Effect of the Scarcity Message Type and Sender Type on Purchase Intention in Instagram as a Distribution Channel

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Abstract

Purpose: Social networking services have been recognized as an attractive distribution channel at a time when efforts to deliver effective messages to consumers are essential amid a flood of advertisements in the multi-media era. In that sense, this study investigated the effect of the scarcity message type (limited-time vs. limited-quantity) and sender type (corporate vs. consumer) on the intention to purchase golf equipment by Instagram distribution channel. **Research design, data and methodology:** Data from 108 college students in their 20s and 30s with experience using Instagram were collected online through convenience sampling. A frequency analysis, exploratory factor analysis, reliability analysis, independent sample t-test, and two-way analysis of variance were performed using SPSS 23.0. **Results:** The results showed that limited-quantity messages induce a higher purchase intention than limited-time messages. Similarly, consumer-sent advertisements induce a higher purchase intention than corporate-sent advertisements. Further, there is no statistically significant interaction effect of the scarcity message type and sender type on the intention to purchase golf equipment. **Conclusions:** This study is meaningful in verifying consumers' purchase intention depending on the type of scarcity message and the type of sender in Instagram advertisements. The results yield significant implications for marketers and several directions for future research.

Keywords : Consumer behavior, Media marketing, Online advertisement, Social media, Distribution channel

JEL Classification Code : C83, M37, Z21

1. Introduction

1.1. Social Media as a Distribution Channel

Rapid network penetration has made it easy for consumers to access all types of information anytime and anywhere through their smartphone (Alavi & Buttlar, 2018). Social networking services (SNSs) have enabled users to communicate freely and provide them a meeting space. For companies, such spaces offer the opportunity to promote brands at low marketing costs. Thus, many companies use SNS as a marketing tool (Dubbelink et al., 2021). Instagram, a social media platform, has over one million users worldwide as of January 2022 and the highest website traffic among different SNS platforms (Statista Research, 2022). It has shifted from text-oriented communication to image- and video-based advanced communication that can visually convey messages. Moreover, Instagram posts are different

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from other SNSs because they can be searched more quickly using hashtags (#) (Zhan et al., 2020). Global corporations have been actively using Instagram to promote and sell (Lim & Yazdanifard, 2014).

The distribution channel has been defined as a path for all goods and services to reach potential end consumers (Fernando, 2022). The distribution channel may be relatively very short or long, and may appear in various ways depending on the number of intermediaries such as wholesalers, retailers, distributors, the Internet and even SNSs involved in the distribution channel (Dent, 2011). Sales may increase as the number of distribution channels connecting producers and consumers increases, but there is a risky possibility that complicated distribution channels may cause problems in systematic management. As such, the aforementioned online advertising through SNSs have been increasingly regarded as an industry standard and changing marketing strategies (Gutierrez et al., 2023). In particular, software and artificial intelligence sales technologies can be directly managed by producers without having to sell products by relying on relationships with retailers, and enable to establish a favorable customer relationship management (Fernando, 2022).

1.2. Media Marketing Strategy

The concept of scarcity is an effective marketing tool that drives consumers to make purchases (Shi et al., 2020). Regarding scarcity messages in advertisements, Aggarwal et al. (2013) found that purchase intentions are higher when there is a price discount scarcity message than when there is no such message. One example of using scarcity messages for marketing is a "limited edition" message, that is, only a limited quantity of a product is produced. Consumers perceive the product's scarcity value and want to own it to stay ahead of others, resulting in an increased desire to purchase the product (Ha, 2021). Cialdini (1984) divided scarcity messages into two types: limited-time and limited-quantity messages. Limited-time messages emphasize that products are available for a limited time by specifying the time or date, whereas limited-quantity messages highlight that a limited quantity of a product is available (Aggarwal & Vaidyannathan, 2003; Cialdini, 2008). Scarcity messages influence consumers' purchase intentions, and this influence differs depending on the message type (Aggarwal et al., 2013; Cialdini, 2008).

