

On the Effect of Engagement Attributes of Virtual Advertising on Advertising Avoidance: The Mediated Effects of Perceived Intrusiveness

Yun Seul, Choi¹ and Seung Yeob, Yu^{2*}

¹Dept. of Advertising & Public Relations,
Namseoul University 91, Daehak-ro,
Seonghwan-eup, Seobuk-gu, Cheonan-si,
Chungnam, 31020, Korea
Yunseul27@gmail.com

²Dept. of Advertising and Public Relations,
Namseoul University 91, Daehak-ro,
Seonghwan-eup, Seobuk-gu, Cheonan-si,
Chungnam, 31020, Korea
ysyeob@hanmail.net

Abstract

Background/Objectives: Introduction of a novel type of media as well as shrinking conventional media has greatly changed the structure and criteria of advertising media. Thus, virtual advertising is expected to bring vitality to advertising market by gaining recognition for its necessity as a new type of advertising. The purpose of this study was to examine the influence that the engagement components of virtual advertising in various programs would have on perceived intrusiveness and advertising avoidance.

Methods/Statistical Analysis: Data was collected from a group of 296 subjects who had experienced virtual advertising and analysis of covariance was conducted to the

collected data. For the method of data collection, we used the conventional survey method involving the distribution of questionnaires to the subjects, explanation to subjects, and collection of questionnaires.

Findings: First, we verified the relationship between engagement attributes of virtual advertising and perceived intrusiveness. For the hypothesis 1, 2 and 3 were supported. Second, we verified the relationship between virtual advertising engagement attributes and advertising avoidance. For the hypothesis 4 and 6 were supported. However, Hypothesis 5 was rejected. Also, Hypothesis 7 was supported. Furthermore, the visibility and usefulness engagement have a partial effect on purchase intention when mediated by perceived intrusiveness. Amusement engagement factor is shown to have a complete mediating effect on the advertising avoidance of viewers when mediated by perceived intrusiveness.

Improvements/Applications: The results of this study will provide theoretical implications of the advertising effect of virtual advertising in drama and entertainment programs.

Key Words : Virtual Advertising: VR Content: Engagement Attributes: Perceived Intrusiveness: Advertising Avoidance.

1 Introduction

A novel type of advertising has been recently developed through content convergence between media in the field of broadcasting and advertising. In the meantime, broadcasters have been actively producing digital broadcasting contents. In particular, terrestrial broadcasting generates over 95% of exports through VOD and on-line contents¹. Therefore, development and introduction of new advertising types suited to digital media environment can be an important factor for sales revenue of broadcasting companies. In this context, virtual advertising is huge attention from both marketers and advertisers. After the amendment of the Broadcasting Act in September 2015, virtual advertising was introduced into various programs such as movies, news, dramas, entertainment programs, etc². Thus, virtual advertising is expected to bring vitality to ad-

vertising market by gaining recognition for its necessity as a new type of advertising.

Virtual advertising is a technique to make virtual images that do not exist in reality look like real advertising through digital device³. Virtual advertising can create virtual images in broadcast programs to naturally expose products, brands, logos, etc.². Recently, broadcasting media environment is applying omni-channel method, such as internet and mobile, etc, which facilitates production of virtual advertising and measurement of advertising effect^{4,5}.

Under those circumstances, virtual advertising has features such as limitlessness of time and space, ease of target advertising, multimedia function, etc. Virtual advertising helps reduce adverse reaction towards advertising and allows viewers to watch programs optimized for the time and space that they want. Moreover, virtual advertising is expanding its applications even in multimedia environments based on mobile games and networks⁴. With such features, industries have a heightened interest in virtual advertising, and academic research on virtual advertising has been vigorously carried out. Furthermore, some studies have recently examined the effects of new forms of virtual advertising⁶.

