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# Attractiveness of discount rate versus limited quantity

## The moderating effect of temporal distance

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## Abstract

**Purpose** – This paper aims to examine how the temporal distance can influence the effect of the scarcity message. To demonstrate this effect, the authors use the limited-quantity flash sales and compare two types of mixed promotion method comprising discount rate and limited quantity.

**Design/methodology/approach** – The results of the experiment reveal that consumers in the temporally distant condition have a relatively high-level construal of the limited-quantity flash sales and are more likely to value desirability (discount rate) over feasibility (limited quantity).

**Findings** – When the expected value is identical, consumers prefer limited-quantity flash sales with smaller limited quantity but higher discount rates. However, consumers in the temporally near condition have a relatively low-level construal of the limited-quantity flash sales and are more likely to value feasibility (limited quantity) over desirability (discount rate).

**Originality/value** – When the expected value is identical, consumers prefer limited-quantity flash sales with lower discount rates but larger limited quantity.

**Keywords** Limited-supply flash sale, Discount rate, Limited quantity, Desirability/feasibility, Temporal distance

**Paper type** Research paper

## 1. Introduction

In the everyday consumption environment, we frequently encounter messages such as "selling out soon", "best-selling", "limited stock" or "limited-edition" that indicate limited supplies and opportunities to purchase (Kim and Baek, 2014). Such messages are



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termed scarcity messages[1]. As consumers generally perceive rare alternatives with limited or temporary purchase opportunities to be of higher value and attraction than alternatives that are readily available (Fromkin, 1970; Lynn, 1992), a scarcity message promotes consumers' purchase decisions (Bozzolo and Brock, 1992). In other words, scarcity messages are part of a marketing strategy that capitalizes on consumers' preference for scarcity and effectively increase the perceived value of the product or opportunity (Cialdini, 1985). For this reason, there have been a variety of theoretical studies on scarcity messages in the fields of marketing and psychology over the past several decades, and the research has undergone important advances.

Recently, several studies comparing the differences in effects by scarcity type have been conducted; these studies categorize scarcity messages as time limited messages or quantity limited messages depending on whether the limitation is in terms of purchase time or the quantity of products available for purchase (Cialdini, 1985). Quantity limited messages are further categorized into supply-side scarcity messages for limited supply (e.g. limited edition) or demand-side scarcity messages for excess demand (e.g. first 100 customers) (Gierl *et al.*, 2008; Herpen *et al.*, 2005). One such study by Aggarwal *et al.* (2011) examined the differences between the effects of the two types of messages. The results showed that quantity limited messages, which are indicative of competition with other consumers, had a more positive influence on consumer purchase intention than time limited messages. In particular, the lower the consumer knowledge level (Bae *et al.*, 2004), the higher was the level of self-monitoring (Han, 2012a). Moreover, the stronger the propensity toward prevention focus (Han, 2012b; Lee *et al.*, 2010; Park, 2009), the more pronounced were the effects of quantity limited messages as compared to time limited messages. The most recent studies classified scarcity messages into supply-side and demand-side scarcity messages according to the cause of scarcity and examined the differences between their effects (Sharma and Alter, 2012). According to these studies, supply-side scarcity messages are effective under the following conditions: conspicuous consumption (Gierl *et al.*, 2008), hedonic consumption (Park, 2010), consumers with propensity toward promotion focus (Ku *et al.*, 2012; Yoon *et al.*, 2014) and strong inclination to satisfy the need for conformity (Kim and Baek, 2014). On the other hand, demand-side scarcity messages actually induced decreased purchase desire in situations of conspicuous consumption (Gierl *et al.*, 2008) and were more effective in consumers with propensity toward prevention focus (Ku *et al.*, 2012; Yoon *et al.*, 2014) and low inclination to satisfy the need for conformity (Kim and Baek, 2014).

