THE EXPLORATION OF INCREASED EVOCATIVENESS FROM IMAGING TECHNIQUE IN ONLINE SHOPPING MALL

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ABSTRACT. *In the present study, the evocativeness effects of cinemagraphs were qualitatively investigated. To this end, a total of 142 test participants were divided into an experimental group of 70 participants and a control group of 72 participants. The experimental and control groups were exposed to five online shopping malls that used cinemagraphs, and five online shopping malls that used regular still images; further, open-structured interviews were conducted after conducting a survey to determine evocativeness, purchase intention, brand attitude, perceived monetary value, perceived taste, and perceived freshness. In the survey results, the experimental group recorded higher scores for all six variables compared to the control group; and most test participants evaluated the cinemagraphs positively and confirmed the effects of evocativeness.*
Keywords: Evocativeness, Cinemagraph, Imagery, Open-structured interviews

1. **Introduction.** Although the use of cinemagraphs is increasing in various advertising formats such as social media, digital signages, and websites, their effects on consumers' attitudes and behaviors have rarely been studied; consequently, little is known regarding their use in online shopping malls. So far, cinemagraph research has been largely divided into two categories: how to create a cinemagraph and measure the effects of the cinemagraph. This study can be found for the first time in that it conducted qualitative research, which conducted interviews with users who were exposed to cinemagraphs unlike the previous studies.

In this research, we expand on the concept of cinemagraphs, still images in which a minor and repeated movement occurs to give the illusion of perpetual motion while the viewer is watching an animation [1].

For this study, we attempt to assess the effects of using cinemagraphs in an online shopping environment. We first created an experimental shopping mall to collect the interview data. We then interviewed the participants to learn about their emotions and attitudes. Finally, we discuss practical implications of the findings.

2. **Theoretical Background.** Widely used in the photographic art industry, cinemagraphs are images produced by a manipulation technique that combines the features of photography and videography. The concept was first introduced in J. K. Rowling's Harry Potter series in 1997, and cinemagraphs were presented next to the articles in the Daily Prophet newspaper in the 2001 film version of the novel [3].

Cinemagraphs are made by extracting both a still image and an animated clip from a video file and combining the two [3]; the major difference between cinemagraphs and still images is that certain parts of cinemagraphs move whereas still images remain still [9]. Since people pay attention to the moving parts of cinemagraphs, they convey messages more clearly [7].

Using this characteristic of cinemagraphs, creators can insert motion into their photos [5]. Since the motion clues can provide more focused product information, cinemagraphs can describe designated objects more effectively than still images [6].

Cinemagraphs are typically in the form of animated GIF (Graphics Interchange Format) files, although these GIFs that repeat short video clips are usually created for communication rather than aesthetic purposes. In addition, whereas GIFs' repeated short moving clips seldom offer valuable experiences, cinemagraphs not only emphasize their animation but also achieve aesthetic purposes through their motion clue [8]. We posit that such characteristics provide "imagery" to potential consumers on e-commerce websites.

For this study, we used cinemagraphs to evaluate the influence of the evocativeness of product image on purchasing behavior. Consumers consider their knowledge about products important when they shop [4,10,12]. We expected cinemagraphs' motion clues to help consumers understand the key product features better than they would from simple images. Specifically, our hypothesis was that cinemagraphs would be significantly more evocative than typical product images since they increase cognitive elaboration.

3. **Research Methodology.** Although qualitative research is difficult to objectively interpret the results of interviews, it is recommended to apply them to exploratory research that explores new phenomena. Therefore, it can be useful to other researchers as a preliminary research data for cinemagraph research.

Table 1 shows the demographics of experiment participants. The experiment participants consisted of 70 participants who were shown cinemagraphs and 72 participants who were shown regular images.

Initially, there were 72 participants in the experimental group and 72 participants in the control group, starting with the same number of people in each group. In the middle of the interview, one in the experimental group answered unfaithfully and was removed from the interview data, and the other one asked to stop the experiment during the interview. Finally, interviews were conducted with 70 participants in the experimental group and 72 participants in the control group.

For the experiment, we exposed the participants to five food images: oyster, steak, champagne, cherry tomato, and chocolate fudge. In the sample image area of the experimental group viewing the cinemagraph, a part of the image is reproduced constantly as in GIF files, but the sample in the control group is shown as a still image.

We presented both the cinemagraphs and the still images in random order in both the experimental and the control groups to reduce any potential bias from the order of the stimuli. And then we conducted one-on-one, open-structured interviews in a controlled environment. In the interviews, we showed the cinemagraphs to the control group and the still images to the experimental group to allow them to compare the differences between the two. The interviews took an average of five minutes, and we recorded the participants' responses and analyzed them using Atlas.ti software (http://atlasti.com/), a qualitative data analysis tool that supports voice recording. We transcribed the voice recordings and

