

The Impacts of the Characteristics of Mobile Rich-Media Ad on Consumers Behavior

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Abstract

This study is aiming to develop a successful advertising strategy on mobile rich-media. First, the mobile rich-media advertisement's attributes could be categorized into five factors; personalization, informativeness, interactivity, credibility, and entertainment. Thus, based on the existing researches regarding attitudes toward mobile advertising, a questionnaire was constructed to illustrate the factors influencing consumers' attitudes toward mobile rich-media advertisements. The major findings indicate that first, mobile rich-media advertisement's some attributes have positively affected customers' attitude toward exposed advertisement and the brand. Also, the high level consumers' impulse buying tendency has moderating effect between brand attitude and purchase intention. Implications of the study and suggestions for the further studies are also presented in the chapter of discussion and conclusion.

Keywords: Mobile Advertising, Rich-media, Consumer Attitude, Advertising Attitude, Brand Attitude, Purchase Intention

1. Introduction

Development of information technology has consistently driven inevitable changes in means of communication between a company and consumers. In this context of development of IT technology, mobile communication technology, especially, has been regarded as a main area of marketing channel where promotional program would be delivered to consumers [1].

In the internet environment, compared to paid online advertising (display, text, and search), using third-party attributed communications sources (publicity, blogs, social networks, or other content-rich online media) increases credibility of the message and provides narrow targeting opportunities along with product relevance [2]. Mobile advertising is defined as any form of activities for a corporate to communicate with its any kind of recipients via proper interactive communicative channel including mobile devices over network [3-4]. The rapid development of mobile phones has resulted in the increasing use of mobile devices to deliver advertisements related to products and services that might be considered to be needed to the potential target consumers. Many firms in Korea have invested numerous resources in this field.

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Rich-media is a new type of two-way communication media supporting audio-visual aids where consumers could be communicating one another, participating in an event, and receiving personalized or customized information from the provider. By providing audio-visual information, which is less ambiguous but even realistic, it helps with improving consumers' purchasing experiences and minimizing uncertainty in purchasing behavior [5-6].

In one hand, In 2013, global spending on mobile advertising was approximately \$16.7 billion, and it is expected to exceed \$62.8 billion by 2017 [7]. With this rapid development of mobile advertisement technology, researchers also have had a look into the field of this mobile advertisement as a worthwhile study field of marketing. Most of the studies, however, have paid attention rather to how consumers perceive the mobile advertisement, but not to a specific type of mobile advertisement.

Therefore, those studies could be seen to have limitations to be generalized, in that the previous studies have focus on the consumers' perception, not on the characteristics of each type of mobile advertisement. This study, therefore, aims to figure out the characteristics of rich-media and then to investigate relationship among the advertisement attitude, brand attitude, and purchase intention.

2. Literature Review and Hypothesis Development

2.1. Characteristics of Mobile Rich-Media Advertising

Based on the preceding studies, the characteristics of mobile rich-media could be divided into five components, which are personalization, informativeness, interactivity, credibility, and entertainment.

Firstly, since real time communication is possible with location-based services, more consumer-friendly and personalized (or customized) information can be provided to an individual consumer [8]. This personalized or customized advertising may have encouraged target consumers to perceive usefulness of mobile advertisement in this society with overflow information, without unnecessary effort of filtering information provided to and fro.

Secondly, consumers usually request not only for any information regarding the product or services they need at the moment, but also for information which is up to date, not to waste their time of surfing online to find the relevant information. Informativeness refers to usefulness of the message provided from the advertisement [9]. The most important factor of mobile rich-media is fulfilling consumers' informational needs, accessible anywhere and anytime through the mobile phone.

Thirdly, the noteworthy feature of internet-based technology is interactivity. Interactivity here means that a consumer can exchange information actively upon receiving or being exposed to an advertisement. This interactivity takes place upon consumers' prompt respond to information received through mobile phone.

