

희소성 소구가 제품 정보처리에 미치는 영향: 감정의 조절적 역할

The Effects of Scarcity Appeals on Processing of Product Information :
The Moderating Role of Mood

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제품의 희소성 (Scarcity)은 흔히 구매가능한 제품의 수량이 제한되거나, 제품의 구매가능한 기간이 제한되는 형태로 광고나 프로모션에서 빈번하게 사용되어져 왔다. 예를 들어 마케터들은 “서두르세요. 제한된 수량만이 남아 있습니다.” “서두르세요. 오늘 하루만 판매합니다.” 와 같이 제품의 희소성에 바탕을 둔 메시지들을 그동안 빈번하게 구사해왔다. 과거의 연구들은 소비자들이 제품의 희소성에 바탕을 둔 메시지를 보았을 때 제품의 정보처리과정을 간소하게 가질 것이라는 주장과 더욱 신중하고 복잡한 정보처리과정을 가질 것이라는 주장, 이 두 가지 상반된 주장들을 사용해왔다. 우리는 이 연구에서 제품의 희소성에 바탕을 둔 메시지가 소비자들의 정보처리과정에 미치는 효과가 소비자가 가지게 되는 감정 (mood)에 의해 영향을 받는다는 것을 밝혀냄으로써 이러한 상반된 주장이 나오게 된 근거를 밝혀냈다. 즉, 소비자가 부정적 감정 상태의 있을 경우 희소성은 정보처리과정을 간소하게 만드는 반면, 소비자가 긍정적 감정 상태의 있을 경우 희소성은 더욱 복잡한 정보처리과정을 이끈다는 것을 발견했다. 덧붙여서, 이러한 제품의 희소성이 서로 다른 감정상태에 따라 정보처리과정에 영향을 주는 차이에 의해 제품 판매와 관련된 다른 설득적인 메시지들이 제품 선호에 다른 결과를 이끌어 낼 수 있다는 것 역시 보여주었다. 즉, 부정적인 감정 상태에 있는 소비자들의 경우 희소성에 의한 정보처리과정의 간소화로 인해 제품과 관련된 설득적인 메시지들이 제품의 평가에 중요한 영향을 주지 못하는 반면, 긍정적인 감정 상태에 있는 소비자들의 경우 희소성에 의한 체계적 정보처리 절차로 인해 제품과 관련된 설득적인 메시지들이 제품의 평가에 중요한 영향을 미치는 것을 발견했다. 이로 인해 긍정적인 감정 상태에 있는 소비자들의 경우 제품의 희소성은 함께 제시된 제품과 관련된 설득적인 메시지들이 강할 때 제품의 평가에 긍정적인 영향을 미쳤지만, 함께 제시된 제품과 관련된 설득적인 메시지들이 약할 때는 희소성이 제품의 평가에 미치는 긍정적인 효과가 사라지는 것을 발견했다.

핵심주제어: 희소성정보, 휴리스틱정보처리, 체계적 정보처리, 감정

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ABSTRACT

Scarcity appeals (as represented by the “Limited edition” or “Limited number” of a given product) have been known for some time to be a very important and widely-used marketing tactic. According to past research, scarcity results in two apparently contradictory effects (facilitative effect and inhibitory effect) on depth of consumers’ information processing. In this paper, we identify a new moderating variable – namely, mood – that determines when either effect is likely to be dominant. We develop a model postulating that in a situation involving scarcity pressure, consumers’ information processing and decision-making differs depending on their current mood state. Our findings support the proposed model and indicate that when mood is positive, scarcity *increases* depth of processing, whereas when mood is negative, scarcity *decreases* depth of processing. In addition, for consumers in a positive mood, systematic processing involving more effortful elaboration of the persuasive argument occurs, with the result that the product-related persuasive argument strongly influences their preference. Conversely, for consumers in a negative mood, heuristic processing not requiring effortful elaboration of the argument occurs; in such an event the argument does not strongly influence consumer preference.

Key words: Scarcity, Heuristic Processing, Systematic Processing, Mood

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Imagine that you go to a department store to buy a new wrist watch. When you enter a shop and find a nice watch, the shop owner tells you the following: “These are the few remaining watches of this model left in the shop. This particular model will not be provided by the company anymore because it is an exclusive limited edition.” When you realize that the watch model in your purchase consideration list is less available, how do you make a decision? If such a product is more available, you may deliberately assess the relevant pros and cons of the product. However, under the situation involving scarcity pressure, your deliberate assessment process may be replaced by a more heuristic process like “What is rare is good” or “now - or - never” (Cialdini 2001). On the other hand, you may doubt whether the watch is really scarce or not, and start wondering why the shop owner mentions its presumably scarce quantity. That is to say, you could consider such scarcity claims as elaborately created marketing tactics. In this case, the situation involving scarcity pressure might make you evaluate the product more systematically and carefully in order to understand why such a marketing tactic is being used. In short, scarcity in the product purchase-related context can cause two possible contradictory effects on information processing and judgment. In this paper, we show that mood is a crucial moderating variable that influences the effect of scarcity on consumers’ information processing and product evaluation.

