



Immunizing customers against negative brand-related information

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Abstract

In today's connected market, brands are more likely than ever to face negative press that can put their customer relationships to the test. Building and fortifying positive aspects of the brand-customer relationship (such as brand commitment, brand love and self-brand connections) may ward off some of the impact of negative information on customers, but this does not always provide full protection. Even customers who love a brand can turn against it when negative information enters the picture. Considering this, the current study provides an exploratory investigation into a new way to build up customer resilience that would otherwise not be formed simply by strengthening positive attributes of the customer-brand relationship. It argues that brands can strengthen their customers' immunity to negative brand-related information by using an immunity metric (i.e., merely asking customers to reflect on their immunity makes them more resilient to actual negative information in the future). The construct of immunity has the dual benefit of being diagnostic of relationship strength, as well as acting as an immunizing agent. We test this effect and the process underlying it using three pilot studies, three multi-method studies, and interviews with customers and managers across different contexts. By doing so, the study establishes the theoretical and practical value of customer immunity to negative information and makes critical conceptual and pragmatic contributions to the existing body of customer research.

Keywords Immunity · Negative information · Relationships · Branding · Brand defense strategies · Self-brand connections · Mere measurement effect

Negative information can be very damaging to any brand (Ahluwalia et al., 2000) and can engender emotional responses such as feelings of betrayal that threaten customer loyalty (Mattila, 2004). The traditional way to build resistance to negative information is by strengthening the customer-brand relationship, through brand commitment (Ahluwalia, 2000), brand love (Batra et al., 2012), self-brand connections and attachment (Escalas & Bettman, 2003; Park et al., 2010). However, building and fortifying positive aspects of the

customer-brand relationship may not fully address what happens when negative information enters the picture. A few years ago, the CEO of Abercrombie & Fitch (A&F- a company that had a strong and loyal customer base) stated that A&F is exclusively for 'cool kids.' When the comment went viral, many consumers were outraged, anti-A&F petitions appeared online, and a social media campaign was launched to donate A&F clothing to the homeless to damage the brand's image (Fierberg, 2016). This public outcry was one the factors that contributed to A&F's financial troubles (Thau, 2013). Spanish fashion brand Balenciaga is currently experiencing something similar: all it took was an awful advertising campaign to lead to a global mass boycotting of a brand that had hitherto enjoyed great popularity and loyalty. Clearly, a strong brand relationship may ward off some of the impact of negative information on customers, but it does not always provide full protection. Customers who love a brand can still turn on that brand in the face of negative information, and it is often those customers who have the strongest relationship with a brand that react more adversely (Grégoire et al., 2009). When Starbucks rebranded its loyalty program a few years ago, many consumers went online to protest the changes. Despite the company insisting

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that existing customers would not be negatively affected, it was some of the brand's most loyal and committed customers—Starbucks cardholders with thousands of points accumulated over years of loyal patronage—that felt most betrayed and turned against the brand more aggressively when the negative information appeared on social media (Barnett, 2012).

So how can brands ensure their customers' love does not turn into hate when faced with negative information? Needed is a way to boost the resilience of customers who are already connected with the brand, a resilience that would otherwise not be formed simply by strengthening positive attributes of the customer-brand relationship over time. Marketing research has started to look at possible priming effects, whereby resistance is bolstered by exposure to a stimulus (Dijksterhuis & Bargh, 2001; Wheeler & Petty, 2001), usually a weak form of negative information (e.g., Mikolon et al., 2015; Wagner et al., 2009). However, our interviews with managers revealed widespread reluctance to the use of actual negative information, with one CEO calling the method "terrifying" or even "grotesque." We therefore propose that customers' resistance to negative information about a brand may be boosted by using a simpler, safer, and more managerially practical prime: a measurement. This measurement asks customers to consider how they would respond to negative information about a brand in the future and functions as a prime to build up customer *immunity* to negative brand-related information. We define immunity as *customers' resistance to changing how they view a brand when confronted with negative information about that brand*. This measurement therefore has the dual benefit of determining and boosting immunity at the same time.

The mechanism behind this immunity is the mere measurement effect, whereby merely measuring an individual's intentions can affect their subsequent behavior (e.g., Morwitz et al., 1993; Morwitz & Fitzsimons, 2004). Specifically, we posit that by merely asking customers how they would react to negative information about a brand, their immunity to actual negative information in the future can be strengthened. In essence, the question creates cognitive dissonance, which customers may resolve by tapping into beliefs that reinforce their initial stance towards the brand. Once activated, these beliefs remain more salient and more readily available for information processing in the future (e.g., when the brand is affected by actual negative information). Note that the nature of the negative information is abstract and not specific and therefore less harmful. We do not argue that immunization always provides a brand with complete protection from a threat, but it can fortify its defence. We also theorize and show that immunity is an important indicator of the strength of the customer-brand relationship that predicts future customer behavior. Hence, to future-proof customer relationships, it is in a brand's best interest to build and measure immunity.

The importance of immunity has never been higher. In an increasingly connected market, customers' voices are

amplified and propagated faster than ever, and user-generated content can outperform traditional marketing efforts (Labrecque et al., 2013). Negative information such as exaggerated negative word of mouth can reach customers rapidly and have a greater effect than any of the company's own marketing efforts (Harris et al., 2016; Homburg et al., 2015). We theorize and empirically test a model of customer immunity that makes several important and timely contributions.

First, we respond to calls for research into how brands can combat the effect of negative information, particularly through pre-emptive approaches (Mikolon et al., 2015; Ein-Gar et al., 2012). While we know much about how to strengthen brands (e.g., Fournier 1998; Keller 1993) and how to soften the blow when things go wrong (e.g., Ahluwalia et al., 2000; Allard et al. 2020; Fennis & Stroebe, 2014), less is known about how brands can build strong customer resistance to future negative information, especially without priming them with actual negative information (Mikolon et al., 2015; Wagner et al., 2009).

Second, we contribute to research on negative incidents and transgressions (e.g., Ahluwalia et al., 2000; Roehm & Tybout, 2006) by showing that measuring immunity represents a diagnostic of the strength of the customer-brand relationship and acts as a strong predictor of future customer behavior. Negative elements can test relationships (Aaker et al., 2004) and thus provide a crucial context in which to assess more accurately the status of a relationship; an idea perhaps best illustrated by the saying: "a friend in need is a friend indeed."

Third, from a practical perspective the immunity metric provides management with a simple tool for measuring and stimulating immunity simultaneously. Our interviews with 20 senior executives from a variety of companies revealed that traditional customer-brand relationship metrics are important but no longer sufficient, and that measuring immunity to gauge the strength of the customer-brand relationship is appealing. Even more attractive to managers was the possibility of immunizing customers through something as straightforward as a metric which does not use specific negative information about the brand.

We conducted three pilots and three studies to test our hypotheses employing different research methods, multiple data sources, study participants, and varied research contexts. In the next section, we discuss the conceptual foundations of the immunity construct and distinguish it from other customer-brand relationship constructs. This is followed by the development of formal hypotheses, presentation of studies, and discussion of implications.

Customer resistance to negative information

The focus of the current study is on building customers' resistance to potential negative information they might encounter in the future. In the marketing literature, most

studies have focused on what brands can do to build positive aspects of the customer-brand relationship slowly over time to achieve some protection against negative events, or on recovery strategies after the event (see Table 1). Things that help when brands face negative information include strong brand commitment (Ahluwalia et al., 2000; Ahluwalia, 2000; Germann et al., 2014), strong brand image (Griffin et al., 1991; DeCarlo et al. 2007), positive customer expectations (Dawar & Pillutla, 2000), high emotional bonding (Mattila, 2004), strong connections (Swaminathan et al., 2007; Cheng et al., 2012; Wilson et al., 2017; Escalas & Bettman, 2003), brand attachment (Park et al., 2010; Whelan & Dawar, 2016), and brand love (Batra et al., 2012).

However, when customers are committed to a brand, or even love it, they can still turn against it when they encounter negative information. Grégoire et al. (2009) found that a brand's best customers often have the most unfavorable reactions to negative incidents (the *love-becomes-hate effect*). Customers with a strong relationship with a brand may react more negatively to negative events than those with weaker relationships (Trump, 2014; Wan et al., 2011). Highly committed customers can have higher recovery expectations following a service failure than less committed ones (Kelley & Davis, 1994), are more likely to respond negatively to opportunistic behavior (Ganesan et al., 2010) and are more likely to engage in anti-brand retaliatory behavior when the relationship is broken (Johnson et al., 2011). Thus, more research is needed on how to increase the resistance of valuable customers to negative information. In other words, how can the love-becomes-hate effect be prevented? This question is very important from both a practical and academic perspective.

Priming customer resistance

An emerging body of research has started to focus on the idea that besides building customer resistance slowly over time, brands may also strengthen their customers' resistance to negative information by priming it. Priming involves exposing individuals to a stimulus—the prime—which then increases accessibility of information already existing in memory (Mandel & Johnson, 2002). This can shape individuals' future intentions and behaviors without their awareness (for a review see Dijksterhuis & Bargh, 2001). In essence, when an individual is primed, action-relevant constructs associated in memory are activated and influence behavior (Wheeler & Petty, 2001).

Marketing research has focused primarily on one type of prime that boosts customers' resistance to negative information: actual negative information about a brand. Mikolon et

al. (2015) demonstrated that exposing customers to weak negative information about a brand before a service encounter reduces the negative consequences that future service failures have on customer satisfaction. Ein-Gar et al. (2012) found that exposing customers to a small dose of negative information may increase their future favorability towards a product (the blemishing effect). Wagner et al. (2009) found that hypocrisy perceptions about a firm's stated vs. actual CSR activities can be mitigated by priming customers with negative CSR information that has already been reported, or is anticipated to emerge, along with counterarguments to that information. However, as noted, we found much reluctance among managers to expose their customers to actual negative information about their brands. For that reason, we suggest that customers' resistance to negative information may be boosted simply by priming them with an immunity metric, which encourages them to conjure some abstract and general negative information about the brand, and then contemplate how they would respond to it. We will demonstrate that this simple consideration can impact future customer behavior. Thus, the measurement has the dual benefit of assessing the strength of the customer-brand relationship, while simultaneously building up resistance to negative information in the future—and all without using actual negative information.

Immunity and the mere measurement effect

The underlying mechanism behind our immunization process is the mere measurement effect, whereby merely measuring an individual's intentions can affect his or her attitudes, intentions, and behavior (Feldman & Lynch, 1988; Morwitz et al., 1993; Morwitz & Fitzsimons, 2004). An established body of literature has demonstrated that the mere act of asking customers a question can lead to biased responses (e.g., Feldman & Lynch, 1988; Simmons et al., 1993) and even change the underlying behavior itself (e.g., Morwitz et al., 1993; Sherman, 1980). Williams et al. (2004, p. 540) describe the effect as follows: “the act of answering an intention question can lead not only to an overprediction of the respondent's likelihood to engage in the target behavior, but ultimately to greater likelihood to engage in the behavior itself.”

