Received: 16 July 2020 | Revised: 22 January 2021 | Accepted: 24 March 2021

DOI: 10.1002/mar.21489

RESEARCH ARTICLE

Psychology & Marketing WILEY

The downside of scarcity: Scarcity appeals can trigger consumer anger and brand switching intentions

Alessandro Biraglia[1] | Bryan Usrey[2] | Aulona Ulqinaku[1]

[1]Marketing Department, Leeds University Business School, University of Leeds, Leeds, UK

[2]Marketing Department, Norwich Business School, University of East Anglia, Norwich, UK

Correspondence
Alessandro Biraglia, Marketing Department, Leeds University Business School, University of Leeds, Maurice Keyworth Bldg, Leeds LS6 1AN, UK.
Email: a.biraglia@leeds.ac.uk

Abstract

Brands often use scarcity appeals to promote sales. However, there is limited research investigating how consumers react when they are unable to obtain items that are advertised using scarcity appeals in terms of limited quantity. In two studies, experimental and correlational, we show that consumers who do not get the product associated to scarcity appeals (vs. not) have higher intentions to switch to competitor brands. This effect is mediated by consumer anger. We present theoretical contributions in research on scarcity appeals and consumer emotions (i.e., anger) and we discuss managerial implications of how scarcity appeals can sometimes backfire and lead to consumers switching to other competitor brands when they fail to obtain the product advertised as limited in quantity.

KEYWORDS

anger, scarcity appeals, switching behavior

1 | INTRODUCTION

Scarcity appeals and limited availability have been shown to be an important heuristic that can aid in choice desirability (e.g., Goldsmith et al., 2017; Inman et al., 1997; Ku et al., 2012; Van Herpen et al., 2009; Worchel et al., 1975). In the shopping scenario, cues related to scarcity appeals are often used to create elitism (e.g., through luxury products or limited editions), particularly if the item is relevant within an individual social group (Amaldoss & Jain, 2010). In this paper, we define scarcity appeals as promotions related to products that were on sale in limited numbers and may not be available at the time of purchase.

While there has been research that suggests that scarcity can have positive effects, including arousal and further heuristic processing (Cialdini, 1993), additional literature has suggested that scarcity appeals may push consumers to display higher levels of consumer aggression to purchase the target product (Kristofferson et al., 2017), presenting the possibility that such feelings may have negative consequences for brands. In their recent research, Cannon et al. (2019) found that individuals need to ultimately resolve resource scarcity through different reparation techniques. Relevant to previous literature, the research aim of this paper is to investigate and demonstrate the effects of scarcity appeals on consumers and the averted feelings and compensatory consumption that may be the result of it.

Thus, although scarcity appeals may be aimed at increasing the perceived value of a good (e.g., Sevilla & Redden, 2014), such an approach may indeed induce feelings of anger amongst consumers if they are unable to obtain the item. However, while some research has shown that sadness and grief may be the emotional response from consumers who do not have the chance to purchase their desired product (e.g., Martin, 2002), there is little research in the field that has uncovered negative emotions towards the brand in relation to not getting a scarce product. Indeed, such emotions may have negative consequences for brands, as consumers may express higher reactance towards message and promotions and may engage in sabotage actions (Kähr et al., 2016).

In this paper, we aim to examine how not getting (vs. getting) an item advertised using scarcity appeals (e.g., a promotion on Black Friday/Cyber Monday) can induce higher (vs. low) consumer anger and instill a desire to get the same item from a competitor brand. This paper aims to contribute to research in consumer behavior, focusing on scarcity appeals and showing that there may be situations in which scarcity appeals in terms of limited quantity can also backfire in anger among consumers that fail to obtain it. This paper also aims to contribute to research in consumer emotions, focusing on anger, and investigating not getting a product under scarcity appeals (vs. no scarcity appeals) as one possible antecedent of consumer anger and switching intentions as a possible consequence of it. We provide implications to practitioners on the effects of scarcity appeals on consumer behavior in terms of switching to competitor brands when they cannot obtain the items advertised as scarce.

2 | THEORETICAL BACKGROUND

2.1 | Scarcity appeals and consumer behavior

The concept of scarcity refers to a shortage of a given resource and thus, increased competition for acquisition. Scholars in the field of marketing and psychology have studied scarcity from a variety of different perspectives. In examining the concept of resource scarcity (e.g., time and money), and its impact on consumer behavior (e.g., Mullainathan & Shafir, 2013; Shah et al., 2012), Van Kerckhove et al. (2020) found that financial scarcity, as opposed to space or control scarcity, increases consumers' desire for a larger choice set due to reduced freedom of choice. Aside from resource scarcity, literature has also explored scarcity relating to both environmental uncertainty and social comparison. Thompson et al. (2020) find that resource scarcity during childhood can impact on how consumers' value a chosen alternative under choice restriction. Additionally, Mittal et al. (2020) find that a poorer background can result in less self-confidence when presented with various threats. In terms of social comparison, scarcity can relate to the perceived discrepancy between one's current resources and a more desirable alternative (Cannon et al., 2019). Indeed, Givi and Olivola (2020) examined the ordering of multiple probabilistic opportunities for resource acquisition and the concept of hope, finding that consumers prefer to start with the opportunity that is the scarcest (i.e., ascending probabilities), as this ordering generates greater levels of hope.

Prudent for this study, scarcity literature has also examined choice restriction, which relates to the limitation of one's ability to evaluate, choose and consume products or services (Botti et al., 2008; Hamilton et al., 2019). Such scarcity may arise for a variety of reasons. Firms may experience demand shock or product delays that could limit quantity (Verhallen & Robben, 1994), or companies may intentionally create scarcity by holding back supply (Cialdini, 2009; Gitlin, 2007). Such scarcity is often communicated to consumers in the form of scarcity appeals, which Koch and Benlian (2015) define as the communication of the deliberate reduction of the amount of a product or service available to consumers.