1 . Scarcity

Scarcity can be defined as insufficiency of product supply or time of availability (Brock 1968; Lynn 1989, 1991). The effect of product scarcity has been an important topic in consumer behavior. Such “scarcity” has long been an

important marketing tactic for attracting consumers. For example, we can find printed luxury brand magazine advertisements using phrases such as “limited number of product released” and “exclusively selling in limited shops”. The scarcity principle is based on the underlying assumption that an object seems more valuable when it is less available. Much research has shown the effect of perceived scarcity on both preference and perceived desirability of a product. For instance, studies by Verhallen (1982) and Verhallen and Robben (1994) indicate that when people perceive recipe books as being less available, they show greater preference for the books. Consistent with such findings, Lynn (1989) also shows that when paintings are perceived as scarce, they are more desirable than paintings perceived as readily available.

As mentioned, one of the most general uses of the scarcity principle in marketing occurs in the “Limited number” or “Limited edition” tactic in which a consumer is informed that a certain product is in short supply that cannot be guaranteed to last (Cialdini 2001). When people realize that a product in their purchase consideration set is limited in quantity, they may feel scarcity pressure. Such pressure, in turn, can cause emotional arousal toward the scarce product. In such a situation, perceived scarcity can influence the way in which we process relevant information. According to Cialdini (2001), the emotional arousal induced in a scarcity situation can prevent us from assessing the product carefully. That is to say, in the situation involving scarcity, it is difficult to harden ourselves cognitively against scarcity pressures because they lead to “emotion cloud” (Cialdini 2001). Therefore, when consumers make their decision in the situation involving scarcity, their decision-making can be affected by automatically induced affective reactions rather than cognitive processes. Scarcity limits the ability to process information, resulting in judgments made

on the basis of heuristics (Cialdini 2001; Suri, Kohli, and Monroe 2007).

However, the findings of some research have shown that scarcity can also motivate consumers to make a judgment based on more cognitive resources (Ditto and Jemmott 1989; Brock and Brannon 1992; Inman, Peter, and Raghuram 1997; Brannon and Brock 2001). For instance, Inman, Peter, and Raghuram (1997) show that when restrictions in available quantity are evident, participants tended to be motivated to evaluate the restricted offer more deliberately, preferring larger discounts. These authors (1997, p.68) claim that “presence of a restriction operates to activate a cognitive resource that is used in rendering a judgment regarding the favorableness of the offering.” Similarly, Brannon and Brock (1992; 2001) also indicate that scarcity leads to evaluative scrutiny by participants. Unlike the original heuristic account in which scarcity leads people to uncritically apply heuristics, namely “what is rare is good”, the elaborative account explains the effects of scarcity as “scarcity - elaboration - extremization” - that is, that scarcity fosters more extreme attitudes (Brannon and Brock 2001). The effect of scarcity that leads to the extremization of attitudes can be explained by the notion that extreme attitudes occur because of enhanced cognitive elaboration (Petty and Cacioppo 1986; Brannon and Brock 2001). Increased evaluative thought about the merits of positive and negative messages could lead to the extremization of attitudes. Therefore, according to the elaborative account perspective, scarcity-induced evaluative thinking can either increase or reduce the preference or desirability of a product, depending on the degree of product-related positive and negative message.

In sum, scarcity results in two apparently contradictory effects on consumer information processing. On one hand, some studies have found that scarcity inhibits information

processing; on the other, researchers have also found that scarcity increases the depth of information processing. These opposite effects of scarcity suggest that there may be moderating variables that determine when scarcity has facilitative or inhibitory effects on consumer information processing. In the present research, we show that mood is one such variable. Mood moderates consumers’ information processing of scarcity, and hence the effect of scarcity on product evaluation.