Forth component, credibility of advertisement, is defined as perception on advertisement; the extent of honesty and trustworthiness of the advertisement [10]. Credible advertisement encourages consumers to accept or embrace the information without resistance or hesitating [11]. Entertainment, lastly, can be defined as pleasure of messages [10]. Consumers not only face information provided from mobile advertisement, but also enjoy audio-visual elements within the given information through the mobile advertisement. Mobile rich-media, hereby, offers entertainment elements to consumers and does a significant role affecting consumers' attitude

2.2. Consumers' Attitude

Attitude is defined as a tendency of personal respondent to a specific object [3]. Based on the prior researches, consumers' attitude would be divided into two parts; attitude toward advertisement itself and toward brand exposed in the advertisement. According to studies of Schlosser *et. al.*, [12] and Chen [13], advertisement properties have been considered as major influencing factors forming advertisement attitude. Assuming that the properties of mobile rich-media advertisement would affect advertisement attitude, following hypotheses are proposed.

H1a: Personalization will have a positive impact on attitude toward advertisement.

H1b: Informativeness will have a positive impact on attitude toward advertisement.

H1c: Interactivity will have a positive impact on attitude toward advertisement.

H1d: Credibility will have a positive impact on attitude toward advertisement.

H1e: Entertainment will have a positive impact on attitude toward advertisement.

In the study of Ching *et. al.*, [14] and Saadeghvaziri *et. al.*, [15], the results identified a firsthand linkage in-between advertisement properties and brand attitude, which is also applicable to the context of mobile rich-media advertisement. Therefore, following hypotheses are hired.

H2a: Personalization will have a positive impact on attitude toward brand.

H2b: Informativeness will have a positive impact on attitude toward brand.

H2c: Interactivity will have a positive impact on attitude toward brand.

H2d: Credibility will have a positive impact on attitude toward brand.

H2e: Entertainment will have a positive impact on attitude toward brand.

Moreover, brand attitude is not only subjected to the impression of product itself, but also subjected to attitude toward a specific advertisement regardless of the product [16]. Thus, the hypothesis below is proposed as well.

H3: Advertisement attitude will have a positive impact on attitude toward brand

2.3. Purchase Intention

In the study of Saadeghvaziri *et. al.*, [15] and Assael *et. al.*, [17], positive linkages among advertisement attitude, brand attitude, and purchase intention were verified and the linkages are also applicable in this study as below. Thus, the hypotheses are employed as follow.

H4: Attitude toward advertisement will have a positive impact on purchase intention.

H5: Attitude toward brand will have a positive impact on purchase intention.