Strengthening their desire to purchase quickly, which is also a factor that increases impulse purchases. In particular, unlike limited sales focused on limited supply only without price discounts, both price discount rates and limited quantity are reflected in limited-supply flash sales, often in a trade-off relationship with each other. For example, in several cases, there is a small, limited quantity when the discount rate is high; conversely, the discount rate is low when there is a large, limited quantity. Given such cases where discount rates and available quantity are in conflict, it becomes important to identify which consumers focus on discounts rates and which focus on limited quantity. In addition, under what circumstances are they more attracted to price discounts and in what situations are they more attracted to limited quantity? These consumer choices may be easily observed in

daily life; in particular, limited-quantity flash sales are used frequently in social commerce and mobile shopping, which have recently enjoyed rapid growth. They also remain an important consideration for those who deploy such marketing tactics. Nevertheless, there have not been any empirical studies dealing with the trade-off in the relationship between the two within the context of a limited-quantity flash sale.

Thus, by focusing on the role of temporal distance as a control variable, this study aims to identify the conditions under which discount rates are valued over limited quantity and vice versa, for limited-quantity flash sales with limited supply.

## 2. Theoretical background

### *2.1 Desirability and feasibility*

In this study, we adopt the view that people behave in goal-directed ways. People set goals and aim to reach a desirable end state by injecting the necessary resources to achieve those goals (Kruglanski *et al.*, 2012). Based on prior research, values related to goal-directed behavior are classified into two standards: desirability and feasibility (Bagozzi and Dholakia, 1999; Kruglanski, 1996; Liberman and Trope, 1998; Trope and Liberman, 2003). The difference between the two may be viewed as the difference between means and ends (Gollwitzer and Moskowitz, 1996; Miller *et al.*, 1960; Trope *et al.*, 2007). Desirability denotes the value associated with the end state of behavior while feasibility denotes the value associated with the degree of difficulty to attain goals or the possibility of reaching a desirable end state (Liberman and Trope, 1998).

According to goal subordination theory, people act with a hierarchical mindset when engaging in goal-directed behaviors (Carver and Scheier, 1981; Vallacher and Wegner, 1987), and while desirability reflects the higher dimension of the behavior – the "why" – and feasibility reflects the lower dimension of the behavior – the "how". For example, when going on a trip, those with a "why" perspective would think about the purpose of the trip and values to be obtained through the trip, whereas those with a "how" perspective would review the efforts or specific action plans required for the trip such as means of transport to get to the destination and the detailed itinerary. According to goal-directed behavior theory, desirability refers to the value (value of the trip) associated with the end state of any action and feasibility refers to the value associated with the resources required (for a desirable trip).

Through their study, Todorov *et al.* (2007) showed that the probability of an event could affect desirability and feasibility. In their study, participants were instructed to read information about a series of public relations campaigns. Specifically, two types of campaigns were created: one campaign was designed to have high desirability but low feasibility (e.g. waiting 15 min at an inconvenient location to receive 10 free CDs) and the other campaign was designed to have low desirability but high feasibility (e.g. immediately receiving one free CD at a convenient location). The results showed that participants focused on the "how" perspective ("How can I receive a free CD?") and preferred the campaign with higher feasibility when the probability of receiving a voucher from the company was assured. Conversely, they focused on the "why" perspective ("What am I getting out of this?") and preferred the campaign with higher

desirability when the probability of receiving a voucher from the company was low (1/100). These results explain that:

- the lower the probability of an event, the higher is the weight that consumers place on superordinate attributes related to the higher dimension of desirability; and
- when the probability of occurrence increases, consumers tend to rely on the lower dimension of feasibility.

These findings support the idea that features related to feasibility are more sensitive to changes in the probability of event occurrence.