II. The Moderating Role of Mood

Several researchers have demonstrated the impact of mood on consumers’ information processing and judgment (Bagozzi, Gopinath, and Nyer 1999; Cohen and Areni 1991; Andrade 2005; Garg, Wansink, and Inman 2007). In the present research, we use a mood management framework to explain the prediction that when mood is negative, scarcity will decrease depth of processing, whereas when mood is positive, scarcity will increase depth of processing. Mood management theory proposes a dynamic approach to explain how people choose information processing depending on their current mood. The dynamic mood management theory suggests that individuals’ projected discrepancy between current mood (i.e., what they feel now) and anticipated mood (i.e., what they could feel in the future as a result of the behavioral activity) plays a major affective role in guiding behavior (Gross 1998; Andrade 2005). The theory proposes that people experiencing negative moods are likely to look for options to repair their mood state, leading to a more action-oriented approach in anticipation of the mood-lifting consequences that such behavior is expected to foster. In contrast, people experiencing positive moods are motivated to maintain their

mood state, leading to a more passive approach in which they refrain from action to avoid potentially mood-threatening consequences of those behaviors (Clark and Isen 1982; Zillmann 1988; Andrade 2005).

Let us again return to the shopping situation mentioned at the outset of this paper. When you hear from the shop owner that the watch model will not be provided by the company anymore because it is an exclusive limited edition, two possible feelings produced by purchase behavior could be anticipated. You would expect to experience pleasure and happiness (mood lifting) as a result of winning the ‘competition’ with other potential purchasers for the scarce product. At the same time, you may be worried about potential regret (mood threatening) produced by your hasty purchase behavior. That is, in a situation involving scarcity pressure, consumers may believe that their subsequent purchase behaviors are likely to change their current feeling in either a mood-lifting or a mood-threatening direction. In sum, since scarcity can act as an important potential factor causing consumers’ mood change, such a scarcity-related purchase situation naturally makes people consider how to cope with the possible discrepancy between their current mood and anticipated mood.

In the case of negative mood, people want to repair this unfavorable emotional circumstance. Under such a negative affective state, they are likely to interpret the scarcity-related purchase situation as an opportunity for mood lifting rather than mood threatening. As a result, people in a negative mood are likely to rely on more heuristic information processing because they want to move away from their current negative state through such an opportunity as soon as possible. Therefore, we predict that when mood is negative, scarcity will reduce depth of processing (H1a).

On the other hand, if people are in a positive mood, they want to maintain this state and try to avoid a possible

negative change (e.g., hasty purchase to cause a future regret) in this affective state. Therefore, people in a positive mood are likely to perceive the scarcity-related purchase situation as a potential mood-threatening situation that brings about the possibility of future regret. As a result, people in a positive mood are likely to evaluate the scarce product more systematically and elaborately in order to assess whether such a scarce product can really bring more valuable benefits to them or not. Therefore, we predict that when mood is positive, scarcity will increase depth of processing (H1b).

These different levels of depth of processing between positive and negative mood, in turn, have implications for product judgment and purchase intent. The effects of scarcity on depth of processing outlined in H1a and H1b have consequences for product evaluation, depending on argument quality. Here, argument quality can be defined as a recipient’s perception that a message’s arguments are strong and convincing as opposed to weak and specious (Petty and Cacioppo 1986; Chaiken and Trope 1999). In H1a, we proposed that when mood is negative, scarcity will lead to heuristic processing. Under heuristic processing, individuals are not expected to process argument quality information (Petty and Cacioppo 1986). Consequently, we further argue that the positive effect of scarcity on product evaluation under negative mood will not be affected by argument quality. In contrast, we proposed in H1b that when mood is positive, scarcity will lead to systematic processing. Under such systematic processing, individuals are likely to base their product judgments on argument quality (Petty and Cacioppo 1986). Hence we predict that when mood is positive, the positive effect of scarcity on product evaluation will be affected by argument quality. That is, scarcity will have a stronger positive effect on product evaluation when argument quality is strong,

compared to weak. Consequently, we hypothesize that when mood is negative, the positive effect of scarcity on product evaluation will not be affected by argument quality (H2a). In contrast, when mood is positive, the positive effect of scarcity on product evaluation will be affected by argument quality (H2b). The proposed model is summarized in Figure 1.

III. Experiment

1. Methods

One hundred undergraduate students at a large university in Canada were invited to participate in the study and were compensated with cash. Participants were randomly assigned to the conditions of a 2 (Scarcity: High versus Low) x 2 (Mood: Positive versus Negative) x 2 (Argument Quality: Strong versus Weak) between-subject design. Participants were told in advance that they would participate in two independent studies. The first was introduced as a study on people’s memories of events in their life, and consisted of a life-event survey. This was followed by a “New Product” study that involved answering some questions related to attitudes toward a “New Product”. The

first study contained the mood manipulation, while in the second study the scarcity-relevant scenario was presented and dependent variables were assessed.