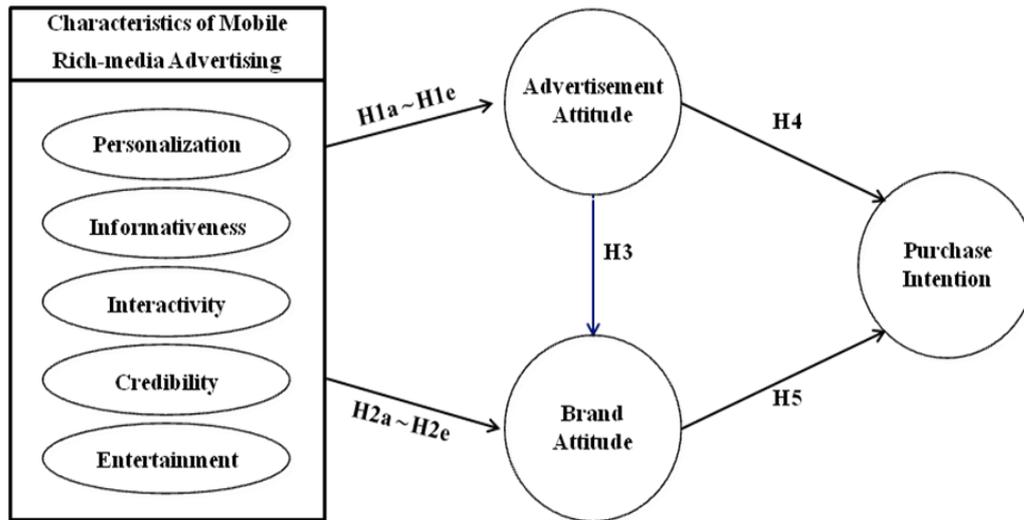


Figure 1. Research Model

3. Methodology

3.1. Sampling and Data Collection

In this study, a total of 257 questionnaires were gathered from consumers who have experience of mobile advertising. This survey was conducted for the period of September 7, 2015 to 15th of the same month, in Korea. After eliminating 8 questionnaires with missing values and irrelevant responds, the analysis was carried out with an effective sample size of 249, with 44.6 percent of male and 55.4 percent of female. And 39.8 percent of the respondents were 20s, with 23.7 percent of 30s, 21.3 percent of 40s, and 15.3 percent of 50s or older. Moreover, regarding the question of weekly exposure frequency, 47.4 percent of respondents answered once or twice weekly, 30.1 percent of three or four times, 13.7 percent of five or six times, and 8.8% of seven times or more

Table 1. Demographic Characteristics

Measure	Frequency	Percentage	Accumulative Percentage
Age	20s	99	39.8
	30s	59	63.5
	40s	53	84.7
	Over 50s	38	100.0
Total	249	100.0	
Weekly Exposure Frequency	Once or twice	118	47.4
	Three or four times	75	77.5
	Five or six times	34	91.2
	Seven times or more	22	100.0
Total	249	100.0	

3.2. Measures

The self-administered questionnaire included eight constructs as in the Table 2. The constructs in the study were measured using multi-item scales adapted from the existing

literatures. The survey instrument was developed by adopting existing validated questions wherever possible. All of the questions were measured by Likert scale (1 = strongly disagree, 5 = strongly agree).

Table 2. Measures

Construct	Item	Researcher
Personalization	1. Rich-media advertisements provide messages that match my needs	Srinivasan <i>et. al.</i> , (2002)
	2. I believe that this advertisement is customized to my needs.	
	3. The advertisements and promotions that this advertisement sends to me are tailored to my situation	
Informativeness	1. It is a good source of product information	Logan <i>et. al.</i> , (2012)
	2. It provides timely information	
	3. It is good source of up to date product information	
Interactiveness	3. supplies relevant product information	Ching <i>et. al.</i> , (2013)
	1. It makes me choose the degree of exposure and access,	
	2. It makes me inquire any question about the product or service anytime.	
Credibility	3. I can participate actively in the event provided from the provider.	Xu(2007)
	1. Personalized mobile advertisements are believable.	
	2. The advertising messages are trustworthy..	
Entertainment	3. The advertising contents are credible.	Xu(2007)
	1. The advertising contents are interesting.	
	2. It is pleasing for me to click an Ad banner.	
Advertisement Attitude	3. I enjoy advertising messages for my refreshing.	Parreno <i>et. al.</i> , (2013)
	1. Rich-media advertisement is a good marketing tool.	
	2. I think it is a good idea to use rich-media for advertisement.	
Brand Attitude	3. I like rich-media advertisements.	Pagla and Brennan (2014)
	1. I think the brand is valuable to me	
	2. I think the brand is fashionable to me	
Purchase Intention	3. I think the brand is very good to me	Weisberg <i>et. al.</i> , (2011)
	1. I will purchase the product or service from the rich-media advertisement.	
	2. I think I purchase the product or service from the rich-media advertisement.	
	3. I am willing to purchase the product or service from the rich-media advertisement.	

4. Results

4.1. Reliability and Validity

Before testing the structural model, the measurement model should exhibit satisfactory levels of reliability and validity. Confirmatory factor analysis was performed to assess the overall model fit of the measurement model using analysis of moment structure. The model fit indices showed that $\chi^2 = 253.65$, d.f. = 142, $P = 0.014$, GFI = 0.909, AGFI = 0.866, RMR = 0.061, CFI = 0.952, RMSEA = 0.056, which suggests that the measurement model reasonably fits the current data.

