



An examination of the celebrity endorsements and online customer reviews influence female consumers' shopping behavior

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ABSTRACT

The goal of this study is to compare the influence of celebrity endorsements to online customer reviews on female shopping behavior. Based on AIDMA and AISAS models, we design an experiment to investigate consumer responses to search good and experience good respectively. The results revealed that *search good* (shoes) endorsed by a celebrity in an advertisement evoked significantly more attention, desire, and action from the consumer than did an online customer review. We also found that online customer reviews emerged higher than the celebrity endorsement on the scale of participants' memory, search and share attitudes toward the *experience good* (toner). Implications for marketers as well as suggestions for future research are discussed.

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1. Introduction

Celebrity endorsements have long been used and which are one of the most popular advertising strategies and recognized as “ubiquitous feature of modern day marketing” (Biswas, Hussain, & O'Donnell, 2009; White, 2004). Advertisers often employ celebrities to endorse a product to enhance audience attentiveness, add glamour and desirability to the product, and make the advertisement more memorable and credible (Spielman, 1981).

Celebrities, however, are expensive because of their celebrity status and risky because of their potential for gaining negative publicity. Recent research has looked at negative events surrounding celebrity endorsers and the consequences of those events (Louie, Kulik, & Johnson, 2001; Louie & Obermiller, 2002; Money, Terence, & Sakano, 2006; Till & Shimp, 1998). Seller-created advertisements with or without celebrity endorsements can provide information that is objective, presented in a standard form, and focused on products' attributes and advantages.

These days, the Internet has significantly changed the sources of information delivery; as a result, sellers no longer control the dissemination of product information. For instance, web 2.0 tools (such as blogs, virtual communities, and social networking sites) open new interactive arenas which enable customers to share their opinions and experiences about goods or services, and finally to influence the purchase decisions of other consumers. In the internet generation, in addition to celebrity endorsement, we should note the importance of online customer reviews on consumers'

purchasing behavior as well. An *online customer review* is defined as a type of product information and evaluation created by users on the basis of their own experiences. The review information is posted on either the websites of the online stores or on third party websites (Chen & Xie, 2004; Mudambi & Schuff, 2010). As a result, how online reviews affect consumers' decision-making has become an increasing crucial research topic (Dellarocas, Zhang, & Awad, 2007; Mudambi & Schuff, 2010).

Many studies have examined celebrity, expert, and typical consumer endorsements (Freiden, 1984; Seno & Lukas, 2007). However, there have been virtually no direct comparisons between the effects of celebrity endorsements and those of online customer reviews. Therefore, we have extended the prior work in this area in several ways. First, we attempt to study how the different effects of celebrity endorsements versus online customer recommendations are likely to be contingent on the product type (*search goods* versus *experience goods*). Second, we focus on the respondents' judgments of the product and their perceptions of the celebrity-endorsed advertisements versus online consumer recommendations in terms of seven stages: attention, interest, desire, memory, searching, taking action, and sharing. Finally, we make a significant contribution to this field of inquiry by conducting an empirical examination of the underlying processes that can explain the different effects of celebrity endorsements versus online customer recommendations.

1.1. Celebrity endorsements

According to McCracken (1989), a *celebrity endorser* is defined as “any individual who enjoys public recognition and who uses this

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recognition on behalf of a consumer good by appearing with it in an advertisement. (p. 310) The issue of celebrity endorsement in advertising has received significant attention in the literature. Many studies show strong support for the use of celebrity endorsements, arguing that celebrities help make brands recognizable and create a positive brand attitude (Petty, Cacioppo, & Schumann, 1983), enhance the likelihood of purchase (Friedman & Friedman, 1979), foster brand loyalty, and positively impact word-of-mouth (Bush, Martin, & Bush, 2004). Hoffner and Cantor (1991) also point out that people emulate the appearance and behavior of the media celebrities that they admire.

Most studies on celebrity endorsers have explored how the credibility of the source affects the success of the message. A highly credible source is more persuasive than a less credible source in influencing audience attitudes and behavioral intentions (Sternthal, Phillips, & Dholakia, 1978). Ohanian (1990) has synthesized the previous literature on this subject and proposed three distinct dimensions of celebrity endorser credibility: expertise, trustworthiness, and attractiveness.

Expertise refers to the extent to which a communicator is perceived to possess knowledge, skills, qualifications, or experience and is therefore considered to provide accurate information. *Trustworthiness* refers to the audience's confidence that the source provides information in an objective and honest manner, and *attractiveness* refers to how physically attractive, elegant, or likable the source is to the audience. Therefore, endorsers who are perceived to be knowledgeable, reliable, and attractive are considered credible and, in turn, induce consumers' positive attitudinal and behavioral responses to the brand and the product (Ohanian, 1991).