Mood Induction

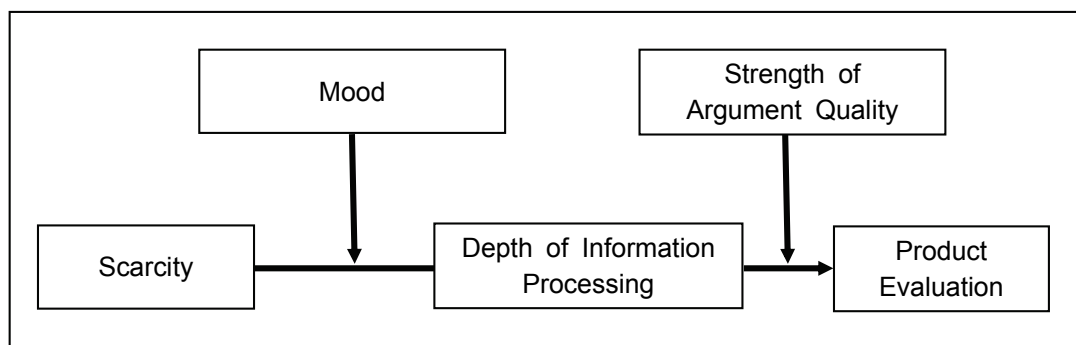
Mood was induced by a methodology validated by Lerner and Keltner (2001). The manipulation consisted of two questions. The first question asked participants to describe three recent events that made them happy or sad, depending on the assigned affect condition. The second question then asked them to describe in detail the one event that made them most happy or sad. They were encouraged to describe the one thing in such a way that another person reading the description might experience the same feeling.

Mood measurement

After completion of this task, participants were thanked and were introduced to the “second study.” To check participants’ affect state, participants were asked to answer the questions for mood measure. Mood was measured by a two-item scale previously used by Mackie and Worth (1989). Participants were asked to rate their feelings “at the present moment” on a two-item, nine-point scale (1/Very sad, 9/Very happy; 1/Not at all pleased, 9/Very pleased).

The second study presented participants with a hypothetical

〈FIGURE 1〉 The Proposed Model



retail scenario. Participants were told that they would be asked to answer some questions related to attitude towards a “New product” presented using a hypothetical retail scenario. They were then asked to imagine that they needed to buy a new watch. With this cover story, participants were shown one of four ads for a fictitious brand of wristwatch (EQUINOXE[®]); each ad manipulated the level of scarcity and the strength of the argument quality. The four ads were modeled on real-world print advertising, and featured a picture of the brand. In the high scarcity condition, the advertisement had the following product description: *“Exclusive limited edition. Hurry, limited stocks.”* In the low scarcity condition, it stated *“New edition. Many items in stock.”* Under the condition of strong argument quality, the advertisement contained this product description: *“Comfortable and elegant, the EQUINOXE watch is winner of the iF Design Award 2009. Add a commanding accent to your business ensemble with the EQUINOXE, certified as a chronometer by the COSC[®] (Swiss Official Chronometer Control).”* Conversely, in the weak argument quality condition, the advertisement had the following product description: *“The EQUINOXE watch was introduced in the iF Design conference 2009. Add an accent to your business ensemble with the EQUINOXE automatic chronometer.”* The product description also contained a survey result on three important and two unimportant attributes, selected from the paper by Li and Wyer (1994). The three important attributes are “Style/Design”, “Durability”, and “Accuracy”. The two unimportant attributes are “Watch Case Material” and “Water Resistance”. Subjects were led to believe that these attribute ratings were conducted by a famous consumer research company that reports annual results on product satisfaction. Ratings were measured on a five-point scale (“Excellent”, “Very Good”, “Good”, “Fair”, and “Poor”). In the strong argument quality condition, the product

had “Excellent” ratings on the three important attributes. Conversely, in the weak argument quality condition, the product had two “Good” ratings and one “Fair” rating on the three important attributes. In both conditions, the unimportant attributes were held consistent at a “Good” rating. In summary, then, the strong argument quality condition encompassed two dimensions: 1) a certification of quality by an independent testing agency, and 2) a high rating by a research company on salient product attributes. After reading the ad, participants responded to measures of the dependent variables and manipulation checks. Upon completion of these tasks all individuals were debriefed.

The dependent variable of product evaluation was measured by attitude toward the target product and purchase intent. Attitude toward a target product was measured using a nine-point bipolar semantic differential scale (dislikable/likable, unfavorable/favorable, and undesirable/desirable). Purchase intent was measured by a single-item, nine-point scale (1/Not at all Likely, 9/Very Likely): “How likely is it that you would buy this watch, if you saw it in the store?”