Specifically, owing to the difference in intrinsic properties between limited-time and limited-quantity messages (Jung & Kellaris, 2004), the limited-quantity message, unlike the limited-time message, increases the level of uncertainty about purchases due to competition with other consumers (Gierl et al., 2008). Meanwhile, Jeon et al. (2004) found that limited-quantity messages have a more positive effect on consumers' purchase intentions than limited-time messages. Thus, consumers' intentions to purchase a product may differ depending on the type of scarcity message.

In addition, Margarita (2018) asserted that the type of sender—corporate or consumer—that delivers information about the product has a significant effect on advertising. Unlike traditional media advertising, which is generally led by corporations, SNS advertisements are shared by acquaintances or anonymous people (Kartajaya et al., 2019). Kartajaya et al. (2019) demonstrated that in the past, consumers paid more attention to advertising messages provided by companies. However, they now focus more on advertising messages provided by actual users who have similar interests. Considering that various information senders exist on SNSs and consumers are unconsciously exposed to product information, there may be significant differences in the response to or acceptance of advertising messages depending on the sender type (Kountouridou & Ioannou, 2018).

1.3. Purpose of the Research

Therefore, this study aims to examine the effect on consumers' purchase intention depending on the scarcity message used and the type of sender in Instagram advertisements. It also investigates the interaction effect of these two factors. In particular, this study provides academic implications that differ from those of previous studies using experimental stimuli. Additionally, its results offer insights into establishing effective marketing strategies in a rapidly changing SNS media environment.

Also, the importance of this study would be found in the spread of smartphones and SNS. In other words, in the current situation where accessing SNS using a smartphone has become a daily routine, this study, which studied consumers' reactions to SNS advertisements, will contribute to the media advertisement market in the future. Finally, it will be a research opportunity to analyze the value of SNS as a distribution channel by applying various types of advertisement strategies (i.e., scarcity message type and sender type) beyond typical advertisements via SNSs.

2. Research Hypotheses

2.1. Effect of Scarcity Message Type (Limited-Time vs. Limited-Quantity) in Instagram Distribution Advertisements on the Intention to Purchase Golf Equipment

A scarcity message is a message that aims to increase consumers' perceived value of a product. By emphasizing

the limited quantity or opportunity available to purchase a product, scarcity messages aim to boost the intention to purchase the product (Lynn, 1989). Bae and Lee (2005) examined the effect of price discounts on consumers' purchase intentions depending on the scarcity message type (limited time or limited quantity). They found that limited-quantity messages are more effective than limited-time messages. In addition, Ku et al. (2012) found that limited-quantity messages have a greater impact on consumers' impulse purchase behavior than limited-time messages. In the case of limited-time messages, consumers can purchase a product within a given period without competing with other consumers. However, in the case of limited-quantity messages, they may not be able to purchase a product if other consumers purchase it first. Accordingly, the following hypothesis was established.

H1: A limited-quantity message will induce a higher purchase intention than limited-time messages in Instagram advertisements.

2.2. Effect of Message Sender Type (Corporate vs. Consumer) in Instagram Distribution Advertisements on the Intention to Purchase Golf Equipment

Companies that put advertisements on Instagram have been searching for appropriate message senders to convince consumers of the accuracy of product/service information and maximize advertising effectiveness (Djafarova & Bowes, 2021). Shareef et al. (2019) classified product information senders as corporate entities and non-corporate acquaintances on SNSs. Meanwhile, Kim and Jeon (2018) conducted a study on Twitter that classified information senders as corporations and consumers. Researchers have segmented information senders as corporates and consumers because "social relationships" may hold great significance in SNSs. A corporate sender is the brand's marketing department or a celebrity hired by the company, whereas a consumer sender is a consumer who communicates information about the brand or product to others (Kim et al., 2017).

A study on the effectiveness of product advertising messages depending on sender type found that consumer-sent messages result in higher recommendation intention and are more reliable and useful than corporation-sent messages (Chatterjee, 2011). Shareef et al. (2019) investigated how the message sender in Facebook advertisements has an impact on consumers' attitudes. The results showed that consumers receiving advertisement messages from acquaintances show a high level of interest, which improves advertising value and builds a positive consumer attitude.

Therefore, it can be inferred that consumers have a negative attitude toward advertisements when corporate senders exhibit their commercial intention (e.g., desire for profit) more than the intention to deliver positive information about the product. Accordingly, the following hypothesis was formulated:

H2: Consumer-sent messages will induce a higher purchase intention than corporate-sent messages in Instagram advertisements.

