

When Posting About Products in Social Media Backfires:

The Negative Effects of Consumer Identity-Signaling on Product Interest

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**When Posting About Products in Social Media Backfires:
The Negative Effects of Consumer Identity-Signaling on Product Interest**

Consumers frequently express themselves by posting about products in social media. As consumers can use physical products to signal their identities, posting products in social media may be a way for consumers to *virtually* signal identity. Paradoxically, we propose that there are conditions where this action can reduce a consumer's subsequent purchase intentions. Five experiments demonstrate that posting products in social media that are framed as being identity-relevant can reduce a consumer's subsequent purchase intentions for the same and similar products, as this action allows a consumer to virtually signal their identity; fulfilling identity-signaling needs. Fortunately for retailers, the authors suggest theoretically and managerially-relevant moderators that attenuate this negative effect on intent to purchase. These findings have important implications for how firms can conduct social media marketing to minimize negative purchase outcomes.

Keywords: Social Media, Identity, Identity-Signaling, User-generated Content, Digital Marketing

Nearly 80% of marketers believe that consumer engagement with their products in social media will increase revenue and customer retention (HubSpot 2017; Marketo 2015), and 90% of US mid-to-large-sized companies are now using social media for marketing purposes (eMarketer 2017). Therefore, brands often encourage consumers to engage with them across social media platforms (e.g., Facebook, Instagram, Pinterest, Twitter) in several ways (e.g., prompting likes, re-shares, product posting). Thus, conventional wisdom is that marketers will benefit from getting customers to post about their products in social media. Although plausible, is this really the case? Do firms' attempts to get consumers to generate word of mouth (WOM) or so-called "earned media" increase consumers' interest in those products? Could marketing efforts that encourage consumers to post a firm's products in social media potentially backfire?

As with actual, real-world product purchase and consumption, consumers can use their product interactions in social media to express their identities. Therefore, our research seeks to understand this relatively new form of identity expression with respect to how and why it affects a consumer's subsequent interest in these and similar products. Despite the ubiquity of product posts in social media, we do not yet understand how this affects the consumers who do the posting. To date, research has focused on product-related social media posting as a form of WOM or information diffusion, and predominantly considers how such actions impact those who see the posts (i.e., receivers) instead of the transmitters themselves (Lamberton and Stephen 2016; Stephen 2016). Thus, while research has established how posting about products in social media affects *other* consumers' interest in those products and their purchasing actions, we know little about how this affects the consumer who originates the post.

The current research examines two main research questions: (i) How does posting products in social media affect consumers' subsequent purchase intentions? (ii) What is the

psychological mechanism through which product posting impacts purchase intentions?

Considering this, conceptually, we examine consumers' product posting in social media through the lens of identity-signaling. It is well-established that consumers purchase products not only for their functional benefits but also to appropriate the symbolic value ascribed to these products (Belk, Bahn, and Mayer 1982; Levy 1995). Put simply, people sometimes buy and consume products because they can signal identity (Bodner and Prelec 2003; Berger and Heath 2007; Dhar and Wertenbroch 2012). With this theoretical lens in mind, it is plausible that posting identity-relevant products in social media is another way for people to signal their identities, albeit virtually. Of interest in the current research is the extent to which self-expression through product posts in social media acts as either a complement or substitute for actual purchase.

Social media enables consumers to transmit social information; thus, a key motivation in social media may be about sharing self-relevant content that signals identity (Back et al. 2010; Reed et al. 2012; Swann 1983; Toubia and Stephen 2013). Considering that social media allows for conspicuous consumption akin to ownership (Belk 2013; Berger and Heath 2007, 2008), we propose that the act of posting products can negatively impact subsequent purchase. This occurs because, under certain conditions, the act of posting products in social media fulfills consumers' identity-signaling needs, obviating the subsequent need for actual purchase. While prior literature might predict that posting should increase identity-consistent behavior (Oyserman 2009), and subsequently predict that there should be higher purchase after identity-relevant posting, we argue that the opposite effect is more likely to occur.

We examine this phenomenon and test this central hypothesis with five experiments. We find that when consumers have been prompted to post identity-relevant products in social media, this leads to a *decreased* interest in purchasing those and similar products as posting can fulfill a

consumer's identity-signaling needs. Additionally, we examine theoretically and managerially-relevant conditions that attenuate this effect such as when posts are (i) seen as less identity-relevant, (ii) private, (iii) seen as a weak signal, and (iv) not salient at the point of purchase.

This research makes several theoretical and practical contributions. First, we add to the small literature on individual-level consequences of social media use. Prior work has mostly addressed firm-level aspects, such as how social media influences sales and customer acquisition (Stephen and Galak 2012; Trusov, Bucklin, and Pauwels 2009). Our research complements the nascent body of research that instead focuses on individual-level consequences such as brand favorability and purchase (John et al. 2017), self-esteem and self-control (Wilcox and Stephen 2013), and shopping (Zhang et al. 2017).

Second, we expand the types of consumer behaviors in social media considered in the literature by examining how posting about products affects the consumer who does the posting (i.e., transmitter) instead of others (i.e., receivers), which has been the dominant focus in the diffusion-related online WOM literature. This is in line with recent calls for social media marketing research to be broader than just WOM (Lamberton and Stephen 2016) and to consider social media use from a psychological perspective (Stephen 2016).

Third, we add to the literature on identity-based consumption and identity-signaling. Prior literature has emphasized situations where people consume in identity-consistent ways and respond favorably to identity-congruent products and messages (Belk 1988; Reed et al. 2012). In contrast, we explore a situation in which connections between the self and products have negative consequences for purchase. This research thus adds to research showing identity-consistency can have marketing-relevant costs (Bhattacharjee, Berger, and Menon 2014).

Finally, our findings have important implications for the practice of social media marketing. As we consider situations where consumers have been prompted to post, as this imitates real social media practice wherein brands encourage posting and engagement from consumers (Chae et al. 2017; Godes and Mayzlin 2009), there are clear implications for how marketers consider these interventions. If firm-encouraged or firm-prompted consumer engagement with products in social media can undermine the desire to purchase, marketers may want to consider other social media strategies or revise expectations for what these programs are likely to achieve. Getting consumers to post products may still achieve receiver-side WOM-related benefits associated with social influence and information diffusion. However, when marketers encourage this, our findings suggest that they could do so at the cost of sales from the consumers on the transmitter side, i.e., the consumers making the posts. Fortunately, our work also provides suggestions to minimize these negative outcomes for managers who hope to encourage consumer engagement in social media.

THEORETICAL BACKGROUND

Identities form a basis for social classification and help to create and maintain the self-concept (Aquino and Reed 2002). Consumers have different identities that organize and guide their attitudes, judgments, behaviors, and choices. Importantly, prior research has shown that consumers tend to engage in identity-consistent behavior and expression (Oyserman 2009). One way that consumers express, maintain, and reinforce their identities is through the products they purchase and consume (Belk 1988; Berger and Ward 2010; Escalas and Bettman 2005; Forehand, Deshpande, and Reed 2002; Reed 2004; Ward and Broniarczyk 2011). Consumers

generally choose and purchase products that express an identity that they possess, such as an environmentalist driving an eco-friendly Toyota Prius (Ward and Dahl 2014).

Identity-relevant products serve as identity signals; they communicate something about the consumer's identity to the self and to a broader audience (Berger and Heath 2007; Dhar and Wertenbroch 2012). When others view the individual publicly using a product, inferences are made about who that person is; e.g., inferring that someone who owns a Prius cares about the environment (Berger and Heath 2007, 2008). Further, the consumer herself makes self-inferences based on product ownership; e.g., I own a Prius, so I care about being environmentally-friendly (Bem 1972; Bodner and Prelec 2003; Malär et al. 2011; Swann 1983). Thus, extant literature on identity-signaling suggests that owning and consuming identity-relevant products allows a consumer to communicate something about herself.