Sherman (1980) was among the first to study this effect, which he termed the “self-erasing error of prediction,” and which later led to a stream of literature that called it the “self-prophecy” effect (see Spangenberg & Greenwald, 1999 for a review). He demonstrated that individuals who were asked about their intentions to perform a socially desirable behavior (e.g., volunteering time to a charity) systematically overpredicted their likelihood to perform the behavior and then, later, were more likely to behave in accordance with their biased responses. Similar effects have been found in other contexts, such as voting behavior (Greenwald et al.,

Table 1 Customer resistance to negative information in the marketing literature

Source	Focus	Method	Main relevant constructs	Immunity	Main findings
Griffin et al. (1991)	The impact of negative publicity on consumer attitudes and intentions	Lab experiment	Negative publicity Situational qualifiers Attitude ratings Purchase int.	No	Source credibility, firm responsibility, performance history and response tactic impact changes in consumer attitudes based on a negative publicity episode; strong corporate image can make customers more resistant to negative information.
Ahluwalia et al. (2000)	Customer reactions to negative product-related publicity	Lab experiment	Negative product-related publicity Commitment Attitudes	No	Commitment moderates consumer response to negative information: consumers who are committed to a brand resist and counterargue negative information. Brand response strategies should be targeted accordingly.
Ahluwalia (2000)	Psychological processes underlying consumers' resistance to persuasion of negative information	Lab experiment Field study	Resistance to persuasion Negative information Commitment	No	Committed consumers resist negative information through biased assimilation, influence minimization and impact minimization. Response strategies are provided.
Dawar and Pillutla (2000)	The impact of product-harm crises on brand equity and the moderating role of consumer expectations	Lab experiment Field study	Product-harm crises Customer expectations Brand equity	No	Consumers interpret information based on their prior expectations about a firm. Existing positive expectations provide firms with a form of insurance against the impact of product crises, and with resilient brand equity in the face of negative information.
Aaker et al. (2004)	The impact of transgressions on customer relationships	Field study	Relationship strength Transgressions Brand personality Partner quality	No	Transgressions are defining moments that distance the relationship between customers and sincere brands, but they can strengthen it in the case of exciting brands.
Mattila (2004)	Impact of service failures on customer loyalty	Field study	Service failure Affective commitment Resistance to change Negativity effect	No	Emotional bonding moderates consumer response to service failure. High affective commitment and high emotional bonding with brands leads to higher tendency for loyalty.
DeCarlo et al. (2007)	The impact of brand image and familiarity on consumer responses to negative word of mouth	Lab experiment	NWOM Familiarity Brand image	No	Strong brand image and high familiarity can help relieve the effect of NWOM. Brand image has the strongest effect. Brands are encouraged to improve their image to navigate through difficult times.

Table 1 (continued)

Source	Focus	Method	Main relevant constructs	Immunity	Main findings
Swaminathan et al. (2007)	The role of self-construal in counter-argumentation	Lab experiment	Field study Self-concept connection self-construal brand country-of-origin connection	No	When self-concept connection is high, consumers tend to discount and counterargue negative information, but this effect is greater in independent self-construal conditions. Country of origin can increase consumer tolerance for negative information.
Wagner et al. (2009)	Corporate hypocrisy, overcoming the threat of inconsistent CSR perceptions through communication strategies.	Lab experiment	Inconsistent CSR information Corporate hypocrisy Communication strategies	Yes	Inoculation statements are effective in reducing perceptions of corporate hypocrisy for inconsistent CSR information.
Ein-Gar et al. (2012)	The blemishing effect in product evaluations	Lab experiment	Field study Negative information Product evaluations Purchase behavior	Yes	Consumers are more favorably disposed to a product when a small dose of negative information is provided alongside positive information. This happens under conditions of low processing effort and when weak negative information follows positive information.
Cheng et al. (2012)	The effects of self-brand connection (SBC) on consumers' responses to brand failure	Lab experiment	Negative brand information Brand failure SBC Self-affirmation	No	Consumers with high SBC respond to negative information as they do to personal failure and will react defensively to maintain their self-evaluation. Their reluctance to lower brand evaluations in the face of negative information is driven more by a desire to protect the self rather than the brand.
Batra et al. (2012)	The antecedents, core elements and consequences of brand love	Field study	Brand love Resistance to negative information	No	Brand love can make consumers more resistant to negative information about a brand.
Germann et al. (2014)	The effect of brand commitment on consumer responses to product recalls	Lab experiment	Event study Product recalls Brand commitment	No	Brand commitment attenuates negative consumer responses to low-severity product recalls, but it can augment them in high-severity recalls.
Fennis and Stroebe (2014)	Self-disclosure of negative information as a strategy to soften the blow	Lab experiment	Negative information Reputation Trust	No	For brands with lower reputation, self-disclosure of negative information (vs. third-party disclosure) lessens the impact of negative information and positively affects consumer responses through the trustworthiness it creates.

Table 1 (continued)

Source	Focus	Method	Main relevant constructs	Immunity	Main findings
Mikolon et al. (2015)	Customer inoculation as a pre-emptive strategy to deal with service failure	Field study	Service failure Customer satisfaction Inoculation	Yes	Exposing customers to weak negative information in advance of a service failure curtails the decrease in customer satisfaction when customers experience a service failure.
Whelan and Dawar (2016)	Attachment styles as moderator of blame attribution post-crisis	Field study	Attachment style	No	Implications of secure vs. fearful attachment style for attribution of blame towards an at-fault brand. For minor crises where fault is ambiguous, most consumers make attributions that favor the brand.
Wilson et al. (2017)	The impact of SBC on consumers' processing of negative online word of mouth (NOWOM)	Lab experiment Field study	NOWOM SBC	No	When SBC is high, consumers process NOWOM defensively. NOWOM can lead to positive outcomes in consumers with high SBC (e.g., more purchases). Brands should focus more on strengthening consumers' SBC rather than invest in preventing NOWOM.
Our study	Immunitizing customers against negative information	Lab experiment Field study	Immunity Brand commitment Self-brand connections Brand love	Yes	Customer immunity is diagnostic of customer-brand relationship strength and a predictor of future customer behavior. The mere act of measuring customer immunity can strengthen customers' future immunity.

1988) and donating blood (Godin et al., 2009). Liu and Aaker (2008) even found that asking people about their willingness to donate time can increase not just the amount of time, but also the amount of money they will donate.

Mere measurement effects have also been observed in a wider range of contexts outside the domain of socially desirable behaviors. In marketing research, for example, Morwitz et al. (1993) demonstrated that measuring customers' intentions to purchase a car or personal computer led to increased purchase rates among those exposed to the question. Similarly, Fitzsimons and Morwitz (1996) found that asking customers with a positive attitude towards a brand about their purchase intention increases choice of that brand later. Dholakia and Morwitz (2002) found that merely measuring customer satisfaction affects purchase and relational behaviors, and Bone et al. (2016) demonstrated that administering feedback surveys influences purchase behavior. These mere measurement effects have been shown to be long-lasting, for at least a few months after the initial exposure (Spangenberg, 1997; Fitzsimons & Morwitz, 1996; Morwitz et al., 1993). A study by Dholakia and Morwitz (2002) specifically focused on the persistence of mere-measurement effects, concluded that they can last for at least a year.

There are three main reasons why the mere measurement effect is so powerful. First, the act of predicting one's intentions can make underlying cognitions, such as attitudes and intentions, more accessible (Fitzsimons & Morwitz, 1996). And this increased accessibility has been convincingly shown to influence behavior (see Chapman, 2001 for a review). Second, measuring intentions encourages more cognitive effort, which can lead to the creation or change of attitudes, intentions, and ultimately behavior (Fitzsimons & Morwitz, 1996; Sherman, 1980). Third, asking an intention question is not perceived as manipulative or an attempt to influence (Williams et al., 2004). Individuals who are exposed to persuasive attempts usually come to recognize them as such and develop defense mechanisms (Friestad & Wright, 1994). In contrast, questions regarding future intentions are not perceived as influence tactics and can therefore have greater impact on customer behavior than actions with clear persuasive intent (Williams et al., 2004).

The distinction between immunity and related constructs

Traditional customer-brand relationship constructs involve developing and maintaining positive associations and evaluations for a brand over time and do not consider potential future negative events that may put the relationship to the test. Whilst these constructs are extremely useful and important, they tend to focus on the status quo and past behavior. Existing measures of *brand loyalty*, for example, involve two main components: a strong preference for the

brand and repeat purchase behavior (Jacoby & Chestnut, 1978). Although this construct predicts future behavior, it is typically measured in terms of past behavior and does not consider future potential threats to the brand. Likewise, commitment, which is broadly defined as psychological attachment (e.g., Ahluwalia, 2000), is typically measured as a function of past associations and behavior (e.g., Ahluwalia et al., 2000; Raju & Unnava, 2006). In addition, related emotional constructs such as attachment and brand love (e.g., Batra et al., 2012; Park et al., 2010) do not consider potential changing events and possible different circumstances in the future. In contrast, the construct of immunity focuses specifically on what customers would do if they encountered negative information about a brand in the future which may change the status quo; and of course, this is increasingly more likely to happen nowadays because of the proliferation of social media and negative brand-related information.

Second, there is no accounting for a customer's *resolve* to withstand any negative incident in many of the existing measures. Because commitment and loyalty measures do not draw individuals' attention to actual or potential negative information, customers are less likely to consider the effects of a full range of positive and negative information on their relationship. Highlighting negative aspects activates a customer's "large, conflicting 'data base' relevant to their attitudes on any given topic" (Wilson & Hodges, 1992, p. 38), which motivates consumers to resolve dissonance and protect their self-identity. Customers' assessments of future behavior are likely to be more accurate as a larger and more varied set of information is brought to bear on the decision. This allows for a more comprehensive test of the nature of the relationship with a brand (Aaker et al., 2004).

Another related construct is attitudinal resistance, which refers to an attitude's ability to withstand an attack, and is strongly related to attitude strength (Krosnick et al., 1993; Krosnick & Petty, 1995). While this construct does begin to capture customers' adherence to an attitude despite undermining information, it is different from immunity. Attitudinal resistance is based on a respondent's ability to counter-argue a specific and direct challenge to a focal attitude (Tormala & Petty, 2002). Individuals tend to resist persuasion when they receive an indication of persuasive intent and a specific message (e.g., Sagarin et al., 2002). To capture attitudinal resistance, individuals are typically exposed to a direct and concrete attack on an attitude. In the case of immunity, however, there is no specific, direct, and concrete attack on an attitude, and no persuasive intent, but merely the provision of a hypothetical abstract scenario.

In summary, while our research builds on this important literature, it differs in several ways. We deal with immunity specifically in the context of hypothetical brand-related negative information and customer-brand relationships to

understand how brands can build immunity at a time when it is becoming increasingly important to do so. We aim to provide, first, a tool that managers are willing to use to strengthen their customers' immunity against negative information, and second, a timely indicator of the strength of the customer-brand relationship.