Depth of Information Processing

Participants were asked to list any and all thoughts that crossed their minds while they were going through this survey. They were encouraged to mention these product-related thoughts as though they were speaking to a friend who is interested in buying the product but is not familiar with it. Thoughts served as dependent variables for the extent of depth of processing. Two independent raters blind to the hypotheses coded participants’ thoughts into message-related counterarguments (CA), message-related support arguments (SA), message-related neutral statements (N), and irrelevant thoughts. The sum of CA, SA, and N was treated as the total message-relevant thinking and served as one measure of depth of processing (Chaiken and Maheswaran

1994; Jain and Maheswaran 2000). A two-item scale ($\alpha = .87$) was also developed in this paper as an additional measurement of depth of processing: “While reading the ad for EQUINOXE, how much effort did you put into evaluating this watch?” (1/Very little effort, 9/A lot of effort) and “While reading the ad for EQUINOXE, how much thought did you put into evaluating this watch?” (1/Very little thought, 9/A lot of thought). This two-item scale was adapted from the composite “cognitive effort index” validated by Menon, Block, and Ramanathan (2002).

The mood manipulation was successfully checked with the two-item scale ($\alpha = .87$), with a significant difference evident between positive and negative mood conditions ($M = 6.91$ vs. $M = 5.37$, $t(98) = -4.92$, $p < .001$). The scarcity manipulation was successfully checked with the two-item scale ($\alpha = .93$), with a significant difference evident between low and high scarcity conditions ($M = 2.26$ vs. 7.35 , $t(98) = 15.24$, $p < .001$). The strength of the presented product argument quality was checked on the four nine-point scale ratings ($\alpha = .84$) (i.e., 1/Low Quality, 9/High Quality; 1/Weak, 9/Strong; 1/Irrelevant, 9/Relevant; and 1/Not very convincing, 9/Very convincing). The manipulation was successful, with a significant difference resulting between the weak and strong argument quality conditions ($M = 4.45$ vs. 6.08 , $t(98) = 5.43$, $p < .001$).

2. Results

Hypotheses H1a and H1b propose that when mood is negative, scarcity will reduce depth of processing, whereas when mood is positive, scarcity will lead to more systematic processing. H1 was tested with ANOVA; means and standard deviations are shown in Table 1 and 2. A mood x scarcity ANOVA on the total message-related thoughts

showed a significant interaction effect ($F(1, 96) = 10.05$, $P < .002$), along with a significant main effect of mood ($F(1, 96) = 3.95$, $p < .05$), but no main effect of scarcity ($F(1, 96) = .001$, $p > .97$). Consistent with H1a, for participants in whom a negative mood was induced, those individuals in the high scarcity condition reported fewer message-related thoughts than did participants in the low scarcity condition ($M = 2.92$ vs. 4.16 , $t(48) = -2.27$, $p < .03$). As predicted by H1b, however, this effect was reversed for those participants in a positive mood ($M = 4.92$ vs. 3.70 , $t(48) = 2.21$, $p < .04$). The cognitive effort scale showed the same pattern of results. A mood x scarcity ANOVA on cognitive effort showed a significant interaction effect ($F(1, 96) = 8.66$, $p < .004$), with a significant main effect of mood ($F(1, 96) = 17.13$, $p < .001$), but no main effect of scarcity ($F(1, 96) = .21$, $p > .64$). For participants in whom a negative mood was induced, individuals in the high scarcity condition undertook less cognitive effort than did participants in the low scarcity condition ($M = 3.77$ vs. 4.69 , $t(48) = -2.17$, $p < .04$), but this effect did not hold for positive-mood participants ($M = 5.69$ vs. 5.02 , $t(48) = 2.00$, $p < .05$). All related variables' means and standard deviations are summarized in Table 3.

Hypotheses H2a and H2b propose that when mood is negative, the positive effect of scarcity on product evaluation will be unaffected by argument quality, whereas when mood is positive, scarcity will have a stronger positive effect on product evaluation in a strong argument quality condition. H2 was tested with ANOVA; means and standard deviations are shown in Table 4 and 5. A scarcity x argument quality ANOVA on purchase intent did not show a significant interaction in the negative mood condition ($F(1, 46) = .01$, $p > .94$); a significant main effect of scarcity was found ($F(1, 46) = 20.10$, $p < .001$), but no corresponding main effect of argument quality was discernable ($F(1, 46) = .19$, $p > .65$). Consistent with H2a, for

