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경영학석사 학위논문

Impact of Endorser Type on Advertising Effectiveness for High-tech Products

광고모델 유형이 광고효과에 미치는 영향:
하이테크 제품을 중심으로

2016년 2월

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Impact of Endorser Type on Advertising Effectiveness for High-tech Products

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Abstract

As the importance of a role of endorsers became greater in advertisement for high-tech products, selecting an appropriate endorser is now considered one of the most critical capabilities of high-tech product companies. This paper contributes to this topic by examining the impact of endorser type on the advertising effectiveness for high-tech products.

In general, endorser type can be categorized into two groups - celebrity and typical consumer endorser, and both endorsers nowadays appear commonly in advertisements for high-tech products. This study has found that consumers form different attitudes toward these two different types of endorsers. In detail, consumers tend to associate attractiveness and likeability with celebrity endorser while they link similarity, trustworthiness, and expertise with typical consumer endorsers. Among these five different attitudes toward the endorser, only likeability, similarity, and expertise of the endorser turned out to have positive influence on the advertising effectiveness, including attitudes toward the advertisement, brand, and even product category.

Further, this study also took self-efficacy level of consumers into consideration in examining the relationship between the attitude toward the endorsers and advertising effectiveness, and it was revealed that self-efficacy level of consumers has moderating effects on the relationship not only between attitude toward endorsers and attitude toward advertisement but also between attitude toward endorsers and attitude toward brand. In detail, the higher self-efficacy level of

consumers weakened the relationship between attitude toward endorsers and attitude toward advertisement and brand. However, self-efficacy level did not show moderating effects on the relationship between attitude toward the endorsers and attitude toward the product category.

This study provided theoretical and practical guidelines in selecting most effective endorser in the advertisement especially in high-tech product industry. Moreover, this paper also suggests that measuring self-efficacy level of targeted customers will help selecting appropriate endorser for high-tech products in improving attitude toward the advertisement, brand, and product category.

Keywords: celebrity endorser, consumer endorser, endorser type, self-efficacy, advertisement, advertising effectiveness, high-tech products

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국문초록

본 연구는 하이테크 제품을 중심으로 유명한 광고 모델과 일반인 광고 모델의 비교를 통해 광고모델 유형이 광고효과에 미치는 영향을 분석하였다. 이를 위해, 광고 모델의 유형 및 관련 속성과 광고 효과간의 관계에 대한 문헌연구를 통해 연구모형을 설정하고 가설을 도출하였다. 가설 검증을 위해 한국 내 19세 이상 일반인을 대상으로 가상의 하이테크 제품 광고를 통해 설문 조사를 진행 하였으며, 수집된 자료를 바탕으로 SPSS 프로그램을 통해 분석을 실시하였다.

분석결과는 다음과 같다. 우선, 소비자는 광고모델 유형에 따라 다른 광고 모델에 대한 태도를 형성하는 것으로 나타났다. 소비자는 유명한 광고모델에는 매력성과 호감성을 연관시키는 반면, 일반인 광고모델에게는 유사성, 실용성 및 전문성을 연관시키는 것으로 나타났다. 하지만, 이 다섯 가지 속성 중 호감성, 유사성, 전문성 세 가지 속성만이 광고태도, 브랜드태도, 제품군태도를 포함하는 광고효과에 긍정적인 효과를 미치는 것으로 나타났다. 또한, 본 연구는 소비자의 자기효능감 수준이 광고모델 유형과 광고효과간의 관계를 조절할 것으로 예상하고 추가 분석을 실시하였다. 그 결과, 소비자의 자기효능감 수준은 모델의 호감성, 유사성, 전문성과 광고태도와의 관계 그리고 브랜드 태도와의 관계를 조절하는 것으로 나타났으나, 제품군

태도와의 관계는 조절하지 않는 것으로 나타났다. 소비자의 자기효능감 수준이 높을수록, 모델의 호감성, 유사성과 전문성과 광고태도의 관계와 브랜드태도와의 관계는 약화되는 것으로 나타났다.

본 연구는 하이테크 제품의 광고 모델 선정 시, 가장 효과적인 모델 유형을 선택할 수 있는 가이드라인을 제시할 뿐만 아니라, 타겟고객의 자기효능감 수준 파악에 대한 필요성을 제시하였다는 것에 그 의의가 있다.

주요어 : 유명인 광고모델, 일반인 광고모델, 광고모델 유형, 자기효능감, 광고효과, 하이테크 제품

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1. Introduction

Everyday people face numerous advertisements. When watching television, reading newspapers and magazines, listening to radios, getting on the bus, subway or taxi, and even when surfing on the internet, people are exposed to all different types of advertisement from the moment they wake up in the morning and to the time they go back to sleep at night.

Companies use these advertisements to change consumers' ways of thinking, behaving, and living. Advertisement that companies use refers to 'any form of nonpersonal communication about an organization, product, service, idea by an identified sponsor' where 'non-personal' involves mass media in one-way communication and 'paid' includes the space or time for an advertising that must be purchased according to the definition provided by American Marketing Association in 1963. Most of these advertisements include spokesmodels in many different forms as they play a critical role in influencing consumer attitudes towards an advertisement, brand, and product as well as consumers' willingness to purchase the product (Ohanian, 1991; Goldsmith et al., 2000; Shimp, 2010).

Spokesmodel in advertisements can be categorized into three forms - Celebrity endorser, expert endorser, and consumer endorser. (Shimp, 2010). In Korea, compared to other countries, celebrity endorser is used more than any other endorsers. About 57% of advertisements on television uses celebrity endorser in Korea whereas only 9% of the advertisements use celebrity endorser in United States. In addition, even advertisements on newspaper show more use of celebrity endorser in Korea (24%) than in

United States (10%). Korea Federation of Advertising Association provides a monthly report that ranks television advertisements in Korea in terms of consumers attitude toward the advertisement. According to the most recent result as the table below shows, 19 of top 30 advertisements (63%) and 8 of top 10 advertisements (80%) used celebrity endorsements, including actors, sport stars, etc.

[Table 1] Top 10 Ranked Television Advertisement

Rank	Advertisements (Brand/Product)	Endorser	Score
1	Samsung Galaxy Note	Consumer	5.22
2	Ottugi Cup Ramen	Celebrity (Sports Star)	5.14
3	Maxim White Gold Coffee Mix	Celebrity (Sports Star)	3.95
4	KT Olleh Giga Wifi	Celebrity (Actress)	3.08
5	SK Telecom LTEA	Consumer	3.02
6	LG U-Plus Zero Club	Celebrity (Singer)	2.97
7	Nongshim Soomi Chip	Celebrity (Actor)	2.79
8	CJ Petitzel Sweet Pudding	Celebrity (Actor)	2.67
9	OB Beer Cass	Celebrity (Singer)	2.56
10	KT Olleh Giga UHDTV	Celebrity (Actress)	2.53

Source: Korea Federation of Advertising Association (2015)

From the list of top advertisements in Korea, what we can also find interesting is that although most of the advertisements recorded a higher score with celebrity endorsers, there are also two other advertisements that ranked No.1 and No.5 with consumer endorsers, and they are both advertisements on high-tech products - smartphone and LTEA services. Looking more closely on advertisements on high-tech products, we can realize that four high-tech products advertisements were included in the top ranks, and two of them used celebrity endorsers, and the other two used

consumer endorsers. We can thus come up with question of which endorser, between celebrity endorser and consumer endorser, is more effective for advertisements on high-tech products?

While many studies have researched impact of spokesmodel on advertisements for mostly consumption goods, not many focused on the advertisements for the high-tech products. This paper thus seek to not only review various prior studies but also explore the impact of endorser type on advertisements for high-tech products. This study will also contribute by comparing the influence of celebrity endorsers and that of consumer endorsers.

The following sections of this paper are organized as follows. In Section 2, this paper reviews and discusses previous studies on the types of endorser, attributes of endorser, advertising effectiveness, and advertisement on high-tech products. Section 3 then proposes the research framework based on the main research question with hypotheses to be tested. In Section 4, survey methods used to collect data on perceived attributes for two endorsers (celebrity and consumer endorser), attitudes toward advertisement, brand, and product category. This section also explain the indices used to measure each independent and dependent variables. Moreover, descriptions on both data collection and analysis methods used in this study are provided in this section. Section 5 explains the results of the study including whether each hypothesis is confirmed or rejected. Section 6 closed up the paper with discussions of the implications, possible limitations of this study, and the suggestions for the future studies.

2. Literature Review

2.1. Endorser Type and Characteristics

There are various previous studies that discussed the types of endorsers on advertisements. Like many other studies, Friedman & Friedman (1979) explained that three types of endorsers are most widely used in advertising - 1) the celebrity, 2) the professional or recognized expert, and 3) the typical consumer.

2.1.1. Celebrity Endorser

Celebrity endorser usually refers to an individual who is known to the public for one's achievements in areas other than that of the product endorsed (Friedman & Friedman, 1979). For example, actors, actresses, sports stars, politicians, and entertainers can be classified as a celebrity endorsers when they show up in the advertisements (McCraken, 1989).