Prior literature has suggested a positive effect of scarcity on purchase intentions, brand attitudes, and perceived value and these effects persist when scarcity is designed around limited editions, making the items symbol of uniqueness for the consumer (Jang et al., 2015). One such reason for this is that scarcity can lead to enhanced value perceptions, in that items that are harder to get are more valuable, as well as the affordability inference that others make when one is using a product that comes in limited quantity (Inman et al., 1997; Van Herpen et al., 2009; Worchel et al., 1975). Because of the greater perceived value that comes with scarcity appeals, Jang et al. (2015) have found that these effects (i.e., scarcity appeals on purchase intentions, brand attitudes, and perceived value) are stronger in the case of conspicuous products. Moreover, research comparing the effects of scarcity appeals of time versus quantity suggests that scarcity appeals are more effective in the latter case (Aggarwal et al., 2011) because limited quantity creates a sense of competition with other consumers.

While scarce products are often valuable for consumers, such products are often rarer and harder to find (King et al., 2009). Thus, scarcity tactics may result in acquisition failure, as only a select number may be made available by the brand. This reduction in quantity via scarcity appeals has the potential to produce a variety of affective responses. Kristofferson et al. (2017) found that scarcity can lead to an increased testosterone level, resulting in a higher level of consumer aggression, while Jachimowicz et al. (2019) found that financial scarcity results in higher and more intense levels of distress. Thus, when consumers are faced with both a scarcity appeal, as well as the potential for purchase failure, it is likely that the intensity of emotions may increase.

Given this heightened emotional state, consumers may react negatively when they are unable to acquire a limited-edition product. Past literature in stock-outs suggests that such an event may disrupt one's goal pursuit resulting in stress that could induce a negative reaction (Fitzsimons, 2000). Additionally, it may be perceived as a restriction to one's independence, resulting in potentially negative emotions directed towards the target brand. This line of thinking is aligned with the theory of psychological reactance, whereby the restriction of one's freedom is limited via the elimination of an item choice (Fitzsimons, 2000), resulting in hostility. In the shopping context, such hostility can take the form of switching behavior.

We propose that due to the heightened emotional state brought about due to scarcity appeals, failure to purchase a given product may lead to consumers switching to a new brand. In particular, consumers may seek to switch to a competitive brand, as the competitor is likely to be seen in a more positive light, as their value increases in light of the limited-edition purchase failure and the heightened negative response elicited by the scarcity tactic.

Based on this, we propose that when a scarcity cue is used by a brand and consumers fail to acquire the product, switching intent increases, as consumers seek out alternatives that can satisfy their consumption desire and reduce their negative emotions.

H1: *Consumers will be more likely to switch to a competing brand when they fail to obtain a product that is promoted with (vs. without) a scarcity appeal.*

2.2 | Scarcity appeals and anger

The employment of scarcity appeals can affect consumer psychological states, reactance, and emotions. Specifically, previous research shows that scarcity appeals can cause a state of physical agitation because of the perceived lack of freedom, and in this case, the main focus of individuals exposed to scarcity becomes the desire to fulfil the need that was left by the scarcity tactic (Brehm & Brehm, 2013). Indeed, research in consumer behavior shows that, in some situations, scarcity appeals can lead to aggressive behavior that goes even beyond the product itself (Kristofferson et al., 2017), while other scholars have found that scarcity can impact on hope, showing that hope reduces as an item becomes more scarce (Givi & Olivola, 2020). Hope is generally a strong emotion, as evidenced by the notion that a threat to one's hope may enhance one's likelihood of motivated reasoning (De Mello et al., 2007). Taken together, it is clear that scarcity induces a heightened sense of emotion. Consumers may act more aggressively towards others that are perceived to as a threat, or they may experience a sense of hope that may drive their decision making. However, both concepts relate to what has not yet taken place. Specifically, a purchase has not been completed. Past literature focuses on emotions in the face of scarcity, rather than after a failed purchase. Given the already heightened state of emotions that consumers feel when presented with scarcity, it may seem likely that when a desirable outcome is not met, such emotions may be amplified. In other words, if the product ends up selling out before one is unable to complete a purchase, the impact may be more dramatic, given the already heightened emotional state. We focus on a specific emotion—anger—and we propose that anger towards the company that is using scarcity appeals may arise if a consumer is unable to successfully purchase a scarce good.

Anger is an emotion that individuals frequently experience and it can affect behavior in a series of contexts, such as marketing and consumer behavior (e.g., Folkes et al., 1987; Funches, 2011; Kalamas et al., 2008) and social interactions (e.g., aggression and hostile behavior; Averill, 2012; Berkowitz, 1990; Roseman et al., 1994). Specifically, anger has been defined as "a negative emotion caused by the appraisal of negative or unwanted circumstances that are caused by others" (Antonetti et al., 2020; Antonetti, 2016, p. 1; Bagozzi et al., 1999). Previous research in marketing has investigated the antecedents of consumer anger and its possible consequences. Among the possible causes that may lead to consumer anger, Funches (2011) has identified "broken promises, unfair treatment and expressed hostility" (p. 420). Additionally, lack of procedural justice, distributive justice, and interactional justice are found to cause emotions, such as anger among consumers facing company service recovery situations (Chebat & Slusarczyk, 2005). Service failure, on the part of the brand, is also an antecedent to anger (Kalamas et al., 2008), as is a firm that fails to control for their actions, leading to immoral behavior (Weiner, 2000). In line with this, research conducted by Diaz et al. (2002) suggest that violations of moral conduct from companies can lead to consumer anger. Given the importance of consumer anger on company profitability, company losses, and risk of jeopardy of consumer-brand relationships (Huefner & Hunt, 2000), and given the call for more research on the role of consumer anger in marketing (Funches, 2011), we focus on this specific possible consumer consequence of scarcity appeals to explain the relationship between not getting a limited-quantity item and brand switching behavior.