A similar relationship between probability and goal-related values may be found in gambling (Sagristano *et al.*, 2002). Sagristano *et al.* (2002) examined the relationship between the probability of winning and payoffs. According to the results, when the game was to take place in the distant future, gamblers valued desirability as the probability of winning was low; consequently, they tended to prefer games with low probability of winning but high payoffs. However, when the game was to take place in the near future, gamblers became interested in feasibility and tended to prefer games with high probability of winning but low payoffs. In other words, the study confirmed that while the higher dimension of desirability is more important when the probability of winning is low, feasibility becomes more important as the probability of winning increases.

One study examined the relationship between goal-directed behavior and consumer choice (Thomas *et al.*, 2006). Its findings showed that while feasibility-related information has a greater influence on purchase intention for the near future, desirability-related information increases purchase intention more strongly for the distant future.

Based on the literature review, it is apparent that both desirability and feasibility are considerably important concepts in understanding the goal-directed behaviors of people. While the weight placed on desirability increases with lower probability of event occurrence, the weight placed on feasibility increases with higher probability of event occurrence. We assess that understanding consumer behavior by applying these characteristics to "limited-quantity flash sale" promotions would be meaningful. A limited-quantity flash sale may be described as a mixed promotion method comprising price discounts and limited supply, and, typically, there is a trade-off between the quantity of the limited supply and discount rate. In other words, in many limited-quantity flash sales, there is a smaller limited quantity when the discount rate is high and a higher limited quantity when the discount rate is low. If so, how can we decipher the relationship between the discount rate and limited quantity in terms of desirability and feasibility? Moreover, when making a decision, what will be of greater importance to consumers between discount rate and limited quantity and how would that differ based on the situation? This study will examine how the preference for limited-quantity flash sale varies based on the construal level theory.

### *2.2 The moderating effect of temporal distance on the relative perceived importance between price discounts and limited quantity*

According to construal level theory, people's construal levels vary based on psychological distance (Trope *et al.*, 2007), which may be categorized into temporal distance, spatial distance, social distance and hypothetical distance. In particular, we will examine in depth

how consumers' preference for the limited-quantity flash sale strategy changes by temporal distance, i.e. we will examine how consumers' mindsets toward events differ by whether the event occurrence is in the distant future versus the near future, and, in doing so, we will identify the differences between their preferred alternatives.

In the construal of events with a temporal distance in the distant future, consumers tend to boldly omit features deemed less important and exhibit more abstract, structural and high-level construal. On the other hand, they display more specific and lower-level construal of events when the temporal distance is in the near future (Liberman *et al.* 2002). Numerous researchers have found evidence to support the claims of the construal level theory. Based on temporal distance, consumers exhibit distinctive characteristics in terms of self-representation (Wakslak *et al.*, 2006), means and end-states (Liberman and Trope, 1998), and mental construal of events (Liberman *et al.*, 2002; Vallacher and Wegner, 1987).

The construal level theory maintains that for temporally distant situations, consumers emphasize the value of desirability of the selected alternative. Conversely, they emphasize the likelihood of the event relatively more in the case of near-future situations (Liberman and Trope, 1998; Trope *et al.*, 2007). For example, when there is a lot of time remaining until a concert date, people mainly think in terms of the desirability of the "performance" such as "enjoying good music" and perceive it as important. However, as the concert date approaches, people begin to focus on feasibility aspects such as "ticket price" and consider them important determinants for selection (Liberman and Trope, 1998).

According to previous studies, desirability refers to characteristics that are associated with the positive end state to be achieved, whereas feasibility refers to the degree of difficulties involved in reaching the end state (Liberman and Trope, 1998). For example, in the case of a student, desirability is about receiving excellent grades, whereas feasibility is associated with the time and effort invested to receive the excellent grades. In this dimension, limited-quantity flash sales could also be viewed in terms of desirability and feasibility, i.e. if "price discount" is related to desirability, the positive end state to be achieved, then "limited quantity" can be considered in terms of feasibility in that it is related to the degree of difficulty in reaching the end state.