〈TABLE 1〉 Scarcity, Mood and Depth of Information Processing

	Positive Mood		Negative Mood	
	Low Scarcity	High Scarcity	Low Scarcity	High Scarcity
Total Message-related Thoughts	3.70 (1.96)	4.92 (1.91)	4.16 (2.25)	2.92 (1.57)
Cognitive Effort Index	5.02 (1.19)	5.69 (1.17)	4.69 (1.55)	3.77 (1.43)

Note. Standard deviations are in parentheses

〈TABLE 2〉 ANOVA Results

〈Dependent Variable: The total message-related thoughts〉

		Mean	d.f.	MS	F-value
A.	Mood		1	14.831	3.955*
	Positive	4.34			
	Negative	3.52			
B.	Scarcity		1	.005	.001
	High	3.92			
	Low	3.93			
A x B			1	37.711	10.057**
Error			96	3.750	

* $p < .05$, ** $p < .01$, *** $p < .001$

〈TABLE 3〉 Scarcity, Mood, Strength of Argument Quality and Depth of Information Processing

	Positive Mood				Negative Mood			
	Weak Argument		Strong Argument		Weak Argument		Strong Argument	
	Low Scarcity	High Scarcity	Low Scarcity	High Scarcity	Low Scarcity	High Scarcity	Low Scarcity	High Scarcity
Total Message-related Thoughts	4.00 (1.47)	5.23 (2.45)	3.41 (2.39)	4.61 (1.19)	5.00 (2.41)	2.69 (1.65)	3.33 (1.82)	3.15 (1.51)
Message-related counter arguments	3.25 (1.21)	2.84 (1.57)	1.41 (2.42)	2.00 (1.35)	3.25 (1.13)	1.38 (1.66)	1.41 (1.31)	1.69 (1.54)
Message-related support arguments	.33 (.88)	.92 (1.38)	.83 (1.85)	1.23 (1.36)	.00 (.00)	.53 (.87)	.83 (1.11)	.30 (.63)
Cognitive Effort Index	4.89 (1.37)	5.09 (.51)	5.14 (1.03)	6.28 (1.35)	4.85 (1.69)	4.09 (1.47)	4.54 (1.46)	3.46 (1.37)

Note. Standard deviations are in parentheses

participants in a negative mood, the positive effect of scarcity on purchase intent was not affected by argument quality. That is, when mood was negative, scarcity increased purchase intent both when argument quality was strong ($M = 3.25$ vs. 5.28 ; $t(23) = 3.41$, $p < .002$) and when argument quality was weak ($M = 3.08$ vs. 5.05 ; $t(23) = 2.96$, $p < .007$). In contrast, a scarcity x argument quality ANOVA on

purchase intent revealed a significant interaction in the positive mood condition ($F(1, 46) = 5.69$, $p < .03$), along with main effects of both scarcity ($F(1, 46) = 8.70$, $p < .005$) and argument quality ($F(1, 46) = 9.04$, $p < .004$). As predicted by H2b, under the positive mood condition, the positive effect of scarcity on purchase intent was affected by argument quality. In the positive mood condition, scarcity

increased purchase intent when argument quality was strong ($M = 3.00$ vs. 5.38 ; $t(23) = 3.48$, $p < .002$), but not when argument quality was weak ($M = 2.72$ vs. 2.97 ; $t(23) = .43$, $p > .66$).

The effect of scarcity on attitude toward the target product showed the same pattern of results. Consistent with H2a, the positive effect of scarcity on attitude toward the product under the negative mood condition was not affected by argument quality. In the negative mood condition, scarcity increased attitude toward the product both when argument quality was strong ($M = 4.33$ vs. 6.38 ; $t(23) = 3.13$, $p < .005$) and when argument quality was weak ($M = 4.10$ vs. 5.63 ; $t(23) = 3.04$, $p < .006$). As predicted by H2b, though, the positive effect of scarcity on attitude toward the product under the positive mood condition was affected by argument

quality. In the positive mood condition, scarcity increased attitude toward the product when argument quality was strong ($M = 4.91$ vs. 6.94 , $t(23) = 3.55$, $p < .002$), but not when argument quality was weak ($M = 3.83$ vs. 4.48 , $t(23) = 1.07$, $p > .29$).