Hypotheses

We posit that immunity predicts future customer behavior in the face of negative brand-related information and is diagnostic of customer-brand relationship strength. Some resistance to negative information may be earned by fostering brand commitment, self-brand connections, and brand love, but importantly—it may be boosted by exposing customers to an immunity measure.

Immunity and resistance to negative information

The construct of immunity lends itself well to the mere measurement effect because measurement-induced judgments are especially likely when individuals have not given the issue much prior thought (Kardes, 1988; Weiner, 1985). Most people do not tend to contemplate how they would respond to negative information about a brand in the future. It is more natural and likely for them to reflect on prior experiences with it, than to ponder, unprompted, what they would do if the brand were to be affected by some negative information in the future. In our literature review, we have established that the mere act of asking customers an intention question about a brand towards which they hold a positive attitude can lead to an overprediction of a respondent's intention, and later, behavioral changes in accordance with that prediction (e.g., Williams et al., 2004). Accordingly, asking customers who have a strong relationship with a brand how they would respond to negative information about that brand can lead to an inflated assessment of their own resilience to the negative information, and later, a behavior that is consistent with it.

When surveyed with the immunity metric, a customer is likely to conjure something negative that might happen to the brand. This information will be abstract and unlikely to be too negative, given the customer's positive attitude. It will be sufficient though to create cognitive dissonance, which the customer will seek to resolve by searching memory for beliefs that reinforce their initial positive stance towards the brand (Festinger, 1957). To minimize dissonance, they are likely to defend the brand, by engaging in biased information processing (Kunda, 1990), counterarguing or questioning the validity of the hypothetical information source (Ahluwalia et al., 2000; Swaminathan et al., 2007), resorting to escalating commitment (Baumeister et al., 1993), and reaffirming their positive attitudes, which ultimately further increase

behavioral intentions towards the brand (Wilson et al., 2017). Because the customer's desire to remain consistent will lead to their behavior ultimately lining up with their initial prediction (Spangenberg & Greenwald, 1999), merely measuring immunity can strengthen customers' resistance to negative information about a brand in the future.

Compared to other measures that focus on positive aspects of the customer-brand relationship, the immunity metric—with its focus on imagined negative information and future intentions—requires customers to be more deliberative by considering a wider range of data points or information, which may be both positive and negative (Fiske, 1980; Petty & Cacioppo, 1986; Liberman & Chaiken, 1992). The customer will pause and re-evaluate his or her initial impression of the brand, which increases the impact of that information on attitudes, and which makes these positive attitudes more accessible later (Ein-Gar et al., 2012).

In sum, when considering hypothetical negative information about a brand with which they have a strong relationship, customers will engage in a dissonance reduction mechanism to protect the brand, and process more data points than in the absence of any negative information or in response to only positive information. Once their positive beliefs are activated, they will remain more salient and more readily available for information processing later (Mandel & Johnson, 2002; Fitzsimons & Morwitz, 1996), thus making customers more likely to maintain, or even strengthen, their intentions towards the brand when faced with real negative information. Thus, we predict that exposure to the immunity measure (*vis-à-vis* not being exposed to it) enhances customer resistance to potential future negative brand information. Accordingly, we hypothesize:

- H1** Merely measuring immunity will strengthen customers' resistance to negative information about a brand in the future.
- H2** The positive effect of measuring immunity on customers' resistance to negative information about a brand in the future is sequentially mediated by (a) a desire to reduce dissonance to protect the brand and (b) a consideration of varied datapoints.

The interaction effect

Because immunity strengthens existing positive attitudes, there must be a strong positive prior attitude for the immunity effect to occur. The mere-measurement effect works best when the customer already has some accessible and positive attitudes toward a brand (Morwitz et al., 1993). The implication is that brands that have already built some resilience by strengthening the customer-brand relationship over time (i.e., brand commitment, brand love, and

self-brand connections) can boost that resilience further to avoid the love-becomes-hate effect. They can fortify positive attitudes and make customers more resistant to negative information that may attack the brand in the future (Petty & Krosnick, 1995; Tormala & Petty, 2004). While the traditional way to attenuate the damaging love-becomes-hate effect is through recovery attempts, such as offering apologies and compensation (Grégoire et al., 2009), we suggest that, in addition, immunizing customers in advance can lead to resilience that would otherwise not be formed simply by strengthening positive attributes of the customer-brand relationship. It can provide brands with an effective way to build up further resistance in their customers against negative information. Accordingly, we hypothesize that:

H3 The positive effect of (a) brand commitment, (b) self-brand connections and (c) brand love on customers' resistance to negative information is strengthened by merely measuring immunity.

Overview of studies

To test the hypotheses and develop and validate a parsimonious and reliable measure of immunity, we conducted three pilot studies and three main studies (summarized in Table 2).

Pilot studies

Pilot Study 1: Initial item generation and selection

To develop the *immunity* measurement scale, we followed established scale development procedures and conducted in-depth interviews (over a period of 5 months and lasting 20–130 min) with 78 customers from a variety of age, gender, social and professional backgrounds, and 12 senior managers across different industries in Pilot Study 1. Our aim was to develop a parsimonious scale that allowed us to test our hypotheses and be useful and accessible to managers wishing to immunize their customers. Based on the findings from the interviews and a literature review we generated a pool of 28 scale items to capture the critical psychological and behavioral aspects of immunity. From this pool, we selected a subset of items with “different nuances of meaning” (Churchill, 1979, p. 68) and reverse-coded several items to minimize “yea-“ or “nay-“ saying response bias (Baumgartner & Steenkamp, 2006). We then pretested the items with 263 customers recruited for the purpose of this study in a large shopping mall. In accordance with Thomson et al. (2005), we removed items that were poorly understood by participants. This resulted in the deletion of 12 items. To maximize content validity, we discussed the revised set of 16 items with 5 academic experts and 8 managers, to ensure

clarity of construction and domain representativeness (Nunnally, 1967). Consequently, we eliminated 5 items and fine-tuned the remaining 11 items to make them more precise and meaningful. We then conducted two focus groups with 61 customers of a supermarket chain to identify problems with the immunity scale, which reduced the number of scale items further. We conducted standard factor analytical tests recommended by Churchill (1979) and obtained a final set of four items for our *immunity* scale (“My relationship with X is not affected by negative information about the business,” “Negative information about X changes the way I think of the business,” “Negative information about X does not change my general view of the business,” “I change the way I do business with X based on negative information about the business”) anchored by 1= “strongly disagree” and 7 = “strongly agree.”

Pilot Study 2: Item validity and reliability

To further test the immunity's scale validity and reliability in a different context, namely financial services, we collaborated with a publicly listed retail bank for a second pilot study ($N=1,093$). Specifically, we examined the effect of immunity on actual customer purchase behavior and compared its effect relative to extant brand attitude and commitment measures (see Web Appendix A for a detailed discussion of Study Method and Design, Setting, and Measures). The results offered support for discriminant validity and showed that immunity acts as a potent predictor of actual future customer purchase behavior.

Measurement model evaluation The quality of our measurement development efforts was assessed by examining unidimensionality, convergent validity, reliability, and discriminant validity. In support of the unidimensionality of each construct, items loaded at least 0.80 on their respective hypothesized construct and did not load more than 0.30 on other constructs in a factor analysis. Specifically, for the immunity scale, all variables loaded heavily on the intended factor (0.90, 0.94, 0.95, 0.83) but loaded minimally on other factors (<0.30). All loadings were significant ($p < .01$), providing support for convergent validity. Coefficient alphas were high and ranged from 0.93 to 0.96, all exceeding the recommended 0.70 threshold. In addition, we computed the average variance extracted (AVE) and composite reliability (CR) to assess reliability jointly for the items of individual constructs. The AVE for all scales exceeded 0.70 and composite reliabilities were higher than 0.90, demonstrating good reliability. Moreover, to assess discriminant validity we followed Fornell and Larcker's (1981) procedure and compared the AVE for all pairs of constructs with the squared correlation between the two constructs of interest (Web Appendix A Table 1). The squared correlation

Table 2 Overview of the studies

Studies	Study 1	Study 2	Study 3
Brand Setting	Amazon.com	Nike sneakers/running shoes	Facebook
Population, Design	Postgraduate students in university lab ($N = 335$)	General customers from Amazon Mechanical Turk workers ($N = 593$)	Field experiment with Facebook users on Amazon MTurk ($N = 226$)
IVs	Manipulated exposure to immunity vs. attitude vs. control	Measured brand commitment, self-brand connection, brand love; manipulated exposure to immunity, control	Measured brand commitment, self-brand connections; manipulated exposure to immunity, control prior to actual negative info
Negative Brand Information	Fictitious negative information about data privacy scandal	Fictitious negative information about social responsibility scandal shared on social media	Actual negative brand incident; Facebook's attack ad on Apple for ad-tracking changes
DV	Purchase intention after exposure to negative info and 2 weeks after IVs	Purchase intention, willingness to pay after exposure to negative information a week after IVs	Actual brand usage one week after negative brand incident and two weeks after IVs
Process	NA	Measured desire to protect brand and consideration of varied datapoints	Measured desire to protect brand and consideration of varied datapoints
Moderator Related to the Process	NA	Moderating role of immunity enhancing the influence of brand commitment, etc. on desire to protect the brand and consideration of datapoints	Moderating role of immunity on impact of brand commitment, etc. on desire to protect the brand and consideration of datapoints
Control Variables	Purchase intention prior to negative brand information exposure	Purchase intention, willingness to pay prior to exposure to negative information, brand familiarity, post believability, post interest	Past brand usage, busy, brand familiarity, incident severity, incident valence, incident relevance, gender
Findings	H1 supported	H1 - H3 supported	H1 - H3 supported

between all pairs of constructs was less than the respective AVE for each of the constructs in the pair, thus providing support for discriminant validity. We also assessed the presence of multicollinearity by examining variance inflation factors, correlation between constructs, partial correlation, and principal components regression and found that multicollinearity is unlikely to be an issue of concern in our data (e.g., Rust et al., 2004).

Evidence for discriminant validity Correlation coefficients signal that the measure of immunity behaves as expected in relation to other constructs (Churchill, 1979). We used a set of confirmatory factor analyses (CFA) to examine discriminant validity, that is, whether brand immunity is significantly related to but distinct from extant attitude and commitment measures. Specifically, we compared the chi-square (χ^2) of the model where the measures of immunity and attitudes were allowed to correlate ($r = .16, p < .001; \chi^2_{(13)} = 31.89, p < .05$) with a model in which the two measures were forced to be perfectly correlated ($\chi^2_{(14)} = 85.57, p < .001$). The difference between the two models was significant ($\Delta \chi^2_{(1)} = 53.68, p < .001$), which shows that the immunity measure is related to but empirically distinct from the measures of attitude. Moreover, immunity relates to ($r = .23, p < .001; \chi^2_{(13)} = 21.89$) but is empirically distinct from commitment ($\Delta \chi^2_{(1)} = 5.59, p < .05$).