Scholars have shown that using famous celebrities to endorse products is generally more effective than using non-celebrities to generate positive responses from consumers (Atkin & Block, 1983; Freiden, 1984; Kamins, 1989). Moreover, these credible endorsers can produce more favorable attitudes toward the advertisement (Goldsmith, Lafferty, & Newell, 2000; Lafferty, Goldsmith, & Newell, 2002) and intent to purchase the product (Lafferty & Goldsmith, 1999; Ohanian, 1991).

1.2. Online customer reviews

Online customer reviews, which are one type of electronic word-of-mouth (eWOM), have a dual role; they provide product information and then make recommendations from a customer's perspective (Lee, Park, & Han, 2008). As informants, they provide user-oriented product information, including honest evaluations of the advantages and weaknesses of a product. As recommenders, they share their opinions and experiences to help other consumers judge the quality of a product (Lee et al., 2008; Park, Lee, & Han, 2007).

A global survey from the Opinion Research Corporation revealed that online consumer reviews play a major role in consumers' decisions about whether or not to purchase products or services. Nearly two-thirds of respondents reported consulting online reviews, blogs, and other sources of online customer feedback before purchasing a new product or service (Harris, 2009). Moreover, consumers say that word of mouth is still the number one influencer in their electronics purchases (BIGresearch, 2008).

Compared with traditional word-of-mouth, online customer reviews are fast, savable, and anonymous; they also transcend time and space and can be received instantly (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). Throughout this online process, consumers can obtain high levels of market and product information transparency. The importance of online customer reviews has been widely documented in the existing literature (Zhu, 2006). Bickart and Schindler (2001) findings indicate that product information on online forums has greater credibility, is easier to relate to, and is more likely to evoke empathy with consumers than is the infor-

mation on seller-designed websites. As a result, online customer reviews play an increasingly significant role in consumers' purchasing decisions (Duan, Gu, & Whinston, 2008).

1.3. Consumer action model

1.3.1. Information processing theory

Human information processing theory is concerned with how people gather, interpret, and use information to make decisions (Newell & Simon, 1958; Norman, 1968; Reitman, 1965). Information processing theory conceptualizes how people attend to environmental events, encode information to be learned, relate it to what they already know, store new knowledge in their memory, and retrieve it as needed (Shuell, 1986), cited in Schunk (2000). Scholars have shown that consumers' choices are shaped by the ways in which human's process information (Huber & Seiser, 2001).

1.3.2. The AIDMA model and AISAS models

In traditional media marketing, the linear classic AIDMA (Attention, Interest, Desire, Memory, and Action) model by Hall (1924) has played a central role in describing the psychological processes involved in a consumer's purchase of a product. AIDMA model has since been widely used by traditional media advertisers. With this model, the buyer is depicted as passing through the stages of Attention, Interest, Desire, Memory, and Action. *Attention* is the first step in the AIDMA process. Once attention is gained, the next step is to arouse the consumer's *interest* in the advertised product. Soon the consumer might *desire* to have the product and keep it in his or her *memory*. Finally, the consumer *acts* to purchase the product (Sumita & Isogai, 2009).

In response to rapid technological changes and the Web 2.0 era, (Dentsu Incorporated, 2008), the largest advertising agency in Japan, modified the AIDMA model and proposed a new model, AISAS (Attention, Interest, Search, Action and Share). The interactive and personalized nature of the Internet, AISAS model is more accurately describe consumer behavior on the Internet. Similar to the AIDMA model, a product first attracts the *attention* of a consumer, and then the consumer becomes *interested*. The next step of the consumer's path in the new AISAS model, however, is to *search* information on the Internet, followed by taking an *action* to purchase the product. After that, in this new model, consumers *share* their experiences and assessments on the Internet. These new Search and Share stages recognize and make explicit the importance of customer-generated messages (CGMs) in the Web 2.0 era.