Previous research suggests that angrier consumers that allocate the fault of their anger to the company are less likely to become or remain loyal (Diaz et al., 2002), to take third-party action, and to spread negative word of mouth about the company (Bougie et al., 2003; Chebat & Slusarczyk, 2005; Kalamas et al., 2008; Nyer, 1997). For instance, by manipulating anger states, Kalamas et al. (2008) find that when consumers experience anger towards the company, they are more likely to give poorer evaluations and weaker ratings of the company, they are more likely to declare lower consumer satisfaction (Folkes et al., 1987), and display greater perceptions of injustice.

In line with this, based on previous findings, consumers that experience anger towards a company are more likely to adopt an exit decision versus loyalty decision towards that company (Chebat & Slusarczyk, 2005). Switching behavior is a common behavior that is presented when consumers are experiencing anger towards a specific brand (Funches, 2011). Indeed, Bougie et al. (2003) have found that anger acts as one possible explaining mechanism between service encounter dissatisfaction and customers' behavioral responses to such company service failure.

In this study, we propose that the acquisition failure of a scarce good enhances one's anger toward the company. As scarcity can enhance one's emotional state, the failure to achieve a desired outcome may lead towards blame being placed on the brand. While literature often states that, in the event of a negative consumption experience, consumers may sometimes be unable to direct blame due to ambiguity (e.g., Yoon, 2013), the employment of scarcity tactics makes it clearer that the brand was at fault for limiting the number of products available. Indeed, in the concept of service failure, consumers tend to allocate more blame to the company and tend to register complains (Su et al., 2018). Moreover, as the product was scarce, consumers are likely to experience anger from perceived other-responsibility, which relates to a strong feeling of displeasure or hostility, accompanied by a desire to attack the source of anger. Thus, compared to less angry people, angry consumers are more likely to engage in retaliatory behaviors (Bonifield & Cole, 2007). Thus, when consumers fail to acquire a given product, they experience heightened levels of anger and may switch to a competing brand.

H2: *Consumers' anger towards the company will mediate the effect of not getting an item with scarcity appeal on consumer switching behavior.*

2.3 | Overview of the studies

We test our predictions in two studies and across different product categories. Our empirical package combines an experimental approach with a correlational preliminary study. All the participants were recruited through Amazon's Mechanical Turk specifying that we want to recruit participants that are residents in the US and that have a 95% acceptance rate in prior studies. We ran the analyses in SPSS Statistics 23 and 25 IBM software and in STATA 16. For the experimental studies, we report effect sizes with partial eta-squared Cohen's *d*. Moreover, we have tested for mediation using the PROCESS macro for SPSS that allows for mediation testing with bootstrapping, using Model 4 for simple mediation and Model 7 for moderated mediation (Hayes, 2013) and we have used STATA 16 for mediation testing with bootstrapping and multilevel model analyses.

In Study 1, we investigated through an experimental approach the effect of scarcity appeals on consumer switching behavior and the role of consumer anger in this relationship. In Study 2, we zoom into the purpose of this paper, scarcity appeals, and we replicate findings of Study 1 using a real-world survey a few days after the Amazon Prime Days in relation to their purchase experience.

3 | STUDY 1

In Study 1, we aim to investigate the effect of scarcity appeals and not getting a product on switching behavior. In Study 1, we operate a fully factorial design, formally a 2 (scarcity promotion: present vs. absent) x 2 (product: got vs. not got) between-subjects experiment.

3.1 | Method and procedures

In Study 1, we recruited four hundred and two respondents on MTurk (39.1% females, $M_{Age} = 36.50$, $SD = 11.04$) in exchange of monetary reward. In this study, respondents took part in an online shopping scenario, where we manipulated both the availability of the object – a fountain pen from a fictitious brand (Bimuka) - (scarce vs. non-scarce) and whether respondents managed to buy it (get vs. not get). As respondents in previous studies mostly recalled promotions related to electronic products, in the study used a fountain pen as the target stimulus to test the robustness of the effect in a different category.

In the scarce condition, participants read that the pen was available only for a limited number of customers. In the non-scarce condition, respondents did not read any scarcity information. Respondents were then asked to add the item to the basket. After they clicked, we presented them randomly with our manipulation of getting or not getting the item following the same procedure as per Study 2 (where they saw an "Order Complete" message for the getting condition and a "Sorry we are out of stock" when they did not get the item.

Next, respondents completed the measures relating to their level of anger ("To what extent do you feel the following in this shopping situation?" 1 = not at all angry–7 = very much angry) and switching intentions ("I would buy a similar item from a competitor" 1 = strongly disagree–7 = strongly agree). Finally, participants completed a manipulation check for scarcity "The Bimuka pen was available in limited quantities" (1 = strongly disagree–7 = strongly agree).

3.2 | Results and discussion

Respondents exposed to the scarce condition indeed evaluated the item to be more limited than respondents who did not read any information about scarcity ($M_{scarce} = 6.19$, $SD = 1.10$; $M_{non\_scarce} = 3.20$, $SD = 1.67$; $F\ (1, 401) = 452.57$, $p < 0.001$, $d = 2.11$). Neither the getting versus not getting condition ($F\ (1, 401) = 0.830$, $p = 0.363$) nor the interaction ($F\ (1, 401) = 0.491$, $p = 0.494$) significantly affected the manipulation check. We can therefore assume the scarcity manipulation worked successfully.