2.3. Interaction Effect of Scarcity Message Type and Sender Type in Instagram Distribution Advertisements on the Intention to Purchase Golf Equipment

Previous studies on word-of-mouth (WOM) and viral advertisements on social media have confirmed the interaction effect of sender and message types (Kim & Lee, 2013; Yu & Kim, 2014). Yu and Kim (2014) found that the intention to purchase products and share messages from close friends and companies on Facebook is higher than those from people who are only Facebook acquaintances. Lee et al. (2012) compared the effect of native advertisements on WOM depending on the type of social media and investigated the interaction effect of the information source and message type. The results showed that evaluation information was effective in media with strong human networks such as Facebook, whereas realistic information was more effective in media with weak human networks such as Twitter.

Considering the characteristics of companies and consumers that produce and create messages for social media advertisements (Ye et al., 2021), there may be an interaction effect of scarcity message type and the sender type. In other words, since limited-quantity and limited-time scarcity messages may differ in the degree of competition consumers perceive, consumers' purchase intentions may vary depending on the type of message sender. Accordingly, the following hypothesis was established.

H3: There will be an interaction effect of the scarcity message type and the sender type on the intention to purchase golf equipment.

3. Methodology

3.1. Participants and Procedures

To achieve this purpose, university students in their 20s and 30s who had experience using Instagram were selected as the population, and samples were taken using

convenience sampling, which is a non-probability sampling method. The minimum number of samples per group was calculated using the G-power program (Faul et al., 2009). Based on the results (significance level α=.05, power = .80, predictors = 2, number of groups = 4, effect size =.25), the minimum number of samples was 27 per group, making a total of 108 samples.

Table 1 shows participants' demographics. Using an online platform from Google, this study surveyed undergraduate and graduate students at two colleges in a metropolitan area. The experimental stimuli to which the subjects were exposed were produced and sent in the same way as the advertisements posted on Instagram. In total, 108 questionnaires were collected.

Table 1: Demographic Characteristics

| Characteristics		n	%
Gender	Male	73	67.6
	Female	35	32.4
Age	20s	70	64.8
	30s	38	35.2
Employment Status	Undergraduate	70	64.8
	Graduate	28	25.9
	Employed	10	9.3
Instagram use experience	Yes	108	100
Total		108	100

Source: This study

3.2. Study Design and Experimental Stimulus

An experimental study was designed to examine purchase intention according to the type of scarcity message and sender of a golf equipment advertisement on Instagram. Therefore, a 2 (scarcity message: limited quantity vs. limited time) × 2 (sender: corporate vs. consumer) between-subjects design was employed.

The experimental stimulation in this study was produced on the same platform as when accessing Instagram through a smartphone. The scarcity messages presented in the experimental stimuli were classified into two types: limited-time messages, which limit purchases to a specific timeframe, and limited-quantity messages, which limit the quantity of products available for purchase (Cialdini, 1985). Specifically, the limited-time message was "Special Price of the Day. Today only. Hurry up!" and the limited-quantity message was "Special price. Only 100 left. Hurry up!" The price and product information and design were identical across the experimental stimuli.

Next, the sender type was manipulated and presented according to the purpose of the experiment. For the corporate sender type, a virtual corporate account, "Golf Class," and a virtual logo were used. For the consumer sender type, four experimental stimuli were produced, each