Previously, research on identity-signaling has assumed that identity signals could only be communicated through ownership or conspicuous consumption (Berger and Heath 2007, 2008). In the age of social media and the connected consumer (Deighton, Goldenberg, and Stephen 2017), however, it is probable that virtual associations with products can serve identity-signaling functions akin to actual ownership or consumption (Belk 2013). If so, virtually associating with products through social media may fulfill consumer identity-signaling needs, ultimately obviating the need for actual purchase.

How might this occur? Social media can be used for self-presentation, affiliation, and expression (Back et al. 2010; Gosling, Gaddis, and Vazire 2007; Toubia and Stephen 2013; Wilcox and Stephen 2013). Social media provides a platform where individuals can have an audience to whom they can demonstrate identity-signaling behavior. For example, a consumer can “follow” Patagonia in social media, and this link between the consumer and Patagonia

products is visible to a broader audience. Therefore, social media enables consumers to send virtual identity-signals to others. Further, as the consumer chooses and views her own social product posts, these can serve as self-signals, reinforcing connections between consumers and their products, and serving to maintain identity-consistent self-perception (e.g., “I posted about Patagonia, so being environmentally-friendly is part of who I am;” Escalas and Bettman 2003; Forehand, Deshpande, and Reed 2002; Reed 2004; Ward and Broniarczyk 2011). Therefore, we suggest that posting products in social media can allow the consumer to fulfill their identity-signaling needs; reducing interest in purchasing the same and similar identity-relevant products.

Our theory predicts a counterintuitive effect, such that there are situations where posting products in social media may make a consumer less interested in subsequent purchase. Critically, we only predict this to extend to products within the same identity-domain as the signaled identity. For example, if someone posted about their athlete identity, we predict that only their interest in purchasing athletic products would be negatively impacted, as other identities have not been virtually signaled. In line with this, we expect virtual identity-signaling to impact purchase at the category level (i.e., any product that communicates the same identity as the signaled identity) rather than at the product level (i.e., only the product that is posted). Prior research has shown that consumers are attracted to a wide array of brands and products that are consistent within a particular identity (Malhotra 1988; Sirgy, Grewal, and Mangleburg 2000), as they all are contained within the “symbolic constellation of products that define an identity” (Reed et al. 2012, p. 316). Thus, any product that signals the same identity of the posted products should be desired less, as posting fulfills the identity-signaling needs that a consumer will typically derive from purchase at the identity, rather than product, level.

Moderators

In a broad sense, our hypothesized effect should only occur when a consumer's social media product posts fulfill her identity-signaling needs. Based on this identity-signaling account, we identify a number of theoretically- and managerially-relevant moderators. First, our effect depends on product posts being seen as identity-relevant to the consumer posting. As individuals might post products in social media for several reasons (e.g., entering a contest, earning a discount, or creating a "list" for gifts), a posted product needs to be seen as identity-relevant to the self. Research on self-perception theory (Bem 1972) and self-signaling theory (Bodner and Prelec 2003) suggests that people make inferences about themselves based on their behavior, thus, we believe that posting identity-relevant products provides the consumer with a self-diagnostic signal that then influences how much she has accomplished her identity-signaling needs. In the case of posted products that are not identity-relevant, however, there is less symbolic value that consumers can acquire through the product posting, thus the product posting is not meaningful for constructing one's identity, and subsequently does not fulfill identity-signaling needs (Berger and Heath 2007).

Second, we believe that posting identity-relevant products should generally be an adequate identity-signal. However, when posted products do not feel like a strong enough identity-signal, we expect that consumers will still want identity-relevant products as identity-signaling needs are unfulfilled. This weak signal could occur for two reasons: the product does not signal the identity (i.e., is not identity-relevant) or because identity verification needs are heightened. Identity verification is particularly important for strong and central identities (Reed et al. 2012), as it is more important to maintain identity-consistency for these strong and central identities (Bolton and Reed 2004). Thus, we predict that if a consumer has a particularly strong identity, she will feel as though she has inadequately signaled an important identity with

“merely” a virtual product association, and, consequently, would not show a decreased interest in purchasing identity-relevant products.

Third, research has shown that an essential component of identity-signaling is that the signal is seen by others. The private consumption of identity-relevant products does not communicate identity to others (Berger and Heath 2007; Reed et al. 2012; Shavitt and Nelson 1999). Therefore, the public visibility of these identity-signals matter. Consequently, we predict that if consumers are posting identity-relevant products, yet others are unable to see the posts, a consumers’ identity-signaling needs will be left unfulfilled. Thus, we do not predict a negative effect on purchase intentions to occur for posts that are privately created.

Finally, we predict that the salience of the post at the point of purchase will matter. Research has shown that the salience of an identity can influence the strength and the probability of the identity influencing subsequent behavior (Laverie et al. 2002; Reed et al. 2012). Identity-relevant product posts are not necessarily always mentally accessible or top of mind, and thus may not be strong identity signals. We predict that when the salience of identity-relevant product posting is weak at the point of purchase, consumers will not feel as though they have fulfilled their signaling needs, and thus, there will be no negative effect on purchase intentions.

Overview of Studies

We present five experiments that test our conceptual framework (see Figure 1). Study 1 establishes the basic effect that posting identity-relevant products in social media can decrease purchase intentions. Study 2 examines how product posts need to be both identity-relevant and public to reduce purchase intentions. Study 3 examines the moderating effect of identity-strength where, when identities are particularly strong, product posting does not sufficiently signal identity, and thus the negative effect of posting is attenuated. Study 4 establishes that the effect

of product posting is not a general decline in purchase intentions for products, but rather is specific to products that signal the same identity as the one posted. Finally, Study 5 reveals that when product posts are not salient at the point of purchase, they no longer feel like a sufficient signal of identity, attenuating the negative effect of posting. Across studies, we examine the effect of posting identity-relevant products for a variety of focal identities and across different measures of interest in products (i.e., purchase intentions, willingness to pay, and choice).

[INSERT FIGURE 1 ABOUT HERE]

STUDY 1

Study 1 shows that consumers' social media actions can negatively influence their purchase intentions when they post identity-relevant products. Using participants' student identity as the focal identity, we compare purchase intentions for an identity-relevant product after consumers have either posted identity-relevant products, merely searched for identity-relevant products (and did not post) or have not engaged with products in social media. In this and in all subsequent studies we explicitly asked participants to post (or not post) products to social media to best replicate brand encouragement (Chae et al. 2017; Godes and Mayzlin 2009).

Method

One hundred and ninety-six undergraduates from the University of Pittsburgh participated in this study as part of a series of unrelated studies conducted during a lab session, in exchange for course credit ($M_{\text{age}} = 21$ years, 50% women). Two individuals failed the screening criteria of being comfortable with English or having a Facebook account and were excluded from the analyses, resulting in a sample size of 194 students. Participants were randomly assigned to

one of three conditions in a single-factor between-subjects design (task: posting, searching, control).

This study was conducted in two ostensibly unrelated parts. Participants first read about a new Facebook feature called “Facebook Curations.” The feature was described as a publicly visible way to post and curate product preferences on Facebook. Participants saw a sample “curation” to make the feature more concrete. Afterwards, participants were given one of three tasks. In the posting condition, participants found three products online that showcased their college student identity and imagined that they posted these products on their Facebook account. In the searching condition, participants also found three products online that represented their student identity but imagined that they had not posted these products on Facebook. In the control condition, after reading about Facebook Curations, participants moved forward to the second task (see Web Appendix A for study instructions and stimuli). Participants who found and/or posted products provided the URLs and product titles for everything they found in the online survey and then wrote about how each of the products signaled their student identity.