A two-way ANOVA on the anger measure did not show a significant main effect of scarcity ($M_{scarce} = 2.59$, $SD = 1.77$; $M_{non\_scarce} = 2.56$, $SD = 1.79$; $F\ (1, 401) = 0.042$, NS, $d = 0.02$). Conversely, we found a significant main effect of getting vs. not getting the product ($M_{not\text{-}getting} = 3.53$, $SD = 1.73$; $M_{getting} = 1.63$, $SD = 1.24$; $F\ (1, 401) = 163.54$, $p < 0.001$, $d = 1.26$). Furthermore, we found a significant interaction: respondents experienced higher levels of anger when they did not obtain the scarce product compared to when the product was not scarce ($M_{notgetting\_scarce} = 3.70$, $SD = 1.63$; $M_{notgetting\_non\_scarce} = 3.37$, $SD = 1.81$; $M_{getting\_scarce} = 1.43$, $SD = 1.10$; $M_{getting\_non\_scarce} = 1.81$, $SD = 1.34$; $F\ (1, 401) = 5.53$, $p < 0.05$, $d = 1.50$).

Concerning the switching intentions, scarcity did not provide a significant main effect ($M_{scarce} = 4.30$, $SD = 1.80$; $M_{non\_scarce} = 4.18$, $SD = 1.76$; $F\ (1, 401) = 0.454$, NS, $d = 0.07$). A main effect emerged for the getting vs. not getting factor ($M_{notgetting} = 4.76$, $SD = 1.63$; $M_{getting} = 3.71$, $SD = 1.77$; $F\ (1, 401) = 39.30$, $p < 0.001$, $d = 0.62$).

The interaction effect also proved to be significant: respondents who did not get the item under the scarcity promotion had higher switching intentions than those who did not get the product when no scarcity was highlighted ($M_{notgetting\_scarce} = 5.01$, $SD = 1.48$; $M_{notgetting\_non\_scarce} = 4.52$, $SD = 1.74$; $M_{getting\_scarce} = 3.57$, $SD = 1.75$; $M_{getting\_non\_scarce} = 3.83$, $SD = 1.81$; $F\ (1, 401) = 4.93$, $p < 0.05$, $d = 1.29$). Figure 1 summarizes the findings.

Next, we test the role of anger as a mediator of the effect of scarcity appeals on brand switching (Process Model 7, 95% confidence interval, 10,000 bootstraps; Hayes, 2013). There was initially a direct effect of getting (vs. not getting the product) on switching intentions ($B = -0.41$, $SE = 0.10$, LLCI = −0.61, ULCI = −0.22). Moreover, the results of the moderated mediation test suggest a significant indirect effect of anger on the relationship between getting (vs. not getting) the product and scarcity as a moderator of this relationship ($B = -0.05$, $SE = 0.03$, LLCI = −0.13, ULCI = −0.01), see Figure 2.

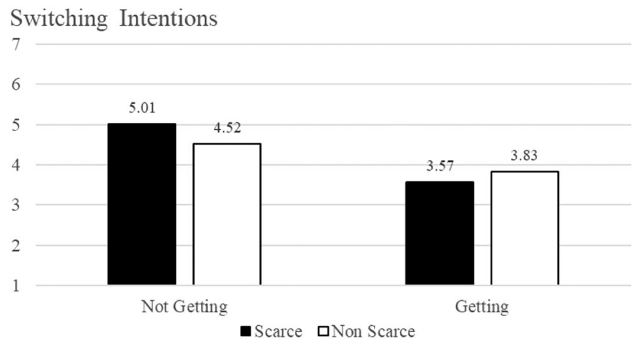

FIGURE 1 Effects on switching intentions in Study 1

Overall, the results of Study 1 provide initial support for H1 and H2, suggesting that when consumers do not get items advertised as scarce, they experience a higher level of anger that in turn may push them to seek a similar product from a competitor brand. Furthermore, Study 1 shows how the effect remains stable in presence of a control condition. Specifically, we show that anger levels after failing to get a scarce product are heightened if the product was promoted via scarcity, as compared to non-scarcity, tactics, which can lead to enhanced switching intent. These results highlight the powerful impact of scarcity tactics, and their ability to enhance one's emotional state. In Study 2, we aim to replicate these findings but focusing on the main purpose of this study: investigating on the effects of scarcity (vs. not) on consumer anger and switching.

4 | STUDY 2

In Study 2, we aim to replicate the effects found in the previous study by investigating the effect of getting as opposed to not getting an item that is scarce on consumer anger and switching intentions. To do so, we used another real context, that of Amazon Prime Days in the UK and we exposed all participants to the non-get condition. Instead of manipulating scarcity appeals, we asked them to report whether the reason for not getting the items they intended to get during the Amazon Prime Days was scarcity (i.e., lack of availability, out of stock) or another reason (e.g., price did not meet their expectations). Two hundred participants (M_{age} = 32.44, SD = 10.54, 38.96% male) were recruited on Prolific Academic in return for monetary compensation on October 15th, 2020, the day after the Amazon Prime Days (October 13th and 14th).

4.1 | Method and procedures

Out of the two hundred recruited participants, we removed the ones that did not participate in the Amazon Prime Days and we were left with 143 distinct participants. Since many of them listed multiple objects they did not manage to get during the Amazon Prime Days, we created a multilevel model with each item in a separate line, nesting by the respondents' unique identification code. This produced a dataset with 249 observations, with 43.09% of them listing items that respondents failed to get because of scarcity and 56.91% of them items that they failed to get for other reasons (e.g., the price did not meet their budget, the item was not doing what intended, etc.).

After listing each item that they failed to get during the Amazon Prime Days and the reason why they failed to get it, participants were asked about the extent to which not being able to get the item made them angry “To what extent are you angry because you did not manage to get the item?” (1 = Not angry at all–7 = Very angry) and whether they later got the item from another retailer or whether they intended to do so “Did you get this item from a similar brand?” (1 = Yes and 0 = No). We used the answer to this question as our main dependent variable to investigate switching behavior.