Assuming this to be the case, we may hypothesize that for temporally distant situations, where consumers have a relatively high-level construal of the limited-quantity flash sales and are more likely to value desirability (discounts rate) over feasibility (limited quantity), if the expected value is identical, consumers will prefer limited-quantity flash sales with smaller limited quantity but higher price discount rates. On the contrary, we may predict that for temporally near situations, as consumers will have a relatively low-level construal of the limited-quantity flash sales and are more likely to value feasibility (limited quantity) over desirability (discounts rate), if the expected value is identical, consumers will prefer limited-quantity flash sales with lower price discount rates but larger limited quantity. Thus, we intend to establish and verify the Hypotheses 1-1 and 1-2 as follows:

*H1-1.* If the expected value is identical for temporally distant situations, consumers will prefer limited-quantity flash sales with high discount rates even if it means a smaller limited quantity.

*H1-2*. If the expected value is identical for temporally near situations, consumers will prefer limited-quantity flash sales with large limited quantity even if it means a lower discount rate.

## 3. Experiment

### *3.1 Method*

In this study, we conducted a test experiment based on scenario analysis to determine how the consumer preference for limited-quantity flash sales varies based on temporal distance. The experiment included 48 college students of which 29 were female. The Smart Watch was selected as the experiment object. It was deemed suitable for manipulating temporal distance because it was not only a product desired by college students who formed the sample group but also a product attracting wide interest amid reports of an impending, new product release.

To manipulate limited quantity, we presented a scenario whereby a "huge discount for the first 500 customers" was to be offered to celebrate the new Smart Watch release. In the case of near temporal distance, we presented the message:

> You have decided to purchase the Apple Watch 2 right away today at the online shopping mall. Since the discount is only available for the first 500 customers, you need to make the purchase quickly in order to buy the Apple Watch 2 at a discounted price.

For the temporally distant situation, we presented the message:

> If you preorder now, you can receive the new Apple Watch 2 to be released in 3 months. The discount is only available for the first 500 customers, so you need to preorder quickly in order to buy the Apple Watch 2 at a discounted price.

To manipulate price discount rate and limited quantity, we presented the following scenario: "You have visited two online shopping malls to purchase Apple Watch 2. Both malls offer a discount but differ in the remaining limited quantity of the first 500 purchases". One shopping mall was manipulated to have a high discount rate but smaller limited quantity, whereas the other shopping mall was manipulated to have a low discount rate but larger limited quantity. Specifically, online shopping mall A displayed the message: "40 per cent discount, 275 sold of the limited 500! 225 watches currently remaining", whereas online shopping mall B displayed the message: "30 per cent discount, 200 sold of the limited 500! 300 watches currently remaining". Once the participants had familiarized themselves with the scenario, we asked them which price discount promotion they preferred between online shopping mall A and online shopping mall B on a seven-point scale with 1 indicating "prefer online shopping mall A" and 7 indicating "prefer online shopping mall B". In this scenario, while the discount rate and limited quantity differed across the two shopping malls, the expected value was identical.

To confirm that the temporal distance was properly manipulated, we asked the participants how they felt about the time of actually obtaining the Apple Watch 2 through two questions. In the first item, we measured how near in the future it seemed (seven-point scale; 1 = very near future, 7 = very distant future), and, in the second item, we measured the perception of how much time was left (seven-point scale; 1 = not much time left, 7 = significant time left). After the experiment was completed, the participants were debriefed and returned home.

*3.2 Analysis results*

Before verifying the hypotheses, we examined whether the temporal distance was properly manipulated. After verifying the manipulation of temporal distance through two items, we found the reliability coefficient (Cronbach's $\alpha$) to be 0.87 and performed a *t*-test on the mean values of the responses to the two questions. The results showed that participants perceived the temporally distant condition (M = 4.56) to be further in time compared to the temporally near condition [M = 3.15; $t$ (46) = −3.69, $p < 0.01$].