Advertisers and marketers believe that the advertising effect would be increase by virtual advertising because consumers' attention and awareness can be strengthened despite limitation to exposure standards for virtual advertising⁷. Additionally, they considered that TV advertising would be more effective than virtual advertising on the premise that TV advertising could be avoided⁸. However, there are also side effects of virtual advertising. Virtual advertising can cause indifference of adopters who watch programs through excessive exposure, or may cause negative feelings such as irritation. Particularly, virtual advertising featured in highly immersive drama and entertainment programs increases the likelihood of advertising avoidance by viewers because it can lower the immersion of viewers and invite advertizing intrusiveness. Therefore, it would be important to understand the relationship between intrusiveness and advertising avoidance in order to effectively execute virtual advertising implemented in various programs in accordance with the revised Broadcasting Act.

In this study, we intended to explore some variables affecting the perceived intrusiveness and advertizing avoidance of virtual ad-

vertising and examine the influence among each variable. In particular, we tried to consider the characteristics of virtual advertising which tended to be more intrusive than general advertising. Intrusiveness is the extent by which advertising interferes with the flow of programs and articles, etc.⁹. So far, there is little study investigating the influence that the intrusiveness of virtual advertising would have on advertising effect. Thus, this study predicted that perceived intrusiveness of virtual advertising would affect the advertising avoidance. Meanwhile, the engagement factor was defined as independent variable of virtual advertising. Most studies on engagement deal with the effects of engagement for advertising products. Engagement is an important variable when the customer characteristics recently witnessed in the Internet media environment are considered. Virtual advertising should take into account the advertising exposure time, advertising exposure location, advertising creative factors, depending on how the contents are deployed. In addition, brand type and product line should be considered based on the preference of listeners or audience. As such, virtual advertising need to be executed by determining all the contexts and involvement among consumers, programs, and products (brands). In other words, it is important to identify key engagement elements among the subjects and to find the most efficient contact points¹⁰. Particularly, drama and entertainment programs, executed in accordance with the Enforcement Ordinance enacted newly, are highly intrusive to viewers, unlike existing virtual advertising. For instance, consumers are involved in story development, conflict among characters, charm of characters, visual elements, auditory elements, etc, to focus on story and are also involved in information from external environment while watching a drama. Therefore, it is necessary to determine the engagement factors, depending on characteristics of programs and adopters, and to explore measures for mitigating perceived intrusiveness and advertising avoidance in order to increase the effectiveness of virtual advertising¹¹. However, there have been very few studies that proved the effectiveness of virtual advertising in spite of heightened interest in virtual advertising. Furthermore, there is no study at all which investigated the effect that intrusive characteristics of virtual advertising would have on advertising avoidance. The purpose of this study was to examine the influence that the engagement components of virtual advertising in various

programs would have on perceived intrusiveness and advertising avoidance.

Thus, this study presented the following hypotheses as shown in figure 1.

H1: Visibility engagement factor of virtual advertising shows will have a negative effect on perceived intrusiveness.

H2: Amusement engagement factor of virtual advertising shows will have a negative effect on perceived intrusiveness.

H3: Usefulness engagement factor of virtual advertising shows will have a negative effect on perceived intrusiveness.

H4: Visibility engagement factor of virtual advertising shows will have a negative effect on advertising avoidance.

H5: Amusement engagement factor of virtual advertising shows will have a negative effect on advertising avoidance.

H6: Usefulness engagement factor of virtual advertising shows will have a negative effect on advertising avoidance.

H7: Perceived intrusiveness regarding engagement factors of virtual advertising shows will have a positive effect on advertising avoidance.

H8: The relationship between visibility engagement and advertising avoidance will be mediated by perceived intrusiveness.

H9: The relationship between amusement engagement and advertising avoidance will be mediated by perceived intrusiveness.

H10: The relationship between usefulness engagement and advertising avoidance will be mediated by perceived intrusiveness.