Celebrity endorsers are used most commonly because they can very easily attract consumers' attention, and thus the companies or organizations can enhance consumers' awareness on the advertisement itself, brands ,or products (Ohanian, 1990). Moreover, celebrity endorsers can transfer the values they built to the brand, and therefore, the consumers' positive attitudes toward the endorser can be transferred to the brand or product (Till & Shimp, 1998). Furthermore, numerous prior researches verified that celebrity endorsers are more effective in advertisement than any other endorsers. Friedman & Friedman (1979) found that consumers can better

recall the brand or product name when the advertisement uses celebrity endorser. Also, Mowen & Brown (1981) and Atkin & Block (1983) each also confirmed this findings when they conducted experiments comparing advertisement using celebrity and consumer endorser on alcohol and on pen, respectively.

However, marketers of the companies or organizations must be very careful in deciding whether to use celebrity endorsers because there also follows disadvantages. First of all, because the fee of using the celebrity endorser is very expensive (Kamins, 1990), the profitability can be negatively influenced. Second, when a certain celebrity endorses different brands or products at the same time, it is difficult to form brand identity (Tripp et al., 1994). Also, brand images can be harmed if celebrity endorser gets involved in unexpected scandals (Aaker & Stayman, 1990). Moreover, there also exist risks that consumers recalls the celebrity endorsers but not the brands or messages that advertisements meant to deliver.

2.1.2. Professional or Recognized Expert Endorser

According to Friedman & Friedman (1979), a professional or recognized expert endorser refers to 'an individual or group possessing superior knowledge regarding the product class endorsed'. In other words, the professional endorsers are the ones who established knowledge that are related to the product through learning, training, or experiences. It is found in previous study that consumers consider professional endorsers with expertise in certain industry or area or with strong academic background regarding the endorsed product very credible (Gotlieb & Sarel, 1991), and

consumers show positive attitudes when they believe that the endorser has expertise (Ohanian, 1990). These behaviors are shown because professional endorsers can reduce the fear toward products especially with improved technologies (Kim & Park, 2011). Considering the circumstances in Korea where there is no outstanding professional or recognized expert endorser for high-tech products in information technology industry, this paper eliminate professional endorser in testing the research hypotheses.

2.1.3. Typical Consumer Endorser

A typical consumer endorser is an individual who has no knowledge of product endorsed except the knowledge gained by a normal use of the product (Friedman & Friedman 1979). Any typical consumer can be selected as an endorser for the advertisement.

Many advertisements use this consumer endorser because when consumer believes that the endorser is similar to him or her, he or she is psychologically more attracted to the endorser (Berschied & Walster, 1969), and thus is more willing to listen to the messages delivered through the advertisement. In addition, according to the review of previous related studies by Jin & Cho (2001), there are also additional reasons in using consumer endorsers rather than other endorsers as follows - 1) consumer endorsers' testimony on the product can induce and enhance credibility from targeted consumers, 2) targeted consumers are better persuaded when endorser is more similar to them, and also 3) consumer endorsers are effective when endorsed product has advanced features than competing products but consumers do not realize its superiority. On the other hand,

there also exist negative sides of consumer endorsers. Because a typical consumer is not a professional model or usually does not have any experience in playing a role as endorser, it is difficult to deliver messages the advertisement meant to deliver. Moreover, when targeted consumer who is exposed to the advertisement winds up purchasing and experiencing the product but is not satisfied with it may show reverse effect.

2.2. Endorser Attributes

Companies or organizations select certain endorser, whether he or she is celebrity, professional, or typical consumer endorser, for a particular advertisement based on the endorser attributes that can directly and indirectly influence consumers' attitudes or beliefs on the endorser, advertisement, brand, and product. Many studies have been conducted to define these attributes, and most of them followed two models - source credibility model and source attractiveness model.

Source credibility model states that consumers form positive attitudes when they receive information from a credible source (Erdogen, 1999), and this model also explains that the effectiveness of advertisement depends on the trustworthiness and expertise (Hovland et al., 1953). Ohanian (1990) again created indices to measure the endorsers' credibility which include expertise, trustworthiness, and attractiveness. In addition to the source credibility model, some other researchers emphasized the importance of source attractiveness model which states that consumers form more positive feelings toward the advertisement or change their beliefs in positive way when endorsers are more attractive (Baker & Churchill, 1977).

McCracken (1989) defined scales to measure the attractiveness with familiarity, likeability, similarity, and attractiveness.

Based on these two models, many researchers attempted to re-define endorser attributes and sub-attributes. As table 2 shows, many of them defined credibility and attractiveness as two main attributes for endorser with attractiveness, trustworthiness, and expertise as sub-attributes for credibility and physical attractiveness, familiarity, likability, and similarity as sub-attributes for attractiveness. When these attributes were carried on to the studies conducted in Korea, researchers re-arranged the attributes considering cultural influences in Korea. Some of them defined expertise as main attributes and some other selected likability and similarity also as main attributes.

[Table 2] Endorser Attributes by Previous Researches

Researcher	Defined Endorser Attributes
Ohanian (1991)	Credibility (Attractiveness, Trustworthiness, Expertise)
Erdogan (1999)	Credibility (Attractiveness, Trustworthiness, Expertise) Attractiveness (Attractiveness, Familiarity, Likability, Similarity)
Till & Busier (2000)	Attractiveness
Goldsmith et al. (2000)	Credibility (Attractiveness, Trustworthiness, Expertise)
La Ferle & Choi (2005)	Credibility (Attractiveness, Trustworthiness, Expertise)
Shimp (2010)	Credibility (Trustworthiness, Expertise) Attractiveness (Attractiveness, Respect, Similarity)
Lee & Jung (1997)	Credibility Attractiveness

Jin & Cho (2001)	Credibility Attractiveness Expertise
Kwak & Kim (2005)	Likability Expertise Similarity
Kim (2008)	Credibility (Trustworthiness, Expertise, Visibility) Attractiveness (Attractiveness, Familiarity, Similarity, Likability)

Source: Literature review by Kim & Park (2012)

This paper, though defines main attributes as credibility and attractiveness, also considers some of the attributes explored by the researched conducted in Korea. As a results, this paper focuses on following five attributes - 1) attractiveness, 2) likeability, 3) Similarity, 4) trustworthiness, and 5) expertise. Further, this study examines the impact of each attributes on the advertising effectiveness and compares the impact when using different types of endorsers.

2.2.1. Attractiveness

Attractiveness is one of the most critical factor influence peoples' judgments on others (Ohanian, 1990), and this is also the case in advertisements. When the attractiveness of endorser is strong, consumers form more positive attitude (Baker & Churchill, 1977; Kahle & Homer, 1985). Therefore two forms of attractiveness - physical attractiveness and psychological attractiveness, and many researchers suggest that physical attractiveness is more influential in advertisements. Consumers believe that

physical attractiveness is very enjoyable (Shimp, 2010), and when the physical attractiveness of the endorser matches that of product, they form more positive attitude (Kahle & Homer, 1985).

2.2.2. Likeability

In some studies, likeability is considered as analogous to 'attractiveness' (Kahle & Homer, 1985). However, Erdogan (1999) defines likeability as 'an affection for the source as a result of the source's physical appearance and behavior'. On this basis, likeability can be considered as distinct attribute from attractiveness. In fact, Kim (2008) tested likeability distinct from attractiveness, and he found that consumers show likeability toward the product or brand when they find 'likeability' first through the endorser in the advertisement.

2.2.3. Similarity

Similarity refers to the level of similarity between the endorser in the advertisement and the consumer (McCracken, 1989; Shimp, 2010), and the similarity can be explained by comparable interests, values, etc. (Doney & Cannon, 1997). In general, people are more attracted to others who are similar to them. They tend to better communicate and more persuaded by the people who are more similar to them, and thus, consumers tend to show more positive attitude toward the endorsers who seem to be more similar to the characteristics of targeted consumers. (Kim, 2008). Similarity can be enhanced when companies select appropriate endorser for targeted consumer but it can also be reduced when selecting the wrong endorser.

2.2.4. Trustworthiness

Trustworthiness may root from the source credibility model mentioned earlier. Based on the study by Ohanian (1990), Amos et al. (2008) defined the trustworthiness as 'the degree of confidence consumers place in a communicator's intent to convey the assertions he or she considers most valid'. The endorser with high trustworthiness induced attitude changes in positive ways more than endorser with no trustworthiness (Miller & Baseheart, 1969) and even more than the expertise of the endorser (McGinnies & Ward, 1980). The endorser can gain trustworthiness by using the product he or she endorses or products from the brand he or she endorses outside the advertisement, showing affection for the brand or products, etc.

2.2.5. Expertise

Endorser's expertise is defined as 'the extent to which a communicator is perceived to be a source of valid assertions' (Ergoden, 1999). Ohanian (1990) found that consumers' response to the endorser rely directly on the endorser's level of expertise and the consumers' agreements on the recommendation provided by the endorser and that consumers who were exposed to the endorser with high expertise show more agreement than those who were exposed to the endorse with low expertise. Moreover, in the same study, expertise turned out to be the only attribute that showed statistically significant result on consumer's willingness to purchase the product.