The hypothesis of this study predicted that between online shopping mall A (high discount rate of 40 per cent and small limited quantity of 225 watches remaining) and online shopping mall B (low discount rate of 30 per cent and large limited quantity of 300 watches remaining), preference for online shopping mall B will be higher for temporally near conditions and preference for online shopping mall A will be higher for temporally distant conditions. For statistical verification, we conducted a *t*-test to examine the differences in preferences for the two shopping malls in accordance with temporal distance.

Based on the results shown in [Table I], preference for online shopping mall B (over online shopping mall A) was higher in temporally near conditions (M = 2.09) than in temporally distant conditions (M = 1.28). Moreover, the difference in preference was statistically significant [$t$ (46) = 3.80, $p < 0.05$] as illustrated in [Figure 1]. For cases with identical expected values, consumers prefer limited-quantity flash sales with low discount rates but large limited quantity as offered by online shopping mall B in temporally near situations, but limited-quantity flash sales with high discount rates even if the limited quantity is small in the case of temporally distant situations. Thus, both *H1-1* and *H1-2* were supported.

These results show that consumers' preference for discount rates and limited sales quantity varies by temporal distance: consumers in temporally distant conditions value desirability over feasibility, thereby making discount rate more important than limited quantity during limited-quantity flash sales. On the other hand, consumers in temporally near conditions value feasibility over desirability thereby making limited sales quantity more important than discount rate during limited-quantity flash sales.

**Table I.**
Preference for online shopping mall B (over online shopping mall A) as a function of temporal distance (near vs distant)

| Temporal distance (dependent variable) | Temporally distant | Temporally near | *t*-test | *p*-value |
|---|---|---|---|---|
| Preference for online shopping mall B | 1.28 ($n$=25) | 2.09 ($n$=23) | 3.80 | 0.02 |

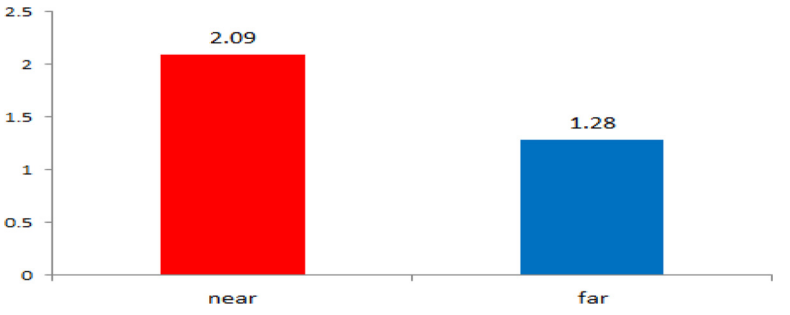


**Figure 1.**
Preference for online shopping mall B (over online shopping mall A) as a function of temporal distance (near vs distant)

## 4. Conclusion and discussion

### *4.1 Summary and significance of findings*

The past decades have seen various theoretical studies of scarcity messages in the marketing and psychology domain and their results have made considerable and significant progress. However, most existing studies only deal with the scarcity value of the product itself and offer limited explanation of the effect of scarcity messages when accompanied by price discounts such as in the case of "limited-quantity flash sales". In particular, unlike in limited sales, which only focus on limited sales quantity without price discount, limited-quantity flash sales comprise both discount and limited sales quantity, with the two often sharing a trade-off relationship. Nevertheless, there is a lack of empirical studies dealing with the trade-off relationship in the context of limited-quantity flash sales. In our own estimation, this study has great academic significance in that it opens the gates to a new research field that has previously remained unexplored by other scarcity message studies. Furthermore, we anticipate that our research would encourage various relevant derivative studies.

Limited-quantity flash sales are one of the sales promotion activities frequently used by companies. In particular, with the recent rapid growth of social commerce and mobile shopping, limited-quantity flash sales are frequently used in both online and offline shopping. However, as limited-quantity flash sales involve significant financial costs for companies, there is a need for strategic guidelines on the context in which companies should execute limited-quantity flash sales with focus on price discounts versus limited sales quantity in order to optimize the benefits of such sales offers to consumers. This study should present the necessary guidelines.