Prediction of customer purchase To test the relative impact of immunity, we simultaneously estimated paths among the focal constructs, control variables, and actual customer purchase behavior. The findings demonstrate that immunity has a stronger effect on actual purchase behavior than attitude ($\gamma = 0.22, p < .001$ vs. $\gamma = 0.01, p > .90$, respectively) (Web Appendix A Table 2). Immunity is also a better predictor of actual purchase behavior than commitment ($\gamma = 0.07, p < .001$). The model explains 75% of the variance in customer behavior and fits the empirical data well ($\chi^2_{(95)} = 273.8; CFI = 0.99; TLI = 0.99; RMSEA = 0.042$ (90% confidence interval = 0.036 to 0.047)).

Taken together, the two initial Pilots enabled us to develop and test a concise and managerially practical scale of immunity. In Pilot Study 3, we further examined immunity's predictive validity and customers' consideration of varied datapoints.

Pilot Study 3: Predictive validity and customer consideration of a wider range of data points or information

Pilot Study 3 investigated whether individuals consider a more varied range of datapoints or information, including potential future negative brand-related information, when

evaluating their relationship with immunity as opposed to other measures. A total of two hundred eighty-nine managers participated as part of a series of executive education programs (see Web Appendix B for a detailed discussion of Study Design, Procedure, and Measures).

An analysis of thought statements revealed that open-ended feedback in response to immunity drew on a consideration of more varied datapoints compared to when no relationship measure was used (control) or in response to traditional attitudes and commitment measures. This included (1) personal past brand experiences, (2) brand-related information and stories in the media, (3) comparisons with other brands, and (4) evaluations of brand perceptions by relatives and friends (see Web Appendix B Table 1). Notably, thought statements in response to immunity drew on almost three times as many personal brand experiences as statements in response to measures of brand attitude and commitment, or when no brand measure (control) was provided. Immunity also triggered significantly longer (in number of total words) responses by participants than brand attitude, commitment, and love measures. Thus, individuals engage in more elaborate information processing and draw on more varied datapoints when assessing their relationship with a brand in response to the immunity measure than with measures of brand attitude and brand commitment. Furthermore, when participants' immunity is measured, they should also be more likely to consider potential future negative information about a brand than in response to any other construct. To further examine the immunity scale's predictive validity and to test H1, we conducted Study 1.

Study 1

Study 1 tests H1 by examining the extent to which customers exposed to the immunity scale are less affected by negative information about a brand and exhibit higher purchase intentions than customer not exposed to it (control) or exposed to an attitude measurement scale.

Design and procedure

Study 1 adopted a single-factor (measurement of: immunity vs. brand attitude vs. control) between-subjects design. Three hundred thirty-five postgraduate students took part in the study as part of a business course and answered questions about Amazon.com as the focal brand. Amazon was identified based on a pretest ($N = 90$) that demonstrated *familiarity* ("I am very familiar with Amazon"; $M = 6.50, SD = 2.05$) and *frequent use* ("I use Amazon very often," "I frequently purchase things on Amazon"; $r = .69; M = 6.68, SD = 1.68$), with anchors 1 = "strongly disagree," 9 = "strongly agree."

The study was conducted in two parts. First, participants were randomly assigned to one of three groups and rated

their *purchase intentions* (“I will keep using Amazon for my online shopping in the near future,” “I am very happy to rely on Amazon for my shopping needs,” “I continuously use Amazon for buying things”; $\alpha = .87$). Participants in group 1 ($N = 110$) then rated their *immunity* (“My relationship with Amazon is not affected by negative information about it,” “Negative information about Amazon changes the way I think of the Amazon brand” (reverse coded), “Negative information about Amazon does not change my general view of the Amazon brand,” “I change the way I do business with Amazon based on negative information about it” (reverse coded); $\alpha = .83$). Those in group 2 ($N = 112$) completed *brand attitude* measure (“For me Amazon is...” 1 = “bad”/ “dislikeable”/ “unfavorable,” 9 = “good”/ “likeable”/ “favorable”; $\alpha = 0.90$), while participants in group 3 (control - $N = 113$) did not answer any additional questions.

In the second part of the study, which took place two weeks later in order to minimize possible demand characteristics, participants in all three groups read a scenario ostensibly reported in BusinessWeek’s latest Tech section, which a pretest ($N = 90$)—using Ahluwalia et al.’s (2000) *message valence* (11-point scale ranging from -5 to $+5$), *extremity* (9-point scale), and *believability* (9-point scale)—demonstrated to be perceived as negative ($M = -2.06$, $SD = 2.98$), moderately extreme ($M = 4.44$, $SD = 2.35$), and believable ($M = 6.73$, $SD = 1.87$):

Amazon has been going from strength to strength as of late. Even Wall Street has begun to fall in love with the company. But there may be dark clouds appearing, as Amazon has been embroiled in a potential data privacy scandal. Evidence suggests that Amazon has made it standard practice to sell some of its customer data to third parties. Is it still safe to shop at Amazon? Consumers may wonder.

Participants again noted their purchase intentions as in time period 1 ($\alpha = 0.77$). Finally, we thanked participants and debriefed them about the study’s purpose and fictitious scenario.

Results and discussion

In period 1, participants’ purchase intentions did not differ across group 1, which was exposed to the immunity scale ($M = 6.50$, $SD = 1.96$), group 2, which answered the brand attitude scale ($M = 6.63$, $SD = 1.90$), and group 3 (control) ($M = 6.49$, $SD = 1.89$) who only indicated purchase intentions ($F(2, 334) = 0.17$, $p = .841$). However, after exposure to the negative information, purchase intentions in the control (group 3) ($M = 5.27$, $SD = 1.98$; $t(221) = 4.18$, $p < .001$) and those who responded to the attitude scale (group 2) ($M = 5.38$, $SD = 1.76$; $t(220) = 3.95$) were significantly

lower compared to the immunity group (group 1) ($M = 6.35$, $SD = 1.89$). Participants who were exposed to the immunity measure did not report significantly lower purchase intentions in period 2 after reading the negative information about Amazon compared to time 1 ($M_{\text{time 2}} = 6.35$ vs. $M_{\text{time 1}} = 6.50$; $t(218) = 0.60$, $p = .552$). Thus, the findings provide strong support for H1 and suggest that merely measuring immunity strengthens customers’ resistance to negative information about a brand in the future. We conducted Study 2 to test H1-H3.

Study 2

To examine H1-H3, Study 2 manipulated whether immunity was present or absent and tested if participants who were exposed to the immunity measure in time period 1 (T_1) display a different response to negative information in time period 2 (T_2) than those who were not exposed to the immunity measure (H1). We also test H2 to investigate if customers’ desire to protect a brand, their careful consideration of a diverse and large number of relevant past datapoints, and potential future negative brand information act as serial mediators explaining the effects of immunity on responses to negative information. Finally, Study 2 tests the extent to which immunity enhances the effects of traditional brand relationship constructs on desire to protect the brand and consideration of varied datapoints (H3).

Design and procedure

We collected data from US Amazon Mechanical Turk workers across two time periods for a prorated equivalent of \$10 per hour. In time period 1 (T_1) 1,300 respondents were randomly assigned to one of three conditions (immunity present vs. immunity absent and the control). Six days later (T_2) we targeted respondents from T_1 with a follow-up study. Responses for whom we could not match T_2 answers to answers in T_1 were dropped. The final dataset consisted of 593 responses ($N_{\text{control}} = 196$, $N_{\text{imm present}} = 196$, $N_{\text{imm absent}} = 201$). Respondents did not differ in demographic statistics (gender, age) across the two phases of the study ($p = \text{ns}$). The demographics data did not affect the results and thus is not discussed further. All respondents were exposed to negative brand information in T_2 , which was a previously published (see Giuffredi-Kähr et al., 2021) fictitious social media post about Nike (see Web Appendix C Fig. 1).

In T_1 respondents in the *immunity present* condition responded to questions regarding immunity, their commitment to the Nike brand, self-brand connections, and brand love, their future purchase intention, and willingness to pay for a pair of Nike running shoes. Respondents in the *immunity absent* condition only answered questions about their

future purchase intention, willingness to pay and questions about their commitment to the Nike brand, self-brand connections and brand love in T_1 . Respondents in the *control* condition only indicated their purchase intention and willingness to pay in T_1 .

Six days later, respondents across the three conditions were contacted again to measure their desire to protect the brand and consideration of datapoints. Next, they were exposed to the negative social media post about Nike. We then asked respondents to indicate their future purchase intention and willingness to pay. Finally, we measured familiarity with the brand, believability of the social media post, interest in the social media post, and asked them to guess the purpose of the study. All items were evaluated on seven-point scales and unless otherwise indicated we used endpoints anchored at 1 = “not at all” and 7 = “very much.” At the end of the study people were debriefed about the fictitious nature of the social media post.

Measures

The main dependent variables were respondents' *purchase intention* (“I will buy Nike products in the future” 1 = “disagree,” 7 = “agree”) and *willingness to pay* in US\$ (“How much are you willing to pay for a pair of Nike sneakers/running shoes?”) after exposure to the negative social media post in T_2 .

Respondents indicated their *desire to protect the brand*: “If I were to receive negative information about Nike, I would have the desire to protect the brand,” and “If I were to receive negative information about Nike, I would have the desire to protect my self-image” ($r = .72$). To assess respondents' *consideration of varied datapoints* we asked them the extent to which they considered varied past experiences and potential future negative information about the brand using 5 items ($\alpha = 0.88$).

For brand *commitment*, we adapted three items from Ahluwalia et al.'s (2000) published scale. For *self-brand connections* we adapted 7 items from Escalas and Bettman's (2003) and Park et al.'s (2010) published scales ($\alpha = 0.96$). For brand *love*, we adapted 7 items from Batra et al.'s (2012) and Bagozzi et al.'s (2017) brand love scales ($\alpha = 0.98$). We captured *immunity* by asking respondents to indicate the extent to which they disagreed or agreed with three statements in accordance with our immunity scale ($\alpha = 0.82$).

Finally, we invited respondents to write down their *thoughts about the purpose of the study* (“What do you think is the purpose of this study?”), brand *familiarity* (“How familiar are you with Nike?” 1 = “not at all familiar,” 7 = “very familiar”), *believability of the social media post* (“How believable is the post about Nike?” “How trustworthy is the post about Nike?” 1 = “not at all,” 7 = “very much”; $r = .64$), and their *interest in the post* (“How interesting do you find

the post about Nike?” “How relevant is the post about Nike to you?” 1 = “not at all,” 7 = “very much”; $r = .58$). No respondent guessed the study's purpose and the three conditions did not differ on any of these controls. In Web Appendix C, Table 1 shows cell means for the variables collected, Table 2 shows measurement items descriptives, and Tables 3 and 4 show factor analysis results and correlations among constructs, respectively. In addition, a post-hoc test ($N = 90$) assessed the brand incident's severity (“The brand incident is very serious,” “This brand incident is of great severity”; $r = .75$) and valence (“The brand incident is very...” (1) = “positive,” (7) = “negative,” “I consider the brand incident as very...” (1) = “good,” (7) = “bad”; $r = .77$), showing that the brand incident was seen as moderately severe ($M = 4.73$, $SD = 1.88$) and negative ($M = 5.10$, $SD = 1.61$).