After this, in a seemingly unrelated study, participants indicated their purchase intentions for a backpack that prominently displayed their school name using a Likert scale (1 = “strongly disagree” to 7 = “strongly agree”). Finally, participants answered manipulation check questions and standard demographic questions. See Web Appendix B for manipulation check analyses and Web Appendix C for images of the dependent variable.

Results and Discussion

We predicted that purchase intentions for the identity-relevant backpack would be lower for those who posted products compared to those who searched and those who did not engage with products. To test this, we regressed purchase intentions on a variable representing the

posting condition (posting = 1, searching and control = -1) and a variable representing the control condition (control = 1, searching and posting = -1).

The results were consistent with our prediction. The overall model was significant ($F(2, 192) = 103.55, p < .001$). The effect of posting products on purchase intentions was negative ($\beta = -.245, t = -2.33, p = .021$). Specifically, purchase intentions were lower for those who posted products in social media ($M = 3.13, SD = 1.81$) compared to those who searched for, but did not post, products ($M = 3.77, SD = 1.86$), and compared to those who did not engage with products ($M = 4.21, SD = 1.94$). Importantly, the purchase intentions for the searching condition did not differ from those in the control condition ($\beta = .221, t = 1.35, p = .178$).

Study 1 provides initial evidence that consumers have less interest in purchasing identity-relevant products after they have posted identity-relevant products in social media. In Web Appendix D, we replicate these findings in another study (using a different focal identity), where participants either posted or just searched for products using their real social media accounts before indicating their purchase intentions for an identity-relevant product ($\beta = -.354, t = -2.50, p = .014$). Study 2, using process-by-moderation (Spencer, Zanna, and Fong 2005), examines how product posting in social media only negatively influences purchase intentions when posts are identity-relevant and publicly visible to others.

STUDY 2

The purpose of Study 2 is two-fold. First, we test our prediction that posted products only negatively impact purchase intentions if the post is identity-relevant. To examine this, we manipulated the perceived identity-signaling value within the same product domain. Depending

on the context, products can be seen as identity-relevant or functional. Clothing, for example, is less identity-relevant and has less signaling value when thinking about what to wear for cleaning as opposed to going out with others (Berger and Heath 2007). Using this manipulation of identity-relevance, we compare how product posts that express an environmentalist identity, versus those that demonstrate how *functional* eco-friendly products are, influence purchase intentions of another identity-relevant product. We predict that when consumers' product posts are not identity-relevant (i.e., are functional), identity-signaling needs will not be fulfilled, and there will be no decreased purchase intentions for another eco-friendly product.

Second, in this study, using a process-by-moderation design, we examine the impact of an audience for fulfilling identity-signaling needs. Identity signals need to be public to communicate identity (Belk 1988; Berger and Heath 2007; Berger and Ward 2010), therefore, we predict that product posts that are not visible to others will not fulfill identity-signaling needs. Thus, the identity-signaling benefits typically derived from purchase should still be desirable to these individuals, and the negative effect of posting on purchase intentions will be attenuated.

Method

Two hundred and eighty-one members of Amazon Mechanical Turk who declared themselves to be active Pinterest users participated for a nominal payment ($M_{\text{age}} = 33.81$ years, 58% women). We chose to look at Pinterest as it is a popular social media platform where users commonly post products (images, text) to "boards" that other users can see. No participants were dropped. Participants were randomly assigned to one condition in a 2 (posting: identity-relevant, functional) x 2 (visibility of post: public, private) between-subjects design.

The study contained two ostensibly unrelated parts. In the first part, participants used their real Pinterest account to find and post three eco-friendly products to a board. In the

functional condition, participants posted “products people can use to help the environment,” while in the identity-relevant condition, participants posted products “that you would use to show that you are a proud environmentalist” (Berger and Heath 2007, Study 4; see Web Appendix E for instructions and stimuli). In the public condition, participants were reminded that everyone would see the board they created while participants in the private condition created a “secret” board which is an option on Pinterest where posted products are only seen by the poster.

After this, in a seemingly unrelated task, participants indicated their purchase intentions for an eco-friendly, environmentalist-relevant backpack. Finally, participants answered manipulation checks and standard demographic questions. See Web Appendix B for manipulation check analyses and Web Appendix C for an image of the dependent variable.

Results and Discussion

Our theory predicted that participants who posted identity-relevant products (vs. posted for functional purposes) should have lower purchase intentions for an eco-friendly bag, but only in the public visibility condition. To test our prediction, we regressed purchase intentions on posting type (functional = -1, identity-relevant = 1), public visibility (private = -1, public = 1), and their interaction. The overall model was significant ($F(3,277) = 30.58, p < .001$), and the main effects of posting and visibility were both significant (posting: $\beta = -.228, t = -2.79, p = .006$; visibility: $\beta = -.479, t = -5.88, p < .001$).

Importantly, the interaction between the posting type and visibility was significant and consistent with our prediction ($\beta = -.598, t = -7.34, p < .001$). The simple effect of posting type on purchase intentions was negative when participants posted products publicly ($\beta = -.825, t = -6.11, p < .001$). When posts were publicly visible to others, those who posted identity-relevant products had lower purchase intentions ($M = 3.76, SD = 1.91$) than those who posted products

from a functional perspective ($M = 5.41$, $SD = 1.20$). The simple effect of the posting type was significant in the opposite direction when participants privately posted products: those who posted identity-relevant products had higher purchase intentions than those whose posts were functional ($\beta = .370$, $t = 3.96$, $p < .001$; $M_{\text{identity}} = 5.91$, $SD_{\text{identity}} = 1.10$, $M_{\text{functional}} = 5.17$, $SD_{\text{functional}} = 1.14$; see figure 2).

[INSERT FIGURE 2 ABOUT HERE]

In Study 2, we demonstrated that consumers' product posts in social media only negatively impact purchase intentions if two conditions are met: the product posts are identity-relevant *and* publicly visible. When people posted privately, posting identity-relevant products significantly increased purchase intentions, highlighting that the negative effect we find in the public posting condition is unlikely to occur due to any type of reactance to being prompted or encouraged to post. This finding is also in line with the research on identity-consistent behavior and expression (Berger and Ward 2010; Escalas and Bettman 2005; Oyserman 2009), where, when people are not able to sufficiently signal their identities to other people, they are motivated to further express, maintain, and reinforce their identities through purchase. Next, in Study 3, we manipulate the strength of consumers' identities and show how those with strengthened identities may not fulfill their identity-signaling needs through identity-relevant product posting online, attenuating our effect.

STUDY 3

Study 3 examines identity-signaling in the context of strongly held identities as there is greater motivation to reinforce the identity, increasing identity-consistent behavior, and

increasing the likelihood that product posting will not be seen as a strong enough signal to decrease interest in identity-relevant products (Bolton and Reed 2004; Gollwitzer et al. 2009). In this study, we measure our proposed mediator of fulfilled identity-signaling via product posting in social media. As well, using participants' college student identity as the focal identity, we use a consequential willingness-to-pay task to elicit real interest in an identity-relevant product.

Method

Two hundred and four undergraduates from the University of Pittsburgh participated in this study as part of a series of unrelated studies conducted during a lab session, in exchange for course credit ($M_{\text{age}} = 20$ years, 39.5% women). Nine individuals failed to pass the screening criteria of being comfortable with English or having a Facebook account and were excluded from the analyses ($n = 195$). Participants were randomly assigned to one condition in a 2 (posting: identity-relevant, functional) $\times$ 2 (identity-strength: high, control) between-subjects design.