2.3. Self-Efficacy

Self-efficacy, commonly appearing in high-tech product studies, refers to 'one's belief in one's ability to succeed in specific situations or accomplish a task (Bandura, 1977). The concept of self-efficacy roots from Everett Roger's innovation diffusion theory, a theory that 'seeks to explain how, why, and at what rate new ideas and technologies spread through cultures'. Among the factors that influence the diffusion, many previous studies defined characteristics of innovations and characteristics of adopters as two important factors that impact the diffusion rate. While the characteristics of innovations include relative advantage, compatibility, complexity, perceived risk, trial-ability, and observability the characteristics of adopters include innovativeness which comprises self-efficacy. (Rogers, 2003) This self-efficacy often appears in the studies on high-tech products, and Shin & Lee (2015) explain in their study that many previous research found that self-efficacy has impact on high-tech products. For example, Lee & Lee (2006) found that consumers who feel more confident in using functions of cell-phones are less repulsive in using DMB equipped cell-phones. Moreover, Wang et al. (2011) also showed that self-efficacy has positive influence on the usage of health-related applications on smart-devices, and Bae (2013) revealed that self-efficacy has positive influence on purchase intention of smart-phones.

3. Research Question

Review and analysis of previous researches on the impact of endorsers on advertising effectiveness have proved that various types of endorsers have positive impact on the advertisement. However, while most of researches focused on the attributes of celebrity endorsers, not many researches focused on the endorser attributes related to the different types of endorsers. In other word, only few examined the comparison between attributes of celebrity endorsers and those of consumer endorsers. Moreover, not only the use of different endorsers in advertisement in general but the use of endorsers in advertisements for high-tech products with distinguished characteristics compared to other consumption goods should be more emphasized. Whether the endorsed product is high-tech products or consumption goods can produce different results in the impact of celebrity or consumer endorser on advertising effectiveness.

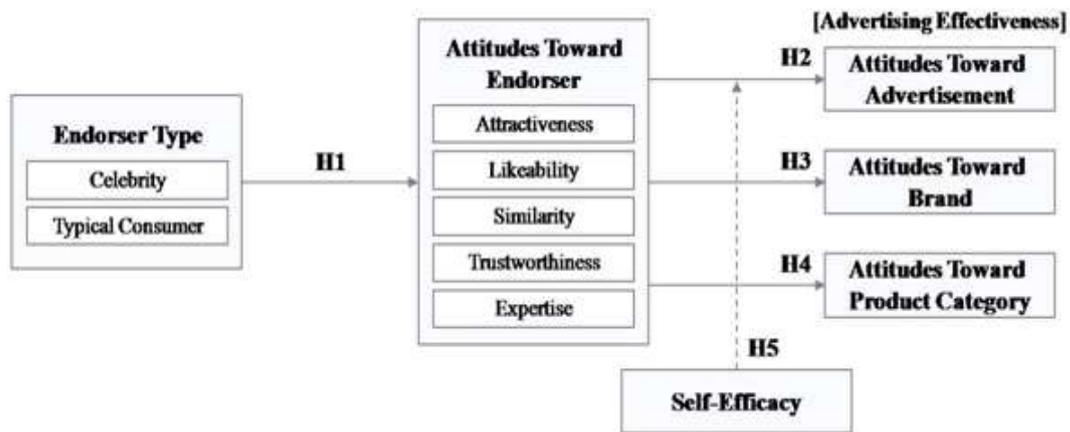
Therefore, based on these findings from the review of previous researches and studies, this paper proposes following research model and hypotheses in order to explore the impact of different endorsers on advertising effectiveness especially for high-tech products.

3.1. Research Model

This paper explores the impact of endorsers on advertising effectiveness for high-tech products and compares the impact of two different endorsers - celebrity endorser and consumer endorser. The attributes related to each endorsers are also studied by examining five different

attributes including attractiveness, similarity, likeability, trustworthiness, and expertise. This study then goes over to take a look at how each endorser with different attributes influence consumers' attitude toward advertisement, the brand, and product category. As a result, the conceptual research framework of this study is as described in Figure 1.

[Figure 1] Conceptual Research Model



3.2. Hypotheses

3.2.1. Relationship Between Endorser Type and Consumer's Attitude Toward the Endorser

As mentioned earlier in the paper, numerous previous researches have studied consumers' attitudes toward the model using different types of endorsers. According to a study by Brock (1965), celebrity endorsers are usually associated with attractiveness and likeability while expert and typical consumer endorsers are associated with expertise and similarity. Despite the findings, many researchers continued to conduct studies in testing different

attitudes toward the model using various types of endorsers and their effects on the advertisement (Ohanian, 1991; Erdogan, 1999; Till & Busier, 2000; Goldsmith et al., 2000; La Ferle & Choi, 2005; Shimp, 2010; Kim, 2008). However, none of them used high-tech products in testing these attitudes and effectiveness depending on the endorser. Therefore, this paper will explore the question of whether certain endorser type is more associated with particular attitude toward the model with focus on high-tech products as the hypothesis 1 states.

Hypothesis 1: Consumers form different attitudes toward the model depending on endorser type in high-tech products advertisement.

(1a) Attractiveness is more positively associated with a celebrity endorser.

(1b) Likability is more positively associated with a celebrity endorser.

(1c) Similarity is more positively associated with a consumer endorser.

(1d) Trustworthiness is more positively associated with a consumer endorser.

(1e) Expertise is more positively associated with a consumer endorser.

3.2.2. Relationship Between Consumer's Attitude Toward the Endorser and Advertising Effectiveness

Advertising effectiveness generally refers to the extent a company's advertising accomplished the intended objectives. The objectives may differ from a company to company, but the most common one would be increasing the revenue through a better communication with customers thus improved purchase intention. Therefore, the advertising effectiveness can be measured by two means. First, a company can examine a changes in

revenue to measure the advertising effectiveness. However, the downsides to this measure is that 1) it takes a long time to notice the change and that 2) there may exist various different reasons besides advertisement that moved revenue. Therefore, many companies use the second way to measure the advertising effectiveness which is by measuring communication effectiveness. In other words, a company can analyze the communication process of consumers - whether they follow the hierarchy-effects model which allows customers to go through the process of awareness, preference, conviction, purchase, etc. - to measure the advertising effectiveness (Lavidge & Steiner, 1961).

In evaluating this advertising effectiveness through the communication, researchers, in general, used three indices which include attitude toward the advertisement, attitude toward the brand, and purchase intention (Kim, 2008). It is commonly proved that after customers form attitude toward the advertisement and attitude toward the brand, they decide whether to purchase the product. Therefore, this paper will focus on how customers form attitude toward the advertisement and toward the brand from their attitude toward the endorser of high-tech products as the following hypotheses propose.

Hypothesis 2: Each attitudes toward the endorser have positive influence on consumer's attitude toward the advertisement in high-tech products advertisement.

(2a) Attractiveness has positive influence on attitude toward the ad.

(2b) Likability has positive influence on attitude toward the ad.

- (2c) Similarity has positive influence on attitude toward the ad.
- (2d) Trustworthiness has positive influence on attitude toward the ad.
- (2e) Expertise has positive influence on attitude toward the ad.

Hypothesis 3: Each attitudes toward the endorser have positive influence on consumer's attitude toward the brand in high-tech products advertisement.

- (3a) Attractiveness has positive influence on attitude toward the brand.
- (3b) Likability has positive influence on attitude toward the brand.
- (3c) Similarity has positive influence on attitude toward the brand.
- (3d) Trustworthiness has positive influence on attitude toward the brand.
- (3e) Expertise has positive influence on attitude toward the brand.

In addition to introduced measures of advertising effectiveness, this paper plans to include one additional measure which is the attitude toward product category. Companies usually advertise their products to increase their revenue or to have better communication with customers, as explained earlier, by emphasizing the presence of product or the brand or by providing advice in selecting the product or the brand, or by doing both. However, compared to other typical companies, high-tech product companies use the advertisement for one another reason - to introduce the new product category. The new product category is continuously launched in high-tech product industry - for example, smart phone in 2000s, smart-watch in early 2010s, and electric cars nowadays. Therefore, this paper plans to take objectives of high-tech products advertisement into consideration and propose the following hypothesis regarding consumers' attitude toward product

category depending the attitude toward the endorser.

Hypothesis 4: Each attitudes toward the endorser have positive influence on consumer's attitude toward product category in high-tech products advertisement.

(4a) Attractiveness has positive influence on attitude toward product category.

(4b) Likability has positive influence on attitude toward product category.

(4c) Similarity has positive influence on attitude toward product category.

(4d) Trustworthiness has positive influence on attitude toward product category.

(4e) Expertise positive influence on attitude toward product category.

3.2.3. Impact of Self-Efficacy

As explained earlier, many previous studies have revealed that self-efficacy has positive influence on the usage intentions for high-tech products (Lee & Lee, 2006; Wang, Park & Choi, 2011; Bae, 2013; Shin & Lee, 2015). From these findings, it can be assumed that consumers with high self-efficacy level are less likely to be influenced by the endorser regardless of the endorser type. Therefore, this study plans to take self-efficacy level of consumers into consideration and plans to examine not only the moderating effects of self-efficacy on the relationship between the attitudes toward the endorser and advertising effectiveness including attitudes toward advertisement, brand, and product category, but also whether the self-efficacy level strengthens or weakens those relationships. As a result, the

following hypothesis can be proposed.