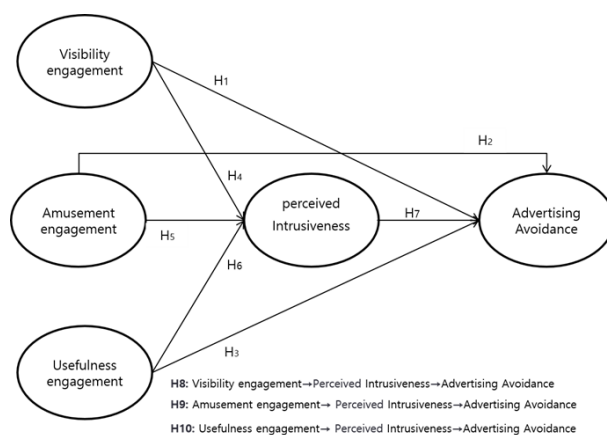


Figure 1: Research Model

2 Materials and Methods

2.1 Research subjects

The subjects in this study were students currently attending at universities located at Gyeonggi-do and Cheon-an. The total number of subjects was 296. For the method of data collection, we used the conventional survey method involving the distribution of questionnaires to the subjects, explanation to subjects, and collection of questionnaires.

2.2 Measurement tools

2.2.1 Engagement components of virtual ad

The questionnaire consisted of 15 items which were slightly revised for this study based from the scale used in the study by of ^{2,3} in order to measure the engagement components for virtual advertising in dramas and entertainment programs. Based on the results of this study, a set of 15 items were organized on a Likert type 7-point scale for measurement by adding such factor questions as graphics, images, entertainment, and fitness, and so on, suitable for virtual advertising types in dramas and entertainment programs. The analysis of the reliability of the scale showed the following figures: Cronbach α =.932 for visibility, Cronbach α =.913 for amusement, and Cronbach α =.928 for usefulness, all of which were obtained at a good level.

2.2.2 Perceived intrusiveness

A set of 5 items were organized in such a way so as to be suited to virtual advertising by considering the scale of ¹² in order to measure the perceived intrusiveness towards virtual advertising in dramas and entertainment programs. The measurement was performed based on a Likert type 7-point scale. The results of scale reliability analysis showed Cronbach α =.957, which is a good level.

2.2.3 Advertising avoidance

A set of 5 items was a slightly revised version of the scale of ⁹ measure the advertising avoidance behaviors towards virtual advertising

in drama/entertainment. The measurement was performed based on Likert type 7-point scale. The results of scale reliability analysis showed Cronbach $\alpha=.934$, a good level.

2.3 Data collection and analyses

First, the questionnaires were designed to examine whether university students had any experience with virtual advertising. Second, the items of visibility, amusement, and usefulness, the attributes of engagement of virtual advertising, were added. Third, data was collected to measure perceived intrusiveness and advertising avoidance.

First, a factor analysis was conducted using the SPSS/PC+ Windows 21.0 to examine the sub-factors of advertisement attributes of virtual advertising in drama programs. A factor analysis was performed to determine sub-factors by using the principal component analysis method and the VARIMAX rotation method. We used Cronbach to verify the reliability of the scale used in the questionnaire items. Second, we verified the goodness-of-fit of research model through confirmatory factor analysis(CFA) using the AMOS 21.0 to verify the hypotheses on the collected data, Finally, the analysis of covariance structure was conducted to verify the hypotheses established in this study.

3 Results and Discussion

3.1 Exploratory factor analysis(EFA)

This study conducted an exploratory factor analysis to determine the engagement attributes 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 the factors that yielded a minimum eigenvalue of 1 were used.

The factor analysis of the engagement attributes of virtual advertising showed that the selected factors contributed to 80% of the variability in the effect of virtual advertising. Factor 1 contained five questions on the suitability, usefulness, information and timeliness of virtual advertising. Factor 1 was thus named as "usefulness." Factor 1 accounted for 53% of the variability and the eigen-

value was 8.020. 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 16% of the total variability and its eigenvalue was 2.317. Factor 3 contained five questions on the image clarity, graphic movement and three-dimensional effects of virtual advertising and was called "visibility." Factor 3 accounted for 11% of variability and its eigenvalue was 1.594. Based on these results, we classified the engagement attributes of virtual advertising in dramas/entertainment shows according to three categories of visibility, amusement and usefulness effects.