According to the findings, the relative emphasis of price discounts and limited sales quantity needs to vary by temporal distance. For example, when launching a new product, planning a limited-quantity flash sale event that corresponds to the temporal distance from the present to the launching point could double the effects of the limited-quantity flash sale. Specifically, given that consumers emphasize desirability and downplay feasibility prior to the start of a limited-quantity flash sale, it is more desirable to emphasize the high price discount than the limited sales quantity in this situation. However, once the limited-quantity flash sale begins and consumers begin to emphasize feasibility, emphasizing the ample limited sales quantity rather than the price discount would be more effective in maximizing the effects of the limited-quantity flash sale.

We expect that these results would provide implications for effective limited-quantity flash sale strategies for companies that utilize pre-order sales. In many cases, new product launches are accompanied by offers of pre-orders at discounted prices (Chatterjee, 2009; Dana, 1998). For example, Microsoft garnered positive responses during the release of Windows 7, when it implemented a price discount for consumers who preordered (McCardle, Rajaram, and Tang, 2004; Tang *et al.*, 2004). However, companies have hitherto lacked the basis to judge strategically whether it is more effective to carry out a price discount policy or a limited-quantity flash sale when implementing pre-orders. The results of this study offer considerable implications for the marketing personnel of companies that are contemplating what type of sales promotions to conduct ahead of the pre-order sales.

*4.2 Limitations and future research direction*

Notwithstanding the significance of its findings as described above, this study has a number of limitations in the experimental procedure. Potential future research directions based on the limitations of this study are discussed below.

First, this study examines the differences in consumer preferences of price discount and limited sales quantity according to temporal distance. While the results significantly support the hypotheses, they are skewed in favor of shopping malls with overall high discount rates compared to shopping malls with large sales quantity. A possible alternative explanation of this result may be that it disproves the hypotheses by showing that the differences in preference by temporal distance were marginal.

While this study adopted the temporal definition of Eyal *et al.* (2009)'s near future (present) versus distant future (three months later), it may be meaningful to examine whether the effects of limited-quantity flash sales are stronger with greater temporal distance by further expanding the future date (e.g. present versus three versus six months).

Second, this study used a new product called "Apple Watch 2" as the stimulus to manipulate temporal distance. According to previous studies, consumers who prefer innovative products have been reported to exhibit different characteristics and product preferences from consumers who do not (Hoeffler, 2003; Rogers, 1976). However, this study has a limitation in that its findings do not account for different consumer characteristics. For example, we expect that consumers with innovative tendencies will show a high preference for the Apple Watch 2 regardless of temporal distance. In addition, as consumers with high affinity for innovative products have a tendency to base their decisions on desirability rather than feasibility, there may be an inherent tendency toward high preference for price discounts. Future research should be able to strengthen the validity of this study's findings by performing additional experimental studies to eliminate such alternative explanations.

Third, the experiment in this study was conducted using Apple Watch, an actual brand instead of a virtual brand to minimize the likelihood that participants would conduct a superficial assessment of the limited-quantity flash sale event. However, using an actual brand poses the risk of potential distortion of findings from a confounding effect, caused by the association of beliefs, attitudes, etc. with a particular brand. Thus, in future studies it is necessary to increase the internal validity of the study findings through additional experiments using a virtual brand.

Finally, this study was limited to the product category of Smart Watch, and the experiment was conducted with only college students as the sample. Therefore, we cannot rule out the possibility that the unique characteristics of this group and the product influence the experiment results. Thus, to improve the generalization potential of this study, additional experiments with various product categories and subjects should be explored in future studies.

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## References

Aggarwal, P., Jun, S.Y. and Huh, J.H. (2011), "Scarcity messages: a consumer competition perspective", *Journal of Advertising*, Vol. 40 No. 3, pp. 19-30.