Finally, participants reported their age, gender, income on a scale compared to the average income in the UK in 2019 (£30,000), and their Prolific Academic unique identification code.

4.2 | Results and discussion

Respondents not getting the item because of scarcity reported more anger than those not getting the item for other (non-scarcity-related) reasons (M_{scarce} = 3.58, SD = 2.09; M_{non_scarce} = 2.20, SD = 1.62; F (1, 239) = 33.46, p < 0.001, d = 0.74). Moreover, respondents that

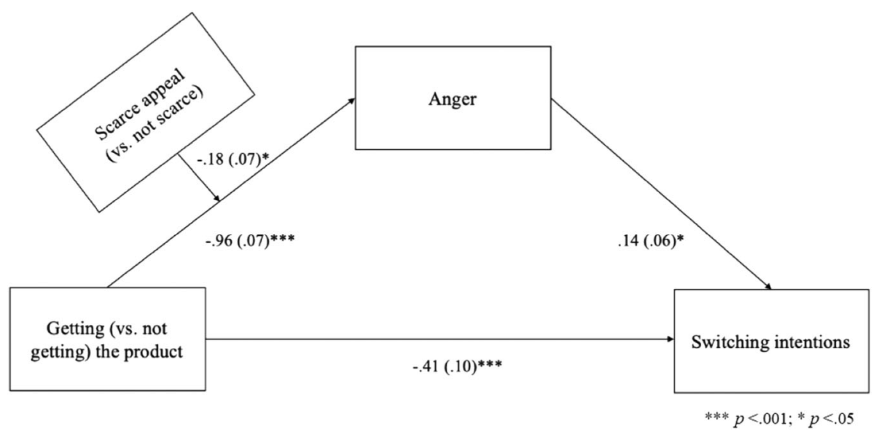

FIGURE 2 Results of the moderated mediation in Study 1

reported not getting the item because of scarcity reported greater switching behavior than those not getting the item for other (non-scarcity-related) reasons ($\text{Frequency}_{\text{scarce}} = 68.18\%$, vs. $\text{Frequency}_{\text{non\_scarce}} = 31.82\%$, $\chi^2 = 14.75$, $p < 0.001$).

We conducted a mediation test with a multilevel model nested at the respondent level, specifying scarcity as the independent variable, switching as the binary dependent variable, and anger as the possible mediator, using STATA with 1000 repetitions bootstrapping, asking the software to produce the results with bias-corrected confidence intervals. The results of the mediation testing suggest a significant indirect effect of scarcity on switching behavior through anger (coeff. = 0.06, bias = 0.00, 95% confidence interval [CI] = 0.02–0.12), and a significant total effect (coeff. = 0.20, bias = 0.00, 95% CI = 0.00–0.30), see Figure 3 below.

In Study 2 we aimed to provide further support for H1 and H2, which suggest that consumers who do not get an item because it was scarce experience heightened levels of anger. Indeed, the results of this study indicate that consumers who fail to acquire a limited good because of scarcity (vs. another reason) experienced higher levels of anger that led to switching intent. These results, along with the results of Study 1, suggests that scarcity may not be an ideal promotional tactic, as it can lead to consumer anger and downstream negative effects if consumers switch to competing brands.

5 | CONCLUSION AND IMPLICATIONS

In two studies we show that consumers who fail to get a limited product experience heightened levels of anger, resulting in a higher level of switching intentions. Our results provide a series of contributions and practical implications, together with opening the possibility for future research on this topic.

5.1 | Theoretical contributions

Theoretically, this study contributes to unravelling the often-underestimated effect of product and promotion scarcity. Specifically, our work highlights that consumers may experience anger in the event of a scarcity appeal when they fail to acquire a scarce good. This finding suggests that scarcity tactics may be more nuanced than previously thought. Indeed, scholars in the past have explored scarcity and found that it can be both a positive and profitable tactic for firms (e.g., Aggarwal et al., 2011; Jang et al., 2015), as scarcity can generate greater feelings of urgency amongst buyers and higher levels of satisfaction. Additionally, literature has argued that consumers may place more value on scarce goods (Verhallen & Robben, 1994). In contrast, there have been a handful of literature that has found that consumers may react negatively in the face of scarcity. For instance, Bone et al. (2014) found that when scarcity is because of one's characteristics or level of income, it is generally perceived in a negative light. Other scholars have explored various boundary conditions that may impact on scarcity evaluations, such as supply versus demand scarcity (Gierl & Huettl, 2010), or quantity versus time scarcity (Jang et al., 2015).

However, such research has often focused on one's evaluation of a given scarcity appeal, where consumers have not yet attempted to purchase the scarce good. In this study, we show that when consumers are presented with a scarce good, yet are unable to purchase it, they experience heightened levels of anger. Such a finding supports the notion that consumers will experience a heightened emotional state when presented with a scarcity appeal (e.g., Kristofferson et al., 2017; Shah et al., 2012), while extending this study to show that anger can occur if the scarce good is sold out.

Moreover, we find that this anger can have a damaging impact on the brand. Previous literature has examined the impact of consumer anger towards others in the event of scarcity (e.g., Kristofferson et al., 2017; Shah et al., 2012) and the very notion of scarcity has been shown to enhance one's competitive drive (Roux et al., 2015) and sense of urgency (Aggarwal et al., 2011). Moreover, the work of Kristofferson et al. (2017) suggests aggressive tendencies may stem from the mere exposure to scarcity tactics. We build upon these findings by arguing that consumer anger may also be directed towards the target brand, for consumers who are not able to purchase a scarce good. This anger then leads to switching, as consumers seek out alternative products that can satisfy their consumer goals and desires.

