

The Effects of Engagement Factors of Virtual Advertising on Purchase Intention: The Mediating Role of Advertising Attitude

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Abstract

Background/Objectives: There has been an increasing interest in virtual advertising in a variety of contents. The current research aims to identify the effect of engagement features of virtual advertising in soap operas and entertainment programs on advertising attitude and purchase intention. **Methods/Statistical Analysis:** Data was collected from a group of 234 subjects who had experienced virtual advertising and analysis of covariance was conducted to the collected data. **Findings:** It was found that all the engagement features – visibility, amusement and usefulness – had a positive effect on advertising attitude. Second, visibility and usefulness exerted a positive influence on purchase intention. Third, attitude towards virtual advertising had a positive effect on purchasing intention. Finally, visibility and usefulness had a partial mediating effect, while amusement had a complete mediating effect. **Improvements/Applications:** The findings of the present research are expected to provide suggestions to find a way to enhance the effect of virtual advertising.

Keywords: Advertising Attitude, Advertising Effects, Engagement, Purchase Intention, Virtual Advertising

1. Introduction

The advent of new media together with the decline of traditional media has incurred significant shifts in advertising. Product placement and virtual advertising are gaining greater shares in the broadcasting and advertising industries, while the advertising market for converged content – which combines the content of multiple media sources – is growing. Korea, in particular, has been producing high quality broadcasting content. Terrestrial broadcasting stations account for more than 95% of total content exports and the total surplus in the content industry was reported to be \$ 185 million as of 2011. As such, quality content acts as the driving power of the broadcasting and advertising industries¹. Following the revision of the Broadcast Act in 2010, virtual advertising branched out of sports channels and emerged as a new type of advertising. Virtual advertising has been deemed feasible for mobile games, digital outdoor advertising and a multitude of other content platforms². Following

further revision of the Broadcast Act in September 2015, virtual advertising has been launched on a wider variety of platforms, including movies, news, dramas and entertainment shows and currently acts as the driving force of today's advertising market.

This introduction to virtual advertising is not limited to merely one channel in the broadcasting setting. Indeed, via Omni-channel habits involving multiple platforms such as internet TV and mobile TV, consumers are exposed to advertising in various types of programming³. By way of these Omni-channel TV programs, virtual advertising reinforces not only consumer engagement (e.g. at levels of immersion and understanding), but also influences advertising attitudes and latent purchasing power by providing consumer satisfaction and familiarity with products or brand names^{1,2}.

The purpose of this research is to identify the effects of engagement factors in the context of virtual advertising in drama and entertainment programs on the advertising attitudes and purchasing intentions of consumers. Moreover,

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how the features of engagement in the context of virtual advertising impact advertising attitudes and purchasing intentions among consumers is surveyed herein.

2. Background and Research Hypotheses

The development of virtual advertising is closely related to the emergence of new media, a category that includes two-way Internet Protocol Television (IPTV) and mobile devices. In today's environment, broadcasting is not limited to one platform, but rather relies on Omni-channels including internet TV and mobile TV. Under this system, viewers select their preferred media to view programs⁴. These innovations have allowed viewers to control the timing, location and content of their viewing experience. Virtual advertising is drawing more attention because it is an optimally suited advertising medium for such platforms. In short, virtual advertising is a future-oriented advertising vehicle, which is likely to spur the development of new advertising methods for the new media market. Virtual advertising is also applicable to the realms of mobile games and network-based online environments.

Virtual advertising is a method of advertising where in a virtual image is seamlessly displayed on a TV monitor or mobile device screen so as to appear real⁵. Virtual advertising uses computer graphics to create virtual images that do not exist at the filming location of the program being broadcast and this technology is used to bring added exposure to certain products, brands and logos within a TV show⁶.

In this context, engagement factors can be viewed as key independent variables in explaining the concept of virtual advertising. Virtual advertising looks not only at advertising expression methods, but also at the relationships between content and featured brands⁷. The definition of engagement varies among different fields of research. In advertising, engagement is defined as an aspect of effectiveness that provides greater satisfaction or higher expectations among consumers regarding a certain product or brand due to the advertised product's close relation to programming content⁸. In short, the amount or degree of brand exposure is not as important as engagement when it comes to virtual advertising in TV dramas and entertainment shows. It is crucial to consider the visual environment at the point of virtual advertising, together with the product's affiliation with the program and customer interest and satisfaction with virtual advertising.