comprising the name and profile picture of an Instagram user. Participants were randomly assigned to one of the four groups. They responded to the questionnaire of their respective groups.
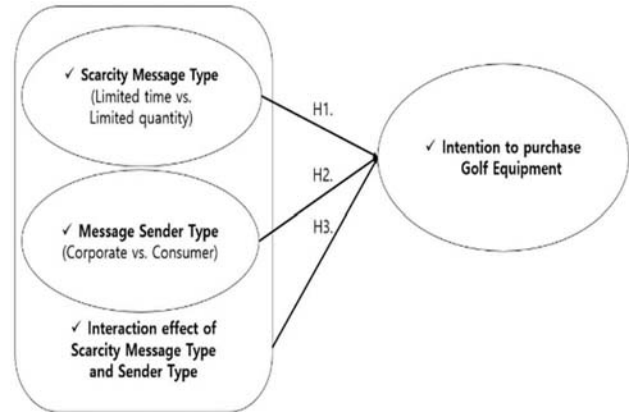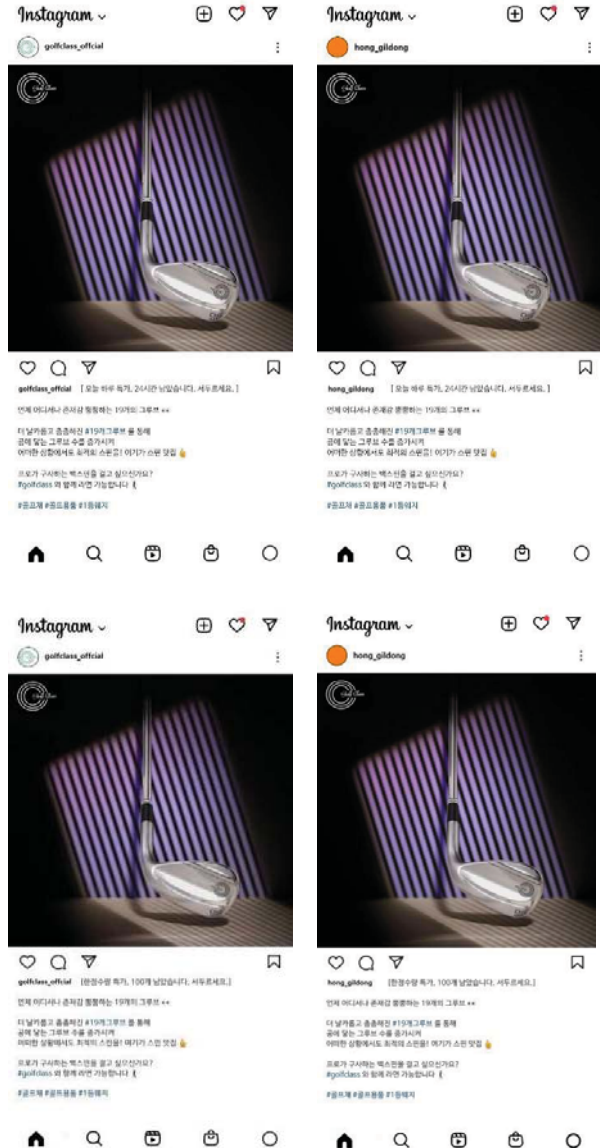

Source: Designed by authors

Figure 1: Conceptual Framework

3.3. Experimental Stimulus and Manipulation Checks (M-Checks)

A preliminary survey was conducted before the actual one with 30 university students to determine whether the participants perceived the scarcity message type and sender type as they had been manipulated (Figure 2). Those who participated in this survey did not participate in the actual one.

Following Chae et al. (2020), this study presented two operational inspection questions to confirm whether the manipulation of limited-quantity and limited-time messages was successful. This study used questions to verify the manipulation of limited-quantity messages: "There is a phrase on the Instagram post that emphasizes limited product availability." To verify the manipulation of limited-time messages, this question was used: "There is a phrase on the Instagram post that emphasizes limited time available." Next, the study adopted the four questions used in Kim et al. (2017) to inspect the manipulation of the sender type. Specifically, Phua et al. (2020) verified the manipulation of the sender type using these questions: "I think the subject of the Instagram account is a company-related person," "I think the subject of the Instagram account is a brand-related person," "I think the subject of the Instagram account is an individual," and "I think the subject of the Instagram account is a general person."

Source: Designed by authors

Figure 2: Experimental manipulation Advertisements by Scarcity Message and Sender Type on Instagram

The independent sample t-test conducted to verify scarcity message type manipulation showed that limited-quantity messages (M = 4.73, SD = .45) were higher than limited-time messages (M = 1.73, SD = .70) (t = 13.84, p = .000) in the experimental stimulation that was treated with a limited-quantity message. In the experimental stimulation that was manipulated with a limited-time message, limited-time messages (M = 4.33, SD = .72) were higher than limited-quantity messages (M = 1.66, SD = .61) (t = -10.85, p = .000).