Bae, Y., Lee, S. and Cha, T. (2004), "The effect of scarcity message on consumer's purchase intention in the internet shopping mall", *The Korean Journal of Advertising*, Vol. 15 No. 5, pp. 503-521.

Bagozzi, R.P. and Dholakia, U. (1999), "Goal setting and goal striving in consumer behavior", *Journal of Marketing*, Vol. 63, pp. 19-32.

Bozzolo, A.M. and Brock, T.C. (1992), "Unavailability effects on message processing: a theoretical analysis an empirical test", *Basic and Applied Social Psychology*, Vol. 13 No. 1, pp. 93-101.

Carver, C.S. and Scheier, M.F. (1981), "The self-attention-induced feedback loop and social facilitation", *Journal of Experimental Social Psychology*, Vol. 17 No. 6, pp. 545-568.

Chatterjee, R. (2009), "Strategic pricing of new products and services", in Vithala, R.R. (Eds), *Handbook of Pricing Research in Marketing*, Edward Elgar Publishing, Northampton, MA, pp. 169-215.

Cialdini, R.B. (1985), *Influence: Science and Practice*, Scott, Foresman, Glenview, IL.

Dana, J.D. Jr (1998), "Advance-purchase discounts and price discrimination in competitive markets", *Journal of Political Economy*, Vol. 106 No. 2, pp. 395-422.

Eyal, T., Sagristano, M.D., Trope, Y., Liberman, N. and Chaiken, S. (2009), "When values matter: expressing values in behavioral intentions for the near vs distant future", *Journal of Experimental Social Psychology*, Vol. 45 No. 1, pp. 35-43.

Fromkin, H.L. (1970), "Effects of experimentally aroused feelings of undistinctiveness upon valuation of scare and novel experiences", *Journal of Personality and Social Psychology*, Vol. 16, pp. 521-529.

Gierl, H., Plantsch, M. and Schweidler, J. (2008), "The international review of retail", *Distribution and Consumer Research*, Vol. 18 No. 1, pp. 45-61.

Gollwitzer, P.M. and Moskowitz, G. (1996), "Goal effects on action and cognition", in Higgins, E.T. and Kruglanski, A.W. (Eds), *Social Psychology: A Handbook of Basic Principles*, Guilford Press, New York, NY.

Han, K. (2012a), "Effects of scarcity messages and self-monitoring on online promotion", *Journal of Institute for Social Sciences*, Vol. 24 No. 2, pp. 1-34.

Han, K. (2012b), "The moderate effectiveness on regulatory focus and prices discounts of scarcity messages", *Management Information Systems Review*, Vol. 31 No. 1, pp. 247-272.

Herpen, E., Pietersb, R. and Zeelenberg, M. (2005), "When demand accelerates demand: trailing the bandwagon", *Journal of Consumer Psychology*, Vol. 19 No. 3, pp. 302-312.

Hoeffler, S. (2003), "Measuring preferences for really new products", *Journal of Marketing Research*, Vol. 40 No. 4, pp. 406-420.

Kim, J. and Baek, M. (2014), "What scarcity message is more attractiveness, 'almost sold out' or 'limited edition'?: focused on the affiliation motivation fulfilled or unfulfilled with in-group", *The Korean Journal of Advertising*, Vol. 25 No. 3, pp. 7-32.

Kruglanski, A.W. (1996), "Motivated social cognition: principles of the interface", in Higgins, E.T. and Kruglanski, A.W. (Eds), *Social Psychology: A Handbook of Basic Principles*, Guilford Press, New York, NY.

Kruglanski, A.W., Bélanger, J.J., Chen, X., Köpetz, C., Pierro, A. and Mannetti, L. (2012), "The energetics of motivated cognition: a forcefield analysis", *Psychological Review*, Vol. 119 No. 1, pp. 1-20.

Ku, H.H., Kuo, C.C. and Kuo, T.W. (2012), "The effect of scarcity on the purchase intentions of prevention and promotion motivated consumers", *Psychology & Marketing*, Vol. 29 No. 8, pp. 541-548.

