 229–48.