Table 3 shows the analysis of measures of the questionnaire, including standard factor loadings, composite reliability, and average variance extracted (AVE). The composite reliability measure that is similar to Cronbach's alpha, but preferred in structural equations modeling [18], because it estimates consistency on the basis of actual measurement loadings [19].

The results of the reliability test showed that the composite reliability's values of all the constructs exceeded the minimum requirement for reliability of 0.70, indicating that multiple measurement items were highly reliable for measuring each construct. The AVE of each latent factor ranged from 0.706 to 0.797, more than the recommended value of 0.5, suggesting that the constructs are distinct [20].

Table 3. Convergent Validity and Reliability

Factor	Item no.	Std. estimate	S.E.	C.R.	Composite Reliability	AVE
Personalization	1	0.781	0.110	8.612**	0.762	0.709
	2 ^a	0.772				
	3	0.729	0.105	8.524**		
Informativeness	1	0.705	0.066	12.404**	0.757	0.719
	2	0.830	0.062	15.267**		
	3 ^a	0.897				
Interactivity	1	0.822	0.100	9.753**	0.808	0.779
	2	0.849				
Credibility	2	0.765	0.080	11.082**	0.769	0.727
	3 ^a	0.835				
Entertainment	1	0.740	0.082	11.700**	0.750	0.706
	2	0.834	0.072	13.582**		
	3 ^a	0.820				
Advertisement Attitude	1	0.813	0.076	12.888**	0.791	0.757
	2 ^a	0.829				
Brand Attitude	1 ^a	0.881			0.801	0.768
	2	0.798	0.059	15.272**		
	3	0.779	0.062	14.666**		
Purchase Intention	2	0.934	0.051	19.402**	0.809	0.797
	3 ^a	0.918				

Notes : a = Reference variable; **p < 0.01

Moreover, in order to test discriminant validity, Hair *et. al.*, [21] suggested that the square root of AVE should be greater than the correlation between every construct. As indicated in Table 4, the square root of the AVE of each construct was larger than the correlation of the specific construct with any of the other constructs in the model.

Table 4. Discriminant Validity

	1	2	3	4	5	6	7	8
1. Personalization	0.842							
2. Informativeness	.293**	0.848						
3. Interactivity	.333**	.289**	0.883					
4. Credibility	.177**	.535**	.414**	0.853				
5. Entertainment	.005	-.078	.013	-.052	0.841			
6. Advertisement Attitude	.382**	.460**	.439**	.449**	-.066	0.870		
7. Brand Attitude	.339**	.443**	.343**	.484**	-.016	.655**	0.876	
8. Purchase Intention	.183**	.379**	.252**	.398**	-.025	.491**	.672**	0.893

Notes : **p<0.01; The square root of the average variance extracted (AVE) values are presented on the diagonal and correlations are below diagonal.

4.2. Path Analysis and Hypothesis Testing

Following measurement purification, the path relationships within the research model were analyzed by structural equation modeling using the maximum likelihood method. The overall fit indices of the structural model was acceptable ($\chi^2 = 205.08$, d.f. = 147, P = 0.000, GFI = 0.927, AGFI = 0.893, RMR = 0.063, CFI = 0.973, RMSEA = 0.042). The results are as below in Table 5.

The results show that all the components of mobile rich-media advertisement, which are personalization, informativeness, interactivity, credibility, and entertainment, have positively linked with consumers' attitude toward advertisement. As shown in the Table 4, the hypotheses, H1a ($\beta = 0.231$, $p < 0.01$), H1b ($\beta = 0.243$, $p < 0.01$), H1c ($\beta = 0.146$, $p < 0.01$), H1d ($\beta = 0.286$, $p < 0.01$), and H1e ($\beta = 0.231$, $p < 0.05$) are all supported in the study.