Results

Effects of immunity (vs. immunity absent) on response to negative information In T_1 , respondents' future purchase intention of Nike products did not differ across the three conditions ($M_{\text{control}} = 5.05$, $M_{\text{imm absent}} = 5.07$, $M_{\text{imm present}} = 5.13$; $F(2, 590) = 0.24$, $p = .790$; see Web Appendix C Table 1). But after exposure to the negative social media post, future purchase intentions were significantly weaker in the control ($M = 3.85$) versus the immunity condition ($M = 4.99$; $t(390) = 5.64$, $p < .001$). Furthermore, respondents indicated weaker intentions to buy Nike products in the future in the immunity absent ($M = 3.82$; $t(394) = 5.81$, $p < .001$) vs. the immunity present condition. Similarly, respondents' willingness to pay for Nike shoes did not differ across the control ($M = 133.47$), immunity absent ($M = 138.29$) and immunity present ($M = 123.99$; $F(2, 541) = 0.22$, $p = .802$) conditions in T_1 (Web Appendix C Table 1). In T_2 , however, after exposure to the negative post respondents noted significantly weaker willingness to pay in the control ($M = 70.74$) and immunity absent ($M = 70.20$) vs. the immunity present condition ($M = 121.61$) ($F(2, 550) = 7.48$, $p = .001$). Taken together, these results support H1.

Effects of immunity on desire to protect the brand and consideration of varied datapoints Desire to protect the brand was significantly greater in the immunity present ($M = 4.36$) than in the control ($M = 3.64$) and immunity absent ($M = 3.42$) condition ($F(2, 589) = 12.92$, $p < .001$) (Web Appendix C Table 1). Moreover, respondents' consideration of varied datapoints was significantly greater when immunity was present ($M = 4.98$) vs. absent ($M = 4.36$) and the control ($M = 4.37$) ($F(2, 589) = 11.57$, $p < .001$). Thus, immunity triggers a stronger desire to protect the brand and greater consideration of varied datapoints when assessing one's relationship with a brand (H2).

Test of the mediating mechanism We used bootstrapping with repeated extraction of 5,000 samples (Hayes, 2017, PROCESS v3.4 model 6) and the results in Fig. 1 Panel A show that H2 is supported. Evidence for sequential mediation was confirmed (indirect effect = 0.480, Boot SE = 0.101, CI: 0.289, 0.678). Switching the order of the mediators led to a weaker R^2 (0.36 vs. 0.17, $p < .001$), suggesting that our sequence of mediators is more appropriate. The results in Fig. 1 Panel B show that these results are replicated with willingness to pay at T_2 as the DV, in additional support of H2.

The moderating role of immunity We again used bootstrapping with repeated extraction of 5,000 samples (Hayes, 2017, PROCESS v3.4 model 85) to test the moderating role of immunity and report the full set of results for brand commitment in Fig. 2 Panels A-B. For self-brand connections and brand love we created a summative scale as items of these loaded on one factor (see Web Appendix C Table 3) and we report the full set of results in Fig. 3 Panels A-B as well as Web Appendix C. The results show that the interaction between brand commitment and immunity predicted desire to protect the brand ($\beta = 0.55$, $p < .01$; see Fig. 2 Panel A), such that desire to protect the brand increased when immunity was present. Notably, conditional effects revealed that commitment had a positive effect on desire to protect the brand in the immunity present condition (conditional effect = 0.72, Boot SE = 0.135, $p < .001$, CI: 0.458, 0.988) but had no effect when immunity was absent (conditional effect = 0.18, Boot SE = 0.127, $p = .161$, CI: -0.072, 0.428). Desire to protect the brand, in turn, influenced consideration of varied datapoints ($\beta = 0.19$, $p < .001$). The interaction between brand commitment and immunity predicted consideration of varied datapoints, such that strong brand commitment enhanced consideration of varied datapoints in the immunity present condition (conditional effect = 0.40, Boot SE = 0.105, $p < .001$, CI: 0.198, 0.611) but not when immunity was absent (conditional effect = -0.06, Boot SE = 0.096, $p = .561$, CI: -0.244, 0.133). Subsequently, consideration of varied datapoints significantly predicted future purchase intentions after exposure to a negative brand event in T_2 ($\beta = 0.59$, $p < .001$). Conditional indirect effects revealed a significantly more pronounced positive effect of commitment on purchase intentions for the immunity present (indirect effect = 0.080, Boot SE = 0.025, CI: 0.036, 0.136) than for the immunity absent condition (indirect effect = 0.020, Boot SE = 0.018, CI: -0.014, 0.058). The results in Fig. 2 Panel A also show a direct effect of brand commitment on future purchase intentions after negative brand event exposure ($\beta = 0.66$, $p < .01$), suggesting that alternative mediators are operative. Immunity did not moderate the direct effect of brand commitment on purchase intentions ($\beta = -0.24$, $p = .154$). These results were replicated with willingness to pay as the DV (see Fig. 2 Panel B).

Discussion

In support of our predictions, purchase intention and willingness to pay after exposure to negative brand-related information are significantly greater when customers are exposed to an immunity measure than when they are not. Moreover, desire to protect the brand and consideration of varied datapoints act as serial mediators in the relationship between immunity and response to negative information. The results also confirm a moderating effect of immunity such that traditional relationship strength measures have a stronger effect on desire to protect the brand and consideration of varied datapoints when immunity is present vs. absent. In order to test the generalizability of these results and customers' response to actual negative information, we carried out Study 3.

Study 3

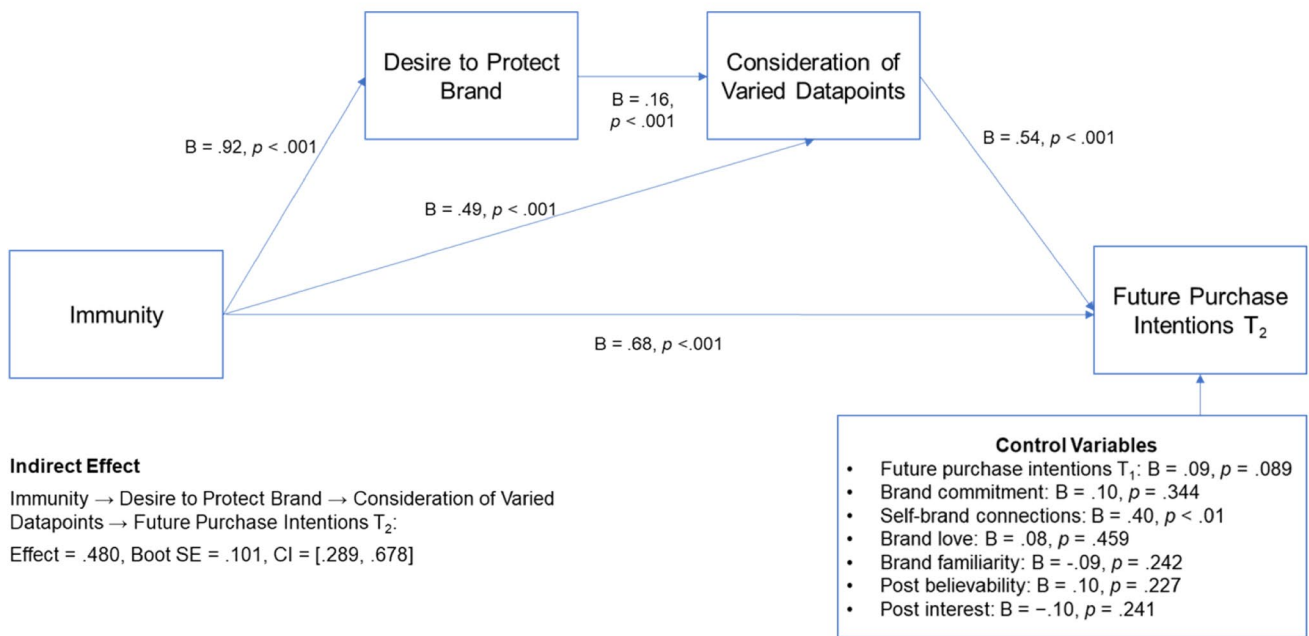
Study 3 tested H1-H3 and examined customers' response (brand usage) in an actual negative information context. Specifically, we collected data from consumers about Facebook. Initially, our intention was merely to replicate the findings of Study 2 in a different context, but coincidentally, one week after our initial measurement, Facebook launched an attack ad on Apple in major U.S. news outlets. Consumers largely reacted negatively to the ad and, thus, it was considered a mishap that led to much negative information about the brand. This provided us with a unique and fortuitous opportunity to test whether our initial measurement had boosted the resilience of Facebook customers vis-à-vis actual negative information about the brand. We contacted the same customers again one week after the incident to examine to what extent their behavior (Facebook usage) had changed. Thus, Study 3 tests immunity in an actual field setting.

Design and procedure

We employed US Amazon Mechanical Turk workers across two different time periods for a prorated equivalent of \$11 per hour. In time period 1 (T_1) we randomly assigned 550 participants who passed our initial screening question (whether they had a Facebook account) to one of three conditions (immunity present vs. immunity absent and the control). Two weeks later, in time period 2 (T_2), we approached respondents from T_1 again with a follow-up study. Only responses with matched answers across the two time periods and from participants who did not fail the attention check ("I am a robot," 1 = disagree, 7 = agree) were retained. The final dataset consisted of 226 responses ($N_{\text{control}} = 74$, $N_{\text{imm present}} = 75$, $N_{\text{imm absent}} = 77$).