Furthermore, our study empirically contributes by showing that the effect of anger manifests both in real-world shopping scenarios (e.g., promotions on Black Friday and Cyber Monday; Study 2) and in

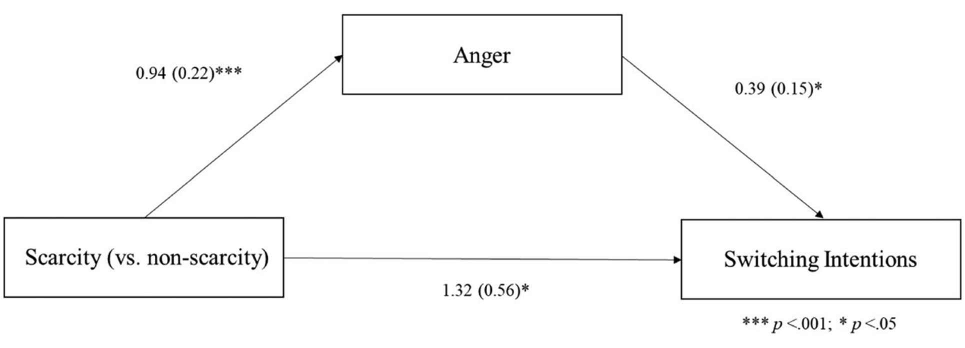

FIGURE 3 Mediation testing of scarcity on switching behavior through anger in Study 2

more controlled experimental designs (Study 1). Importantly, our results remain stable across different product categories and for both real and fictitious brands, corroborating the robustness of the effect.

5.2 | Managerial implications

From a managerial perspective, our research sheds light on the negative outcomes that scarcity promotions seem to have beyond their large appeal in stimulating sales. By definition, a scarcity promotion satisfies the need for a reduced reservoir of customers, leaving most of the customers unhappy. Therefore, managers should be advised to operate these tactics with prudence, as they can backfire and damage the brand's sales in the long term. A solution would be designing different "scarcity-based" product segments to retain the effect but limiting consumer anger. Managers should be also cautious in evaluating the strength of the brand image: brands with not a particularly strong image, in fact, may suffer from the discontent and switching intentions of customers more than brands with a stronger image.

Furthermore, as scarcity will naturally lead to a reduced number of products, and the potential for acquisition failure on the part of the consumer, managers need to be cautious as to how they implement such procedures both before and after product availability. Literature has heightened that aggression stemming from scarcity may be present when product quantity is limited, but not when time is the only factor (Kristofferson et al., 2017). Thus, managers are included to promote scarce items based on time limitations to avoid losing a potential consumer as a result of anger. Moreover, our results indicate that in the face of anger, consumers are more likely to switch brands. Thus, managers should employ measures to reduce consumer anger following a failed purchase. If such limited products are sold in stores, staff could be trained to deal with angry consumers and assist them in finding suitable alternatives within the same brand. If such a promotion is online, the brand could promote suitable alternative alongside the limited-edition item.

Hence, the findings of this study would suggest to branding practitioners to carefully apply scarcity appeals as they may result in consumer anger and hence, in brand abandonment and switching behavior especially in situations that the consumer is not able to get their hands on the brand that is promoted as scarce. To avoid such unwanted consumer behavior towards the brand, the findings of this paper suggest branding practitioners apply scarcity promotions based on time limitations—rather than quantity limitations—to avoid losing a potential consumer as a result of anger.

5.3 | Opportunities for future research

While this study provides a first account of how scarcity promotions could damage a brand because of consumers' anger, our findings also provide a series of opportunities for future research. First, while we document the effect in two "one-shot" studies, future research could investigate how the effect of anger on switching intentions could remain or fade over time. For example: do customers go back to the original brand after having switched to the competitor? Is their resolution of anger what Fournier (1998) defines a "one-night stand" or would they engage in a different type of relationship? Addressing such questions can also open intriguing opportunities for the use of other techniques like panel data and time series analysis to track how the market shares of brands operating scarcity promotions. Similarly, future research may also look at how brand loyalty, brand awareness, and brand familiarity can play a role in determining consumers' reactions.

Future research could also investigate how individual and cultural differences influence consumers' reactions when they do not get a scarce item. While our sample relies on Western consumers, who generally score higher on individualistic traits, future research may test whether the same effect would hold for consumers with higher collectivistic traits. One may assume that scarcity promotion would be seen even more negatively by collectivistic cultures, as it limits access to certain goods to a restricted number of people. At the same time, collectivistic cultures seem also less prone to express sentiments disrupting the harmony of a community (e.g., anger), and therefore the effect we found may be limited. Thus, future research could shed more light on such a process.

6 | LIMITATIONS

The findings of this paper remain in an online context. We have conducted our studies using online platforms, such as Mechanical Turk and Prolific Academic. Despite their reliability and usability in the marketing field (Goodman & Paolacci, 2017; Kothe & Ling, 2019), future research could replicate these findings in the field using behavioral variables.

Moreover, the studies include some intentional variables, rather than behavioral. For instance, in Study 1 the dependent variable is measured at a hypothetical level, however, in Study 2, it reflects behavior in a more realistic context. Future research could investigate these effects using an experimental approach with different measures (e.g., different multi-item constructs) or even actual behaviors (e.g., by writing a negative review about the brand or by talking negatively about the brand with friends) in response to not getting products under scarcity promotion. Such new measures could also open avenues for experiments in the field where researchers could capture such reactions to create a broader taxonomy of consumers outcomes and potential behaviors when they do not succeed in getting a scarce product. Finally, in the future, research could extend the investigation to consumers that get (vs. not get) an item that was promoted as scarce. In this case, future research could extend beyond anger as the only possible mechanism, which is far from what we claim and show in this study, investigating additional possible ones. For instance, future studies could be enriched investigating other additional mechanisms, such as disappointment, sense of control, and feeling of being fooled. Moreover, future research could also unravel the moderating role of personality characteristics: as anger (like other high arousal states) could be a transient emotion, future studies may want to look at how different consumers' personality traits that can elicit more or less anger and how such feelings evolve in a longer time frame.