Next, the independent sample t-test conducted to inspect sender type manipulation revealed that the corporate sender type (M = 4.70, SD = .31) was higher than the consumer sender type (M = 2.00, SD = .68) (t = 13.92, p = .000) in the experimental stimulus that was treated with the company sender type. In the experimental stimuli that was manipulated with the consumer sender type, the consumer sender type (M = 4.40, SD = .63) was higher than the corporate sender type (M = 1.80, SD = .67) (t = -10.87, p = .000). Therefore, this study conducted a subsequent analysis to confirm whether manipulation of the scarcity message type and sender type was appropriately performed.

3.4. Instruments

This study modified and supplemented the instruments used in previous studies to measure our variables. The measurement tool consisted of purchase intention (the dependent variable), scarcity messages (manipulation inspection), and message sender (manipulation inspection). All items were rated on a 5-point Likert scale ranging from 1 to 5. In addition, four questions were included to measure demographic characteristics.

Three items sourced from Machleit and Wilson (1988) and Kim and Han (2014) were modified according to this study to measure purchase intention. The questions to check the manipulation of scarcity message type were presented as two items by modifying and supplementing the items from Woo and Park (2020). To verify the manipulation of the sender type, the questions used in Kim et al. (2017) were employed. Finally, the demographic questionnaire included four questions on gender, age, employment status, and Instagram use experience.

3.5. Scale Validity and Reliability

Content validity and construct validity was verified to validate the questionnaires. First, content validity was verified by three professors in the field of sports management. Next, construct validity was verified using an exploratory factor analysis (EFA). The maximum likelihood method was used for factor extraction. Only items with a value of 1.0 or higher and factor loading of 0.5 or higher were selected by applying the direct Oblimin rotation method (Hair, 1998). According to the EFA results, both the eigenvalue and factor loading of purchase intention satisfied the statistical criteria.

Additionally, Cronbach's α was used to measure internal consistency. All items were deemed reliable since all factor loading coefficients exceeded the standard value of .70, as suggested by Nunnally and Bernstein (1994). Detailed results are reported in Table 2.

Table 2: Scale Validity and Reliability

Items	1
I will choose this product.	.928
I have a plan to purchase this product,	.949
I will buy this product again.	.934
Eigenvalue	2.634
Variance(%)	87.803
Cornbach's α coefficient	.928

Note: KMO = .760, Bartlett's test = 258.728, *df* = 3, *p* < .05. Source: this study

3.6. Data Analysis

This study analyzed data in the following manner. First, a frequency analysis was conducted to examine participants' demographics. Next, an EFA was conducted to verify the construct validity of purchase intention. Third, internal consistency was verified using Cronbach's α to assess purchase intention. Fourth, an independent sample t-test and two-way analysis of variance (ANOVA) were conducted to test this study's hypotheses. All hypothesis tests applied a significance level of α = .05 based on two-sided tests, and SPSS 23.0 was used for statistical analyses.

4. Results

4.1. Experimental Manipulation Check

Before examining consumers' purchase intention depending on the scarcity message type and sender type in Instagram advertisements, a manipulation check was conducted to confirm whether the two types were appropriately manipulated. The independent sample t-test showed that a significant difference exists between the treatments for the sender type and the scarcity message type (Table 3). Therefore, it was confirmed that the two types were manipulated as desired.

Table 3: Results of Independent Sample t-test for Manipulation Check

Manipulation		N	M(SD)	t	p
Corporate sender	Corporate Consumer	54 54	3.05(.83) 2,28(.84)	-4.67	.000***
Consumer sender	Corporate Consumer	54 54	2.89(.87) 3.63(.40)	5.603	.000***
Limited-quantitiy message	Limited-quantitiy Limited-time	54 54	3.59(.53) 2.01(.85)	11.45	.000***
Limited-time message	Limited-quantity Limited-time	54 54	2.37(.93) 3.48(.63)	-7.20	.000***

Note: *** *p* < .05. Source: This study

4.2. Descriptive Statistics

This study examined the intention to purchase golf equipment depending on the scarcity message type and the sender type in Instagram advertisements. An independent sample t-test and two-way ANOVA were conducted to determine the interaction effect of the two independent variables. Before data analysis, this study examined the normality and equal variance of the data to verify whether the data are suitable for the assumptions of variance analysis (Kwon & Pyun, 2012).