3.2 Confirmatory factor analysis(CFA)

In this study, we conducted the confirmatory factor analysis(CFA) on the measurement items for the engagement attributes of visibility, amusement and usefulness, and the features of perceived intrusiveness and advertising avoidance which were identified from the exploratory factor analysis(EFA) in order to verify construct validity of those measurement items.

First, the items that degraded the goodness-of-fit of the model were first removed through confirmatory factor analysis on the latent variables and the constructed measurement model. After this data refinement process, 5 items of media advertising avoidance were removed ($\chi^2=417.428$ ($df=214$, $p=.000$), $\chi^2/df=1.951$ GFI=.903 RMR=.050, RMSEA=.057, CFI=.973, NFI=.945, TL1=.966). In general, the goodness index can be considered in the following criteria: the model can be considered to be a good one if RMR is close to 0; GFI is equal to or exceeding .90; NFI is equal to or exceeding 0.90; and CFI is equal to or exceeding 0.9. If RMSEA is .06 or less 13. Based on these standards, the research model of the current research was verified as good. In addition, the reliability of all the concepts was found to be 0.7 or higher, securing the convergent validity, and therefore the model was acknowledged by satisfying the threshold values for overall fitness evaluation indexes. The results of analysis showed that the overall goodness-of-fit of the model was recognized based on the average variance extracted (AVE) and construct reliability. Moreover, it could be interpreted that the concepts of visibility, amusement and usefulness engagement, perceived

intrusiveness, and advertising avoidance of virtual advertising was appropriate, and therefore it can be considered that there would be no problem in analyzing the structural equation model.

Table 1: Results of Confirmatory Factor Analysis

Factor Name	Path		Estimate	S.E.	C.R.	P	Standardized Coefficients	AVE	CR
Visibility Engagement	VE5	← Visibility	1.000	-	-	-	.769(.289)	.707	.923
	VE4	← Visibility	1.152	.067	17.180	***	.807(.249)		
	VE3	← Visibility	1.169	.069	16.877	***	.883(.185)		
	VE2	← Visibility	1.201	.074	16.251	***	.858(.332)		
	VE1	← Visibility	.945	.066	14.279	***	.773(.332)		
Amusement Engagement	AE10	← Amusement	1.000	-	-	-	.837(.257)	.272	.930
	AE9	← Amusement	1.012	.046	22.068	***	.819(.173)		
	AE8	← Amusement	1.180	.051	22.945	***	.949(.127)		
	AE7	← Amusement	1.141	.051	22.170	***	.928(.414)		
	AE6	← Amusement	1.037	.052	19.959	***	.880(.351)		
Usefulness Engagement	UE15	← Usefulness	1.000	-	-	-	.827(.246)	.719	.927
	UE14	← Usefulness	1.216	.056	21.649	***	.924(.498)		
	UE13	← Usefulness	1.192	.053	22.298	***	.945(.152)		
	UE12	← Usefulness	1.147	.063	18.330	***	.839(.228)		
	UE11	← Usefulness	1.114	.052	21.294	***	.905(.415)		
Perceived Intrusiveness	PI5	← Perceived Intrusiveness	1.000	-	-	-	.886(.373)	.726	.929
	PI4	← Perceived Intrusiveness	.901	.028	31.884	***	.877(.250)		
	PI3	← Perceived Intrusiveness	1.061	.046	23.063	***	.907(.261)		
	PI2	← Perceived Intrusiveness	.816	.039	20.893	***	.861(.261)		
	PI1	← Perceived Intrusiveness	.886	.045	19.488	***	.832(.293)		
Advertising Avoidance	AA4	← Advertising Avoidance	1.134	.086	13.177	***	.952(.290)	.768	.929
	AA3	← Advertising Avoidance	1.110	.049	22.617	***	.948(.115)		
	AA2	← Advertising Avoidance	1.089	.047	23.026	***	.959(.152)		
	AA1	← Advertising Avoidance	1.000	-	-	-	.979(.555)		