This study was conducted in two ostensibly unrelated parts. In part 1, participants received \$2.00 in dimes. Participants were told that the money was compensation for participating in the surveys in the lab that day. Once participants confirmed that they received their money, they continued with another study. After completing other studies in the lab session, participants began part 2 of our study by first participating in a writing task. In the high identity-strength condition, participants wrote about how being a student at the University of Pittsburgh was important to their life and their identity while in the control condition, participants wrote about their favorite type of tree, using a task from Kraus and Chen (2009; i.e., what type of leaves it has, how tall it is). In both conditions, participants had to write for at least one minute (see Web Appendix F for specific wording of writing task across conditions).

After the identity-strength prime, participants read about the “Facebook Curations” feature used in Study 1. Participants all developed their own Facebook Curation. In the identity-relevant posting condition, participants found three products online that represented and showcased their specific college student identity. In the functional posting condition, participants found three products that would be useful to their lives as college students (see Web Appendix A). Participants provided the URLs and product titles for everything they found in the online survey and then wrote about how each of the products signaled their identity (was useful to them), and how these products would be portrayed publicly on their Facebook accounts. After creating and considering these curations on their social media accounts, participants were asked to complete a five-item identity-signaling scale that measures the degree to which participants felt they were signaling their identity through their posted products on Facebook ($\alpha = .93$; items adapted from Arbore, Soscia, and Bagozzi 2014; see Web Appendix F).

Next, participants completed the lottery portion of the study where they learned they may have the opportunity to purchase a university tote bag. We assessed participants’ valuation of this identity-relevant tote bag using an adaption of the BDM method of price elicitation (Becker, DeGroot, and Marschak 1964), which incentivizes participants to provide accurate valuations. Participants learned that they would be indicating their willingness to pay for the bag at a range of specified prices. If the participant was randomly chosen, one randomly-selected pricing decision was fulfilled: buying the bag (i.e., paying the experimenter and receiving the bag at the elicited price) or not buying the bag (i.e., keeping the elicited amount of money and not receiving the bag). After reading the instructions, participants indicated WTP at alternating values of \$.10 (e.g., at \$.10, then \$2.00, then \$.20, then \$1.90), which was randomized to start at \$2.00 or \$.10.

After engaging with the WTP task, participants answered randomized questions about their felt psychological ownership of posted products and questions about the bag they indicated WTP for, along with standard demographic questions. At the end of each lab session, one student was chosen to purchase the tote bag and the purchase transaction was made (if the participant's decision was to buy at the randomly chosen price). See Web Appendix B for manipulation check analyses, Web Appendix C for images of the dependent variable, and Web Appendix G for the analysis of psychological ownership and feelings towards identity-relevant tote bag that may have influenced participants (instead of identity-signaling).

Results and Discussion

Willingness-To-Pay. We predicted that participants would have a lower WTP for the identity-relevant bag if their posts were also identity-relevant and when they were in the control identity-strength condition. To test this, we regressed WTP on posting (functional = -1, identity-relevant = 1), identity-strength (control = -1, high = 1), and their interaction. The overall model was significant ($F(3,191) = 3.28, p = .022$). Neither the main effect of posting ($\beta = .099, t = 1.77, p = .079$) nor the main effect of identity-strength were significant ($\beta = -.094, t = -1.67, p = .096$).

Importantly, the interaction was significant in the direction consistent with our prediction ($\beta = .114, t = 2.035, p = .043$; see figure 3). Specifically, the simple effect of posting in the control identity-strength condition was such that those who posted identity-relevant products had lower WTP for the identity-relevant bag ($M = \$0.86, SD = \0.79) than those who posted functional products ($M = \$1.28, SD = \$0.73; \beta = -.209, t = -2.59, p = .011$). The simple effect of posting in the high identity-strength condition was not significant ($\beta = .020, t = .261, p = .795; M_{\text{identity}} = \$1.29, SD_{\text{identity}} = \$0.81, M_{\text{functional}} = \$1.25, SD_{\text{functional}} = \0.78), consistent with our prediction.

[INSERT FIGURE 3 ABOUT HERE]

Moderated Mediation. We suggest that identity-relevant posting in social media can allow consumers to fulfill their identity-signaling needs which should decrease willingness to pay for identity-relevant products. However, we should not see this effect in situations where posting is seen as an insufficient identity-signal. Thus, in this study we predicted that for participants with a strongly activated student identity, merely posting identity-relevant products would not act as a strong enough identity signal to lower willingness to pay.

To examine this prediction, a moderated mediation model was estimated using PROCESS Model 8 (Hayes 2013). We included our measure of fulfilled identity-signaling as our mediator and identity-strength as the moderator. As predicted, the index of moderated mediation was significant ($b = -.05$, $SE = .03$, $CI_{95} [-.13, -.01]$). Consistent with our prediction that WTP is only influenced after product posts fulfill identity-signaling needs, a conditional indirect effects analysis demonstrated that identity-signaling mediates in the control identity-strength condition ($b = -.06$, $SE = .03$, $CI_{95} [-.12, -.02]$). However, when identity-strength was high, the indirect effect was not significant ($b = .007$, $SE = .02$, $CI_{95} [-.02, .04]$; see table 1).

[INSERT TABLE 1 ABOUT HERE]

Study 3 showed how social media posting must strongly signal identity to see a decreased willingness to pay for identity-relevant products. In this study, using an incentive-compatible design, we found that differences in real willingness-to-pay only arose when consumers felt as though they strongly signaled their identities. When consumers had a strongly activated student identity, they were more motivated to signal this identity, and consequently, their identity-relevant posts were not seen as sufficient identity-signals. Thus, there was no lowered willingness-to-pay for another identity-relevant product.

Across studies thus far, we have seen a decreased interest in purchasing products after consumers have posted identity-relevant products in social media to signal their identities. However, in these studies, the product considered for purchase was also identity-relevant. Therefore, to determine whether our effect is due to identity-relevant product posts satisfying the need for other identity-relevant goods (vs. general product satiation), in the next study, we examine the identity-relevance of the products considered for purchase.

STUDY 4

Study 4 examines a key boundary to our effect—that identity-relevant posting *only* impacts intentions to purchase other identity-relevant products, not products generally. We have argued that product posting should only substitute products that achieve the same value: signaling identity. In this study, we demonstrate that products that are considered for reasons other than symbolic value (e.g., for functional properties) are not devalued through the identity-signaling derived from product posting. In this study, as in Study 3, we use participants' college student identity as the focal identity.

Method

One hundred and ninety-six undergraduates from the University of Pittsburgh participated in this study as part of a series of unrelated studies conducted during a lab session, in exchange for course credit ($M_{\text{age}} = 20$ years, 50% women). Eleven individuals failed to pass the screening criteria of being comfortable with English or having a Facebook account or were unable to complete the study and were excluded from the analyses ($n = 185$). Participants were

randomly assigned to one condition in a 2 (posting: identity-relevant, functional) x 2 (product evaluated: identity-relevant, functional) between-subjects design.

This study was conducted in two seemingly unrelated parts. In part 1, participants developed the same Facebook Curations as in Studies 1 and 3. Afterwards, in a seemingly unrelated study, participants indicated their purchase intentions for a backpack. Participants were randomly assigned to indicate their purchase intentions for a plain black backpack (functional) or an identical backpack that prominently displayed their school name (identity-relevant). After indicating purchase intentions and answering manipulation check questions, participants answered the same identity-signaling measure as in Study 3 (see Web Appendix F). Finally, participants answered standard demographic questions. See Web Appendix B for manipulation check analyses and Web Appendix C for images of the dependent variables.

Results and Discussion

Purchase Intentions. Based on our theory, we predicted that participants would have lower purchase intentions for the identity-relevant backpack only if they had posted identity-relevant (vs. functional) products. To test our predictions, we regressed purchase intentions on posting (functional = -1, identity-relevant = 1), product evaluated (functional = -1, identity-relevant = 1), and the interaction. The overall model was significant ($F(3,181) = 3.67, p = .013$). We found that neither the main effect of posting ($\beta = -.055, t = -.387, p = .699$), nor the main effect of product evaluated was significant ($\beta = -.221, t = -1.55, p = .123$).