In summary, the results of our study were consistent with H1 and H2. As predicted by H1a and H1b, it was found that when mood was negative, scarcity reduced depth of processing, while no such effect was discerned when mood was positive. In addition, as predicted by H2a and H2b, when mood was negative, the positive effect of scarcity on product evaluation was not affected by argument quality; in contrast, when mood was positive, scarcity increased product evaluation only when argument quality was strong. These results indicate that when mood is negative, scarcity tends

<TABLE 4> Scarcity, Mood, Strength of Argument Quality, and Product Evaluation

	Positive Mood				Negative Mood			
	Weak Argument		Strong Argument		Weak Argument		Strong Argument	
	Low Scarcity	High Scarcity	Low Scarcity	High Scarcity	Low Scarcity	High Scarcity	Low Scarcity	High Scarcity
Product Attitude	3.83 (1.45)	4.48 (1.55)	4.91 (1.82)	6.94 (.91)	4.10 (1.17)	5.63 (1.32)	4.33 (1.96)	6.38 (1.25)
Purchase Intention	2.72 (1.37)	2.97 (1.49)	3.00 (2.13)	5.38 (1.19)	3.08 (1.54)	5.05 (1.75)	3.25 (1.72)	5.28 (1.23)

Note. Standard deviations are in parentheses

<TABLE 5> ANOVA Results

<Dependent Variable: Purchase Intent>

	Positive Mood				Negative Mood			
	Mean	d.f.	MS	F-value	Mean	d.f.	MS	F-value
A. Argument		1	22.544	9.041*		1	.493	.198
Strong	4.24				4.30			
Weak	2.85				4.10			
B. Scarcity		1	21.692	8.700*		1	49.920	20.106***
High	4.17				5.16			
Low	2.86				3.16			
A x B		1	14.188	5.690*		1	.013	.005
Error		46	2.493			46	2.493	

* $p < .05$, ** $p < .01$, *** $p < .001$

to activate heuristic processing. Under such circumstances, individuals are not expected to actively process argument quality information (Petty and Cacioppo 1986). Consequently, for consumers in a negative mood, the positive effect of scarcity on product evaluation is not affected by argument quality.

In contrast, for consumers in a positive mood, scarcity leads to more systematic processing, whereby individuals base their product judgments on argument quality (Petty and Cacioppo 1986). Consequently, for consumers in a positive mood, scarcity has a stronger positive effect on product evaluation when argument quality is strong, compared to weak.

IV. General Discussion

Scarcity has been known for some time to be a very important and widely-used marketing tactic. The positive effect of scarcity on desirability and preference of a product has been shown in many studies and such an effect of scarcity has been used in various types of appeals by marketers. However, past consumer research is somewhat inconclusive regarding how scarcity influences consumers' information processing. There has been no clear explanation as to why scarcity shows two apparently contradicting effects (facilitative and inhibitory effects) on consumers' information processing.

In this paper we have sought to resolve this paradox by identifying a new moderating variable - namely, mood - that determines when either the facilitative or the inhibitory effect is likely to be dominant. We cite mood management theory and the role of mood as a resource in processing persuasive message (Raghunathan and Trope 2002) to explain the moderating function of mood in a product-

related scarcity context. Our model adopts the view that under the situation involving scarcity pressure, people's information processing and decision-making differs depending on their current mood state. Evidence from the study provided support for our posited model. Our findings show that when mood is negative, scarcity decreases depth of processing, whereas when mood is positive, scarcity leads to increased depth of processing. In addition, as a result of such contradicting information processing, when mood is positive, scarcity has a stronger positive effect on product evaluation when argument quality is strong than when argument quality is weak. However, when mood is negative, the positive effect of scarcity on product evaluation is not affected by argument strength.

These results support the notion that when people are in a negative mood, they seek to repair their unfavorable affective state. In this case, people are likely to interpret the scarcity-related purchase situation as an opportunity for mood lifting. As a result, people in a negative mood tend to rely on more heuristic information processing to grab such an opportunity as quickly as possible. Since heuristic processing does not require effortful elaboration of a persuasive argument, when people are in a negative mood, product-related persuasive arguments do not strongly influence their preferences. That is to say, in the case of people in a negative mood, scarcity is likely to increase the preference and desirability of a product regardless of quality of the product-related persuasive argument.

In contrast, when people are in a positive mood, they want to maintain their current mood state, and therefore try to evaluate the scarce product more systematically so as to avoid a possible negative change in affect. Since such systematic processing involves more effortful elaboration of a persuasive argument, when people are in a positive mood, product-related persuasive arguments strongly influence

their preference. Therefore, for people in a positive mood, increasing scarcity does not always increase the preference and desirability of a product; this outcome depends on the degree of product-related positive and negative messages.