Note. Visibility Engagement; VE, Amusement Engagement; AE, Usefulness Engagement; UE, Perceived Intrusiveness; PI, Advertising Avoidance; AA.
***p<.001

3.3 Structural model and verification of hypotheses

In this study, we conducted verification of fitness of the model in order to verify the hypotheses established through the path coefficient obtained from the structural equation model analysis. We verified the fitness of the model presented in this study as shown in table 1, and the results showed that the fitness indices were GFI=.900, RMR=.044, RMSEA=.059, CFI=.971, AGFI=.860, NFI=.945, TL1=.963, indicating a relatively satisfactory level.

First, we verified the relationship between engagement attributes of virtual advertising and perceived intrusiveness. For the Hypothesis 1, the results of verification showed that the standardized path coefficient between visibility engagement and perceived intrusiveness was $-.264(t=-2.892, p=.004)$, having a negative (-) influence, and therefore Hypothesis 1 was supported. For the Hypothesis 2, the results of verification showed that the standardized path coefficient between amusement engagement and perceived intrusiveness was $-.337(t=-5.301, p=.000)$, having a negative (-) influence, and therefore Hypothesis 2 was supported. For the Hypothesis 3, the results of verification showed that the standardized path coefficient between usefulness engagement and perceived intrusiveness was $-.290(t=-4.022, p=.000)$, having a negative (-) influence, and therefore Hypothesis 3 was supported.

Second, we verified the relationship between virtual advertising engagement attributes and advertising avoidance as shown in table 2. For the Hypothesis 4, the results of verification showed that the standardized path coefficient between visibility engagement and advertising avoidance was $-.247(t=-3.705, p=.000)$, having a negative (-) influence, and therefore Hypothesis 4 was supported. For the Hypothesis 5, the results of verification showed that the standardized path coefficient between amusement engagement and advertising avoidance was $.020(t=.426, p=.670)$, which did not have a significant influence, and therefore Hypothesis 5 was rejected. For the Hypothesis 6, the results of verification showed that the standardized path coefficient between usefulness engagement and advertising avoidance was $-.126(t=-2.403, p=.016)$, having a negative (-) influence, and therefore Hypothesis 6 was supported. For the Hypothesis 7, the results of verification showed that the stan-

standardized path coefficient between perceived intrusiveness and advertising avoidance was .518 ($t=10.501$, $p=.000$), having a positive (+) influence, and therefore Hypothesis 7 was supported.

Table 2: Results of Analysis of Hypotheses

Hypothesis	Path	Path coefficient	S.E	t	p	Confirmation
H1	Visibility Engagement $\rightarrow$ Perceived Intrusiveness	-.264	.091	-2.892	.004	Accept
H2	Amusement Engagement $\rightarrow$ Perceived Intrusiveness	-.337	.064	-5.301	***	Accept
H3	Usefulness Engagement $\rightarrow$ Perceived Intrusiveness	-.290	.072	-4.022	***	Accept
H4	Visibility Engagement $\rightarrow$ Advertising Avoidance	-.247	.067	-3.705	***	Accept
H5	Amusement Engagement $\rightarrow$ Advertising Avoidance	.020	.048	.426	.670	Reject
H6	Usefulness Engagement $\rightarrow$ Advertising Avoidance	-.126	.052	-2.403	.016	Accept
H7	Perceived Intrusiveness $\rightarrow$ Advertising Avoidance	.518	.049	10.501	***	Accept

*** $p < .001$

3.4 Mediated effects in bootstrap

First, H8 and H10 deal with visibility engagement and usefulness engagement, which are mediated by the perceived intrusiveness of advertising as shown in table 3. 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, visibility and usefulness engagement have a partial effect on advertising avoidance when mediated by perceived intrusiveness in viewers. The verification for H9 shows a 95% confidence interval associated with the effect of amusement engagement on advertising avoidance when mediated by perceived intrusiveness. 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 advertising avoidance of viewers when mediated by perceived intrusiveness.