Importantly, the interaction between posting and product evaluated was significant in the direction consistent with our prediction ($\beta = -.409, t = -2.865, p = .005$; see figure 4). Specifically, the simple effect of posting was such that participants who signaled their school identity through identity-relevant posting had lower purchase intentions for the identity-relevant

bag ($M = 3.21$, $SD = 1.95$) than those who posted about functional products ($M = 4.14$, $SD = 1.86$; $\beta = -.464$, $t = -2.33$, $p = .022$). The simple effect of posting was not significant when participants posted identity-relevant products and then evaluated the functional backpack ($\beta = .354$, $t = 1.73$, $p = .087$; $M_{\text{identity}} = 4.47$, $SD_{\text{identity}} = 1.97$, $M_{\text{functional}} = 3.76$, $SD_{\text{functional}} = 1.98$).

[INSERT FIGURE 4 ABOUT HERE]

Mediated Moderation. We predicted that participants would have lower purchase intentions for the identity-relevant backpack only if they had posted identity-relevant (vs. functional) products. We predicted this would occur as only identity-relevant posting allows participants to fulfill their identity-signaling needs. We also predicted that this identity-signaling process would not influence purchase intentions for the functional backpack. We tested these predictions using PROCESS Model 15 (Hayes 2013), so that identity-signaling was our mediator, and the product evaluated was the moderator.

We found a significant index of mediated moderation for identity-signaling ($b = -.66$, $SE = .17$, $CI_{95} [-1.05, -.371]$). Consistent with our predictions, a conditional indirect effects analysis demonstrated that identity-signaling mediated when the dependent variable considered was identity-relevant ($b = -.36$, $SE = .10$, $CI_{95} [-.59, -.19]$). Conversely, when the product considered for purchase was the functional backpack (i.e., less identity-relevant), the indirect effect was no longer significant ($b = .29$, $SE = .11$, $CI_{95} [-.12, .54]$; see table 2).

[INSERT TABLE 2 AROUND HERE]

In Study 4, we determine that a boundary condition to our effect is that identity-relevant posts lead to lowered purchase *only* for identity-relevant products. Identity-relevant posting fulfills consumer identity-signaling needs typically derived from purchase and ownership. However, in the case of products that are considered for reasons outside of their symbolic value

(e.g., for functional properties), the identity-signaling derived from product posting is less impactful on purchase. In our last study, we examine how virtual identity-signals need to be salient to influence subsequent identity-relevant purchase intentions.

STUDY 5

In Study 5, using a process-by-moderation design, we examine the longer-term consequences of identity-relevant posting on identity-relevant purchase intentions. Traditionally, identity signals are physical items that people own, yet product posts are less tangible (Belk 2013) and thus may not remain strong identity signals after the initial act of posting. To examine whether consumers' actions in social media can have lasting implications, we manipulated the salience of these posts at the time of product choice.

Participants posted products that were relevant to their environmentalist-identity on Pinterest to either a publicly or privately visible board before they made a real product choice. A week later we re-contacted participants, and either had them revisit (or not) their previous posts before making a real product choice between identity-relevant and other non-relevant products. We predict that when the salience of public identity-relevant product posts is low, product posting is a weaker (insufficient) identity signal, and subsequently, consumers will seek other signals of their identity (e.g., choosing an identity-relevant product).

Method

Three hundred and sixty members of Amazon Mechanical Turk who declared themselves active Pinterest users initially participated for a nominal payment. In this study, we only included participants who responded and completed the online surveys across two points of contact one

week apart in the analysis, which resulted in a sample size of 266 people ($M_{\text{age}} = 33.84$ years, 70% women).¹ Participants were randomly assigned to one condition in a 2 (visibility: public, private) x 2 (salience of posting: low, high) between-subjects design. All participants in this study posted products that were relevant to their environmentalist identity.

The study at Time 1 contained two ostensibly unrelated parts. First, participants engaged in the identity-relevant posting task from Study 2. Everyone found products “that you would use to show that you are a proud environmentalist.” Specifically, in the public condition, participants were reminded that everyone would see their board while those in the private condition created a “secret” board that no one else could see. Afterwards, in a seemingly unrelated study, in randomized order, participants saw four bags (two eco-friendly and two-functional) and indicated how much they liked each bag, how eco-friendly each bag was, and how useful each bag appeared (1 = “strongly disagree” to 7 = “strongly agree”). Once participants evaluated all four bags, they were told that everyone who completed the survey would be entered in to a lottery to receive one of the bags, and subsequently chose a bag they would like to win (all of which were similarly priced and available on Amazon). At the end, everyone answered questions measuring impression management concerns (White and Peloza 2009), felt psychological ownership of their posted products (Shu and Peck 2011), and standard demographic questions and were informed that a follow-up survey would be available in a week.

One week later, we re-contacted participants to do our Time 2 survey. Once participants agreed to do the Time 2 survey, they were randomly assigned to either re-engage with the products they posted on Pinterest that represented their environmentalist identity (high salience

¹ From the initial 360 participants, 135 from the private condition and 131 from the public condition completed the Time 2 survey. There were no meaningful demographic differences between those included or excluded from the final analysis.

condition), or to not re-engage with these products (low salience condition). Individuals in the high salience condition signed into their Pinterest accounts, looked at the products they pinned representing their environmentalist identity the week before, and wrote in the online survey how these products were relevant to their environmentalist identity. In the low salience condition, participants, after confirming they took the Time 1 survey, were moved forward in the online survey without going back to their Pinterest account.

Afterwards, participants saw the same selection of four bags from Time 1 and were told to choose a bag they would want to receive. Participants were informed that if they were to win the lottery, they would receive the bag they chose at this time, not the bag chosen one week earlier. Lastly, participants answered standard demographic questions. The winner was contacted and sent an Amazon gift card for the value of their bag. Refer to Web Appendix H for specific study instructions and stimuli, Web Appendix B for manipulation check analyses, Web Appendix C for images of the bag options given to participants in the real choice task, and Web Appendix G for the analysis of alternative explanations that may have influenced participants.

Results and Discussion

Time 1 Choice Results. Based on our theory, participants who posted publicly should have chosen to receive an identity-relevant, eco-friendly bag, less often than the participants who posted privately. As participants chose from four possible bags, we created a dependent measure that represented choosing one of the two identity-relevant eco-friendly bags or one of the two functional bags (functional bags = 0, identity-relevant eco-friendly bags = 1). We ran a binary logistic regression of choice on visibility (private = -1, public = 1), and found a significant main effect of visibility on the choice of an eco-friendly bag ($\beta = -.341$, $\chi^2 = 5.26$, $p = .022$, $\text{Exp}(B) =$

.711). People in the public condition were significantly less likely to choose an identity-relevant eco-friendly bag (70%) compared to those in the private condition (82.5%).

Time 2 Choice Results. We predicted that one week later, the visibility of identity-relevant product posts would only still impact the choice of an identity-relevant product if the virtual identity-signal from the public product post was still salient. We again created a dependent measure that represented choosing one of the two identity-relevant eco-friendly bags or one of the two functional bags (functional bags = 0, eco-friendly bags = 1).