In T_1 , respondents in the *immunity present* condition noted their past usage of the study's focal brand (Facebook), brand

A



B

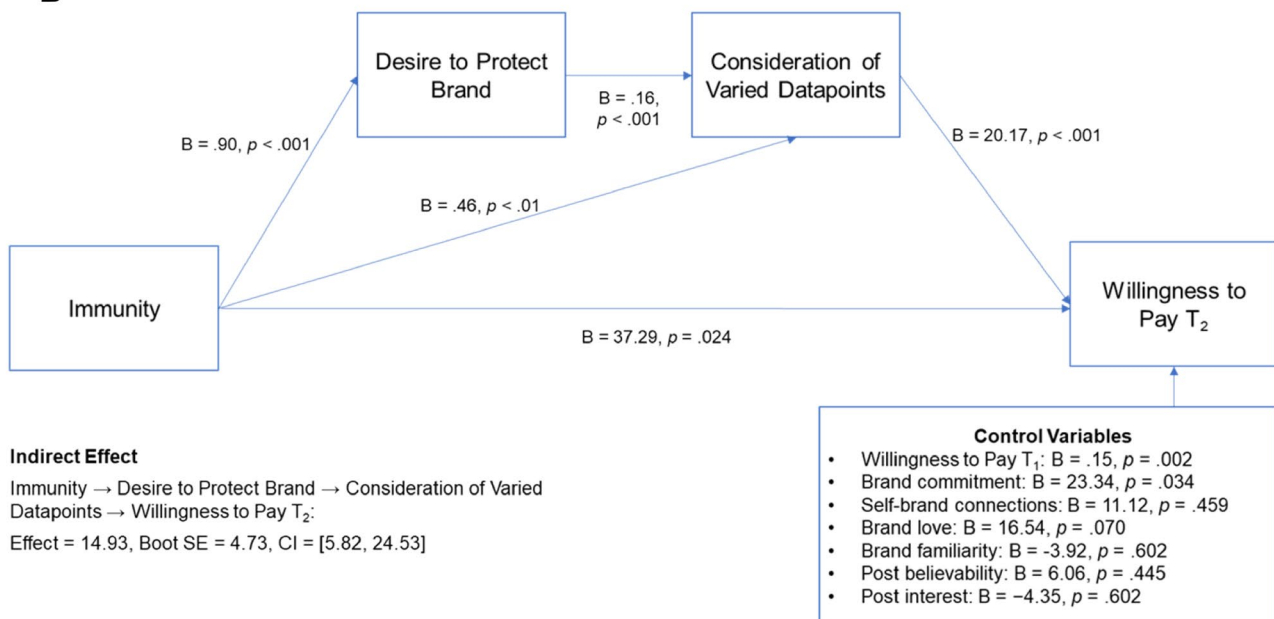


Fig. 1 **A** Process model (Hayes, 2017, Model 6) testing the mediational role of desire to protect the brand and consideration of varied datapoints in the relationship between immunity (IV) and purchase intentions after a negative brand event (DV). **B** Process model

(Hayes, 2017, Model 6) testing the mediational role of desire to protect the brand and consideration of varied datapoints in the relationship between immunity (IV) and willingness to pay after a negative brand event (DV)

commitment and self-brand connections as well as immunity. After a brief filler task, they answered questions about their *desire to protect the brand* and *consideration of varied datapoints*. Respondents in the *immunity absent condition*

answered questions about their past brand usage as well their brand commitment and self-brand connections. After a brief filler task, they answered questions about their desire to protect the brand and consideration of varied datapoints. Finally, those

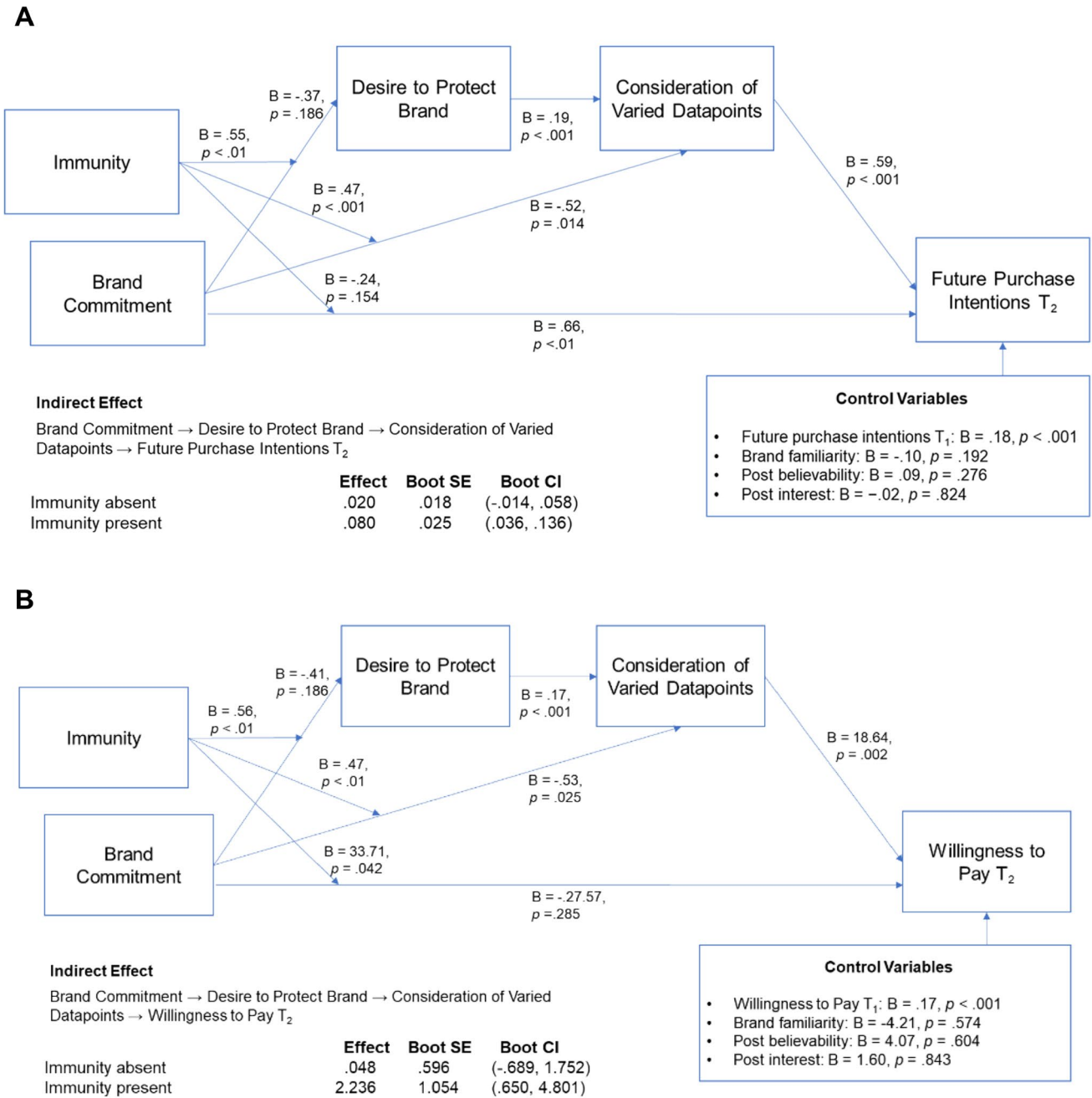


Fig. 2 **A** Process model (Hayes, 2017, Model 85) testing the moderating role of immunity and the mediational role of desire to protect the brand and consideration of varied datapoints in the relationship between brand commitment (IV) and purchase intentions after a negative brand event (DV). **B** Process model (Hayes, 2017, Model 85)

testing the moderating role of immunity and the mediational role of desire to protect the brand and consideration of varied datapoints in the relationship between brand commitment (IV) and willingness to pay after a negative brand event (DV)

in the control condition indicated their past brand usage, desire to protect the brand, and consideration of varied datapoints.

Two weeks after T₁, we contacted respondents across the three conditions again and shared with them the real incident Facebook had been involved in a week earlier

(one week after T₁; see Web Appendix D Fig. 1). Specifically, Facebook had run newspaper attack ads on Apple for limiting companies’ access to personalized ads in the *New York Times*, *Washington Post* and *Wall Street Journal*. Apple responded by blaming Facebook of “disregard

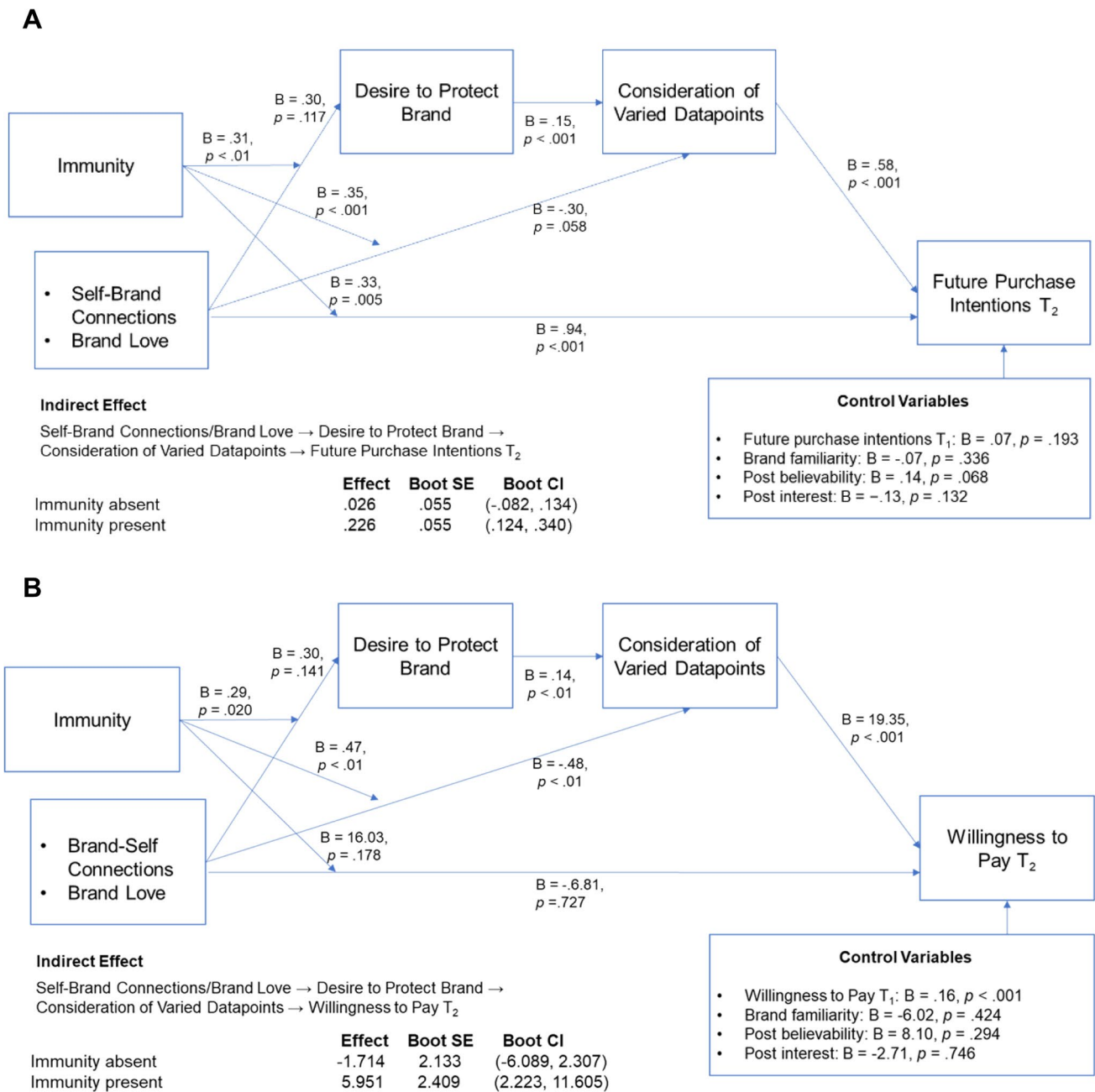


Fig. 3 **A** Process model (Hayes, 2017, Model 85) testing the moderating role of immunity and the mediational role of desire to protect the brand and consideration varied datapoints in the relationship between self-brand connections and brand love (IV) and purchase intentions after a negative brand event (DV). **B** Process model (Hayes, 2017,

Model 85) testing the moderating role of immunity and the mediational role of desire to protect the brand and consideration varied datapoints in the relationship between self-brand connections and brand love (IV) and willingness to pay after a negative brand event (DV)

for user privacy” (Bloomberg, 2020). After receiving the manipulations, respondents answered the key measures. As in Study 4, items were evaluated on seven-point scales and unless otherwise indicated we used endpoints anchored at 1 = “not at all” and 7 = “very much.”