CONFLICT OF INTERESTS

The authors confirm that they have no conflict of interest to declare. They also confirm that this article adheres to ethical guidelines specified in the APA Code of Conduct as well as the authors' national ethics guidelines. They confirm that the article submitted, to the knowledge of all authors, has not been published elsewhere previously and is not under consideration for publication elsewhere. This submission is approved by all authors and by the responsible authorities where the authors carried out the work. If accepted for publication, this article will not be published elsewhere including electronically in the same form, in English, or in any other language, without the written consent of the copyright holder.

AUTHOR CONTRIBUTIONS

The submitted work is original and not self-plagiarized, and authorship reflects individual author contributions.

DATA AVAILABILITY STATEMENT

The data is available upon reasonable request to the authors.

ETHICS STATEMENT

This study is conducted ethically, results are reported honestly. It has received ethical approval from the AREA/FREC Committee of Leeds University Business School. Ethical approval protocol number: LTLUBS-296.

ORCID

Alessandro Biraglia https://orcid.org/0000-0002-1323-2586
Aulona Ulqinaku https://orcid.org/0000-0003-3456-6451

REFERENCES

Aggarwal, P., Jun, S. Y., & Huh, J. H. (2011). Scarcity messages. *Journal of Advertising*, *40*(3), 19–30.

Amaldoss, W., & Jain, S. (2010). Reference groups and product line decisions: An experimental investigation of limited editions and product proliferation. *Management Science*, *56*(4), 621–644.

Antonetti, P. (2016). Consumer anger: a label in search of meaning. *European Journal of Marketing*, *50*(9), 1602–1628.

Antonetti, P., Crisafulli, B., & Katsikeas, C. S. (2020). Does it really hurt? Making sense of varieties of anger. *Psychology & Marketing*, *37*(11), 1465–1483.

Averill, J. R. (2012). *Anger and aggression: An essay on emotion*. Springer Science & Business Media.

Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science*, *27*(2), 184–206.

Berkowitz, L. (1990). On the formation and regulation of anger and aggression: A cognitive-neoassociationistic analysis. *American Psychologist*, *45*(4), 494–503.

Bone, S. A., Christensen, G. L., & Williams, J. D. (2014). Rejected, shackled, and alone: The impact of systemic restricted choice on minority consumers' construction of self. *Journal of Consumer Research*, *41*(2), 451–474.

Bonifield, C., & Cole, C. (2007). Affective responses to service failure: Anger, regret, and retaliatory versus conciliatory responses. *Marketing Letters*, *18*(1-2), 85–99.

Botti, S., Broniarczyk, S., Häubl, G., Hill, R., Huang, Y., Kahn, B., Kopalle, P., Lehmann, D., Urbany, J., & Wansink, B. (2008). Choice under restrictions. *Marketing Letters*, *19*(3-4), 183–199.

Bougie, R., Pieters, R., & Zeelenberg, M. (2003). Angry customers don't come back, they get back: The experience and behavioral implications of anger and dissatisfaction in services. *Journal of the Academy of Marketing Science*, *31*(4), 377–393.

Brehm, S. S., & Brehm, J. W. (2013). *Psychological reactance: A theory of freedom and control*. Academic Press.

Cannon, C., Goldsmith, K., & Roux, C. (2019). A self-regulatory model of resource scarcity. *Journal of Consumer Psychology*, *29*(1), 104–127.

Chebat, J. C., & Slusarczyk, W. (2005). How emotions mediate the effects of perceived justice on loyalty in service recovery situations: An empirical study. *Journal of Business Research*, *58*(5), 664–673.

Cialdini, R. B. (1993). *Influence: The psychology of persuasion* (Rev. edn.). Morrow.

Cialdini, R. B. (2009). *Influence: Science and practice* (5th edn.). Allyn & Bacon.

De Mello, G., MacInnis, D. J., & Stewart, D. W. (2007). Threats to hope: Effects on reasoning about product information. *Journal of Consumer Research*, *34*(2), 153–161.

Diaz, A., Casado, B., & Francisco, J. M. R. (2002). The consumer's reaction to delays in service. *International Journal of Service Industry Management*, *13*(2), 118–140.

Fitzsimons, G. J. (2000). Consumer response to stockouts. *Journal of Consumer Research*, *27*(2), 249–266.

Folkes, V. S., Koletsky, S., & Graham, J. L. (1987). A field study of causal inferences and consumer reaction: the view from the airport. *Journal of Consumer Research*, *13*(4), 534–539.

Fournier, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research*, *24*(4), 343–373.

Funches, V. (2011). The consumer anger phenomena: Causes and consequences. *Journal of Services Marketing*, *25*(6), 420–428.

Gierl, H., & Huettl, V. (2010). Are scarce products always more attractive? The interaction of different types of scarcity signals with products' suitability for conspicuous consumption. *International Journal of Research in Marketing*, *27*(3), 225–235.

Gitlin, T. (2007). *Media unlimited: How the torrent of images and sounds overwhelms our lives*. Henry Holt.

Givi, J., & Olivola, C. Y. (2020). How do I like my chances (to unfold)? Why perceived scarcity and anticipated hope lead consumers to prefer increasing probabilities of obtaining a resource. *Journal of the Association for Consumer Research*, *5*(4).

Goldsmith, K., Tezer, A., & Roux, C. (2017). When thoughts of "having less" promote the desire to become one's best: Reminders of resource scarcity increase the desire for self-improvement. *ACR North American Advances*.

Goodman, J. K., & Paolacci, G. (2017). Crowdsourcing consumer research. *Journal of Consumer Research*, *44*(1), 196–210.