We ran a binary logistic regression of choice on visibility (private = -1, public = 1), salience (low = -1, high = 1), and their interaction. There was no main effect of visibility ($p = .187$), or a main effect of salience ($p = .920$). There was however, a significant interaction ($\beta = -.229$, $\chi^2 = 4.12$, $p = .042$, $\text{Exp}(B) = .795$). The simple effect of visibility showed that participants who publicly posted still chose an identity-relevant bag less often ($M = 74\%$) one week later compared to those who privately posted when salience was high ($M = 86\%$; $\beta = -.378$, $\chi^2 = 4.98$, $p = .026$). This effect of visibility was no longer significant when the salience of the product posts was low ($M_{\text{public}} = 82\%$ vs. $M_{\text{private}} = 80\%$; $\beta = .08$, $\chi^2 = .289$, $p = .591$; see figure 5).

[INSERT FIGURE 5 ABOUT HERE]

In Study 5, we demonstrated that consumers' identity-relevant product posts in social media only negatively impact purchase intentions if two conditions are met: the product posts are publicly visible and salient at the point of purchase. Private posting does not allow consumers to signal their identities to other people, thus further motivating purchase of identity-relevant products (replicating the findings of Study 2). As well, when identity-relevant product posting was no longer salient, the negative effects on the real choice of another identity-relevant product were attenuated as the previous posting in social media was seen as a weak identity-signal.

GENERAL DISCUSSION

As marketing is increasingly focused on using social media to encourage consumer engagement and the generation of “earned media,” understanding the consequences of consumers’ product posting is essential. Conceptually, we examine consumers’ posting actions through the lens of identity-signaling. Research has established that consumers utilize brands and products not only for their functional benefits but also to appropriate the products’ symbolic value, and this is no different for virtual compared to real products (Belk 2013; Belk, Bahn, and Mayer 1982; Levy 1995). Across five experiments, we found that consumers’ identity-relevant product posts in social media led to *decreased* interest in purchasing those and similar identity-relevant products when consumers were able to satisfy their identity-signaling needs.

Theoretical Contributions and Practical Implications

This research makes several theoretical and practical contributions. Theoretically, we add to the small but growing literature on the individual consequences of social media use (John et al. 2017; Wilcox and Stephen 2013; Zhang et al. 2017). In line with recent calls (Lamberton and Stephen 2016), we expand the types of consumer behaviors in social media considered by examining how posting about products affects the consumer who does the posting (transmitter) instead of others (receivers). We also add to the literature on identity-based consumption and identity-signaling. While prior research has focused on situations where consumers respond favorably to identity-congruent products and messages (Oyserman 2009; Reed et al. 2012), we examine a situation where engaging with identity-relevant products backfires.

Our findings additionally have important implications for social media marketing. We find that posting a brand's products in social media could, ironically, be less valuable to that brand. Conventional wisdom suggests that encouraging consumers to post product images in social media is beneficial because this spreads word of mouth or generates buzz that raises awareness and, hopefully, lifts sales. Indeed, prior work has shown positive links between social media posting and outcomes such as customer acquisition and sales (Stephen and Galak 2012; Trusov, Bucklin, and Pauwels 2009). However, previous studies look at posting activity aggregated across consumers and not at how an individual's social media posting actions affects their own purchase intentions or interest in owning products that they post about. Unfortunately, our findings suggest that consumers who are encouraged to post identity-relevant products may have reduced purchase likelihoods. While it might seem sensible for all brands to encourage customers to post about its products in social media to enhance awareness, we find instances where this can backfire when considered at the individual-level.

Fortunately, our findings also have some possible suggestions for marketers to minimize this unintended consequence of engagement. Based on our findings, if consumers post products that are not identity-relevant or do not allow them to fully signal their identity (e.g., privately or weak signal), there is no negative effect on purchase intentions. One suggestion may be that some brands frame content they want consumers to post in a way that emphasizes their products' usefulness (vs. focusing on the gained identity-signaling value from posting). Another suggestion could be for brands to add some type of external motivation for posting behavior such as a discount or reward for posting, as this may minimize the perceived identity-signaling the consumer feels after posting. On the other hand, brands could "steer into the skid" and heavily prime identities that are relevant to their product offerings when they encourage consumers to

post as this may make consumers desire stronger signals of identity. One other suggestion could be for marketers to time their contact with consumers to when they are no longer salient. Instead of immediately responding to consumers who interact, there may be instances where messages and products will be more positively received if interaction is done after a time delay.

Directions for Future Research

In the current research, we focus on how sufficiently signaling ones' identity through social media product posting subsequently influences identity-relevant purchase intentions. While we focus on identity-signaling at a more general level, prior research on identity-signaling has focused on two distinct targets to identity-signals; the self and others (Bodner and Prelec 2003; Berger and Heath 2007). Future research could investigate situations in social media where a consumer only signals their identity to the self or to others and determine whether both types of signaling are necessary to fulfill identity-signaling needs, reducing interest in further purchase of identity-relevant products.

Future research could also examine how consumers can post about non-material, experiential things like ideas, activities, and goal striving more generally. There may be situations where signaling aspirational identities such as in the case of weight-loss or fitness will encourage greater (rather than less) engagement in the behaviors necessary to accomplish these identities in their physical lives. There could be a positive effect if there is accountability through the social nature of these posts or there may be a negative effect, due to feeling as though signaling these aspirations is enough to signal the identity; impeding goal progress.

Future research could also address network impacts. While we saw decreased purchase intentions after posting identity-relevant products in social media, possibly other people in a consumer's network may be encouraged to purchase these products, due to increased feelings of

pride or liking (Bellezza and Keinan 2014). On the other hand, overly conspicuous consumption of identity-relevant products in social media could cause dilution for some target customers; discouraging purchase intentions not only at the individual, but at the aggregate level (Ferraro, Kirmani, and Matherly 2013). There could also be negative repercussions to seeing dissimilar or disliked others also posting the same products (Berger and Heath 2008). Alternatively, there could also be negative repercussions when other post the same products as people strive to avoid too much similarity (Brewer 1991). Therefore, future work should be conducted to determine the impact of other peoples' social media-based product posts on purchase intentions.

Another possible direction for future research is examining how consumers respond to different forms of user-generated content (UGC) in social media. Social media allows consumers to write reviews, create posts, tag friends, like content, share content, and more. Traditionally, research has mostly focused on the consequences of UGC that exists after a brand or service experience (e.g., online reviews) while this research focuses more on social media actions that can occur prior to purchase (e.g., posting images of products that are not owned but seen as identity-relevant). Understanding how a consumer's own social media actions influence their subsequent opinions and behavioral intentions after varying types of UGC and after varying levels of commitment (e.g., pre or post real purchase) is important for social media marketers who encourage consumer engagement.

The current research, due to limitations of experimental paradigms, currently can only consider how consumers, after some type of instruction or prompt, respond to their own posting actions in social media. However, to begin to address the generalizability of our findings for all consumers who post products in social media (regardless of being externally or intrinsically motivated), we sought real-world data to corroborate our findings. In a pilot study using data

collected from Pinterest (approximately 50,000 product pins), we found that on an aggregate level, real Pinterest products that have been described by users with identity-signaling language (e.g., “I,” “my,” “mine”) have lower “tried it” counts than products that do not include any identity-signaling language ($b = -.536$, $\chi^2 = 181.21$, $p < .0001$). “Tried it” on Pinterest is something that users are instructed to click on if they have actually tried or bought the pinned item. As this is a social media website where neither the site nor brands directly interact with consumers, and thus are unlikely to have prompted posting, we believe that this provides at least some initial preliminary evidence beyond our experiments that the effect we study could extend beyond prompted scenarios (see Web Appendix I for further information and results from this preliminary real-world evidence). Future research could address more in-depth how different antecedents and drivers of consumer posting such as brand prompting, social or monetary incentives, or self-motivation attenuate versus accentuate these effects.

In summary, we find that transmitters of social media content may, ironically, have lowered purchase intentions for the products and product categories they post. We demonstrate that product posts can act as a substitute for purchase when those posts allow the consumer to sufficiently signal identity-relevant information, allowing her to coopt the identity-signaling value of the product without actual purchase. Thus, marketers’ enthusiasm for generating earned-media should be tempered with caution, as the effects on consumers doing the posting may not always be positive.