2. Research methodology

2.1. Experiment framework

This study integrated AIDMA and AISAS models to treat consumer responses to celebrity advertisements and online customer reviews. That is, a product first attracts the *attention* of the consumer, and then the consumer becomes *interested*. After that, following the traditional AIDMA path, the consumer might *desire* to have the product and will keep it in his or her *memory*. Finally, the consumer may take *action* to purchase it. In the Web 2.0 era, customer reviews are increasingly available online for a wide range of products; people tend to rely on judgments made by other people and listen more carefully to the opinions of other buyers. Most people have Google-d a product before buying it. Following the Web 2.0 AISAS path, we see that after consumers become *interested* in this product, they *search* product-related information through the Internet, followed by taking *action* to purchase it. Finally, consumers *share* their experiences and assessments on the Internet with other potential consumers, feeding back to the search

stage on the Internet. Thus, this study combines these stages in the following order: Attention, Interest, Desire, Memory, Search, Action, and Sharing.

2.2. Stimulus material

We designed a 2 (type of endorser: celebrity or online consumer) * 2 (type of product recommended: shoes or toner) stimulus. Prior to the experiment, we conducted focus group interviews to determine an appropriate celebrity and relevant products. Five female graduate students in an Internet marketing program in Taiwan were asked to name female celebrities and then to match appropriate products with each celebrity they mentioned. Tiffany Hsu, a fashion model and actress, was the most frequently named celebrity and was selected as the most suitable celebrity endorser. Shoes and toner were mentioned with the highest frequency and were also selected because of their relevance and availability. The two products also represent different goods categories, which allowed an investigation into whether the responses to the two types of recommendations varied for different types of products. According to Nelson (1970, 1974) original classification, shoes can be categorized as a *search* good, which is easier to evaluate before purchase, whereas toner is an *experience* product, which can be evaluated only after it has been used.

According to Mitchell (1986), the use of professionally developed advertisements rather than mock advertisements is encouraged in experimental research in order to elicit a true response from the subjects. Following this suggestion, we selected the celebrity-endorsed shoe ads from real ads, and a professional graphic designer created a celebrity-endorsed toner ads. For the consumer-endorsed shoes and toner stimulus, we invited a doctoral student to experience the selected shoes and toner for a month. This student then shared her evaluations and opinions in written comments and photos of herself with these products.

Four full-color celebrity endorsement ads and consumer reviews were selected and designed for use as the stimulus material in the experiment, including: (1) a celebrity endorsing a shoe product, (2) a celebrity endorsing a toner product, (3) an online consumer recommending the same shoe product, and (4) an online consumer recommending the same toner product. The two celebrity ads featured a celebrity, Tiffany Hsu, who posed with the shoes or toner and provided seller-created information. The consumer reviews featured an online consumer, a doctoral student, who provided photos of herself with the products and consumer-created information, including her own experience with the products and her evaluations and opinions of the products (see Appendix A).

2.3. 3 Research instrument

The questionnaire for participants had two parts. The first part was developed to measure the participants' psychological processes as they passed through the seven stages of the consumer action model—attention, interest, desire, memory, search, action, and share—with three items for each stage as each participant considered either an advertisement or a review. The items were adapted or modified from past research papers (Mackenzie, Lutz, & Belch, 1986; Norris & Colman, 1992; Pollay & Banwari, 1993) and were examined by two experts in marketing to make sure that the items fit the context of our study (see Appendix B). All items were measured on a five-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5).

This part of the questionnaire also added open-ended questions in order to ascertain how participants assessed the celebrity and online reviewer in terms of three perceived dimensions of source credibility: expertise, trustworthiness, and attractiveness. The sec-

ond part of the questionnaire asked participants to answer questions related to demographics, including gender, age, and income.

2.4. Research procedure

Participants were solicited through a web-based survey conducted a survey using PTT Bulletin Board System (PTT, telnet://ptt.cc, http://www.ptt.cc/bbs/index.html) is a terminal-based bulletin board system based in Taiwan. The reasons selecting PTT are: (a) PTT is arguably the largest online forum in Taiwan with more than 1.5 million registered users. During peak hours, there are over 150,000 users online; (b) it has over 200,000 boards with a multitude of topics, and more than 40,000 articles and 1 million comments are posted every day. We choose the board named “e-Shopping”, more than half members are female discussing and sharing online shopping experiences. This implies that the users in this board are more active and motivated in searching beauty related products and shopping. Thus, the users are suitable for this study. Respondents who clicked on the questionnaire URL were randomly led to one of four treatments. Each participant was asked to view an advertisement or a consumer review before filling out the questionnaire. An incentive (the opportunity to win five \$500NT (\$16US) department store gift vouchers) was applied to increase the response rate.