Lee, J., Kim, Y. and Sung, J. (2010), "Sales promotion strategy for restaurant using the scarcity message and regulatory focus", *Korean Journal of Hospitality Administration*, Vol. 19 No. 6, pp. 77-97.

Liberman, N. and Trope, Y. (1998), "The role of feasibility and desirability considerations in near and distant future decisions: a test of temporal construal theory", *Journal of Personality and Social Psychology*, Vol. 75 No. 1, pp. 5-18.

Liberman, N., Sagristano, M. and Trope, Y. (2002), "The effect of temporal distance on level of construal", *Journal of Experimental Social Psychology*, Vol. 38 No. 6, pp. 523-535.

Lynn, M. (1992), "The psychology of unavailability: explaining scarcity and cost effects on value", *Basic and Applied Social Psychology*, Vol. 13 No. 1, pp. 3-7.

McCardle, K., Rajaram, K. and Tang, C.S. (2004), "Advance booking discount programs under retail competition", *Management Science*, Vol. 50 No. 5, pp. 701-708.

Miller, N.E., Galanter, E. and Pribram, K.H. (1960), *Plans and the Structure of Behavior*, Holt, Rinehart and Winston, New York, NY.

Park, H. (2010), "Persuasion effects of scarcity message in online cosmetic advertising: focused on moderating effect of product type", *Family and Environment Research*, Vol. 48 No. 10, pp. 121-132.

Park, J. (2009), "The effects of the scarcity message type on the perceived value: the moderating role of regulatory focus", *Korean Business Review*, Vol. 2 No. 1, pp. 75-87.

Rogers, E.M. (1976), "New product adoption and diffusion", *Journal of Consumer Research*, Vol. 2 No. 4, pp. 290-301.

Sagristano, M.D., Trope, Y. and Liberman, N. (2002), "Time-dependent gambling: odds now, money later", *Journal of Experimental Psychology General*, Vol. 131 No. 3, pp. 364-386.

Sharma, E. and Alter, A.L. (2012), "Financial deprivation prompts consumers to seek scarce goods", *Journal of Consumer Research*, Vol. 39 No. 3, pp. 545-560.

Tang, C.S., Rajaram, K., Alptekinoğlu, A. and Ou, J. (2004), "The benefits of advance booking discount programs: model and analysis", *Management Science*, Vol. 50 No. 4, pp. 465-478.

Thomas, M., Chadran, S. and Trope, Y. (2006), "The effects of temporal distance on purchase construal", Unpublished Manuscript, Cornell University.

Todorov, A., Goren, A. and Trope, Y. (2007), "Probability as a psychological distance: construal and preferences", *Journal of Experimental Social Psychology*, Vol. 43 No. 3, pp. 473-482.

Trope, Y. and Liberman, N. (2003), "Temporal construal", *Psychological Review*, Vol. 110 No. 3, pp. 403-421.

Trope, Y., Liberman, N. and Wakslak, C. (2007), "Construal levels and psychological distance: effects on representation, prediction, evaluation, and behavior", *Journal of Consumer Psychology*, Vol. 17 No. 2, pp. 83-95.

Vallacher, R.R. and Wegner, D. (1987), "What do people think they're doing? Action identification and human behavior", *Psychological Review*, Vol. 94 No. 1, pp. 3-15.

Wakslak, C.J., Trope, Y., Liberman, N. and Alony, R. (2006), "Seeing the forest when entry is unlikely: probability and the mental representation of events", *Journal of Experimental Psychology: General*, Vol. 135 No. 4, pp. 641-653.

Yoon, S., Lee, H. and Lee, C. (2014), "The effects of limited quantity scarcity message and product type on the purchase intention: focusing on the moderating role of regulatory focus and the mediating role of processing fluency", *The Korean Journal of Advertising*, Vol. 25 No. 8, pp. 241-268.

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