In sum, it is important to find the most efficient point of contact to boost engagement among consumers. Thus, virtual advertising in dramas and entertainment programs needs to take into account the correlation between the potential consumers of a product and the story being broadcast, as well as the product's relation to the main character, relevance to the image and bearing on brand preference in order to maximize the advertising effects.

To boost the effects of virtual advertising in dramas and entertainment shows, it is effective to create favorable recognition and positive attitudes towards a brand. Advertising attitudes, in turn, are believed to improve purchase intention⁹. One study confirms that virtual advertising has limitations in terms of its duration of exposure, but that virtual advertising grabs the interest of consumers and greatly boosts product or brand recognition, thus showing relatively strong advertising effects⁴. Another study claims that despite its short exposure, virtual advertising creates much more positive advertising attitudes in consumers in comparison to traditional TV advertising¹⁰. Furthermore, a classic study by Lavidge and Steiner confirms the correlation between purchase intention and attitude in consumers. Purchase intention is defined as an individual's will or conviction to consume a certain product due to one's emotional attachments¹¹. A study by Engel et al. defines purchase intention as the planned future behavior of a consumer or the probability that a consumer's conviction and attitude toward a product will transform into consumption of the product¹². In the study of virtual advertising, advertising attitude and purchase intention are important variables that affect the purchase behavior of consumers.

Based on previous research, requirements to optimize the effectiveness of virtual advertising are identification of engagement factors that take into account the physical and psychological characteristics of viewers and deduction of the mediating role of the variables. However, despite the increased focus on – and explosive growth of – virtual advertising, research on the effectiveness of virtual advertising in dramas and entertainment program is scarce. Furthermore, studies on the effects of virtual advertising on the attitudes and purchase intentions of viewers are almost nonexistent. Thus, this study attempts to identify the engagement factors of virtual advertising in dramas and entertainment shows accessed through a digital media environment and to determine whether the engagement factors have an effect on advertising attitudes and purchase intentions in viewers.

According to the Korea Broadcasting Act, virtual advertising was first introduced in broadcasting in 2010³. At that point, however, research on the efficacy of virtual advertising in terms of its features and the features of customers was not yet established. Unfortunately, there is no early literature on the effects of virtual advertising on consumer attitudes. Accordingly, this paper takes a first look at the influence of engagement features on advertising attitudes and purchasing intentions in consumers. The research model shown in Figure 1 and hypotheses are as follows:

- H1: Visual engagement factors of virtual advertising in dramas/entertainment shows will have a positive effect on advertising attitude.
- H2: Amusement engagement factors of virtual advertising in dramas/entertainment shows will have a positive effect on advertising attitude.
- H3: Usefulness engagement factors of virtual advertising in dramas/entertainment shows will have a positive effect on advertising attitude.
- H4: Visual engagement factors of virtual advertising in dramas/entertainment shows will have a positive effect on purchasing intention.
- H5: Amusement engagement factors of virtual advertising in dramas/entertainment shows will have a positive effect on purchasing intention.
- H6: Usefulness engagement factors of virtual advertising in dramas/entertainment shows will have a positive effect on purchasing intention.
- H7: Advertising attitude regarding engagement factors of virtual advertising in dramas/entertainment shows will have a positive effect on purchasing intention.
- H8: The relationship between visibility engagement and purchasing intention is mediated by advertising attitude.

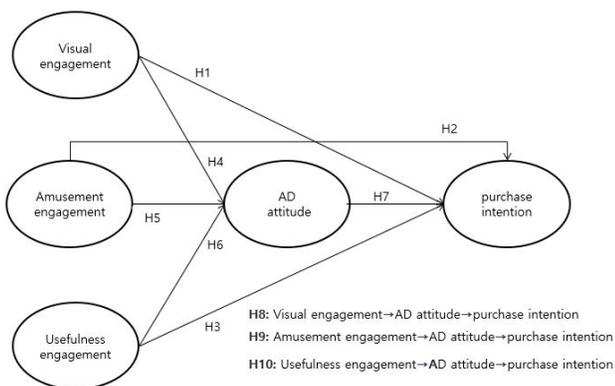


Figure 1. Research model.

- H9: The relationship between amusement engagement and purchasing intention is mediated by advertising attitude.
- H10: The relationship between usefulness engagement and purchasing intention is mediated by advertising attitude.