TABLE 1. Participants

Category		Frequency	Distribution Ratio
Gender	Male	89	62.7%
	Female	53	37.3%
Total		142	100%
Age	16 ∼ 20	12	8.5%
	21 ∼ 25	85	59.9%
	26 ∼ 30	40	28.2%
	31 ∼ 35	4	2.8%
	36 ∼ 40	1	0.7%
Total		142	100%
Highest level of education	High School	1	0.7%
	Some College	113	79.6%
	College	11	7.7%
	Higher than Graduate school	17	12.0%
Total		142	100%
Ever used online shopping malls?	Yes	116	81.7%
	No	26	18.3%
Total		142	100%
How many times have you used online shopping malls?	1 ∼ 3	106	74.6%
	4 ∼ 6	7	4.9%
	7 ∼ 9	1	0.7%
	10 ∼ 12	1	0.7%
	13 ∼ 15	1	0.7%
	No	26	18.3%
Total		142	100%
Is online shopping important?	Yes	116	81.7%
	No	26	18.3%
Total		142	100%
Are descriptions on online shopping websites important?	Yes	120	84.5%
	No	22	15.5%
Total		142	100%
Are you hungry?	Yes	39	27.5%
	No	103	72.5%
Total		142	100%

then conducted summative content analysis, which counts the number of times certain words and phrases were used [2].

4. **Analysis.**

4.1. **Consumers' attitudes and responses regarding cinemagraphs and still image stimuli.** Table 2 presents the findings of the comparative analysis of the experimental and control groups' survey responses.

As shown in Table 2, the participants in the experimental group, who saw cinemagraphs, reported higher product evocativeness than did the participants in the control group who

TABLE 2. Comparative analysis of the experimental and control group survey responses

Classification	Experimental group			Control group			t-value	Sig
	N	Mean	SD	N	Mean	SD		
Evocativeness		4.62	0.76		4.12	0.92	6.48	0.00
Purchase intention		4.45	0.84		3.80	0.86	4.20	0.00
Brand attitude		4.55	0.74		4.08	0.59	4.04	0.00
Perceived monetary value	70	4.34	0.69	72	3.94	0.71	3.79	0.00
Perceived taste		5.03	0.77		4.48	0.75	3.44	0.00
Perceived freshness		5.22	0.85		4.43	0.65	2.89	0.00

saw still images; average evocativeness in the experimental group was 4.62 (SD = 0.76) and 4.12 (SD = 0.92) in the control group.

Similarly, the experimental group reported higher purchase intention, brand attitude, perceived monetary value, perceived taste, and perceived freshness than did the control group. The t-test results for the group comparisons were all statistically significant.

4.2. **Interview results.** To analyze the most frequently used words in the interview results of 142 experiment participants, the frequency of words used by the experiment participants was recorded and the words were divided into positive and negative words.

For 70 experimental group participants, the total number of words used was 2,665 and the average number of words per person was 38.07 whereas for 72 control group participants, the total number of words used was 2,847 and the average number of words per person was 39.54, indicating that there was little difference between the number of words used by the two groups.

In the interview data of all the test participants of the experimental and control groups, the ratio of participants using positive words was 88.0% and the ratio of participants using negative words was 12.0%; and it was found that most test participants used positive words after looking at the cinemagraphs of the experimental group.

As a result of the analysis, a total of 332 words of 21 types were collected with respect to positive words whereas a total of 50 words of 13 types were collected with respect to negative words.

The types of positive words included fresh feeling (60 words total, 18.1%), can think of it in head well (53 words total, 16.0%), increased purchase intention (38 words total, 11.4%), looks lively (31 words total, 9.3%), feeling of actual presence in front (27 words total, 8.1%), want to eat (23 words total, 6.9%), better (22 words, 6.6%), gaze is focused (15 words, 4.5%), looks vivid (14 words, 4.2%), and more touching (12 words total, 3.6%). Table 3 shows the results for the positive words analyzed in the interview data of the experimental group. The interview responses of the test participants who evaluated the images of the experimental group positively are as follows.

"In the case of the champagne cinemagraph of the experimental group, bubbles come up and in the case of steak, juice comes out, right? So, should I say it was more vivid? Felt like tasting it? It looked appetizing. And it felt more real. In the case of the control group's shopping malls, they were just photos, but the experimental group's shopping malls seemed to be a little more trustworthy."

"The cinemagraphs of the experimental group seemed to be a little more dynamic, and because people's gaze is drawn to a certain focused point, it provides a direction, I think. And it looked somewhat tastier. And the water drops falling down from the cherry tomatoes or fire flames on the steak looked very good and delicious."

"When I first looked at it, I saw the cinemagraph first and then the product description, but because the image was moving, my eyes were turned toward it. Looking at the

TABLE 3. The number of positive words extracted from the interview data

Extracted Words	Description	Number of Words	% age
Freshness	Fresh feeling	60	18.1%
Can easily visualize it	Can easily visualize it	53	16.0%
Increased purchase intention	Increased purchase intention	38	11.4%
Liveliness	Looks lively	31	9.3%
Reality	Feeling of actual presence in front	27	8.1%
Want to eat	Want to eat	23	6.9%
Better	Better	22	6.6%
Draws one's gaze	Gaze is focused	15	4.5%
Vivid	Looks vivid	14	4.2%
More touching	More touching	12	3.6%
Reliability	Reliability/trust is increased	8	2.4%
Visual effect	It is visually effective	7	2.1%
Looks delicious	Looks tasty and appetizing	4	1.2%
Stimulating	Stimulating	4	1.2%
Amazing	Amazing/wonderful	3	0.9%
Expectation	Have an expectation	3	0.9%
Provides direction for product description	Helps understand/ follow the product description	3	0.9%
Attractive	Attractive	2	0.6%
Paid more attention	Feels like more attention/ effort was given	1	0.3%
Reproducibility	Feels like the product is reproduced	1	0.3%
Memorable	Memorable	1	0.3%
Total		332	100%

movement, I felt that the product was actually being delivered just like that; and the proportion of watching was leaned toward the moving pictures. With the regular images, my eyes focused longer on the product description."