In the test of the impact of the characteristics of mobile rich-media advertisement on the consumers' attitude on the brand exposed through the advertisement, personalization and credibility have positive effects on the brand attitude, but other three components, informativeness, interactivity and entertainment, do not. As presented in the Table 4, the hypotheses H2a ($\beta = 0.232$, $p < 0.01$) and H2d ($\beta = 0.324$, $p < 0.01$) are accepted but H2b, H2c, and H2e are rejected.

Lastly, in the relationship among the attitude toward the advertisement itself, the attitude toward the brand which is exposed from the advertisement, and purchase intention, the results driven in this study are not far from the results of previous studies. Eventually, the hypotheses, H3 ($\beta = 0.317$, $p < 0.01$), H4 ($\beta = 0.667$, $p < 0.01$), and H5 ($\beta = 0.673$, $p < 0.01$), are supported as shown in table 4.

Table 5. Results of Hypothesis Testing

Hyp.	Independent variable	Dependent variable	Std. estimate	S.E.	C.R.	Result
H1a	Personalization	Advertisement Attitude	0.231	0.067	3.017**	Supported
H1b	Informativeness	Advertisement Attitude	0.243	0.088	2.265**	Supported
H1c	Interactivity	Advertisement Attitude	0.146	0.069	2.326**	Supported
H1d	Credibility	Advertisement Attitude	0.286	0.071	3.537**	Supported
H1e	Entertainment	Advertisement Attitude	0.231	0.055	1.957*	Supported
H2a	Personalization	Brand Attitude	0.232	0.086	2.633**	Supported
H2b	Informativeness	Brand Attitude	0.038	0.127	0.374	Rejected
H2c	Interactivity	Brand Attitude	0.067	0.094	0.701	Rejected
H2d	Credibility	Brand Attitude	0.324	0.075	3.285**	Supported
H2e	Entertainment	Brand Attitude	0.136	0.079	1.806	Rejected
H3	Advertisement Attitude	Brand Attitude	0.317	0.100	2.927**	Supported
H4	Advertisement Attitude	Purchase Intention	0.667	0.120	6.687**	Supported
H5	Brand Attitude	Purchase Intention	0.673	0.111	6.229**	Supported

Notes : *p < 0.05, **p < 0.01

5. Discussion and Conclusion

The purpose of this study is to investigate the relationship among the properties of mobile rich-media advertisement, consumer's attitude, and purchase intention. The summary of the results is as following.

First, one of the goals of this research is to identify relationship between properties of mobile rich-media advertisement and consumers' attitude toward advertisement. Personalization factor turns out to have a significant effect on advertisement attitude. This result shows that once a consumer perceives advertisement information as information that is customized or personalized to him/her, the consumer's attitude will be even positive toward the advertisement. Thus marketers should try to develop advertisement messages with great consideration on what information consumers want and need to aware about. Moreover, the results show that important factors forming favorable attitude toward advertisement are interactivity and entertainment. Credibility also has been emphasized as an important factor, which is meaning to speak that exaggerated or false advertisement can cause people to distrust against the advertisement.

Second, as in the linkage between the five properties of mobile rich-media advertisement and attitudes toward brand, personalization and credibility positively affect brand attitude, while rest of the components including informativeness, interactivity, and entertainment do not. This implies that consumers would have favorable attitude toward brand when the messages are customized and trustworthy.

Lastly, the relationship among advertisement, brand attitude, and purchase intention has been identified through a number of prior studies, and the results in this study are not far from the previous researches. Companies, eventually, try to bring consumers into the purchasing actions through the advertisement. In this context, the information provided from mobile rich-media advertisement, which is interactive comparing to normal

advertisement forcing consumers to be exposed to one-way advertising message, are more likely to be persuasive to the consumers' side.

Some choices made during this research may limit the generalization of the findings. First, since this research concentrated on the mobile rich-media advertisement, the results may not be applicable to different type of advertisements. Second, the respondents were from a limited area, from Korea. To generalize the findings of this study, therefore, more diversified random samples across region and age are suggested in the future study.

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