This research offers important guidelines to practitioners. Our findings suggest that marketers should use scarcity as a marketing tactic more carefully. Since emphasizing scarcity does not always result in increasing preference and desirability of a product, marketers should operate such scarcity-related advertisement and promotion strategies properly depending on the quality of their product's attributes and persuasive arguments. In addition, since mood is revealed as an important factor to control consumers' information processing on persuasive argument under the scarcity-related purchase context, marketers should strive to maximize the effects of scarcity on preference by manipulating consumers' mood through various methods. It is common practice on the part of many retailers to play soothing background music in their stores, presumably in an attempt to induce a positive mood in their consumers and to make the shopping experience more enjoyable. While such tactics may be effective, our research suggests that positive mood induction needs to be carefully managed when a scarcity-related claim is also presented. In this case, marketers should be cognizant of the need to pair mood-enhancing cues with a strong product-related argument, since (as shown by our results) consumers in a positive mood will be more likely to systematically evaluate product claims in an effort to maintain this favorable affective state. Testing the role of mood, scarcity, and product evaluation in a real-world retail setting would be an interesting approach for future research in this vein.

In this research, we use a mood management framework to explain the prediction that when mood is negative, scarcity will decrease depth of processing, whereas when

mood is positive, scarcity will increase depth of processing. Mood management theory proposes that people experiencing negative moods are likely to look for options to repair their mood state, leading to a more action-oriented approach in anticipation of the mood-lifting consequences that such behavior is expected to foster. In contrast, people experiencing positive moods are motivated to maintain their mood state, leading to a more passive approach in which they refrain from action to avoid potentially mood-threatening consequences of those behaviors (Clark and Isen 1982; Zillmann 1988; Andrade 2005).

However, it could be argued that according to affect evaluation framework, people in positive affect are likely to show a favorable attitude and evaluation toward environment, which leads to proactive behavior, whereas people experiencing negative affect are likely to show a less favorable attitude and evaluation toward environment, which result in inhibits action. Such an affective state can influence individuals' motivation to elaborate on the content of the message. In other word, moods can influence on individuals' preferred information processing style. For instance, people in a good mood are more likely to use more shallow and heuristic processing strategies, whereas people in a bad mood are more likely to engage in deeper and more effortful processing strategies (Bless et al. 1990; Isen, Daubman, and Nowicki 1987). Negative mood may inform individuals that the current situation around them is problematic, resulting in that people are more likely to use deeper and more systematical information processing in order to analyze the current situation more adequately. On the other hand, positive mood may inform individuals that the current situation around them is safe and clear. As a result, people are unlikely to engage in deeper and more effortful processing under this situation. They may tend to take a risk and to use more shallow and heuristics in information processing

(Bless et al. 1990).

In the present research, we argue that people are likely to choose their preferred information processing strategy based on the mood management theory framework in situations marked by scarcity because scarcity pressure may act as a mood changing cue. According to Andrade (2005), whether mood - changing cues are present in the environment play an important role in determining which one of these two processes, affect regulation (i.e., mood management theory) and affective evaluation, dominates. That is to say, the most important aspect that divides the two processes is whether the activity/ behavior that the person is considering has mood - changing properties. For instance, when mood - changing cues (e.g., comfort food such as chocolate cake) are present, people in negative mood try to move away from their current state, whereas people in positive mood try to be more protective of their current state. As a result, people in negative mood are more likely to consume comfort food to move away from their current negative mood (e.g., Eating chocolate will make me happy), whereas people in positive mood try to refrain from consuming food items that might make them regret their consumption later (e.g., Eating chocolate now will make me regret it later). In conclusion, when mood - changing cues are present, people are likely to choose their preferred information processing based on the mood management framework. Again, let's go back to the shopping situation mention previously. When you hear from shop owner that "these are the few remaining watches of this model left in the shop. This particular model will not be provided by the company anymore because it is an exclusive limited edition," we can predict the two opposite anticipated feeling which subsequent purchase behavior is expected to bring to; you would expect to experience either pleasure and happiness (i.e., mood lifting) produced by winning in competition with other potential

purchasers for the scarce product or potential regret (mood threatening) produced by hasty purchase behavior. That is, in such a situation where consumers can feel scarcity pressure, consumers may be led to believe that their subsequent purchase behaviors are likely to change their current feeling in either mood lifting or mood threatening direction. Therefore, we argue that scarcity can act as a mood changing cue associated with consumers' mood change. In this situation, people are likely to choose their preferred information processing based on the mood management framework. There is an important limitation of the present research that should be noted. We did not directly measure the role of the scarcity claim as a mood changing cue. Instead, such a role was inferred through verbal reports based on the message-related thoughts. Future research could directly measure the role of the scarcity claim as a mood changing cue. Such research would confirm that mood could moderate the effect of the scarcity on the information processing, and thus influence the effect of scarcity on the product evaluation depending on the strength of argument quality.

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