2.5. Participants

During the two-week survey period (from May 1, 2011 to May 14, 2011), 203 responses were received. After male responses and those with missing data were eliminated, 176 responses were complete and usable, among which 43 responded to the celebrity-endorsed shoe stimulus, 46 to the celebrity-endorsed toner stimulus, 44 to the online consumer-recommended shoe stimulus, and 43 to the online consumer-recommended toner stimulus. All of the usable participants were female, with ages ranging from 16 to 35 years (80% were 16–25 years), 69% were students, 77% of participants' average discretionary income per month were under \$10,000 NT (\$320US).

2.6. Validity and reliability

The individual item reliabilities, composite reliabilities, Cronbach's alphas, and average variances extracted by the constructs for these four stimuli (see Table 1) indicated that they had acceptable levels of convergent validity and reliability (Cook & Campbell, 1979; Fornell, 1982; Fornell & Larcker, 1981; Hair, Anderson, Tatham, & Black, 1992; Nunnally, 1978). The constructs also exhibited sufficient discriminate validity because the average variance extracted for each construct was greater than the squared correlations between constructs (Fornell & Larcker, 1981; Grant, 1989).

3. Results

3.1. Manipulation check

Participants were asked if they knew who the person was in the advertisement or customer recommendation. For those who recognized the person, an open-ended question asked for her name. Almost all of the participants reviewing the celebrity endorser (93.8%) recognized her, whereas 95.6% of the subjects did not know the online customer. More than 97% of those who knew the celebrity endorser provided her correct name, indicating that the celebrity/online customer manipulation worked. Those who did not correctly identify the endorser and who recognized the online customer were eliminated for subsequent analyses.

Table 1
Summary of measurement scales.

Item	Factor loadings		Cronbach's alpha		Composite reliability		Average variance extracted		
	Toner	Shoes	Toner	Shoes	Toner	Shoes	Toner	Shoes	
Attention			0.94		0.89	0.94	0.92	0.86	0.81
Attention 1	0.91	0.91							
Attention 2	0.93	0.88							
Attention 3	0.94	0.91							
Interest			0.95		0.89	0.95	0.92	0.88	0.82
Interest 1	0.94	0.92							
Interest 2	0.93	0.85							
Interest 3	0.94	0.93							
Desire			0.97		0.94	0.97	0.96	0.92	0.89
Desire 1	0.95	0.93							
Desire 2	0.96	0.96							
Desire 3	0.98	0.94							
Memory			0.94		0.85	0.95	0.90	0.87	0.75
Memory 1	0.93	0.89							
Memory 2	0.97	0.92							
Memory 3	0.90	0.77							
Search			0.98		0.97	0.98	0.97	0.94	0.94
Search 1	0.90	0.96							
Search 2	0.98	0.97							
Search 3	0.97	0.96							
Action			0.96		0.85	0.96	0.91	0.90	0.76
Action 1	0.96	0.87							
Action 2	0.95	0.95							
Action 3	0.94	0.80							
Share			0.95		0.89	0.96	0.93	0.90	0.81
Share 1	0.95	0.91							
Share 2	0.97	0.92							
Share 3	0.93	0.87							
	>0.5 (Hair et al., 1992)		>0.7 (Hair, Anderson, Tatham, & Black, 1998)		>0.8 (Kline, 1998)		>0.5 (Hair et al., 1998)		

3.2. Analysis of variance results

In order to compare the characteristics of the four groups, a series of analyses of variance (ANOVA) were conducted. The purpose of ANOVA is to test for significant differences in average scores among independent groups (Howell, 1992). In this study, one-way ANOVAs ($\alpha = 0.05$) were used to compare the four stimuli-celebrity-endorsed shoes/celebrity-endorsed toner, online consumer-recommended shoes/online consumer-recommended toner-for significant differences in group means for the following variables: attention, interest, desire, memory, search, action and share attitudes toward the stimuli.

3.2.1. Celebrity-endorsed shoes vs. online consumer-recommended shoes

We first analyzed how each endorser (celebrity or online customer) evoked different degrees of AIDMA and AISAS attitudes toward the *search* product, shoes. The analysis yielded the following results. Advertisements featuring the celebrity figure produced a consistently more favorable impact than did the online consumer's recommendations, as shown in Table 2. The celebrity-endorsed shoes were significantly higher in terms of the participants' attention, desire, and action stages than they were for the online consumer's shoe recommendations. The difference was small and insignificant on the scale measuring interest, memory, search, and share.

3.2.2. Celebrity-endorsed toner vs. online consumer-recommended toner

Second, we analyzed how each endorser (celebrity or online customer) evoked different degrees of AIDMA and AISAS attitudes in the *experience* product, toner. The results indicated that the online consumer's recommendations produced a consistently more favorable impact than did the celebrity advertisement. The online consumer's recommendations for the toner stimulus were significantly higher in the memory, search, and share stages than those endorsed by the celebrity. Table 3 provides details.