Table 3: Results of Bootstrap

Path	Effects	Standardized Coefficients	S.E.	95% Percentile Confidence Intervals
H8. Visibility Engagement → Perceived Intrusiveness → Advertising Avoidance	Total Effects	-.276***	.068	-.167 ~ -.440
	Direct Effects	-.126***	.044	-.206 ~ -.037
	Indirect Effects	-.150***	.051	-.288 ~ -.177
H9. Amusement Engagement → Perceived Intrusiveness → Advertising Avoidance	Total Effects	-.155**	.005	-.041 ~ -.269
	Direct Effects	.020	.045	-.081 ~ .093
	Indirect Effects	-.175**	.045	-.305 ~ -.033
H10. Usefulness Engagement → Perceived Intrusiveness → Advertising Avoidance	Total Effects	-.384**	.116	-.171 ~ -.679
	Direct Effects	-.247**	.081	-.401 ~ -.106
	Indirect Effects	-.137**	.070	-.311 ~ -.201

Note. The visibility and usefulness engagement have a partial effect on advertising avoidance when mediated by perceived intrusiveness.

Also, the amusement engagement factor has a complete effect on advertising avoidance when mediated by perceived intrusiveness.

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

4 Concluding Remarks

The results of this study will provide theoretical implications of the advertising effect of virtual advertising in drama and entertainment programs. In addition, the present study might be significant in that it examined the relationship between the engagement attributes of visibility, amusement and usefulness on one hand and perceived intrusiveness and advertising avoidance on the other. Based on these theoretical implications, practical implications can be presented as follows:

First, we proposed a standard for using virtual advertising in various programs by understanding the characteristics of virtual advertising in drama and entertainment programs based on the concept of engagement. Most of the virtual advertising produced after 2010 were found to be of a type of simple exposure used in sports game telecast. These programs would not involve the story or context of contents, and, thus, the types of virtual advertising were strictly limited. However, various types of virtual advertising, including 3D or stereoscopic virtual advertising, have been produced in many different ways as the Broadcasting Act was amended in 2015, which has led to stimulation of virtual advertising. Thus, selection of effective virtual advertising by advertisers and advertisement producers could be established by examining the advertisement attributes of virtual advertising in drama/entertainment programs as considered in this study and identifying the concepts

and the perception of users.

Second, the results of the present research are expected to help the working-level personnel making virtual advertising. The implications can be useful in the course of advertisement production and in the process of utilizing new contents, creative strategies and methods of message expressions. This study examined the relationships among the variables affecting advertising attitude, perceived intrusiveness and advertising avoidance behavior, depending on characteristics of virtual advertising. It was found that perceived intrusiveness and advertising avoidance, as well as advertising attitude, were significantly influenced by the engagement attributes of virtual advertising in drama/entertainment programs. This suggests that it would be necessary to explore the measures capable of mitigating the negative perception of viewers and preventing interference with program viewing in the course of seeking sensible and creative implementation methods, considering that virtual advertising is exposed to viewers within a very short time in various programs.

Third, this study is significant in that it explored the measures to reduce advertising avoidance through virtual advertising by examining the relationship among variables that might affect the advertising avoidance behavior: engagement attributes of virtual advertising in dramas and programs. Virtual advertising has great advantage of reducing advertising avoidance or zapping of viewers who turn channels during advertising time. Furthermore, it attracts greater attention through selective attention of customers compared to ordinary advertising. Therefore, virtual advertising can be used actively in various fields. However, high involvement and immersion of viewers are important, depending on the story and situation setting of programs, for contents such as drama and entertainment. Thus, virtual advertising such as 3D should reflect situational factors of viewers who watch programs by considering the experience and level of stimulation arising from sensory stimulus. In other words, the results of perceived intrusiveness and advertising avoidance behavior, depending on virtual advertising attributes, suggest that proper virtual advertising production and proper exposure time would be necessary to prevent drama/entertainment programs from interfering with the context.