Hypothesis 5: Self-efficacy level has moderating effect on the relationship between attitude toward the endorser and advertising effectiveness.

(5a) Higher self-efficacy level weakens the relationship between attitude toward the endorser and attitude toward advertisement.

(5b) Higher self-efficacy level weakens the relationship between attitude toward the endorser and attitude toward brand.

(5c) Higher self-efficacy level weakens the relationship between attitude toward the endorser and attitude toward product category.

4. Methods

4.1. Research Procedure

4.1.1. Research Stimulus

In exploring the impact of endorser type on advertising effectiveness for high-tech products, this study created research stimulus, imaginary advertisements, through two steps.

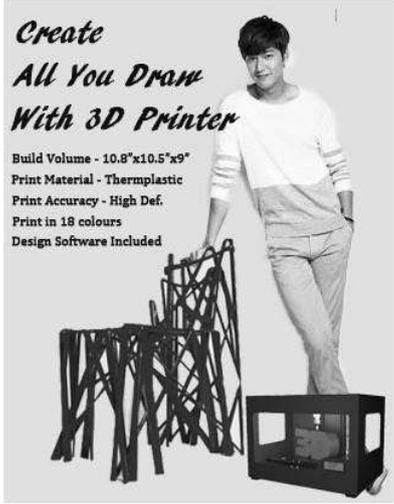
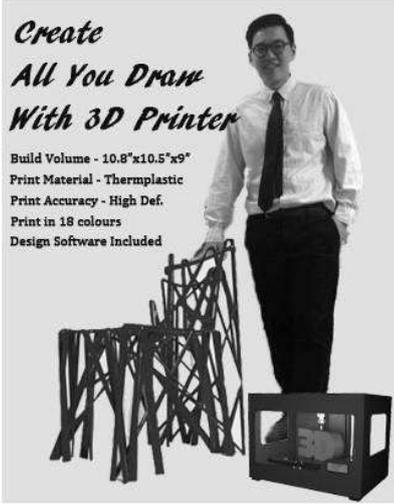
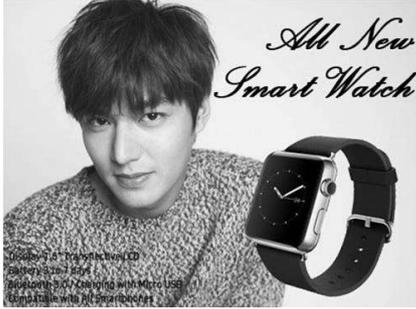
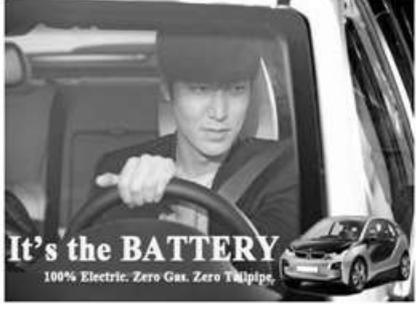
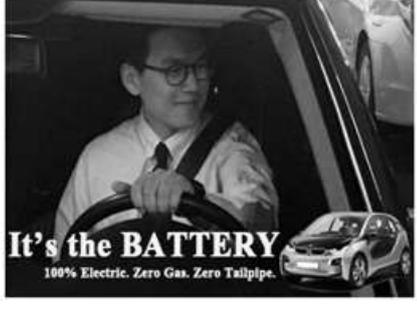
First, endorsers on were selected. For celebrity endorser, the ranking of top models who were chosen as 'the monthly best advertising model' provided by Advertising Information Center at Korean Federation of Advertising Associations was used, and from the list of top 5 models who were chosen as 'the monthly best advertising model' at least three times, this study decided to select one who has no prior experience in advertising high-tech product to prevent any bias. As a result, Min-ho Lee was chosen as the celebrity endorser for this study. Min-ho Lee, born in June, 1987, is a famous actor in Korea, and he plays a role as celebrity endorser usually in fashion or beauty-item industry. For the typical consumer endorser, those whose profile matched that of celebrity endorser were searched, and finally, Sung-uk Lee was chosen. Any information besides his sex, age, and job description will be provided to prevent the bias.

Second, the products that will be endorsed for the research were selected through pretest. Based on the list of high-tech products from 2013 to 2015 by ZDNet and recent articles, total ten high-tech products were selected as candidates for this research, and they include drone, electric car, healthcare wearable bands, smart glasses, smart phone, smart TV, smart

watch, tablet PC, 3D printer, and VR headset. Online survey was created, and respondents were asked to first read a brief description on high-tech products in general, then they were requested to evaluate each product on a scale of 5 whether they believe each product is considered as high-tech products. Total 43 responses were collected, and the results showed that the mean value of 3D printer was the highest at 4.12. Because this research focuses on high-tech products in general rather than on one certain product, I decided to take a look at few more products so that the results can be generalized to all high-tech products. Therefore, in addition to 3D printer, smart watch and electric car which showed two next highest two mean values at 4.09 and 4.07, respectively were also chosen to be included in the study. As a result, total three high-tech products, 3D printer, smart watch and electric car, were selected.

Using selected endorsers and products, total six different stimulus were created. The images, descriptions, and slogans of existing products were searched and combined together through Adobe Photoshop 2015 to produce the resulting advertisements displayed in Figure 2. To prevent bias, all except the endorser images were provided in the same format for each product, and all stimulus were presented in black and white.

[Figure 2] Research Stimulus

	Celebrity Endorser	Consumer Endorser
3D Printer		
Smart-Watch		
Electric Car		

4.1.2. Procedure

This research, to examine the impact of endorser type on advertising effectiveness for high-tech products, was constructed with 2 (endorser type: celebrity endorser and consumer endorser) x 3 (products: 3D printer, smart-watch, and electric vehicle) factorial design. Therefore, total six different surveys were developed, and respondents were randomly chosen to participate in one of six surveys. Through the online survey, participants were first provided with advertisement and brief descriptions on the endorser, and they were then asked to evaluate various items measuring attitude toward endorser, advertisement, brand, and product category.

4.2. Measurement Instrument

Most of measurement instruments for the variables used this research were based on the previous studies. Some were used as they were as they were already verified with reliability and validity tests in the previous studies, but some were modified to help understandings of research participants. For each measurement, 5-point Likert scale was used, a scale ranging from 1="Not at all likely" to 5="Extremely likely". The descriptions on measurements of variables are as follows.

4.2.1. Attitude Toward Endorser

Most of the measurements were taken from the study by Ohanian (1991). She, through her early research, constructed a scale to measure endorser's perceived attractiveness, trustworthiness, and expertise. Although these measures were first used to evaluate celebrity endorser only, and it

also be applied to other endorsers. Therefore, using measurements provided by Ohanian (1991), for *attractiveness*, four indices including 'attractive-unattractive', 'classy-notclassy', 'handsome-ugly', and 'elegant-plain' were used. For *likeability*, this research modified and updated the measurements developed by researchers in Korea (Kim,2008), and as a result, five indices were chosen-'likeable-unlikeable', 'have good feeling-bad feeling', 'favorable-unfavorable', 'popular-unpopular' and 'have a good impression-bad impression'. The measurements for *similarity*, considering the measurements developed by previous researches (Swartz,1984; Doney&Cannon,1997; Coulter&Coulter,2003; Kim&Park,2012), include 'have similar interest-dissimilar interest', 'have similar values-dissimilar values', 'have similar hobbies-dissimilar hobbies', and 'have similar characteristics-dissimilar characteristics'. For *trustworthiness*, 'honest-dishonest', 'sincere-unsincere', and 'trustworthy-untrustworthy' were taken from previous study, but 'faithful-unfaithful' was also included to measure whether participants believe that the endorser uses the product endorsing in his or her real life. The measurements for *expertise* were also taken from Ohanian(1991), and they include 'expert-not an expert', 'knowledgeable-unknowledgeable,' qualified-unqualified for this advertisement' and 'knows how to use the product well-doesn't know how to use the product well'. Because the survey will be distributed in Korea, the measures were translated into Korean in survey.

4.2.2. Advertising Effectiveness

Three variables were used in evaluating advertising effectiveness in

this study, and they include attitude toward advertisement, attitude toward brand, and attitude toward product category. The measurement instruments for these variables were taken from previous studies (MacKenzie & Lutz, 1989; Bruner & Hensel, 1992; Lafferty et al., 2002; Kim & Kwak, 2005; Kim & Park, 2012) and modified and updated for this study. As a result, the scales for *attitude toward advertisement* were anchored with 'good-bad', 'favorable-unfavorable', 'pleasant-unpleasant', 'trustworthy-untrustworthy' and 'distinct-undistinct'. For *attitude toward brand*, measurements such as 'good-bad', 'favorable-unfavorable', 'trustworthy-untrustworthy', 'satisfactory-unsatisfactory' and 'wants to try-not want to try'. Last, in measuring *attitude toward brand*, scales of 'good-bad', 'favorable-unfavorable', 'useful-not useful', 'trustworthy-untrustworthy', 'valuable-not valuable', and 'easy to use- difficult to use'.