3. Method

3.1 Study Participants

This study was conducted among university students enrolled at H University or N University in Korea. A total of 234 students participated. Data was collected by distributing survey forms, which the students returned upon completion.

3.2 Measurement Tools

3.2.1 Engagement Factors of Virtual Advertising

In order to determine the engagement factors of virtual advertising in dramas/entertainment shows, we used a modified version of survey questions from the work of past research^{2,13,14}. The key engagement factors of virtual advertising were classified into three categories of visual, amusement and usefulness. The factors were selected based on the 15-question survey. Each survey was scored on a Likert scale of seven points. The reliability of each criteria was Cronbach's $\alpha = .918$ for visual, Cronbach's $\alpha = .935$ for amusement and Cronbach's $\alpha = .926$ for usefulness, each of which represent a moderate level of reliability.

3.2.2 Advertising Attitude

To measure advertising attitudes among viewers in the context of virtual advertising in dramas/entertainment shows, we employed a scale used by previous research^{15,16} and modified it for our purposes. There were five questions and the questions were scored on a Likert scale of seven points. Reliability was scored at a value of Cronbach's $\alpha = .952$, which indicates a moderate level of reliability.

3.2.3 Purchase Intention

To measure purchase intentions among viewers in the context of virtual advertising in dramas/entertainment shows, we used a scale from the work of¹¹ and modified

it for our purposes. There were five questions and the questions were scored on a Likert scale of seven points. Reliability was scored at Cronbach’s $\alpha = .935$, which indicates moderate reliability.

3.3 Data Collection and Analysis

The survey first asked whether the participating college students had experience with virtual advertising. The questions then dealt with engagement factors of virtual advertising, advertising attitude and purchase intentions. The dependent variables for the advertising attributes of virtual advertising in dramas/entertainment shows were determined using SPSS/PC + Windows 18.0 for factor analysis. The principal component analysis was followed by a varimax rotation to yield interpretable factors. Reliability of the questions was confirmed with the use of Cronbach’s α tests. The collected data was assessed through Confirmatory Factor Analysis using AMOS 18.0 in order to analyze our hypotheses. The research model underwent a goodness-of-fit test. Finally, a covariance structure analysis was conducted to determine whether the results supported the hypotheses.

4. Results

4.1 Exploratory Factor Analysis for the Determination of Engagement Factors for Virtual Advertising

This study conducted exploratory factor analysis to determine the engagement factors of virtual advertising in dramas and entertainment shows. The exploratory factor analysis consisted of a principle component analysis followed by a varimax rotation and only factors that yielded a minimum eigenvalue of 1 were used.

Factor analysis of the engagement factors of virtual advertising showed that the selected factors contributed to 79% of the variability in the effects of virtual advertising. Factor 1 contained five questions on the suitability, usefulness, information and timeliness of virtual advertising. Factor 1 was thus designated as “usefulness”. Factor 1 accounted for 54% of the variability and the eigenvalue was 8.213. Factor 2 contained five questions on the entertainment, amusement, originality and novelty of virtual advertising and was thus designated as “amusement”. Factor 2 accounted for 14% of the total variability and its eigenvalue was 2.199. Factor 3 contained five questions on the image clarity, graphic movement

and three-dimensional effects of virtual advertising and was called “visual”. Factor 3 accounted for 10% of variability and its eigenvalue was 1.551. Based on these results, we classified the engagement factors of virtual advertising in dramas/entertainment shows according to three categories of visual, amusement and usefulness effects as shown in Table 1.

4.2 Confirmatory Factor Analysis

This study further conducted a Confirmatory Factor Analysis (CFA) in order to determine the construct validity of the three factors obtained through exploratory factor analysis (visual effect engagement, amusement engagement and utility engagement), as well as the validity of purchase intention and advertising attitude among consumers ($\chi^2 = 416.236$ ($df = 234$, $F = .000$), $\chi^2/df = 1.779$ GFI = .900 RMR = .047, RMSEA = .051, CFI = .978, NFI = .951, and TL1 = .971).