It should be admitted that there are limitations of the study

despite the theory and practical implications of this study. First, it is a limitation for experimental advertising. In this study, we examined the perceived intrusiveness and advertising avoidance behavior of viewers, depending on their experience with virtual advertising in drama and entertainment programs. Future studies, however, will need to assure reliability in actual production of experimental materials by analyzing varying advertising effect in various expression of virtual advertising.

Second, this study did not consider different characteristics of different types of virtual advertising. Virtual advertising in drama /entertainment programs might have different characteristics which vary depending on exposure location, program types, and graphic types. Different virtual advertising will have different impact on the advertising effect, depending on its type. Thus, it would be necessary to verify differences in advertising effect by classifying the types of virtual advertising and programs so as to analyze causal relation precisely.

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References

- [1] BeunSnag Gyu, SooBum Lee, *A Study on Improvement and Activation of Indirect and Virtual Advertisement Regulation*. Korea Broadcast & Advertising Corporation Report, 2013.
- [2] HeeBok Lee, YoungRan Cha, *Audience Awareness of Virtual Advertising and Product Placement*. The Korea Contents Society, 2012, 12(5), pp. 91-102. <http://www.koreacontents.or.kr>
- [3] YunSeul Choi, SangPil Han, SeungYeob Yu, *The Effects of Engagement Factors of Virtual Advertising on Purchase Intention: The mediating Role of Advertising Attitude*. Indian Journal of Science and Technology, 2016, 9(39), pp. 103-110.

- [4] WoonHan Kim, *A Study of Creative Engagement in Keyword Advertising*. Korean Society for Advertising Education, 2013, 97, pp. 39-77. <http://www.riss.kr/index.do>
- [5] JungYeun Sung, SeungBae Park, *The Moderating Role of Consumer's Need-for-Touch on the Virtual Advertising Effect*. The Korean Journal of Advertising, 2012, 23(1), pp. 165-182. <http://www.riss.kr/index.do>
- [6] Pei-Yu, P, Hsien-Tung T, *How Virtual Community Participation Influences Consumer Loyalty Intentions in Online Shopping Contexts: An Investigation of Mediating Factors*. Behavior. Inf. Technology, 2011, 30, pp. 603-615.
- [7] Yang C, Yang L, Cheng T, Jou Y Chiou, S, *Assessing Mental Workload and Situation Awareness in The Evaluation of Computerized Procedures in The Main Control Room*. Nucl, Eng. Design, 2012, 250, pp. 713-719.
- [8] SooBum Lee, HeeBok Kee, MungHee Shin, *A Study on The Effectiveness and Efficiency of Advertising for Virtual Advertising Activation*. Korea Broadcast & Advertising Corporation Report, 2010.
- [9] Speck, Paul S, Michael T, Elliott, *Predictors of Advertising Avoidance in Print and Broadcasting Media*. Journal of Advertising, 1997, 26(3), pp. 61-76.
- [10] Wang, A, *Advertising Engagement: A Driver of Message Involvement on Message Effects*. Journal of Advertising Research, 2006, 46(4), pp. 355-368.
- [11] Woodside, Arch G, Suresh Sood, Kenneth E. Miller, *When Consumers and Brands Talk: Storytelling Theory and Research in Psychology and Marketing*. Psychology & Marketing, 2008, 25(2), pp. 97-145.
- [12] Edwards, Steven M, Hairoung Li, JooHyun Lee, *Forced Exposure and Psychological Reactance: The Perceived Intrusiveness of Rich Media Pop-Up Ads*. Journal of Advertising. 2002, 31(3), pp. 95-107.

- [13] Brown, M. W, Cudeck. R, *Alternative Ways of Assessing Model Fit*. In Boollen. K. A. & Log, J. S.(Ed), Testing Structural Equation Models, 1992, pp. 136-162.