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## **The Effect of Scarcity on Product Evaluation**

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Marketers often use scarcity to influence consumers, with announcements such as “hurry, limited quantities” or “exclusive offer, limited time only.” In four studies, we show that scarcity has a stronger positive effect on product evaluation when salience of persuasion knowledge is low, frequency of exposure to scarcity claims is low, decision reversibility is high, and cognitive load is high. Further, we show that these moderating effects are driven by inferences made by consumers about the scarcity cue.

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# The Effect of Scarcity on Product Evaluation

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## EXTENDED ABSTRACT

Marketers often use scarcity to influence consumers, with announcements such as “hurry, limited quantities”, “until stocks last,” or “few tickets left for this event.” Past research indicates that scarcity generally has a positive effect on product evaluation, because consumers infer that scarcity is a consequence of high demand for the product, which in turn arises from superior value offered by the product<sup>1,2</sup>. In the present research, we argue that consumers can also make a second type of inference about scarcity—namely that scarcity is perceived as a signal of manipulative intent on the part of marketers to increase demand for the product. For example, it is possible for marketers to artificially restrict the quantity of product being offered in a given retail outlet or sales territory, and thus send a false signal of popularity among consumers. In summary, therefore, we argue that two kinds of inferences are possible when consumers are faced with scarcity: value inference and manipulative intent inference. Greater the value inference, the more positive would be the effect of scarcity on product evaluation; the greater manipulative intent inference, the less positive would be the effect of scarcity on product evaluation. Based on this framework, we specify four moderators, namely persuasion knowledge, frequency of exposure to scarcity claims, decision reversibility, and cognitive load that influence the interpretation of scarcity as value or manipulative intent, and hence the effect of scarcity on product evaluation.

Study 1 focused on persuasion knowledge, defined as individuals’ knowledge about persuasion tactics<sup>3,4</sup>. We argued that when salience of persuasion knowledge is high, consumers are likely to think about why the marketer is using scarcity claims. This questioning of marketers’ motives, in turn, is likely to prompt inferences that the scarcity is a manipulative intent designed to boost demand. And greater these inferences about manipulative intent on the part of marketers, the less positive will be the effect of scarcity on product evaluation. In contrast, when salience of persuasion knowledge is low, consumers are likely to fall back on the inference that scarcity implies value. Consequently, scarcity will have a stronger positive effect on product evaluation when salience of persuasion knowledge is low. Participants in this study were told that they were participating in two independent experiments. The first experiment manipulated salience of persuasion knowledge using a priming procedure validated in previous research<sup>4</sup>. The second experiment presented participants with a hypothetical retail scenario, which included an ad for a wristwatch. The ad manipulated scarcity, in terms of limited quantities. The dependent variable of product evaluation was measured by a single item, nine-point scale for purchase intent and an item assessing willingness to pay (WTP). Inferences about scarcity were measured by coding thought listings from study participants after they evaluated the target product. We predicted and found that scarcity increased purchase intent and WTP when salience of persuasion knowledge was low, but not high. Consistent with our hypothesis, 61% of participants under the high salience of persuasion knowledge condition perceived scarcity as a manipulative intent to increase sales, as compared to only 29% of participants under the low salience of persuasion knowledge condition.

Study 2 focused on frequency of exposure to scarcity claims. We argued that the individuals who are exposed to many (compared to few) scarcity claims, i.e., high frequency of exposure, are more likely to interpret scarcity claims as a signal of manipulative intent. For example, consider an individual who is reading a