Measures

We asked participants to indicate their *brand usage* (“How many hours have you spent on Facebook in the last week?”) in T₂ as our dependent variable. We asked respondents to

indicate their *desire to protect the brand* and *consideration of varied datapoints* with the same 2-items ($r = .79$) and 5 items ($\alpha = 0.87$) measures as in Study 2, respectively. For *brand commitment*, we adapted two items from Ahluwalia et al.'s (2000) published scale, and for brand-self connections we adapted 4 items from Escalas and Bettman's (2003) and Park et al.'s (2010) published scales ($\alpha = 0.95$). We captured *immunity* with the 3-item measure as in Study 2 ($\alpha = 0.94$). We asked respondents to guess the purpose of the study and to indicate how busy they had been in the past week ("I was exceptionally busy last week," "Last week I had more leisure time than I usually do" (reverse); $r = .72$). We also asked them to note their *brand familiarity* ("How familiar are you with Facebook?" (1) = "not at all familiar," (7) = "very familiar"), *severity of the brand incident* ("The brand incident is very serious," "This brand incident is of great severity"; $r = .75$), as well as the incident's valence ("The brand incident is very..." (1) = "positive," (7) = "negative," "I consider the brand incident as very..." (1) = "good," (7) = "bad"; $r = .83$) and relevance ("How relevant is the brand incident to you?," "How interesting do you find the brand incident?"; $r = .83$). Finally, respondents indicated their age and gender (1 = male, 2 = female). No respondent guessed the study's purpose and the three conditions did not differ on any of the controls (Web Appendix D Table 1). Web Appendix D Table 2 shows measurement items descriptives and Tables 3 and 4 list factor analysis results, and correlations among constructs, respectively.

Results

Effects of immunity vs. (immunity absent) on response to negative information In T_1 , respondents' brand usage did not differ across the three conditions ($M_{\text{control}} = 23.71$, $M_{\text{imm absent}} = 23.61$, $M_{\text{imm present}} = 23.77$; $F(2, 225) = 0.01$, $p = .998$; Web Appendix D Table 1). After the negative information, however, in T_2 respondents' brand usage was significantly higher in the immunity present ($M = 23.24$) vs. the immunity absent ($M = 17.22$; $t(150) = 2.13$, $p = .035$) and the control ($M = 17.26$; $t(147) = 2.12$, $p = .035$) conditions. These results support H1.

Effects of immunity on desire to protect the brand and consideration of varied datapoints Desire to protect the brand was significantly greater in the immunity present condition ($M = 3.41$) than in the control ($M = 2.49$; $t(147) = 3.85$, $p < .001$) and immunity absent ($M = 2.75$; $t(150) = 2.62$, $p = .010$) conditions (Web Appendix D Table 1). Moreover, respondents' consideration of varied datapoints was significantly greater when immunity was present ($M = 3.57$) vs. absent ($M_{\text{imm absent}} = 2.66$; $t(150) = 3.33$, $p < .001$; $M_{\text{control}} = 2.70$; $t(147) = 3.40$, $p < .001$). Together, these results support H2.

Test of H2-H3 As in Study 2, we used bootstrapping with repeated extraction of 5,000 samples (Hayes, 2017, PROCESS v3.4 model 6) and the results in Fig. 4 show that H2 is supported. We used bootstrapping with repeated extraction of 5,000 samples (Hayes, 2017, PROCESS v3.4 model 85) to test the moderating role of immunity on the influence of commitment and self-brand connections (see Fig. 5 Panels A-B). As predicted, the interaction between commitment and immunity influenced desire to protect the brand ($\beta = 0.77$, $p < .001$; see Fig. 5 Panel A). Critically, conditional effects revealed that commitment had a positive effect on desire to protect the brand in the immunity present condition (conditional effect = 0.56, Boot SE = 0.106, $p < .001$, CI: 0.352, 0.772), while we found a negative effect when immunity was absent (conditional effect = -0.21, Boot SE = 0.100, $p = .035$, CI: -0.411, -0.015). We also found a positive influence of immunity on desire to protect the brand ($\beta = 0.63$, $p = .006$), which in turn influenced consideration of varied datapoints ($\beta = 0.21$, $p = .006$). Notably, in addition to the direct influence of immunity on consideration of varied datapoints ($\beta = 0.77$, $p < .001$), the interaction between commitment and immunity predicted consideration of varied datapoints ($\beta = 0.46$, $p = .001$), such that commitment enhanced consideration of varied datapoints in the immunity present condition (conditional effect = 0.31, Boot SE = 0.101, $p = .003$, CI: 0.109, 0.509) but not when it was absent (conditional effect = -0.15, Boot SE = 0.088, $p = .084$, CI: -0.329, 0.021). Subsequently, consideration of varied datapoints significantly predicted brand usage after exposure to negative information in T_2 ($\beta = 1.92$, $p < .001$). Conditional indirect effects revealed a positive effect of commitment on brand usage for the immunity present condition (indirect effect = 0.223, Boot SE = 0.129, CI: 0.002, 0.509) but no effect for the immunity absent condition (indirect effect = -0.084, Boot SE = 0.070, CI: -0.264, 0.003). The results showed a direct effect of immunity on brand usage ($\beta = 4.37$, $p = .002$). There was no direct effect of commitment on brand usage ($\beta = -1.92$, $p = .174$) and immunity did not moderate the direct effect of commitment on brand usage ($\beta = 1.30$, $p = .174$) (Fig. 4 Panel A). These results were replicated with brand-self connections as IV (see Fig. 5 Panel B).

Discussion

Study 3 replicated H1-H3 by manipulating customers' exposure to immunity vs. commitment and self-brand connection measures (and control) prior to exposure to a real brand incident and by studying customers' brand usage behavior in response to answering the immunity measure and actual negative brand information. The results showed that immunity effectively shielded the brand against consumer backlash after negative information. Study 3 thus underscores the

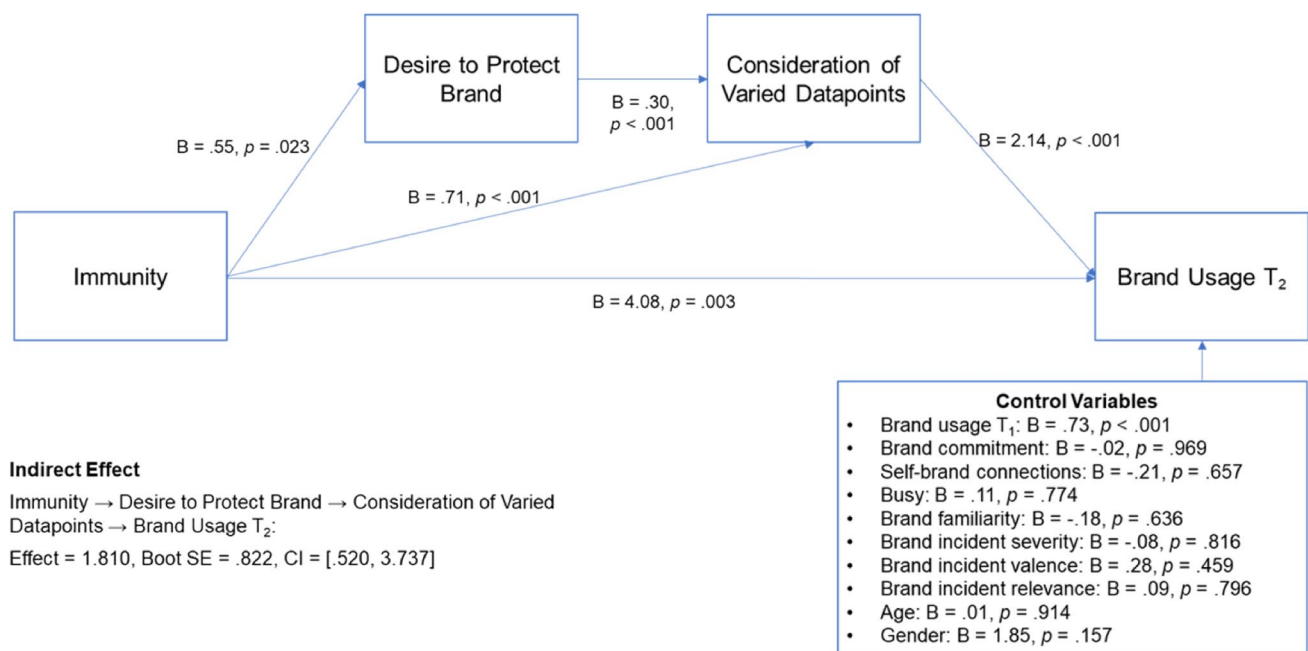


Fig. 4 Process model (Hayes, 2017, Model 6) testing the mediational role of desire to protect the brand and consideration varied datapoints in the relationship between immunity (IV) and brand usage after a negative brand event (DV)

potential of immunity and points to provocative implications for theory and marketing practice.

General discussion

This paper proposed a new construct of customer *immunity* and conceptualized it as customers' resistance to changing how they view a brand when confronted with negative information about that brand. We developed a parsimonious measure of immunity that captures the extent to which the relationship between a customer and a brand is resilient to negative information. We have investigated immunity, showing that it helps customers form a stronger resistance to negative information. Customers' desire to protect a brand and consideration of varied datapoints when assessing their relationship with a brand help explain the effect. We have provided support for this result studying different brand incidents and relying on different respondent samples across different purchase contexts. Furthermore, we have shown that immunity strengthens the positive effects of traditional relationship strength measures such as brand commitment, self-brand connections, and brand love.