Table 2
ANOVA results.

Stage	Celebrity (N = 43) Mean (SD)	Online customer (N = 44) Mean (SD)	F	p
Attention	3.33(0.80)	2.68(0.87)	13.95	0.001**
Interest	3.23(1.02)	2.85(0.90)	3.31	0.072
Desire	2.53(1.00)	2.06(0.82)	5.64	0.020*
Memory	3.07(0.87)	2.82(0.89)	1.65	0.202
Search	2.96(1.18)	2.52(1.13)	3.23	0.076
Action	2.64(0.90)	2.24(0.89)	4.21	0.043*
Share	2.48(0.97)	2.12(0.83)	3.58	0.062

Table 3
ANOVA results.

Stage	Celebrity (N = 46) Mean (SD)	Online customer (N = 43) Mean (SD)	F	p
Attention	2.88(0.88)	2.89(1.01)	0.01	0.969
Interest	3.00(0.86)	3.07(1.09)	0.09	0.763
Desire	2.60(0.89)	2.72(1.22)	0.28	0.596
Memory	2.44(0.88)	2.92(1.11)	5.13	0.026*
Search	2.67(0.96)	3.19(1.23)	4.91	0.029*
Action	2.67(0.89)	2.73(1.09)	0.09	0.765
Share	2.07(0.81)	2.50(1.14)	4.13	0.045*

3.2.3. Celebrity-endorsed shoes vs. celebrity-endorsed toner

Third, we were interested in comparing how the different product types (shoes versus toner) evoked different degrees of AIDMA and AISAS attitudes in the celebrity endorser situations. Table 4 shows that the celebrity-endorsed shoe scored significantly higher in the attention, memory and share stages than did the celebrity-endorsed toner.

3.2.4. Online consumer-recommended shoes vs. online consumer-recommended toner

Fourth, we were interested in how the different product types (shoes versus toner) evoked different degrees of AIDMA and AISAS attitudes in the online consumer recommendation situations. The

Table 4
ANOVA results.

Stage	Shoes (N = 43) Mean (SD)	Toner (N = 46) Mean (SD)	F	p
Attention	3.33(0.80)	2.88(0.88)	6.26	0.014*
Interest	3.23(1.02)	3.00(0.86)	1.28	0.262
Desire	2.53(1.00)	2.60(0.89)	0.13	0.715
Memory	3.07(0.87)	2.44(0.88)	11.28	0.001**
Search	2.96(1.18)	2.67(0.96)	1.58	0.212
Action	2.64(0.90)	2.67(0.89)	0.03	0.875
Share	2.48(0.97)	2.07(0.81)	4.68	0.033*

Table 5
ANOVA results.

Stage	Shoes (N = 44) Mean (SD)	Toner (N = 43) Mean (SD)	F	p
Attention	2.68(0.87)	2.89(1.01)	1.07	0.303
Interest	2.85(0.90)	3.07(1.09)	0.99	0.322
Desire	2.06(0.82)	2.72(1.22)	8.81	0.004**
Memory	2.82(0.89)	2.92(1.11)	0.20	0.655
Search	2.52(1.13)	3.19(1.23)	7.14	0.009**
Action	2.24(0.89)	2.73(1.09)	5.17	0.025*
Share	2.12(0.83)	2.50(1.14)	3.19	0.077

analyses revealed that the online consumer-recommended toner stimulus was significantly higher in the desire, search, and action stages than it was for the online consumer's shoe recommendations. Table 5 provides details.

3.3. 3 Open-ended questionnaire analysis

Open-ended questions were used to understand how participants assessed the celebrity versus online customer in terms of three distinct dimensions of source credibility-expertise, trustworthiness, and attractiveness—for the two types of products. Arbitrary labels were used to code the data. The results show that in the **celebrity-endorsed toner** stimulus, most participants (69.6%) did not trust the endorser because they thought that endorsing the product was her job and that she was in this advertisement for the money. 58.7% of the participants considered this celebrity attractive because she is beautiful and has confidence. Half of the participants (54.3%) felt that this celebrity has expertise because she is a well-known model and has good skin; others (45.7%) felt that she did not have expertise because she is a model, not a skin care expert.