4.2.3. Self-Efficacy

The survey also included the indices to measure 'self-efficacy' level of the participants in order to examine the moderating effect of self-efficacy in studying the impact of endorser type on advertisement effectiveness. The measurement instruments for self-efficacy level were taken from the previous study on influential factors of purchase intention of wrist wearable devices by Shin & Lee (2015), and they include 'I can handle with new products or technologies well compared to others', 'I can better understand and use the functions of the new products or technologies compared to others', 'I learn the functions of the new products or technologies on my own', and 'I collect information through smart-devices'.

4.2.4. Survey Questionnaire

Based on the measurements of variables as described earlier, the

survey questionnaire for this research was constructed as the table 3 below shows.

[Table 3] Survey Questionnaire

Variables	No.	Measures
Attitude Toward Endorser	Attractiveness	4 Attractive, Classy, Handsome, Elegant
	Likeability	5 Likeable, Good Feeling, Favorable, Popular, Good Impression
	Similarity	4 Similar Interest, Values, Hobbies, Characteristics
	Trustworthiness	4 Honest, Sincere, Trustworthy, Faithful
Expertise	4 Expert, Knowledgeable, Qualified, Skilled	
Attitude Toward Advertisement	5	Good, Favorable, Pleasant, Trustworthy, Distinct
Attitude Toward Brand	5	Good, Favorable, Trustworthy, Satisfied, Wants to Try
Attitude Toward Product Category	6	Good, Favorable, Useful, Trustworthy, Valuable
Self-Efficacy	4	Handle with new products or technologies well, Better understand and use the functions of the new products or technologies, Learn the functions of the new products or technologies on my own, Collect information through smart-devices
Demographical Questions	2	Sex, Age
Total 43 Questions		

4.3. Data Collection

4.3.1. Survey Methods

Six different online surveys using two different endorsers (celebrity endorser and typical consumer endorser) and three different high-tech products (3D printer, smart watch and electric car) were randomly distributed to people aged from eighteen to sixty-five residing in Republic of Korea. Total 319 responses were collected for eight days from November 19, 2015 to November 26, 2015. Among the collected responses, 308 responses were used for this study after eliminating those incomplete.

4.3.2. Sample

The characteristics of the respondents according to sex and age are summarized in Table 5. As the Table 5 explains, a total of 168 male and 140 female participated in the survey, and around 39.9% of the participants' age ranged from 30 to 39.

[Table 4] Characteristics of Respondents

		Respondents (N=308)	
		Frequency (n)	Percentage (%)
Sex	Male	168	54.5
	Female	140	45.5
Age	18 ~ 29	84	27.3
	30 ~ 39	123	39.9
	40 ~ 49	44	14.3
	50 ~ 59	41	13.3
	60 ~ 65	16	5.2

5. Results

5.1. Reliability and Validity Tests

In order to check not only whether measurements used in this study provide consistent results but also whether the measurements measure what they are supposed to measure, both reliability and validity tests were conducted. Reliability assessments were run to determine the Cronbach's alphas, and for validity tests, factor analysis using principal component analysis was conducted.

5.1.1. Attitudes Toward the Endorser

1) Attractiveness

The results from factor analysis show that four measurements appropriately signify 'attractiveness' variable, and all measurements display high factor score around 0.90. The percent of explained variance is around 85.8% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.944, which confirms the consistency within the measurements.

[Table 5-1] Reliability and Validity Test Results for Attractiveness

Questions	Factor Score
	Attractiveness
This model is physically attractive	0.916
This model is classy	0.949
This model is handsome	0.943
This model is elegant	0.896
Eigenvalue	3.433
% of Variance	85.832
Cronbach's Alpha	0.944

2) Likeability

The results from factor analysis show that five measurements appropriately signify 'likeability' variable, and all measurements display high factor score over 0.70. The percent of explained variance is around 74.3% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.902, which confirms the consistency within the measurements.

[Table 5-2] Reliability and Validity Test Results for Likeability

Questions	Factor Score
	Likeability
This model is likeable	0.919
I have good feelings for this model	0.928
This model is favorable	0.895
This model is popular	0.706
This model has good impression	0.841
Eigenvalue	3.713
% of Variance	74.255
Cronbach's Alpha	0.902

3) Similarity

The results from factor analysis show that four measurements appropriately signify 'similarity' variable, and all measurements display high factor score over 0.70. The percent of explained variance is around 75.2% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.866, which confirms the consistency within the measurements.

[Table 5-3] Reliability and Validity Test Results for Similarity

Questions	Factor Score
	Similarity
This model and I have similar interests	0.883
This model and I have similar values	0.915
This model and I have similar hobbies	0.895
This model and I have similar characteristics	0.768
Eigenvalue	3.007
% of Variance	75.186
Cronbach's Alpha	0.866

4) Trustworthiness

The results from factor analysis show that four measurements appropriately signify 'trustworthiness' variable, and all measurements display high factor score over 0.90. The percent of explained variance is around 86.3% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.946, which confirms the consistency within the measurements.

[Table 5-4] Reliability and Validity Test Results for Trustworthiness

Questions	Factor Score
	Trustworthiness
This model is honest	0.932
This model is sincere	0.948
This model is trustworthy	0.921
This model is faithful	0.915
Eigenvalue	3.450
% of Variance	86.259
Cronbach's Alpha	0.946

5) Expertise

The results from factor analysis show that four measurements appropriately signify 'expertise' variable, and all measurements display high factor score over 0.80. The percent of explained variance is around 78.9% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.911, which confirms the consistency within the measurements.

[Table 5-5] Reliability and Validity Test Results for Expertise

Questions	Factor Score
	Expertise
This model is an expert	0.916
This model is knowledgeable	0.895
This model is qualified for this advertisement	0.833
This model knows how to use the product	0.907
Eigenvalue	3.158
% of Variance	78.947
Cronbach's Alpha	0.911

5.1.2. Advertisement Effectiveness

1) Attitude Toward Advertisement

Through the factor analysis, one measurement for attitudes toward the advertisement - this advertisement is distinguished from other advertisements. Using four measurements, the factor analysis results explain that the rest four measurements appropriately signify 'attitude toward the advertisement' variable, and all measurements display high factor score over 0.80. The percent of explained variance is around 84.2% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.936, which confirms the consistency within the measurements.

[Table 6-1] Reliability and Validity Test Results
for Attitude Toward Advertisement

Questions	Factor Score Attitude Toward Advertisement
This advertisement is good	0.920
This advertisement is favorable	0.943
This advertisement is pleasant	0.941
This advertisement is trustworthy	0.865
Eigenvalue	3.370
% of Variance	84.245
Cronbach's Alpha	0.936

2) Attitude Toward Brand

The results from factor analysis show that five measurements appropriately signify 'attitude toward brand' variable, and all measurements display high factor score over 0.90. The percent of explained variance is around 84.8% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.952, which confirms the consistency within the measurements.

[Table 6-2] Reliability and Validity Test Results for Attitude Toward Brand

Questions	Factor Score
	Attitude Toward Brand
This brand is good	0.949
This brand is favorable	0.941
This brand is trustworthy	0.912
This brand is satisfying	0.920
I want to try this brand	0.880
Eigenvalue	4.240
% of Variance	84.797
Cronbach's Alpha	0.952

3) Attitude Toward Product Category

The results from factor analysis show that six measurements appropriately signify 'attitude toward product category' variable, and all measurements display high factor score over 0.70. The percent of explained variance is around 78.4% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.941, which confirms the consistency within the measurements.

[Table 6-3] Reliability and Validity Test Results
for Attitude Toward Product Category

Questions	Factor Score
	Attitude Toward Product Category
This product category is good	0.916
This product category is favorable	0.918
This product category is trustworthy	0.903
This product category is valuable	0.906
This product category is useful	0.880
It is easy to use this product category	0.781
Eigenvalue	4.704
% of Variance	78.392
Cronbach's Alpha	0.941

5.1.3. Self-Efficacy

The results from factor analysis show that four measurements appropriately signify 'self-efficacy' variable, and all measurements display high factor score over 0.80. The percent of explained variance is around 80.3% which verifies the validity of measurements, and the Cronbach's alpha turns out to be very high, 0.917, which confirms the consistency within the measurements.

[Table 7] Reliability and Validity Test Results for Self-Efficacy

Questions	Factor Score Self-Efficacy
I handle new products/techs better than others	0.914
I understand and use functions of new products/techs better than others	0.899
I learn functions of new products/techs on my own	0.903
I collect information through smart-devices	0.867
Eigenvalue	3.212
% of Variance	80.292
Cronbach's Alpha	0.917

5.2. Hypotheses Test

5.2.1. Endorser Type and Consumer's Attitude Toward the Endorser

In order to examine whether consumers form different attitudes toward the endorser depending on the endorser type in high-tech products advertisements, T-tests were conducted. Through the T-tests, the mean scores of celebrity endorser and those of typical consumer endorser were compared

for attractiveness, likeability, similarity, trustworthiness, and expertise. The results show that the p-value for T-tests were 0.000 for all tests, satisfying the requirements for significance level at $p < 0.05$, and thus the mean scores of celebrity endorsers and those of typical consumer endorsers were different for all attitudes toward the endorser. Note that for likeability, since the p-value of F is over 0.05, equality of variance is assumed.