Theoretical contributions

Our study makes three important theoretical contributions. First, we contribute to work on how customer-brand

relationships may remain strong even in the face of negative brand-related information. Previous research has focused mainly on building up resistance through brand commitment, brand love, etc. However, this may not always shield a brand against a negative information. We therefore introduced the construct of immunity as a means of further defending the brand, and importantly, without using actual negative information. When customers are exposed to an immunity measure, they tend to protect the brand and draw on more datapoints when assessing their brand relationship (and more so than compared to other extant measures). This is an important and novel finding that complements and extends existing work that examines the relevance of negative events in studying customer responses (e.g., Gijsenberg et al., 2015; Xiong & Bharadwaj, 2013).

Second, we provide further support for the mere measurement effect and the influence it can have on customer behavior. In doing so we contribute to an emerging body of literature in marketing concerned with establishing pre-emptive measures to protect brands from future attacks. While as marketing researchers we usually tend to see measurements effects as sources of errors, merely measuring immunity can lead to desirable outcomes. Importantly, we show that it is not just a measurement artifact but also a meaningful psychological process. Although the mere measurement effect remains relatively under-researched in marketing, the current study provides further evidence that measurement can indeed influence cognitive

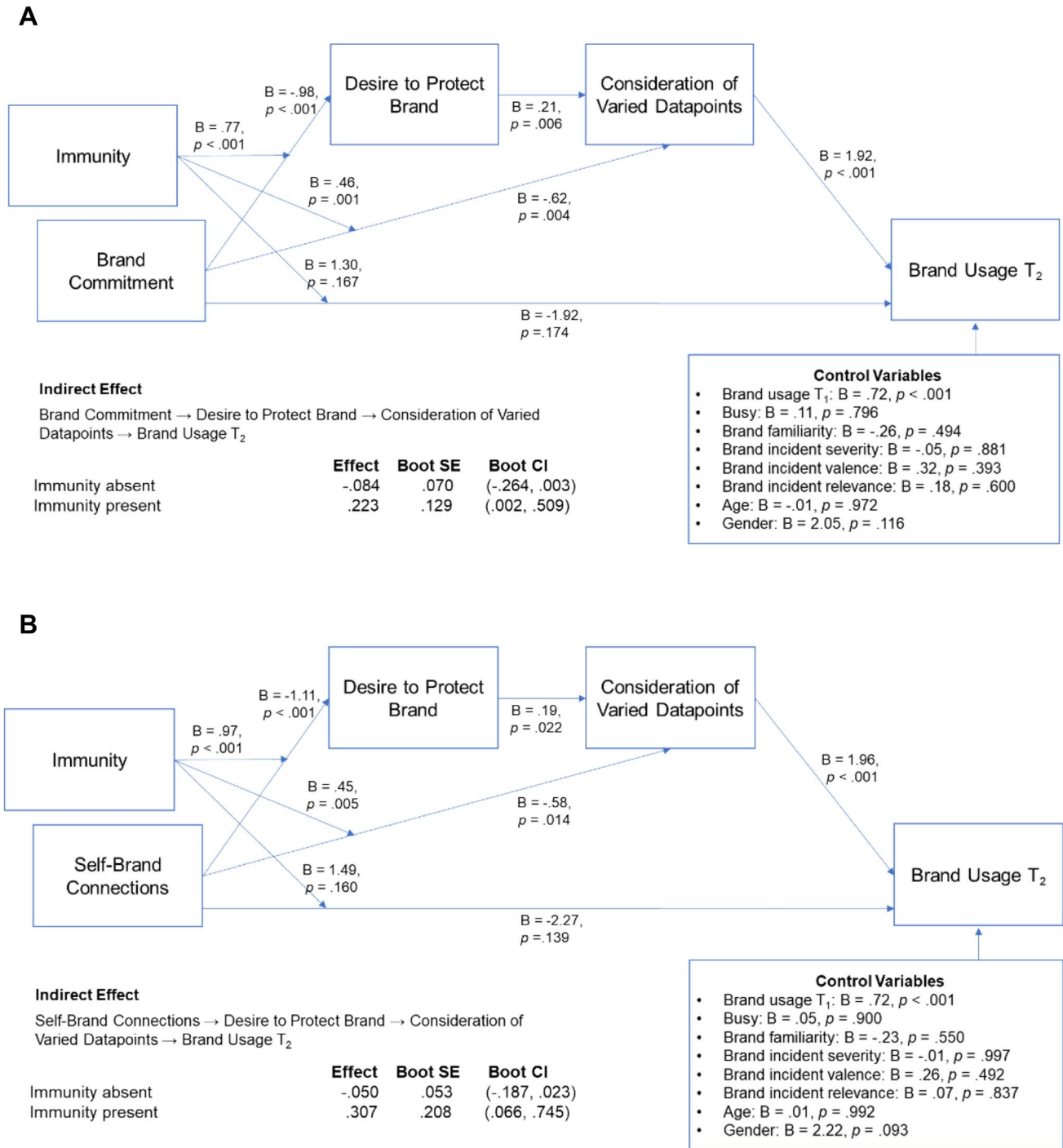


Fig. 5 A Process model (Hayes, 2017, Model 85) testing the moderating role of immunity and the mediational role of desire to protect the brand and consideration of varied datapoints in the relationship between brand commitment (IV) and brand usage after a negative brand event (DV).

B Process model (Hayes, 2017, Model 85) testing the moderating role of immunity and the mediational role of desire to protect the brand and consideration of varied datapoints in the relationship between self-brand connections (IV) and brand usage after a negative brand event (DV)

structure and behavior, opening up several important directions for future research, which we discuss later.

Third, we have shown that because immunity motivates customers to retrieve more varied information, it can be an

effective basis to determine the strength of their relationship with a brand. We shed additional light on the critical questions of how customers respond to negative information, and what difference it makes to their behaviors (Lei et al.,

2012). Marketing scholars have for long been interested in measuring the strength of customer-brand relationships, and we provide a new and timely way to measure this construct. This is critical in today's world, where customers are often exposed to negative information from a variety of sources. Our immunity measure sheds light on how resilient customers are to potential negative information, which is a strong indicator of the strength of the customer-brand relationship.

Taking all this together, the findings of our study articulate the defining properties of the immunity construct, the conceptual distinction between it and other customer-brand relationship constructs, its measurement, and its outcomes. Our findings complement and extend current knowledge by showing that immunity taps into key elements of customer-brand relationships. Our conservative test added credibility to the robustness of immunity to negative information in assessing the nature of customer-brand relationships.

Implications for marketing practice

Measuring the strength of customer-brand relationships is a key managerial issue since it can help brands achieve sustainable growth (Aaker et al., 2004). We offer a measurement tool that can be used by managers to audit the resilience of their customer base to negative information and hence the strength of their relationship. Because immunity acts as a predictor of future customer behavior, measuring it can be highly beneficial to management. In addition, measuring immunity can also serve as an effective means of increasing customers' resilience to future negative information, without exposing them to any actual negative information about the brand; something managers are highly reluctant to do.

Because past research has demonstrated that mere measurement effects can last for several months and even a year after the initial exposure (Dholakia & Morwitz, 2002), we recommend that managers measure the immunity of selected customers at least yearly. Ideally, immunizing efforts should be focused on a group of profitable customers who are already strongly connected to the brand and which the company wants to protect. Many brands already engage with these customers regularly (e.g., through customer surveys, customer relations managers, etc.). In a B2B context this could be quite a manageable and easily identifiable group of customers. In a B2C context, brands might need to be more selective, and focus, for example, on loyalty program members, or those customers who are deemed to be most important for business growth (e.g., based on their Customer Lifetime Value, Net Promoter Score, etc.). We conducted interviews with managers across a range of B2B and B2C organizations in the USA, Europe and Asia who have been using (or were interested in using) the immunity metric. Our interviews revealed that managers like the simplicity with which immunity can be measured. A senior brand manager of a global FMCG company noted: "it's a

very interesting concept. For some of our brands we have a lot of metrics to score consumer sentiment. We would normally [...] sample a few hundred consumers each month on dimensions such as awareness, brand equity attributes, etc. Adding another metric to the 30 or so we already have is easy. There's no practical difficulty in measuring immunity." Another brand manager within the same company noted: "it is incredibly useful, and we face zero barriers to see it adopted across several of our brands and produce valuable outcomes." Managers were also more comfortable with using the immunity metric than exposing customers to actual negative information. The CEO of a B2B services company noted: "Customers understand it's hypothetical, but at the same time it makes them think about it. Our services often represent the largest single expense for our clients, so they take anything relating to us very seriously."

The managerial response to the diagnostic power of the immunity metric was overwhelmingly positive. There was a consensus among managers that traditional customer-brand relationship metrics are useful but no longer sufficient. Our interviews confirmed that negative information may be more diagnostic or informative than positive information. A senior marketing executive noted: "Asking things on the positive sentiment, like loyalty or the NPS ... First, I kind of expect clients to reaffirm that they are happy; I feel I am forcing the client to say something positive. Second, I find that the feedback [...] always seems to relate to a specific recent event, rather than a more complete view of their relationship with us." The CEO of a logistics solutions firm told us: "I believe immunity is a true test of the strength of the relationship. We get deeper insights with this metric, which helps us invest in our client relationships more effectively."

As the online world heightens customer sensitivity to negative information, it is important that managers deploy defensive strategies. A senior executive within a large chemical company told us: "Measuring sentiment is great, but being able to vaccinate against future negative information is very attractive." A senior manager within a B2B services company that has been using the immunity metric for nearly a year stated: "I just witnessed the power of the vaccination effect first-hand. A disgruntled former customer recently attacked us on a popular review site. It's not the first time this has happened. But the difference is that this time it seemed to have virtually no impact on our customers, with several of them actually going out of their way to express support for us, whether online or directly to me. This is unlike anything I've seen in the past and I don't think it's just coincidental." A brand manager for a global FMCG company stated: "It's not enough to have a great product or a sound recovery strategy. We really need to insulate ourselves from future negative information proactively. So, the idea of increasing immunity in our customers is very attractive."

Limitations and future research

While the current study provides preliminary support for the importance of immunity as a predictor of consumer behavior, and for the immunization metric as a way to boost that immunity, it is still exploratory in nature. Further evidence of the phenomena under study could be provided, for example, through field studies within organizations over an extended period of time. Also, in our study we did not focus on extremely negative information, but on the kind of moderately negative information that tends to be prevalent online and that can affect any brand today. Therefore, future research could investigate how the severity of the negative information may impact the immunization process, and how various types of negative information may have a greater or lesser effect.

In addition, while research has shown mere measurement effects to be generally long-lasting, future studies could investigate specifically the duration of the effect and its rate of decay. Also worthwhile would be investigating the context of brands that are highly polarizing (e.g., negative information about a political candidate's behavior, fast food brands, tobacco brands, etc.) and how the mere measurement effect and immunization may operate in those contexts. Future research could examine the effect of immunity on shareholder value across different customer segments and industries. A study on how immunity impacts customer purchase behavior over time is thus worthy of further exploration. Future research could also explore whether our findings hold for brands that are less compelling or well-known, with a small loyal following and mostly apathetic customers.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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