In the **online consumer-recommended toner** stimulus, many participants (62.8%) did not trust the recommendation because the comments were too short and exaggerated; also, the user did not provide photos that compared her skin before and after using the toner. Several participants also noted that in recent years, advertisers have paid bloggers to recommend their products; as a result, some people don't trust online consumer recommendations anymore. 60.5% of the participants did not consider this user attractive; they felt she looked very ordinary and not very pretty. The majority of participants (83.7%) did not consider this online consumer an expert because they did not know her, and they didn't know her background.

In the **celebrity-endorsed shoe** stimulus, most participants (60.5%) did not trust the endorser. As with the toner situation, they felt she did this advertisement just for money; also, because she has great body shape, whatever she wears will look attractive. 74.4% of the participants considered her attractive because she has beautiful legs. More than half of the participants (60.5%) considered her an expert because of her occupation and because she lives in a fashion environment.

In the **online consumer-recommended shoe** stimulus, more than half of the participants (54.5%) trusted the recommendation because they felt that the user had no reason to lie, and her comments seemed sincere. 45.5% of the participants, however, did not trust her

recommendations because they believe that many non-celebrity bloggers earn money from promoting products. Half of the participants (52.3%) considered the online consumer attractive; they felt she was good-looking and just like a friend. Most of the participants (52.3%) felt she had expertise because the photo looked fashionable, and her comments mentioned fashion items and trends.

4. Discussion and conclusion

Although celebrity endorsements are one of the most popular advertising strategies to promote products, many consumers turn to the Internet to research products because it lowers the costs of gathering and sharing information and offers new ways to learn about products before purchasing them. This experimental study used a combination of the AIDMA and AISAS models to provide further insight into how celebrity endorsements and customer recommendations influence the shopping behavior patterns of female consumers. The research provides further support for previous findings that traditional advertisements and consumer-created information produce different effects on consumers and their responses.

First, the experiment found that a *search* good (shoes) endorsed by a celebrity in an advertisement evoked significantly more attention, desire, and action from the consumer than did an online customer review. This is consistent with previous research; both Petrosiush and Crocker (1989) and Patzer (1983) studies found that physically attractive models used in advertising led to more favorable attitudes toward the advertisement and stronger purchase intentions. It also supports research evidence showing that the perceived image of the celebrity endorser had a positive impact on product buying behavior (Goldsmith et al., 2000; Ohanian, 1990) and attractive celebrities are more effective when endorsing products used to enhance one's attractiveness.

Second, consumer recommendations emerged higher than the celebrity endorsement on the scale of participants' memory, search, and share attitudes toward the *experience* good (toner). According to Korgaonkar, Silverblatt, and Girard (2006), female customers tend to perceive greater risks than males, and the perceived risks are greater for experience goods than it is for search goods. It can be said that female consumers are more worried about whether only one review is true or manipulated, so when shopping for experience goods, female consumers will read more reviews to verify the quality of the products being considered. This is supported by Park, Yoon, and Lee (2009), who found that females tend to search for significantly more kinds of information, including both product and customer reviews, when shopping for experience goods than when shopping for search goods.

Third, our study provides additional perspectives on how participants in two product-type situations perceive celebrities and online customers in terms of three distinct dimensions of source credibility: expertise, trustworthiness, and attractiveness. In both the celebrity-endorsed toner and shoe stimuli, most participants did not trust the endorser because they thought endorsing products is a celebrity's job and that she probably doesn't wear or use those products in her real life. By contrast, in the online consumer reviews, the trustworthiness depended on the content of the review; if it was too short and exaggerated (as perceived in the toner situation), the participants did not trust the recommendation. On the other hand, because the celebrity in this research is a famous fashion model, most of the participants considered her attractive and an expert in both the toner and shoes stimuli. In contrast, the evaluations of the customer reviewer's attractiveness and expertise depended on the participants' subjective viewpoints. In fact, prior research has suggested that whether an endorser truly is an expert matters little. Instead, these results confirm that what matters greatly is whether consumers perceive them as experts (Erdoğan, 1999; Hovland, Janis, & Kelley, 1953; Ohanian, 1990).

5. Implications, limitations, and future research

This study contributes to both theory and practice. From the theoretical standpoint, this study makes three contributions to research. First, our study's successful application of the combined classic AIDMA model and Web 2.0 AISAS model to treat celebrity advertisements and online consumer reviews. This study is able to provide a better understanding of the two different information channels and how to influence female consumers' attention, interest, desire, memory, search, action, and share perceptions of advertisements versus consumer recommendations which was lacking in the marketing literature. It is a first step toward integrating this two consumer action model AIDMA and AISAS research on online shopping behavior opens up other areas for further research.