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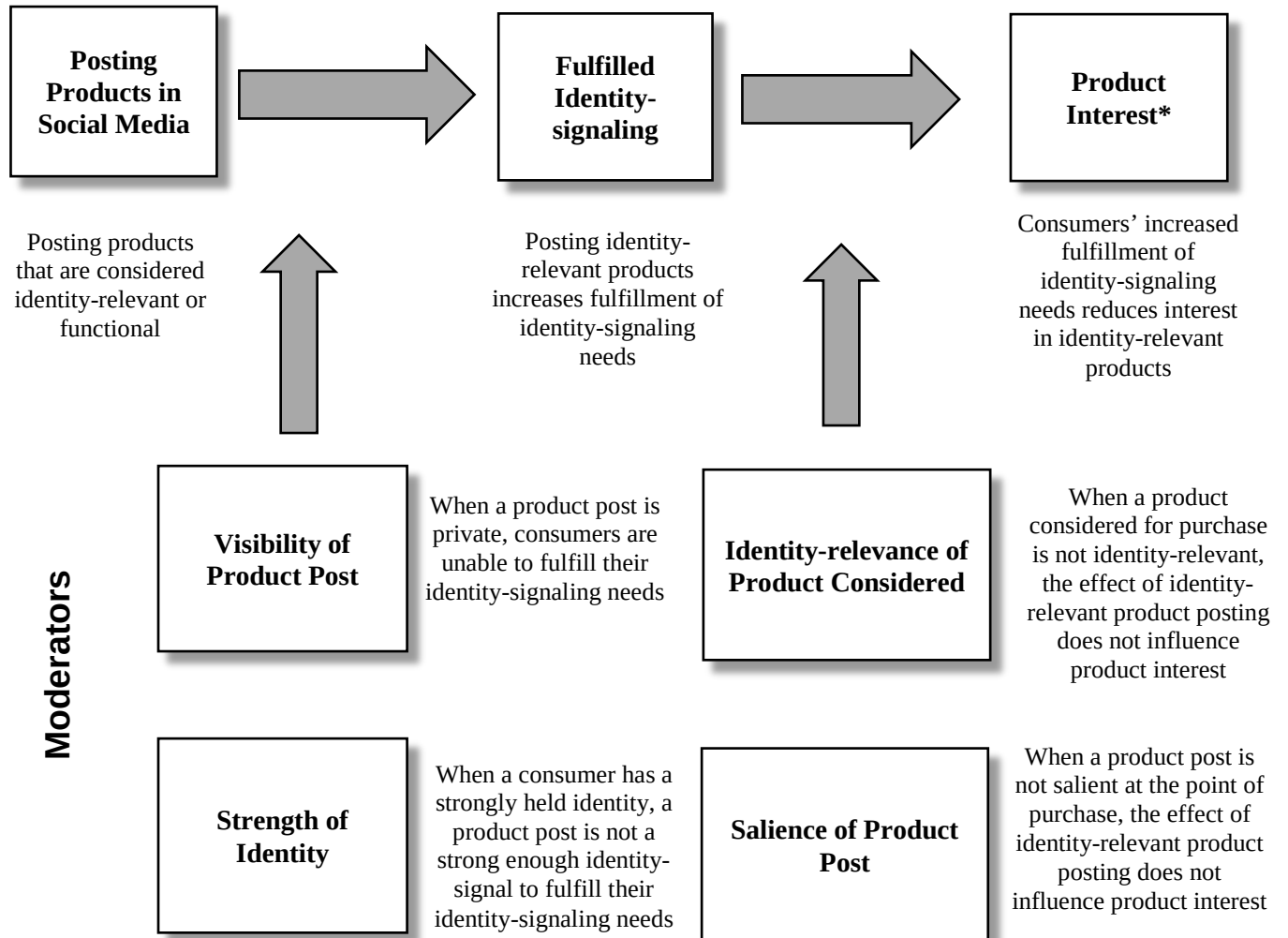
TABLE 1: MODERATED MEDIATION (STUDY 3)

	M (Identity-Signaling)				Y (WTP)			
Antecedent	Coeff.	SE	<i>T</i>	<i>p</i>	Coeff.	SE	<i>T</i>	<i>p</i>
X (Posting)	.3253	.1041	3.1263	.0020	.0814	.0565	1.4394	.1516
M (Identity-Signaling)	---	---	---	---	-.0988	-.0375	-2.6344	-.0091
W (Identity-Strength)	.0195	.1041	.1870	.8519	.0670	.0552	1.2148	.2259
Posting * Identity-Strength	-.2521	.1041	-2.4228	.0163	.1042	.0560	1.8607	.0643
Constant	3.8605	.1041	37.0992	< .0001	.8068	.1549	5.2072	<.0001
Model Summary	R ² = .0702				R ² = .0547			
	F(3, 191) = 5.0362, <i>p</i> = .0022				F(4, 190) = 2.8790, <i>p</i> = .0239			

TABLE 2: MEDIATED MODERATION (STUDY 4)

	M (Identity-Signaling)				Y (Purchase Intentions)			
Antecedent	Coeff.	SE	<i>T</i>	<i>p</i>	Coeff.	SE	<i>T</i>	<i>p</i>
X (Posting)	.7632	.1277	5.976	< .0001	-.0966	.1461	-.6612	.5093
M (Identity-Signaling)	---	---	---	---	-.0406	.0779	-.5207	.6032
V (Product Evaluated)	---	---	---	---	1.405	.3206	4.382	<.0001
Identity-Signaling * Product Evaluated	---	---	---	---	-.4307	.0779	-5.529	<.0001
Posting * Product Evaluated	---	---	---	---	-.0880	.1461	-.6026	.5475
Constant	3.763	.1277	29.469	< .0001	4.089	.3206	12.752	<.0001
R ² = .1633					R ² = .2027			
Model Summary	F(1, 183) = 35.7144, <i>p</i> < .0001				F(5, 179) = 9.1034, <i>p</i> < .0001			

FIGURE 1. CONCEPTUAL FRAMEWORK



*Product Interest: Measured as purchase intentions (Studies 1, 2, 4), real willingness to pay (Study 3), and real choice (Study 5).

FIGURE 2. THE INTERACTION OF PRODUCT POSTING AND VISIBILITY ON PURCHASE INTENTIONS (STUDY 2)