Hamilton, R., Thompson, D., Bone, S., Chaplin, L. N., Griskevicius, V., Goldsmith, K., Hill, R., Roedder John, D., Mittal, C., O'Guinn, T., Piff, P., Roux, C., Shah, A., & Zhu, M. (2019). The effects of scarcity on consumer decision journeys. *Journal of the Academy of Marketing Science*, *47*(3), 532–550.

Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: Methodology in the social sciences. A regression-based approach. New York, NY: The Guilford Press.

Huefner, J., & Hunt, H. K. (2000). Consumer retaliation as a response to dissatisfaction. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, *13*.

Inman, J. J., Peter, A. C., & Raghubir, P. (1997). Framing the deal: The role of restrictions in accentuating deal value. *Journal of Consumer Research*, *24*(1), 68–79.

Jachimowicz, J., Frey, E., Matz, S., Jeronimus, B. F., & Galinsky, A. (2019). The sharp spikes of poverty: Financial scarcity is linked to higher distress intensity. *PsyArXiv Preprints*. https://doi.org/10.31234/osf.io/m9k2f

Jang, W. E., Ko, Y. J., Morris, J. D., & Chang, Y. (2015). Scarcity message effects on consumption behavior: Limited edition product considerations. *Psychology & Marketing*, *32*(10), 989–1001.

Kalamas, M., Laroche, M., & Makdessian, L. (2008). Reaching the boiling point: Consumers' negative affective reactions to firm-attributed service failures. *Journal of Business Research*, *61*(8), 813–824.

King, L. A., Hicks, J. A., & Abdelkhalik, J. (2009). Death, life, scarcity, and value: An alternative perspective on the meaning of death. *Psychological Science*, *20*(12), 1459–1462.

Koch, O. F., & Benlian, A. (2015). Promotional tactics for online viral marketing campaigns: how scarcity and personalization affect seed stage referrals. *Journal of Interactive Marketing*, *32*, 37–52.

Kothe, E., & Ling, M. (2019). Retention of participants recruited to a one-year longitudinal study via Prolific.

Kristofferson, K., McFerran, B., Morales, A. C., & Dahl, D. W. (2017). The dark side of scarcity promotions: How exposure to limited-quantity promotions can induce aggression. *Journal of Consumer Research*, *43*(5), 683–706.

Ku, H. H., Kuo, C. C., & Kuo, T. W. (2012). The effect of scarcity on the purchase intentions of prevention and promotion motivated consumers. *Psychology & Marketing*, *29*(8), 541–548.

Kähr, A., Nyffenegger, B., Krohmer, H., & Hoyer, W. D. (2016). When hostile consumers wreak havoc on your brand: The phenomenon of consumer brand sabotage. *Journal of Marketing*, *80*(3), 25–41.

Martin, M. A. (2002). Consumer responses to discontinuance of favorite products: An exporatory study. *Advances in Consumer Research*, *29*, 249–250.

Mittal, C., Laran, J., & Griskevicius, V. (2020). How early-life resource scarcity influences self-confidence and task completion judgments. *Journal of the Association for Consumer Research*, *5*(4).

Mullainathan, S., & Shafir, E. (2013). *Scarcity: Why having too little means so much*. Macmillan.

Nyer, P. U. (1997). A study of the relationships between cognitive appraisals and consumption emotions. *Journal of the Academy of Marketing Science*, *25*(4), 296–304.

Roseman, I. J., Wiest, C., & Swartz, T. S. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology*, *67*(2), 206–221.

Roux, C., Goldsmith, K., & Bonezzi, A. (2015). On the psychology of scarcity: When reminders of resource scarcity promote selfish (and generous) behavior. *Journal of Consumer Research*, *42*(4), 615–631.

Sevilla, J., & Redden, J. P. (2014). Limited availability reduces the rate of satiation. *Journal of Marketing Research*, *51*(2), 205–217.

Shah, A. K., Mullainathan, S., & Shafir, E. (2012). Some consequences of having too little. *Science*, *338*(6107), 682–685.

Su, L., Wan, L. C., & Wyer, R. S. Jr (2018). The contrasting influences of incidental anger and fear on responses to a service failure. *Psychology & Marketing*, *35*(9), 666–675.

Thompson, D. V., Banerji, I., & Hamilton, R. W. (2020). Scarcity of Choice: The Effects of Childhood Socioeconomic Status on Consumers' Responses to Substitution. *Journal of the Association for Consumer Research*, *5*(4), 415–426.

Van Herpen, E., Pieters, R., & Zeelenberg, M. (2009). When demand accelerates demand: Trailing the bandwagon. *Journal of Consumer Psychology*, *19*(3), 302–312.

Van Kerckhove, A., Lunardo, R., & Fitzsimons, G. J. (2020). Monetary Scarcity Leads to Increased Desire for Assortment. *Journal of the Association for Consumer Research*, *5*(4), 377–390.

Verhallen, T. M., & Robben, H. S. (1994). An integrative view of how consumers react to scarcity. *Integrating Views on Economic Behavior*, 1326–1342.

Weiner, B. (2000). Attributional thoughts about consumer behavior. *Journal of Consumer Research*, *27*(3), 382–387.

Worchel, S., Lee, J., & Adewole, A. (1975). Effects of supply and demand on ratings of object value. *Journal of Personality and Social Psychology*, *32*(5), 906–914.

Yoon, S. (2013). Do negative consumption experiences hurt manufacturers or retailers? The influence of reasoning style on consumer blame attributions and purchase intention. *Psychology & Marketing*, *30*(7), 555–565.

SUPPORTING INFORMATION

Additional Supporting Information may be found online in the supporting information tab for this article.

How to cite this article: Biraglia, A., Usrey, B., & Ulqinaku, A. (2021). The downside of scarcity: Scarcity appeals can trigger consumer anger and brand switching intentions. *Psychology & Marketing*, 1–9. https://doi.org/10.1002/mar.21489