Second, unlike previous studies that focused on only celebrity endorsements (Amos, Holmes, & Strutton, 2008; Biswas, Hussain, & O'Donnell, 2009; Ferle & Choi, 2005; Miller & Laczniak, 2011) or online customer reviews influenced brand attitude and purchase intention (Chevalier & Mayzlin, 2006; Clemons, Gao, & Hitt, 2006; Hu, Liu, & Zhang, 2008; Mudambi & Schuff, 2010). To the best of our knowledge, this paper is one of a small number of studies that uses an experimental design to investigate both celebrity advertisements and online customer reviews within a single study. We conducted a 2 × 2 stimulus with the type of endorser (celebrity or online consumer) and the type of product recommended (shoes or toner). Additionally, the open-ended questionnaire is also important for its contribution to a better understanding of the relationship between source credibility items and advertising outcome measures. Moreover, the differential effects of the two types of endorsers are contingent on the type of product recommended (search goods or experience goods). Search good (shoes) endorsed by a celebrity in an advertisement evoked significantly more attention, desire, and action from the consumer than did an online customer review. Online customer reviews emerged higher than the celebrity endorsement on the scale of participants' memory, search and share attitudes toward the experience good (toner). The results demonstrate that traditional advertisements and consumer-created information produce different effects on consumers, and sheds light on the future relevance research of the search goods and experience goods different impact for consumer behavior.

Third, the present study shows the differences between Web 1.0 and Web 2.0 in the advertising environment. Celebrity advertisements, like the Web1.0 format, are static; the consumer can only look at and take official information from it. In contrast, the online customer review, like Web 2.0, has a user-centered design; the consumer creates the experience and evaluation then share. In addition, online consumers' willingness to share their experiences and recommend product suggests an opportunity to study post-purchase differences between search and experience goods.

This study also makes several practical contributions. Our findings can help practitioners apply the results to their marketing strategies. First of all, our study shows that a celebrity-endorsed search good evokes more of the consumer's attention, memory, and share attitudes toward the advertisement and product than it does toward the celebrity-endorsed experience good. Moreover, this study shows that the famous fashion celebrity was considered attractive and expert for both the shoe and toner products. In practice, celebrity attractiveness may be more important as a cue for new brands because of celebrity still serves as attention-getter, aids to recall and reference group identifier but celebrities are always expensive. Thus, according to resource allocation theory, used to assign the available resources in an economic way, different products should use different marketing strategies. We suggest managers, especially for unknown brands, should use physically attractive spokespersons/models to promote beauty-re-

lated search goods, which will be more effective in attracting the attention, memory, and share responses to the advertised product.

Second, the only way consumers used to know their own valuation of an experience good was to purchase and try it (Nelson, 1970). In the Web 2.0 era, however, the consumer has another way to further understand the experience goods, which is through electronic word-of-mouth (eWOM). Online WOM communication in the form of online product reviews perceived as helpful to consumers have greater potential value to companies, including increased sales (Chevalier & Mayzlin, 2006; Clemons et al., 2006). Our findings can help online retailers' understanding of the role online customer reviews play in the different stages of the consumer's purchase decision process (Attention, Interest, Desire, Memory, Search, Action and Share). We also discover that consumer recommendations emerged higher than the celebrity endorsement on the scale of participants' memory, search, and share attitudes toward the experience good (toner). The results can be used to develop guidelines for promoting experience goods. Since online customer reviews are more effective than celebrity endorsers for experience goods and they are likely to cost much less than celebrity endorsements, it is natural for firms to use this form of endorsement in their ads. In fact, it is not at all surprising that there has been a steady increase in the use of non-celebrity bloggers to write articles to recommend products in recent years. Enterprises and advertisers should be concerned about electronic word-of-mouth, not only to get consumers' opinions of products but also to use the eWOMs wisely to improve the competitive force of the product.

Furthermore, due to online product reviews has become a major informational source for consumers and marketer, it is important to consider the participants' mixed opinions of the reliability of online consumer reviews. We discovered that some participants felt that strangers have no reason to lie about their opinions, so their recommendations are worthy of trust, whereas others indicated that advertisers in recent years have paid non-celebrity bloggers to write articles to recommend their products, which leads people to distrust online consumer reviews. This phenomenon generates another issue, and advertisers should think more deeply about how to use this new marketing strategy and what kind of commercial recommendations can convince consumers of the value of their products and increase consumers' purchasing intentions.