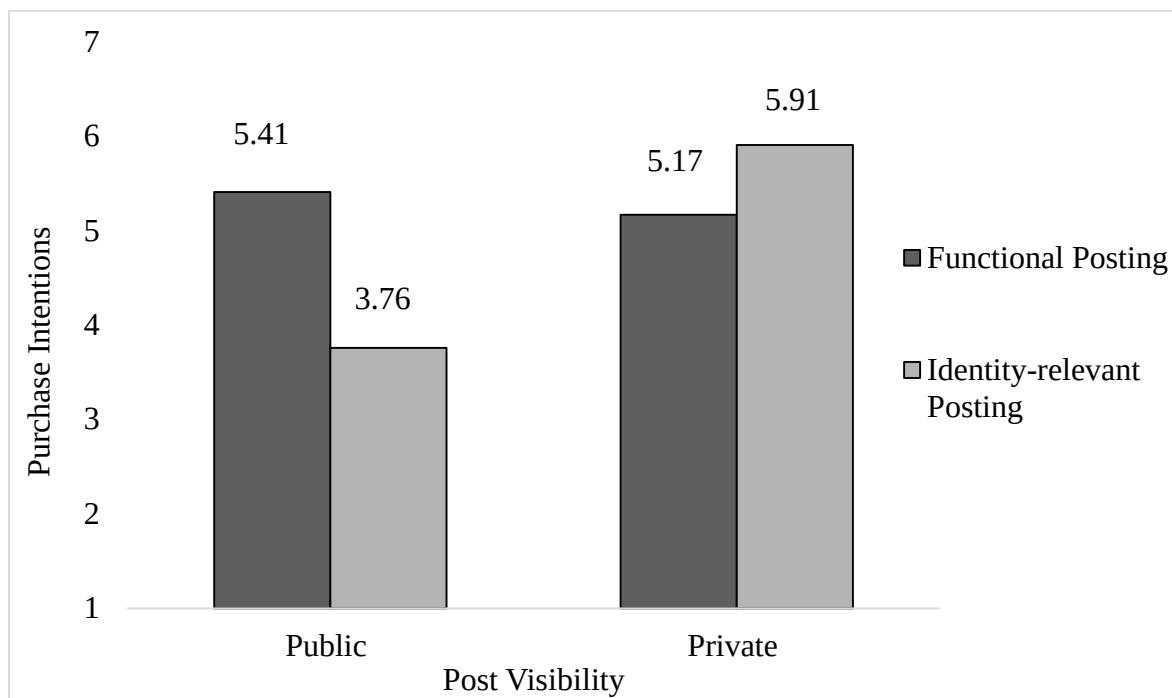


FIGURE 3. THE INTERACTION OF PRODUCT POSTING AND IDENTITY-STRENGTH ON WTP (STUDY 3)

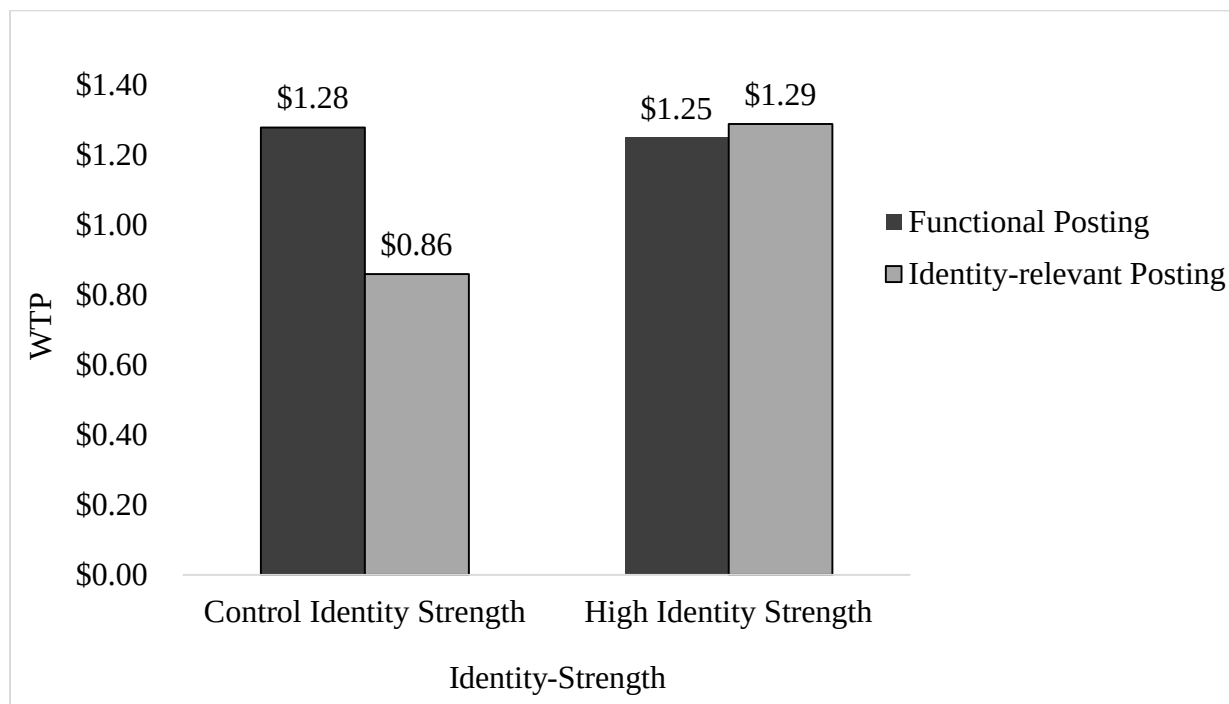


FIGURE 4. THE INTERACTION OF PRODUCT POSTING AND PRODUCT EVALUATED ON PURCHASE INTENTIONS (STUDY 4)

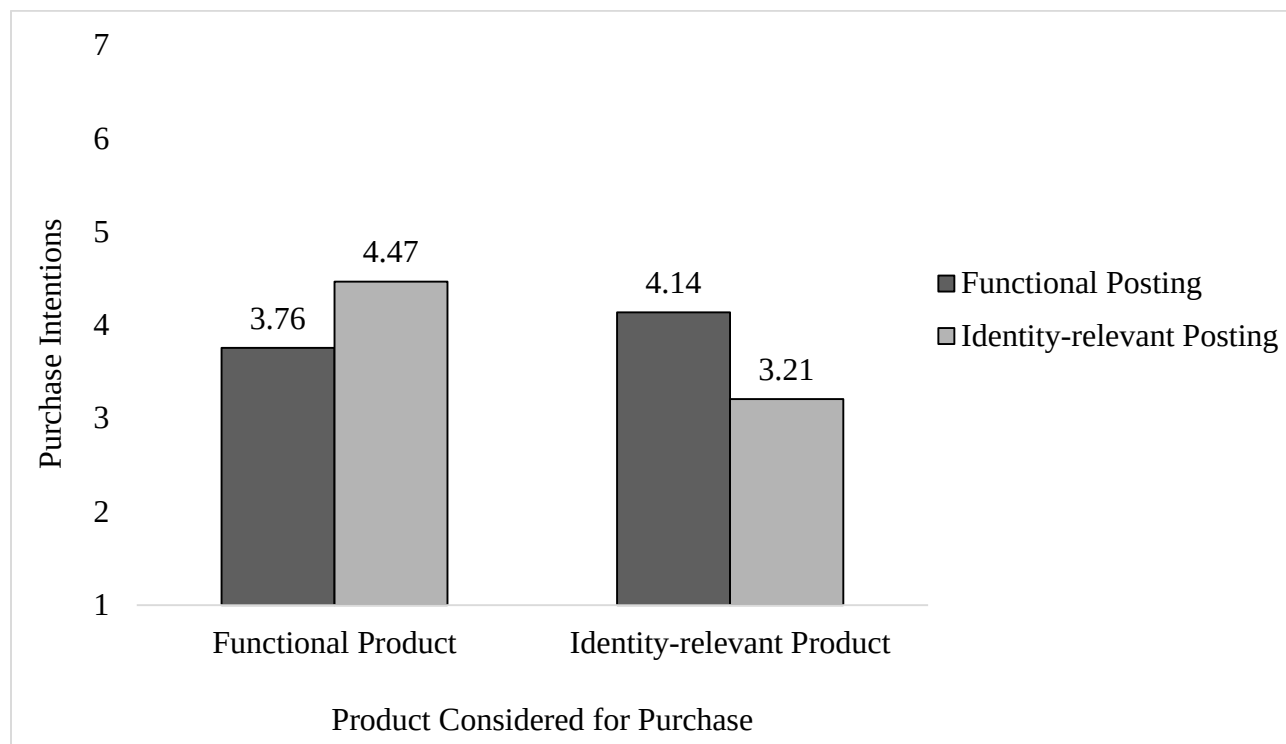


FIGURE 5. TIME 2 CHOICE OF IDENTITY-RELEVANT PRODUCT (STUDY 5)