The results showed that the Average Variance Extracted (AVE) and construct reliability were suitable for the

Table 1. Reliability analysis of measuring tools

Item	Component		
	Factor 1	Factor 2	Factor 3
Usefulness Engagement	.193	.175	.792
	.200	.336	.784
	.143	.288	.845
	.230	.275	.775
	.162	.202	.820
Amusement Engagement	.166	.830	.274
	.181	.891	.256
	.223	.883	.264
	.324	.749	.283
	.302	.795	.272
Visual Engagement	.838	.230	.166
	.862	.202	.124
	.884	.244	.157
	.860	.195	.263
	.841	.185	.227
% of Variance	54.75	14.66	10.34
% of Accumulated Variance	54.75	69.41	79.75
Eigenvalue	8.21	2.19	1.55
Cronbach’s α	.918	.935	.926

overall model. In short, visual engagement, amusement engagement, usefulness engagement, advertising attitude and purchase intention were all suitable variables backed with appropriate figures. As such, the model and the data were shown to be fit for structure equation analysis.

4.3 Structural Model and Hypothesis Verification

Prior to verifying the structural model in the hypothesis, this study first conducted a goodness-of-fit test for the model. First, the latent variables in the model were subjected to Confirmatory Factor Analysis and factors that were not good fits were eliminated. During this process, the “amusement engagement” factor was removed. The goodness-of-fit test for this study’s proposed model revealed the following results: $\chi^2 = 360.891$ ($df = 199$, $F = .000$), $\chi^2/df = 1.814$, $GFI = .905$, $RMR = .039$, $RMSEA = .053$, $CFI = .978$, $NFI = .953$ and $TLI = .972$. These are all relatively satisfactory levels as shown in Table 2.

First, we verified whether the engagement factors of virtual advertising had any effect on advertising attitude in viewers. The verification of H1 confirmed a standardized path coefficient of .318 ($t = -4.850$, $p = .000$), indicating

a positive effect of visual engagement on advertising attitude. Thus, H1 was verified as true. The verification of H2 revealed a standardized path coefficient of .428 ($t = -7.779$, $p = .000$), thus confirming a positive impact of amusement engagement on advertising attitude. Accordingly, H2 was also verified as true. The verification of H3 yielded a standardized path coefficient of .265 ($t = 6.153$, $p = .000$), which indicates positive effects. Thus, H3 was also supported.

Second, we determined whether the engagement factors of virtual advertising had any effects on purchase intention. The verification of H4 confirmed a standardized path coefficient of .179 ($t = -2.100$, $p = .036$), which indicates a positive effect and verifies H4 as true. The verification of H5 revealed a standardized path coefficient of .031 ($t = .420$, $p = .674$), which indicates no meaningful correlation between amusement engagement and purchase intention. Thus, H5 was rejected. The verification of H6 revealed a standardized path coefficient of .371 ($t = -6.293$, $p = .000$), signifying a positive effect and thereby verifying H6 as true. The verification of H7 showed a standardized path coefficient of .330 ($t = 3.715$, $p = .000$), which indicates a positive effect. Thus, H7 was also supported.

Table 2. Hypothesis testing results

	Path	Path coefficient	S.E	t	P	Confirmation
H1	Visual E→ AD attitude	.318	.066	4.850	□□□	Supported
H2	Amusement E→ AD attitude	.428	.055	7.779	□□□	Supported
H3	Usefulness E→ AD attitude	.265	.043	6.153	□□□	Supported
H4	Visual E→ Purchase intention	.179	.085	2.100	.036	Supported
H5	Amusement E→ Purchase intention	.031	.074	.420	.674	Dismissed
H6	Usefulness E→ Purchase intention	.371	.059	6.293	□□□	Supported
H7	AD Attitude → Purchase intention	.330	.089	3.715	□□□	Supported

4.4 Determining the Mediating Role of Advertising Attitude through Bootstrap Analysis

To test H8, H9 and H10, we determined whether the engagement factors had an effect on purchase intention while taking into account the mediating role of advertising attitudes in viewers. Generally speaking, to confirm a mediating role of a variable, the variable should yield a significant path coefficient. This study created a Bootstrap table to substantiate the mediator role of advertising attitude. The results of the Bootstrap analysis are shown in Table 3.