[Table 8] T-Test Results

		Mean	Std. Error Diff.	Levene Test for Equality of Variances		T-Test for Equality of Means	
				F	Sig.	t	Sig.
Attractiveness	Celebrity	4.2500	0.59105	25.385	0.000	15.019	0.000
	Consumer	2.9167	0.92603	<i>Statistically</i>		<i>Different</i>	
Likeability	Celebrity	3.8895	0.73179	0.011	0.918	6.978	0.000
	Consumer	3.2769	0.80593	<i>Statistically</i>		<i>Different</i>	
Similarity	Celebrity	2.1020	0.56758	14.423	0.000	-12.030	0.000
	Consumer	2.9712	0.74670	<i>Statistically</i>		<i>Different</i>	
Trustworthiness	Celebrity	2.2737	0.55070	83.211	0.000	-9.690	0.000
	Consumer	3.6346	0.96301	<i>Statistically</i>		<i>Different</i>	
Expertise	Celebrity	2.3750	0.68269	13.411	0.000	-11.955	0.000
	Consumer	3.4968	0.93715	<i>Statistically</i>		<i>Different</i>	

* Celebrity N=44, Consumer N=60

As a results, the hypothesis 1 is accepted which means that consumers form different attitudes toward the model depending on the endorser type in high-tech products advertisements. In detail, with celebrity endorsers, consumers tend to form attractiveness and likeability attitudes toward the endorser while they form similarity, trustworthiness, and expertise attitudes toward the typical consumer endorser in high-tech products advertisements.

5.2.2. Impact of Attitude Toward Endorser on Attitude Toward Advertisement

To test hypothesis 2 which states that each attitudes toward the endorser, including attractiveness, likeability, similarity, trustworthiness, and expertise, have positive influence on consumer's attitude toward the high-tech products advertisement, multicollinearity test followed by multiple regression analysis were conducted. First, the results from multicollinearity test proved that multicollinearity does not exist with variance inflation factor less than 5 and condition index less than 10 for all independent variables.

Multiple regression analysis, with product type (3D printer, smart-watch, and electric car) set as control variable, on the relationship between attitude toward endorser and attitude toward the high-tech products advertisement followed. The results showed the regression model seems appropriate with R^2 at 0.445 and F-value at $p < .001$. Moreover, t-tests proved that among five attitudes toward the endorsers, three attitudes, including likeability, similarity, and expertise, have positive influence on the attitude toward the high-tech products advertisements. Therefore, hypothesis 2 was partially accepted.

[Table 9] Relationship Between Attitude Toward Endorser and
Attitude Toward Advertisement

		Unstandardized Coefficients		Std. Coef.	t	Sig.
		B	Std. Error	Beta		
Independent Variables	Attractiveness	0.056	0.070	0.069	0.802	0.423
	Likeability	0.393	0.083	0.392	4.703	0.000
	Similarity	0.135	0.063	0.146	2.143	0.033
	Trustworthiness	0.047	0.074	0.046	0.645	0.520
	Expertise	0.298	0.067	0.357	4.438	0.000
Control Variables	Product B	-0.002	0.091	-0.001	-0.017	0.987
	Product C	-0.178	0.089	-0.102	-2.002	0.046
R ²				0.445		
Adjusted R ²				0.432		
F				34.080***		

Note: N=308, Product B= smart watch, Product C= electric car

***p<.001, **p<.01, *p<.05

5.2.3. Impact of Attitude Toward Endorser on Attitude Toward Brand

Hypothesis 3, stating that each attitudes toward the endorser have positive influence on consumer's attitude toward the brand, was also tested with multiple regression analysis with product type as control variable. The regression model turned out to be appropriate for the test with R² at 0.413 and F-value at p<.001. The results of the regression analysis showed that among five attitudes toward the endorsers, again, three attitudes, including likeability, similarity, and expertise, have positive influence on the attitude toward the brand. Therefore, hypothesis 3 was also partially accepted.

[Table 10] Relationship Between Attitude Toward Endorser and Attitude Toward Brand

		Unstandardized Coefficients		Std. Coef.	t	Sig.
		B	Std. Error	Beta		
Independent Variables	Attractiveness	0.045	0.077	0.052	0.580	0.563
	Likeability	0.431	0.091	0.404	4.715	0.000
	Similarity	0.208	0.069	0.212	3.021	0.003
	Trustworthiness	0.039	0.081	0.036	0.487	0.626
	Expertise	0.227	0.074	0.255	3.085	0.002
Control Variables	Product B	0.032	0.100	0.017	0.317	0.751
	Product C	-0.249	0.098	-0.134	-2.553	0.011
R ²				0.413		
Adjusted R ²				0.399		
F				29.895***		

Note: N=308, Product B= smart watch, Product C= electric car

***p<.001, **p<.01, *p<.05

5.2.4. Impact of Attitude Toward Endorser on Attitude Toward Product Category

Multiple regression analysis was again conducted to test hypothesis 4, stating that each attitudes toward the endorser have positive influence on consumer's attitude toward the product category. The regression model turned out to be appropriate for the test with R^2 at 0.479 and F-value at $p < .001$. The results of the regression analysis showed that among five attitudes toward the endorsers, again, three attitudes, including likeability, similarity, and expertise, have positive influence on the attitude toward the brand. Therefore, hypothesis 4 was also partially accepted.

[Table 11] Relationship Between Attitude Toward Endorser and Attitude Toward Product Category

		Unstandardized Coefficients		Std. Coef.	t	Sig.
		B	Std. Error	Beta		
Independent Variables	Attractiveness	-0.004	0.071	-0.005	-0.056	0.955
	Likeability	0.454	0.085	0.433	5.366	0.000
	Similarity	0.244	0.064	0.253	3.827	0.000
	Trustworthiness	0.133	0.075	0.124	1.787	0.075
	Expertise	0.166	0.068	0.253	3.827	0.000
Control Variables	Product B	0.120	0.092	0.065	1.296	0.196
	Product C	-0.154	0.090	-0.084	-1.704	0.089
R^2				0.479		
Adjusted R^2				0.467		
F				39.175***		

Note: N=308, Product B= smart watch, Product C= electric car

*** $p < .001$, ** $p < .01$, * $p < .05$

5.2.5. Impact of Self-Efficacy on the Relationship Between Attitude Toward Endorser and Advertisement Effectiveness

1) Attitude Toward Advertisement

In order to test a part of hypothesis 5, impact of self-efficacy on the relationship between attitude toward endorser and attitude toward advertisement, regression analysis, examining the moderating effect of self-efficacy, was conducted. Among the five attitudes toward the endorser, only three attitudes that turned out to have significant influence on the attitude toward the advertisement were tested. The interactive term between each attitude toward the endorsers and attitude toward advertisement was inserted in the regression analysis, and the results, as Tables below display, show that there are moderating effects of self-efficacy on the attitude toward the endorser and attitude toward the advertisement. In detail, the higher self-efficacy level of consumers weakens the relationship between the attitudes toward endorser (likeability, similarity, and expertise) and the attitude toward advertisement, confirming the hypothesis 5a.

[Table 12-1-1] Moderating Effect : Likeability and Attitude Toward

Advertisement

	B	Std.Err.	Beta	t	Sig.
Likeability	0.586	0.064	0.581	9.191	0.000
Likeability x Self-efficacy	-0.043	0.012	-0.234	-3.692	0.000
R ²			0.228		
Adjusted R ²			0.223		
F			45.024***		

Note: N=308

***p<.001, **p<.01, *p<.05

[Table 12-1-2] Moderating Effect : Similarity and Attitude Toward

Advertisement

	B	Std.Err.	Beta	t	Sig.
Similarity	0.608	0.086	0.654	7.066	0.000
Similarity x Self-efficacy	-0.053	0.018	-0.266	-2.871	0.004
R ²			0.208		
Adjusted R ²			0.203		
F			40.130***		

Note: N=308

***p<.001, **p<.01, *p<.05

[Table 12-1-3] Moderating Effect : Expertise and Attitude Toward

Advertisement

	B	Std.Err.	Beta	t	Sig.
Expertise	0.585	0.073	0.701	7.983	0.000
Expertise x Self-efficacy	-0.047	0.016	-0.268	-3.054	0.002
R ²			0.253		
Adjusted R ²			0.248		
F			51.306***		

Note: N=308

***p<.001, **p<.01, *p<.05

2) Attitude Toward Brand

In order to test another part of hypothesis 5, impact of self-efficacy on the relationship between attitude toward endorser and attitude toward brand, regression analysis, examining the moderating effect of self-efficacy, was again conducted. Among the five attitudes toward the endorser, only likeability, similarity, and expertise which turned out to have significant influence on the attitude toward the brand were tested. The interactive term between each attitude toward the endorsers and attitude toward brand was

inserted in the regression analysis, and the results, as Tables below display, show that, similar to the results from the first regression analysis on moderating effects, there are moderating effects of self-efficacy on the attitude toward the endorser and attitude toward the brand. Again, the higher self-efficacy level weakens the relationship between attitudes toward the endorser and the attitude toward the brand, confirming hypothesis 5b.