First, this study examined skewness and kurtosis to verify the normality of the data; skewness was -1.28– -.600 and kurtosis -4.65–1.54. These values are within the acceptable range of skewness (±2) and kurtosis (±7) proposed by West et al. (1995), indicating that normality was verified. Second, Box's M test was performed to verify equal variance, and the hypothesis that the variance between the groups is the same was rejected (F = .14, p < .05). However, even if the data violate the assumption of equal variance, the effect is small if the proportion of the group with the largest and smallest samples is less than 1.5 (Hair et al., 1998). Thus, the number of samples per group was 27, verifying the assumption of equal variance.

4.3. Hypothesis Verification

Hypothesis 1: A limited-quantity message will induce a higher purchase intention than limited-time messages in Instagram advertisements. Table 4 shows the results of the independent sample t-test that explored the effect of the scarcity message type in Instagram advertisements on the intention to purchase golf equipment. Evidently, a statistically significant difference existed in the purchase intention depending on the type of scarcity message. Specifically, purchase intention was higher when limited-quantity messages were shown in advertisements than when limited-time messages were used (F = 9.59, p < .001). Therefore, Hypothesis 1 was accepted.

Table 4: The Effect of Scarcity Message Type on Purchase Intention

Scarcity message type	M	SD	Equality of variances		t	df	p
			F	p			
Limited-quantity	3.43	.86	9.59	.003	4.42	106	.000
Limited-time	2.62	1.02					

Note: *** *p* < .001. Source: This study

Hypothesis 2: Consumer-sent messages will induce a higher purchase intention than corporate-sent messages in Instagram advertisements. Table 5 shows the results of the independent sample t-test that examined how the message

sender type in Instagram advertisements affects consumers' intention to purchase golf equipment. A statistically significant difference existed in the purchase intention according to the sender type. Specifically, consumer-sent messages induced a higher purchase intention than corporate-sent messages (F = 7.73, p < .001). Therefore, Hypothesis 2 was accepted.

Table 5: The Effect of Message Sender Type on Purchase Intention

Message sender type	M	SD	Equality of variances		t	df	p
			F	p			
Coporate	2.56	.98	7.73	.004	5.26	106	.000
Consumer	3.50	.85					

Note: *** p < .001. Source: This study

Hypothesis 3: There will be an interaction effect of the scarcity message type and the sender type on the intention to purchase golf equipment. A two-way ANOVA was conducted to verify the interaction effect of the scarcity message type and sender type on intention to purchase golf equipment. Table 6 shows the results by applying the scarcity message type and sender type as independent variables and purchase intention as the dependent variable. The interaction effect was not statistically significant (F = 3.09, p > .001), rejecting the third hypothesis.

Table 6: Interaction effect of the scarcity message type and sender type on purchase intention

	Type III Sum of Squares	df	Mean square	F	p
Scarcity message(**A**)	17.65	1	17.65	26.18	.000
Sender (**B**)	23.45	1	23.45	34.79	.000
A * B	2.08	1	2.08	3.09	.082

Note: *** p < .001. Source: This study

5. Discussion and Conclusions

5.1. Discussion

Advertising through social media, one of the most effective distribution channels, has long been used as a core marketing strategy for companies. In particular, SNS advertisements, which can be produced on their own at a low cost and implement various marketing strategies, would be the most attractive distribution advertisements for ever-changing consumer sentiment. In that sense, this study examined how the scarcity message type and sender type in Instagram advertisements affect the intention to purchase golf equipment and the interaction effect of the two independent variables. The results are as follows.

First, limited-quantity messages induce a higher purchase intention than limited-time messages, indicating that the type of scarcity message has a significant effect on purchase intention. Jang et al. (2015) and Lim and Ahn (2019) examined the effects of advertisement messages on luxury products and found meaningful effects of scarcity messages on consumer behavior, supporting the results of this study. Similarly, Cialdini (2008) and Aggarwal et al. (2011) investigated the relative effect of the type of scarcity message on purchase intention and found that the positive effect of limited-quantity messages on consumers' purchase intention was greater than that of limited-time messages, aligning with the results of this study.