First, H8 and H10 deal with visual engagement and usefulness engagement, which are mediated by the perceived intrusiveness of advertising. The 95% confidence interval associated with advertising avoidance did not contain a 0 value determined by the null hypothesis. As such, the two variables are seen to have a mediating effect of 5%. In short, visual engagement and usefulness engagement have a partial effect on purchase intention when mediated by advertising attitude in viewers. The verification for H9 shows a 95% confidence interval associated with the effect

Table 3. Mediating effects of intrusiveness according to Bootstrap analysis

Path	Effects	Standardized coefficients	S.E.	95% Percentile confidence intervals
Visual E→ AD attitude→ Purchase intention	Total Effects	.459	.063	.337~.586
	Direct Effects	.371	.068	.249~.522
	Mediating Effects	.087	.030	.035~.164
Amusement E→ AD attitude→ Purchase intention	Total Effects	.172	.065	.063~.335
	Direct Effects	.031	.077	-.088~.193
	Mediating Effects	.141	.052	.055~.266
Usefulness E→ AD attitude→ Purchase intention	Total Effects	.284	.086	.118~.463
	Direct Effects	.179	.087	.025~.354
	Mediating Effects	.105	.041	.044~.229

of amusement engagement on purchase intention when mediated by advertising attitude. The interval also did not include any 0 values determined in the null hypothesis and thus had a relevance rate of 5%. As such, the amusement engagement factor is shown to have a complete mediating effect on the purchase intentions of viewers when mediated by advertising attitude.

5. Discussion and Conclusion

The outcomes of this study provide effective verification of the advertising effects of virtual advertising in dramas and amusement shows. Because research in this field is scarce, this study provides significant theoretical implications. Furthermore, the results mentioned here are meaningful insofar as they uncover the engagement factors of virtual advertising and determine the effects of the three categories of engagement factors - visual, amusement and usefulness - on purchase intentions and advertising attitude in consumers. This section summarizes the significance of this theoretical framework and offers several implications for future research.

First, this paper analyzes virtual advertising in terms of engagement factors, which is a useful framework for

the creation of diverse virtual advertising programs. Since its advent in 2015, virtual advertising in Korea has been featured in a wide variety of programs based on storytelling and/or new advertising methods. Furthermore, 3D and other multidimensional advertising has become increasingly popular in the context of new media. Thus, the framework offered in this study is a useful point of reference in developing novel creative advertising programs. In short, this study determines the characteristics of virtual advertising in dramas/entertainment shows and clarifies consumer perception, which is extremely useful for advertising executives and creative directors in that it provides a standard for effectiveness.

Second, we determined the effects of engagement factors of virtual advertising on advertising attitudes and purchase intentions in consumers. This is a great advantage for creative directors in the field because it provides useful suggestions for creative strategies and various advertising expression methods. According to the outcomes of this study, engagement factors of virtual advertising in dramas/entertainment shows have a positive impact not only on advertising attitudes, but also on the purchase intentions of viewers. Indeed, we are able to codify a specific standard for factors that impact viewer attitudes and purchase intentions^{17,18} based on the findings herein.

Third, this study determines the effects of engagement factors of virtual advertisement on purchase intention by taking into account the mediating role of advertising attitude in viewers. Among the engagement factors, amusement engagement was not shown to have a direct impact on purchase intention¹⁶. Yet, when mediated by advertising attitude, amusement engagement has a positive effect on purchase intention. In short, this points to the need for natural amusement factors that enable seamless incorporation of brands in virtual advertising so as not to disturb the program from the perspective of the consumer. Based on advertising attitude and purchase intention, virtual advertising boasts higher selective attention and higher effectiveness on purchase intention in comparison to other regular modes of advertisement. Accordingly, it is deemed a highly effective mode of advertising.

Furthermore, this study has practical implications in regard to virtual advertising by proposing several variables. First, the planning phase for virtual advertising in dramas and entertainment shows should consider the emotional stimulation levels of viewers, especially for 3D and other multidimensional advertising. In short, the effects of

engagement factors on changes in consumer attitudes and behavior indicate that virtual advertising and brand exposure must take place at the most opportune time, so that the advertisement is incorporated seamlessly into the overall atmosphere and story of the drama/entertainment show rather than serving to disrupt the program.

Despite these suggestions and implications, this study also suffers from limitations. One limitation of this study was due to the inability to create experimental advertisements. This study was based solely on surveys, which asked questions about the past experiences of participants with virtual advertisement. Future research will need to create experimental virtual advertisements to examine the effects of advertising expression methods and to improve the reliability of the analysis. Virtual advertising in drama/entertainment shows comes in many forms given that the location of brand exposure, program type and graphics are highly variable. These variances in virtual advertising will have differing impacts on advertising effects. Accordingly, further research into this field will need to confirm the differing impacts by examining each type of virtual advertising.

6. References

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