magazine where several ads contain statements such as “Hurry, few items left in stock” and “Only a limited number of products released”. Seeing repeated use of scarcity claims, individuals may wonder if these claims are really manipulative techniques used by marketers to increase sales. To the extent individuals see scarcity as a signal of manipulative intent, the positive effect of scarcity on product evaluation will be weakened. In contrast, when frequency of exposure to scarcity claims is low, consumers are less likely to infer manipulative intent, and hence scarcity would have a stronger positive effect on product evaluation. Participants in this study were told that they were participating in two independent experiments. In the first experiment, frequency of exposure was manipulated in the magazine by inserting scarcity claims into either one ad (low frequency) or four ads (high frequency). In the second experiment, the participants were asked to rate a new line of sunglasses available through an online shopping website. A printout of the online shopping webpage manipulated scarcity using limited quantities of the product. We developed a two-item scale to measure the inference of scarcity claims as a manipulative intent: “The ad was being honest about the number of sunglasses available for sale” and “The ad tried to artificially increase sales by mentioning the number of sunglasses available for sale.” This two-item scale was adapted from the six-item scale measuring inferences of manipulative intent validated in past research<sup>5</sup>. We predicted and found that scarcity increased purchase intent and WTP when frequency of exposure to scarcity claims was low, but not high. Consistent with our hypothesis, respondents were more likely to perceive scarcity as a manipulative intent when frequency of exposure was high, compared to low.

Study 3 focused on decision reversibility, defined as the ability to undo a purchase decision<sup>6</sup>. We argued that when a scarce product is unconditionally refundable (“30-day unconditional money-back guarantee”), individuals are likely to interpret scarcity as a signal of product value. This is because a money back guarantee indicates that the seller is confident about product quality<sup>7</sup>. As a result, the “scarcity=value” inference should be highlighted, and scarcity should have a positive effect on product evaluation. In contrast, if a scarce product cannot be refunded once purchased (e.g., “All sales are final”), such low reversibility protects sellers from the consequences of selling defective items. Consequently, scarcity with low reversibility should highlight manipulative intent on the part of marketers, which is likely to reduce the effect of scarcity on product evaluation. As in Study 2, participants were asked to rate a new line of sunglasses available through an online shopping website. A printout of the online shopping webpage manipulated scarcity using limited quantities of the product validated in past research<sup>8</sup>; reversibility was manipulated by a sign saying either “All sales are final” or “30 day unconditional money-back guarantee.” We predicted and found that scarcity increased purchase intent and WTP when decision reversibility was high, but not low. Consistent with our hypothesis, respondents were more likely to perceive scarcity as a manipulative intent when decision reversibility was low, compared to high.

Study 4 focused on cognitive load. Drawing inferences about hidden marketing tactics behind a persuasive message are likely to require cognitive capacity. Thus we argued that when cognitive load is low, consumers possess sufficient mental capacity to draw inferences about hidden marketing tactics behind a persuasive

message. In this case, consumers are likely to think about why the advertiser has created the ad with scarcity claims. This questioning of marketers' motives, in turn, is likely to prompt inferences that marketers are using scarcity to manipulate consumers into buying the product. Such inference of manipulative intent can dilute value inference, and hence reduce the positive effect of scarcity on product evaluation. In contrast, when cognitive load is high, consumers do not have the cognitive capacity to engage in inferential processing. In this case, consumers are likely to fall back on the simpler and less effortful inference, namely value inference, and hence scarcity would have a positive effect on product evaluation. Participants in this study were told that they were participating in two independent experiments. In the first experiment, cognitive load was manipulated by asking participants to memorize either a seven-digit number (high cognitive load condition) or a two-digit number (low cognitive load condition)<sup>9</sup>. In the second experiment, participants were asked to rate wines available through an online shopping website. A printout of the online shopping webpage manipulated scarcity using limited quantities of the wine products. We predicted and found that scarcity increased purchase intent and product choice when cognitive load was high, but not low. In addition, respondents were more likely to perceive scarcity as a manipulative intent when cognitive load was low, compared to high.

In summary, the four studies reported herein make a theoretical contribution by identifying a new psychological mechanism (i.e., *why*) and corresponding boundary conditions (i.e., *when*) of scarcity, a tool that is widely used in marketing communications.

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