The majority of interview participants used words that mostly described the food. Particularly, it was analyzed that with respect to the quality of food, they frequently used expressions like "it looked tasty or fresh". In addition, they replied that when they looked at the cinemagraphs, they were able to imagine the relevant food well in general. Furthermore, they answered that the food they just saw looked vivid as if it was right in front of them or its vividness could be felt; and they felt like they were actually shopping in a large supermarket. Moreover, it was analyzed that the majority of test participants who answered using the abovementioned responses had high purchase intentions regarding the pertinent products.

The following answers were especially noticeable in the interview: because a cinemagraph focuses people's eyes on its moving part, it plays a kind of guiding role to the people who are experiencing the cinemagraph for the first time; and since it seemed that considerable effort is required to make these cinemagraphs, their trust in the shopping mall increased.

Next, the examples of negative words that were used include: felt no difference (total of 16 words, 32.0%), looks unrealistic (total of 5 words, 10.0%), do not like the website's UI (total of 5 words, 10.0%), bad product experience in past (total of 5 words, 10.0%), do not want to buy (total of 5 words, 10.0%), and only the product reviews are used

as references (total of 3 words, 6.0%). The interview responses of test participants who evaluated the cinemagraphs negatively are as follows.

"The cinemagraphs of the experimental group drew people's attention since they are moving, but other than having additional effects, I thought they were not very different from the images of the control group."

"The videos were certainly more helpful while imagining the taste, etc. But I don't think I will make a purchase based on this. On the contrary, because I know that the videos are only the tools used by the shopping malls to make the product standout, I will feel that they are rather deceptive."

The majority of the test participants who answered negatively regarding the cinemagraphs responded that there was not a significant difference between the cinemagraphs shown to the experimental group and the still images shown to the control group. They replied that the moving parts of cinemagraphs only had additional effects and the effects were not strong enough to induce the purchase intentions. It was particularly interesting that more negative words were used in the case of the test participants who had bad memories regarding at least one product among the five food sample images. A certain participant answered in the interview that he had an experience of food poisoning from eating a mandarin in the past, and this test participant marked 1, which was the lowest score, in response to the survey questions related to the mandarins, but regarding the other four products, his answers to the survey questions were similar to the average answers of other test participants.

Furthermore, the test participants who used negative words after looking at the cinemagraphs felt that the movements in the cinemagraphs were unrealistic; and the shopping mall UI(User Interface)s having low qualities were not to their liking; and there were opinions that the reliability of the shopping mall decreased because of this.

However, among the test participants who answered negatively, no one said that their ability to imagine the products was hindered after looking at the cinemagraphs; and no one denied the evocativeness of the cinemagraphs. On the contrary, the test participants who answered negatively responded that the cinemagraphs enabled them to imagine the food better.

Since the test participants who answered negatively also replied that the cinemagraphs had an effect of improving the evocativeness, it is safe to say that there was no difference between the test participants who answered positively and those who answered negatively with respect to the increase in evocativeness of the foods represented by the cinemagraphs. In other words, this is an undeniable result showing that the two groups are agreeing that the cinemagraphs increase the evocativeness of the pictures of food products.

5. **Discussion and Conclusion.** In terms of practical contributions, by verifying that cinemagraphs in an online shopping mall environment aid in visualizing the products, the study suggested the use of cinemagraph imagery to improve the evocativeness of the food images. In addition, we found that: consumers perceived higher value of the products that were presented as cinemagraphs as compared to those that were presented as still images; cinemagraphs and still images did not significantly affect brand attitude; and the cinemagraphs of food products led to higher product purchase intentions than did still images.

Specifically, the results of this study suggest a new way of online marketing to food marketers. To improve product evocativeness in online shopping malls, it would be effective to use food cinemagraphs; in other words, it is possible to provide elaborate imagery as well as product information by utilizing motion clues and adding these to the images. For example, to highlight the freshness of a tomato, it would be effective to insert a motion clue with water trickling down the surface of the tomato to enhance the evocativeness of the imagery.

In this way, the current study examined the influences of increased image evocativeness in an online shopping mall environment from various aspects. The study is significant in that it provides food marketers with the novel idea of utilizing the increased evocativeness of imagery using cinemagraphs to expand online food sales.

As a result of qualitative research, the product produced by cinemagraph has more visual stimulus than general image, so future research will study how the visual stimulus of cinemagraph quantitatively differs from general image.

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