Generally, limited-quantity messages tend to make consumers more competitive in terms of purchasing products than limited-time messages (Jun et al., 2004; Park & Ryu, 2021). That is, consumers exposed to limited-quantity messages perceive the situation as a relatively easy task (Inman et al., 1997) and are likely to make a final purchase decision without carefully evaluating the product. Furthermore, consumers exposed to limited-time messages believe that they can purchase the product as much as they want within a given timeframe (Kim & Cheong, 2019; Simonson, 1992). Therefore, it is highly likely that they will make a final purchase decision after comparing various products. Such propensities in consumer behavior may be the reason limited-quantity messages induce a higher purchase intention. Therefore, while devising social media marketing strategies, golf equipment marketers should emphasize the functional elements of golf equipment and induce a competitive sentiment that other consumers will purchase the product and the product will sell out quickly.

Next, consumer-sent advertisements induce a significantly higher purchase intention than corporate-sent advertisements, suggesting that the type of sender exerts a significant effect on purchase intention. Yoo et al. (2021) examined the impact of content material and the type of message sender on the advertising effects of sports brands. They found that consumer senders induce more positive advertising effects than corporate senders do. Moreover, Shareef et al. (2019) found a significant difference between the advertising effect of advertisements delivered by corporations and those delivered by Facebook-using individuals.

Most effects of advertisements tend to be linked to marketing promotions (Kim & Cheong, 2019; Schultz & Peltier, 2013). This may be because marketing activities aim to increase sales considering that social media can disseminate product information among the masses in a short time (Yoo et al., 2021). Accordingly, consumer-sent messages in advertisements can be perceived as having lower commerciality than corporate-sent messages. This can propagate reliability and consensus among consumers,

resulting in a high purchase intention. Therefore, companies should adopt a differentiated strategic approach using product reviews of actual consumers to formulate practical Instagram advertising strategies for golf equipment.

Finally, the interaction effect of scarcity message type and sender type was not significant in the intention to purchase the golf equipment advertised on Instagram. In other words, consumer-sent advertisements induce high purchase intention, regardless of the type of scarcity message used. This result contradicts what this study hypothesized. That is, the intention to purchase golf equipment will vary depending on the type of scarcity message used and the sender of the message. Mann and Ward (2004) conducted investigated the effect of message framing on consumers' food choices attitudes toward advertisements, particularly focusing on the moderating effect of information reliability. While highly reliable information was persuasive in a positive framing situation, there was no difference in the reliability of the information source in a negative framing situation, which partially supports the results of this study.

Based on the results of this study, more precise analysis results for advertisements through SNS could be obtained. Beyond the typical type of SNS advertisement, the value as a distribution channel was once again demonstrated through more effective advertising effects. Specifically, golf equipment marketers should consider ways to maintain a continuous relationship with consumers. Moreover, they should generate WOM using consumer-sent advertisements that can build ties with consumers rather than advertising through scarcity messages. Nevertheless, future studies should re-verify the interaction effect of the scarcity message type and sender type since there might be limitations in generalizing the presence or absence of such an interaction effect based on the fragmentary results of this study.

5.2. Conslusions

This study investigated how the scarcity message and sender type in Instagram advertisements affect the intention to purchase golf equipment and investigated the interaction effect of the independent variables. Its results extend the findings of previous studies and present useful advertising suggestions for marketers of golf equipment. As a result, these findings could offer insights into establishing effective marketing strategies in a rapidly changing SNS media environment.

However, it is not free of limitations. To compensate for these limitations, it offers several suggestions for future research. First, since this study produced virtual Instagram advertisements for golf equipment as experimental stimuli, it may be difficult to generalize this study's results for all

advertisements. Therefore, future research should investigate actual product advertisements by collaborating with companies. Second, Instagram advertisements were produced in the form of text and images. However, video-based advertisements could prove more effective than text- and image-based advertisements. Thus, future studies can compare video-, image-, and text-based advertisements. Third, this study included the scarcity message type and sender type as the independent variables. However, other exogenous variables may also affect purchase intention. Therefore, future studies should verify the covariate analysis by including exogenous variables as covariates.

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