[Table 12-2-1] Moderating Effect : Likeability and Attitude Toward Brand

	B	Std.Err.	Beta	t	Sig.
Likeability	0.574	0.069	0.533	8.304	0.000
Likeability x Self-efficacy	-0.033	0.013	-0.164	-2.550	0.011
R ²			0.205		
Adjusted R ²			0.200		
F			39.345***		

Note: N=308

***p<.001, **p<.01, *p<.05

[Table 12-2-2] Moderating Effect : Similarity and Attitude Toward Brand

	B	Std.Err.	Beta	t	Sig.
Similarity	0.578	0.093	0.582	6.218	0.000
Similarity x Self-efficacy	-0.040	0.020	-0.190	-2.027	0.004
R ²			0.191		
Adjusted R ²			0.185		
F			35.894***		

Note: N=308

***p<.001, **p<.01, *p<.05

[Table 12-2-3] Moderating Effect : Expertise and Attitude Toward Brand

	B	Std.Err.	Beta	t	Sig.
Expertise	0.531	0.081	0.597	6.557	0.000
Expertise x Self-efficacy	-0.039	0.017	-0.207	-2.271	0.024
R ²			0.196		
Adjusted R ²			0.190		
F			36.857***		

Note: N=308

***p<.001, **p<.01, *p<.05

3) Attitude Toward Product Category

To test last part of hypothesis 5, impact of self-efficacy on the relationship between attitude toward endorser and attitude toward product category, regression analysis, examining the moderating effect of self-efficacy, was again conducted. The results were different from previous tests where the moderating effects existed. This time, the result showed that there did not exist moderating effects of self-efficacy level on the relationship between the attitudes toward endorser and the attitude toward product category, rejecting hypothesis 5c.

[Table 12-3-1] Moderating Effect : Likeability and Attitude Toward Product Category

	B	Std.Err.	Beta	t	Sig.
Likeability	0.497	0.069	0.466	7.184	0.000
Likeability x Self-efficacy	-0.011	0.013	-0.054	-0.830	0.407
R ²			0.189		
Adjusted R ²			0.184		
F			35.617***		

Note: N=308

***p<.001, **p<.01, *p<.05

[Table 12-3-2] Moderating Effect : Similarity and Attitude Toward Product

Category					
	B	Std.Err.	Beta	t	Sig.
Similarity	0.532	0.089	0.540	5.955	0.000
Similarity x Self-efficacy	-0.013	0.019	-0.062	-0.680	0.497
R ²			0.240		
Adjusted R ²			0.235		
F			48.198***		

Note: N=308

***p<.001, **p<.01, *p<.05

[Table 12-3-3] Moderating Effect : Expertise and Attitude Toward Product

Category					
	B	Std.Err.	Beta	t	Sig.
Expertise	0.464	0.078	0.531	5.978	0.000
Expertise x Self-efficacy	-0.011	0.016	-0.058	-0.649	0.517
R ²			0.235		
Adjusted R ²			0.230		
F			46.481***		

Note: N=308

***p<.001, **p<.01, *p<.05

6. Discussion

6.1. Summary of Results

To examine the impact of endorser type on the advertisement effectiveness for high-tech products, this research analyzed different attitudes toward the endorser depending on the endorser type, impact of attitudes toward the endorser on attitude toward the high-tech product advertisement, brand, and product category, and the moderating effects of consumer's self-efficacy level on the relationship between attitudes toward the endorser and advertising effectiveness.

First, through t-tests, hypothesis 1 was confirmed, and thus it can be stated that consumers form different attitudes toward the endorser depending on the endorser type in advertisements for high-tech products. In detail, consumers tend to link attractiveness and likeability with celebrity endorser and similarity, trustworthiness, and expertise with typical consumer endorser.

This study also found that some of the attitudes toward the endorser have positive influence on the advertising effectiveness. Among five different attitudes toward the endorser, likeability, similarity, and expertise showed positive influence on attitudes toward the advertisement, brand, and product category. Note that when the product is narrowed down to certain product, there exist slight differences in the results. For 3D printer only, the results showed that only likeability has positive influence on attitude toward advertisement, and likeability and similarity have positive influence on the attitude toward the brand and product category. For smart-watch, only

likeability showed positive influence on the attitude toward the advertisement and product category while likeability and expertise had positive influence on the attitude toward the brand. Moreover, for electric car, the results showed that only expertise has positive influence on the attitude toward the advertisement while both likeability has positive influence on the attitude toward the brand and product category.

Self-efficacy level of the consumers are also measured, and it was taken into account in examining the moderating effect. The results confirmed that there exists the moderating effects from the self-efficacy level on the relationship between attitudes toward endorser and attitude toward advertisement and the relationship between attitudes toward endorser and attitude toward brand, but there was no moderating effects on the relationship between attitudes toward endorsers and attitude toward product category. Interestingly, this study found that with the higher self-efficacy level, attitudes toward the endorser, likeability, similarity, and expertise, actually weaken the impact on the attitude toward advertisement and brand. The results of hypotheses tests can be summarized as shown in Table 13.

[Table 13] Summary of Hypotheses Tests

	Hypothesis	Results
1	Consumers form different attitudes toward the endorser depending on the endorser type in high-tech product advertisements	Accepted
	(1a) Attractiveness is more positively associated with celebrity endorser	Accepted
	(1b) Likeability is more positively associated with celebrity endorser	Accepted
	(1c) Similarity is more positively associated with consumer endorser	Accepted
	(1d) Trustworthiness is more positively associated with consumer endorser	Accepted
	(1e) Expertise is more positively associated with consumer endorser	Accepted
2	Attitudes toward the endorser have positive influence on attitude toward the high-tech product advertisement	Partially Accepted
	(2a) Attractiveness has positive influence on attitude toward the ad.	Rejected
	(2b) Likeability has positive influence on attitude toward the ad.	Accepted
	(2c) Similarity has positive influence on attitude toward the ad.	Accepted
	(2d) Trustworthiness has positive influence on attitude toward the ad.	Rejected
	(2e) Expertise has positive influence on attitude toward the ad.	Accepted
3	Attitudes toward the endorser have positive influence on attitude toward the brand	Partially Accepted
	(3a) Attractiveness has positive influence on attitude toward the brand	Rejected
	(3b) Likeability has positive influence on attitude toward the brand	Accepted
	(3c) Similarity has positive influence on attitude toward the brand	Accepted

	(3d) Trustworthiness has positive influence on attitude toward the brand	Rejected
	(3e) Expertise has positive influence on attitude toward the brand	Accepted
4	Attitudes toward the endorser have positive influence on attitude toward the high-tech product category	Partially Accepted
	(4a) Attractiveness has positive influence on attitude toward the product category	Rejected
	(4b) Likeability has positive influence on attitude toward the product category	Accepted
	(4c) Similarity has positive influence on attitude toward the product category	Accepted
	(4d) Trustworthiness has positive influence on attitude toward the product category	Rejected
	(4e) Expertise has positive influence on attitude toward the product category	Accepted
5	Self-efficacy level has moderating effect on the relationship between attitude toward the endorser and advertising effectiveness*	Accepted
	(5b) Higher self-efficacy level weakens the relationship between attitude toward the endorser and attitude toward advertisement	Accepted
	(5c) Higher self-efficacy level weakens the relationship between attitude toward the endorser and attitude toward brand	Accepted
	(5e) Higher self-efficacy level weakens the relationship between attitude toward the endorser and attitude toward product category	Rejected

* Note: Tested only those (likeability, similarity, and expertise) accepted in hypothesis 2, 3, and 4

6.2. Implications and Recommendations

This study shed lights on the impact of the endorser type on advertising effectiveness for high-tech products, and the key findings from this research are as follows. First, this study revealed different attitudes toward the endorser depending on the endorser type, and how each attitudes toward the endorser influences the advertising effectiveness, including attitudes toward the advertisement, brand, and product category for high-tech products. It was also theoretically proved that self-efficacy produces moderating effects in the relationship between attitudes toward the endorser and advertising effectiveness - attitude toward advertisement and attitude toward brand. Second, this study provides practical implications in selecting the endorser for high-tech products. This research found which attitudes consumers form for celebrity and typical consumer endorser and that likeability, similarity, and expertise of the endorser have positive influence on the advertising effectiveness. Based on the results of this study, typical consumer endorser, associated with similarity and expertise, may be a better choice for the endorser, but likeability of the endorser cannot be ignored. Therefore, it would be best to find an endorser equipped with all of likeability, similarity, and expertise through consistent market and consumer researches. It would also be critical to continuously examine which features affect how consumers form those attitudes toward the endorser as they tend to consistently change over time. Last but not least, this study also reveals the needs of measuring self-efficacy level of targeted consumers when advertising high-tech products. Because the results of this study showed that self-efficacy level of consumers has moderating effects on the relationship

between attitudes toward the endorser and advertising effectiveness, self-efficacy should also be considered when selecting an endorser for the high-tech product advertisement. For example, when the self-efficacy level of targeted consumers is high, likeability, similarity and expertise of the endorser should be less emphasized since this study has shown that with the higher self-efficacy level, likeability, similarity, and expertise of the endorser has less influence on the attitude toward the advertisement and attitude toward the brand. However, when companies use advertisement to introduce new product category into the market, self-efficacy should be less considered based on the results of this study showing that self-efficacy level does not have moderating effects on the relationship between attitude toward endorser and attitude toward product category. Therefore, after companies determine the objectives of advertisement and the target customers for high-tech products, they must consider the self-efficacy level of target customers before selecting the endorser for the product.