Despite its valuable findings and implications, our study contains some limitations that warrant future research. First, only one celebrity and non-celebrity were used in our experiment thus the subjective preference of participants might influence the results. In the future, it is desirable to study multiple celebrities and non-celebrities in advertisements and online customer reviews. Second, online questionnaires were used to collect information; a self-selection bias may well be present in such online surveys. We propose that future research use an interview-assisted quantitative viewpoint to support such research. This study used a convenience sample and was limited to female consumers of 80% were in their 16–25 years and 69% were students in Taiwan. Therefore, the results of this study cannot be generalized to women of different age groups and in different geographic locations. It would be interesting for future research to study different age groups and compare Taiwanese attitudes and beliefs toward both celebrity advertisements and online customer reviews with other countries. Third, this study focused only on female consumers. The effect of gender differences toward purchasing a product has been verified in recent research, so the gender effect should be examined in future studies. Another limitation is that the present research involves only two types of product categories, shoes and toner, in its analysis of celebrity endorsements and online customer reviews. Future research in this area should consider a more generalizable sample and other product classes to overcome inherent limitations in the current design.

Appendix A. Four treatments

A.1. A celebrity endorsing a toner product



St. Clare Peptide Acid Complex Toner

St. Clare Peptide Acid Complex Toner improves and increases skin compactness and firmness. It also contains a moisturizing formula that provides deep and long-term moisturizing to all layers of your skin. Your skin will become softer, smoother, and more youthful.

A.2. An online consumer recommending the same toner product



St. Clare Peptide Acid Complex Toner

Usually it takes one to two weeks for the efficacy of a skin care product to become apparent. But St. Clare Peptide Acid Complex Toner is different. It made me feel its effects right away, the day after I first used it. This toner feels perfectly pure and clear, and it is not sticky. As soon as I started using this product, I felt my skin change dramatically. It became softer, more delicate, more sparkling, and fully moisturized. My skin is much more attractive than it was before I started using the product. Now I do not even really have to use make up when I go out. I really love this product.

A.3. A celebrity endorsing a shoe product



Airspace Studded Ankle Boots

The two colors and silver studs of these Airspace Ankle Boots have a dazzling effect. These low-heeled, black and brown leather boots combine elements of rocker and old England fashion. They will work for anybody and will go with anything you wear. You can be very girly and mannish at the same time. Airspace Studded Ankle Boots are must-have fashions for this winter.

A.4. An online consumer recommending the same shoe product



Airspace Studded Ankle Boots

I walk a lot, so I do not like to wear heels, especially very thin high heels. If I have to wear heels and I have a choice, I prefer to wear wedge platform shoes or square heels because they are comfortable and easy to walk in. The low-heeled Ankle Boots by Air-space are made of an attractive combination of black and brown leather. Also, the soles are skid-proof, so even on rainy days, I never worry about slipping. What I like most are the studs on the back of the boots. These boots combine elements of rocker and old England fashion; they are both stylishly unique and comfortable to walk in. I really love these boots.

Appendix B. Instrument of the research

B.1. Attention

- (1) I think this advertisement/online customer review attracts me.
- (2) I think this advertisement/online customer review draws my full attention.
- (3) I think this advertisement/online customer review catches my eye.

B.2. Interest

- (1) After reading this advertisement/online customer review, I feel an interest in the product.
- (2) After reading this advertisement/online customer review, I like the product.
- (3) After reading this advertisement/online customer review, I have a good impression of the product.

B.3. Desire

- (1) After reading this advertisement/online customer review, I think I need the product.
- (2) After reading this advertisement/online customer review, I want to have the product.
- (3) After reading this advertisement/online customer review, I hope I can get the product.

B.4. Memory

- (1) I think this advertisement/online customer review is impressive.
- (2) After reading this advertisement/online customer review, I can remember this review.
- (3) After reading this advertisement/online customer review, I can recall its content.

B.5. Search

- (1) After reading this advertisement/online customer review, I think I will search for information about the product on the Internet.
- (2) After reading this advertisement/online customer review, I think I will search for online word-of-mouth about the product on the Internet.
- (3) After reading this advertisement/online customer review, I think I will compare prices of the product on the Internet.

B.6. Action

- (1) After reading this advertisement/online customer review, I think the product in the review is worth purchasing.

- (2) After reading this advertisement/online customer review, I think I am willing to buy the product.
- (3) After reading this advertisement/online customer review, I think the product will benefit me.

B.7. Share

- (1) After purchasing and using the product, I think I will forward this advertisement/online customer review to my friends.
- (2) After purchasing and using the product, I think I will share the product with my friends.
- (3) After purchasing and using the product, I think I will share my experiences and comments about the product on the Internet.

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