There also exist limitations to this study. First, because this study used online surveys using imaginary advertisements, there may be differences to the results when using real advertisements. Second, the data collected from the surveys showed that despite enough sample size, most of the respondents were in 10~30s in their age. Therefore, one has to be very cautious in generalizing the results to customers in all age. Last, because there existed slight differences in the results between the main analysis which controlled the product type and each analysis on certain product - 3D printer, smart watch, or electric car, further researches may take a look at differences within high-tech products. Future studies can reveal more

interesting findings when they categorize the high-tech products into different groups, for example, according to innovativeness, usages, prices, design, etc. and compare the results from each group.

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Appendix : Survey



Impact of Endorser Type on Advertising Effectiveness for High-tech Products

Hi, this is Young Eun Hahm, majoring in Marketing at Seoul National University. Thank you very much for your time.

The intent of this survey is to examine the impact of endorser type on advertising effectiveness for high-tech products. Your feedback will be very helpful. I would very appreciate your taking time to complete the following survey. It should take about five minutes of your time.

Your responses are voluntary and will be confidential. Responses will not be identified by individual.

If you have any questions or concerns, please feel free to contact Young Eun Hahm, at yegahm@gmail.com.

Thank again for your participation.

November, 2015

Seoul National University, Young Eun Hahm

Professor: Seoul National University, Sang-Hoon Kim

Research Stimulus

[3D Printer]

1) Celebrity Endorser



- **Name:** Min-Ho Lee
- **Job:** Actor
- **Birth:** 1987.6.22 (Age 28)
- **Agency:** Starhouse
- **Activities:** Ambassador for UNICEF, Drama & Movie: City Hunter, The heir, Gangnam1970, etc.

2) Consumer Endorser



- **Name:** Sung-Uk Lee
- **Job:** Salaryman
- **Birth:** 1986.12.06 (Age 28)

[Smart Watch (Same Description)]

1) Celebrity Endorser

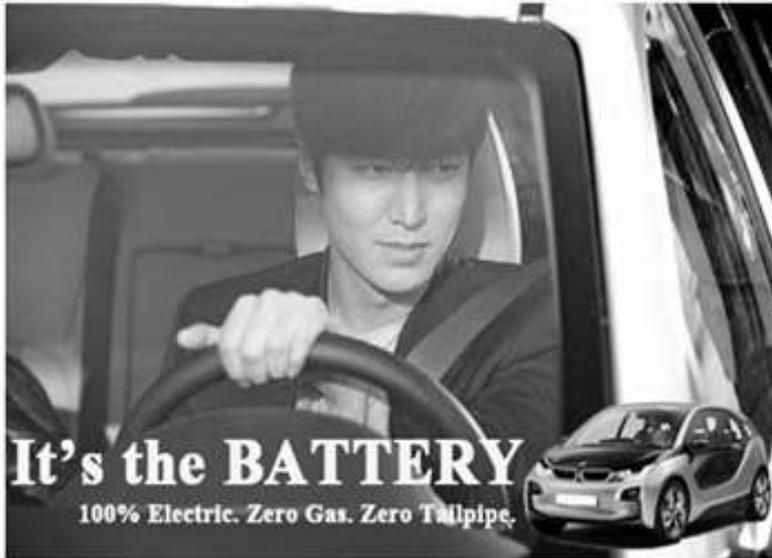


2) Consumer Endorser

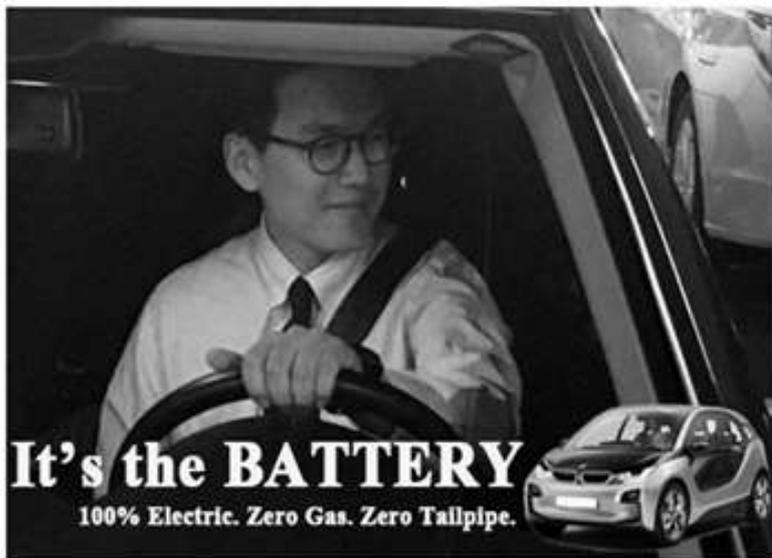


[Electric Car (Same Description)]

1) Celebrity Endorser



2) Consumer Endorser



Please take a look at the advertisement and answer the following questions.

1. How do you think about the attractiveness, likeability, and trustworthiness of the model in the given advertisement?

Questions	Not at All	Not Really	Neutral	Some-what	Very Much
(1) This model is physically attractive	①	②	③	④	⑤
(2) This model is classy	①	②	③	④	⑤
(3) This model is handsome	①	②	③	④	⑤
(4) This model is elegant	①	②	③	④	⑤
(5) This model is likeable	①	②	③	④	⑤
(6) I have good feelings for this model	①	②	③	④	⑤
(7) This model is favorable	①	②	③	④	⑤
(8) This model is popular	①	②	③	④	⑤
(9) This model has good impression	①	②	③	④	⑤
(10) This model is honest	①	②	③	④	⑤
(11) This model is sincere	①	②	③	④	⑤
(12) This model is trustworthy	①	②	③	④	⑤
(13) This model is faithful	①	②	③	④	⑤

2. How do you think about the similarity and expertise of the model in the given advertisement?

Questions	Not at All	Not Really	Neutral	Some-what	Very Much
(1) This model and I have similar interests	①	②	③	④	⑤
(2) This model and I have similar values	①	②	③	④	⑤
(3) This model and I have similar hobbies	①	②	③	④	⑤
(4) This model and I have similar characteristics	①	②	③	④	⑤
(5) This model is an expert	①	②	③	④	⑤
(6) This model is knowledgeable	①	②	③	④	⑤
(7) This model is qualified for this ad.	①	②	③	④	⑤
(8) This model knows how to use the product	①	②	③	④	⑤

3. How do you think about the given advertisement?

Questions	Not at All	Not Really	Neutral	Some-what	Very Much
(1) This advertisement is good	①	②	③	④	⑤
(2) This advertisement is favorable	①	②	③	④	⑤
(3) This advertisement is pleasant	①	②	③	④	⑤
(4) This advertisement is trustworthy	①	②	③	④	⑤
(5) This advertisement is distinguished	①	②	③	④	⑤

4. How do you think about the brand of the product in the given advertisement?

Questions	Not at All	Not Really	Neutral	Some-what	Very Much
(1) This brand is good	①	②	③	④	⑤
(2) This brand is favorable	①	②	③	④	⑤
(3) This brand is trustworthy	①	②	③	④	⑤
(4) This brand is satisfying	①	②	③	④	⑤
(5) I want to try this brand	①	②	③	④	⑤

5. How do you think about [3D printer/smart-watch/electric car] after you take a look at the given advertisement?

Questions	Not at All	Not Really	Neutral	Some-what	Very Much
(1) This product category is good	①	②	③	④	⑤
(2) This product category is favorable	①	②	③	④	⑤
(3) This product category is trustworthy	①	②	③	④	⑤
(4) This product category is valuable	①	②	③	④	⑤
(5) This product category is useful	①	②	③	④	⑤
(6) It is easy to use this product category	①	②	③	④	⑤

6. Please answer following questions about your self-efficacy level.

Questions	Not at All	Not Really	Neutral	Some-what	Very Much
(1) I handle new products or technologies better than others	①	②	③	④	⑤
(2) I understand and use functions of new products or technologies better than others	①	②	③	④	⑤
(3) I learn functions of new products or technologies on my own	①	②	③	④	⑤
(4) I collect information through smart-devices	①	②	③	④	⑤

7. Following questions are demographic questions.

1) Sex ① Male ② Female

2) Age ① 10~20s ② 30s ③ 40s ④ 50s ⑤ 60s and over

Thank you very much for your participation