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In-Feed Native Advertisement on News Websites: Effects of Advertising Format, Website Reputation, and Product Involvement

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Abstract

Focusing on two popular types of native advertising, endemic in-feed advertisements and linked in-feed advertisements, the current study examined the effects of advertising format, website reputation, and product involvement on perceived advertising credibility (trustworthiness and expertise), attitude-toward-the-advertisement, brand interest, and purchase intention. In general, endemic in-feed advertisements were rated more favorably on source expertise and brand interest, while linked in-feed advertisements scored higher on attitude-toward-the-advertisement. Three-way interaction effects were found for source trustworthiness, attitude-toward-the-advertisement, brand interest, and purchase intention. Endemic in-feed advertisements showed stronger impact for the high involvement product on a high-reputable website, while linked in-feed advertisements appeared to work better for the low involvement product on a low-reputable website.

Keywords: native advertising; advertising format; website reputation, product involvement

Introduction

Since the rise of digital media, consumers have been overwhelmed with advertising messages in various forms on their computers, smart phones, and tablets. As a result, many begin to skip or block advertisements whenever possible. According to the *Digital News Report* from Reuters Institute (2015), Internet users in the U.S. (29%) and the UK (31%) felt that traditional online advertisements (such as banners and pop-ups) were distracting and would "actively avoid sites where they interfere with the content too much." A recent study reported that approximately

39% of Internet users in the UK and 47% of users in the U.S. used advertising blockers on their computers or mobile devices (Newman, et. al, 2018). In an effort to address this challenge and more effectively reach target audiences, native advertising (sponsored, branded, or custom content) was created with both hopes and controversies.

As a subtler alternative to traditional online advertising, native advertisements match the visual design of the webpage they live within and tell an "editorial story" to earn attention (Hill, 2013). Many researchers (e.g., Lee, Kim, & Ham, 2016; Sweetser, Golan, Ahn, & Hochman, 2016) believe native advertising is more informative and less irritating, and therefore would be more effective than traditional online advertisements. eMarketer (2017) reported native advertisements accounted for approximately 53% of all display advertising spending in the U.S. in 2017. Nevertheless, native advertising may not always be a better option. Dumenco (2014) indicated that most brands did not really have much to say other than "buy this." Howe and Teufel (2014) reported native advertising might not work as effectively as traditional online advertisements among older consumers. For news organizations, Colhoun (2015) worried native advertising might limit journalists' independence and threaten media's credibility. Persuasive content could have negative influences on news content and threaten social responsibilities because of its unclear identities and lack of transparency (Schauster, Ferrucci, & Neill, 2016).

Previous studies on native advertising have largely focused on analyzing advertising content (e.g., Sweetser, Golan, Ahn, & Hochman, 2016; Carlson, 2014; Wojdynski, 2016) or comparing it with other types of online advertising (e.g., Gillespie & Joireman, 2016; Cole & Greer 2013). To take a closer look at the effects of native advertising, the current research examined two popular types of native advertisements, endemic and linked in-feed advertisements, and their impact on perceived advertising credibility, attitude-toward-the-

advertisement, brand interest, and purchase intention. Product involvement and website reputation were also included in the study as two potential moderating variables.

Literature review

Native advertising formats

Generally speaking, native advertising is an advertising message embedded in editorial content that matches the style and layout of the host medium (Knoll 2015). Interactive Advertising Bureau (2015) identified six major types of native advertisement – in-feed advertisement, paid search unit, recommendation widget, promoted listing, in-ad with native element unit, and custom. In-feed advertisements have the largest variation in execution. There are three common types of in-feed advertisements. Endemic in-feed advertisements are written in story form by or in partnership with the publisher to match the surrounding stories. They are published on a subpage within the host site. Linked in-feed advertisements are also in story form but they link off of the main site and usually direct viewers to the brand's landing page. The third type of in-feed advertisements allows users to read branded content without leaving to a different page and it is popular on social media. The current study focused on native advertisements on traditional and digital news websites, so only the first two types were examined. According to Pew Research Center (2018), even though many online users (68%) in the U.S. got news through social media, more people (74%) received news from a news site or an App. In addition, a recent survey suggested that only about 15% of Americans trusted news on social media, while approximately 54% of Americans trusted information from newspaper websites, making it the third-most credible source, 5% behind TV and 4% behind print newspapers (Dunn, 2017).

Endemic and linked in-feed advertisements are the two most frequently used native advertising formats on news websites (Interactive Advertising Bureau, 2015). Compared to

linked in-feed advertisements, endemic in-feed advertisements represent a higher level of

integration with news content but generate less direct responses toward the brand (Interactive

Advertising Bureau, 2015). Previous studies (e.g., Boerman, Van Reijmersdal, & Neijens, 2014;

Schauster, Ferrucci, & Neill, 2016) believed that sponsorship disclosure strategy used in native

advertisements could influence viewers' recognition of advertising and brand attitude in either

positive or negative direction. Since there have been very few studies examining specific types

of native advertising, the following question was asked:

> **RQ1:** What are the differences between endemic in-feed advertisement and linked in-
>
> feed advertisement, in terms of their impact on (a) perceived advertisement credibility;
>
> (b) attitude-toward-the-advertisement; (c) brand interest; and (d) purchase intention?

Product involvement

According to the Elaboration Likelihood Model (ELM), there are two routes to

persuasion, the central route and the peripheral route (Petty, Brinol, & Priester, 2007).

Individuals who have motivation and ability to understand a persuasive message tend to process

the message via the central route (MacInnis, Moorman, & Jaworski, 1991). However, if

individuals are lacking motivation or ability, the peripheral route is activated and decisions are

often made based on non-content cues (Celsi & Olson, 1998).

One of the greatest determinants of elaboration motivation is product involvement.

Involvement is a multi-meaning construct that indicates how actively and carefully individuals

seek information and make decisions (Flores, Chen, & Ross, 2014). Research in online

advertising has shown that product involvement had main and interaction effects (e.g., website

format, web reputation, types of online review) on purchase intention (Park & Lee, 2008), brand

attitude (Flores, Chen, & Ross 2014), advertising credibility (Xue & Zhou, 2011), and intention

to click (Flores, Chen, & Ross, 2014). In high product involvement situations, individuals are more motivated to analyze and understand the meaning of the information (e.g., Warrington & Shim, 2000; Phelps & Thorson, 1991). Contrarily, low product involvement often leads to less motivation and the persuasive effects of a message will highly rely on peripheral cues such as source trustworthiness, media expertise, and information formats (Park, Lee, & Han, 2007; Kaufman, Stasson, & Hart 1999; Petty, Brinol, & Priester 2007).

Often serving as a peripheral cue under the ELM, advertising format could significantly affect viewers' elaboration level, attitude, and behavioral intent. For example, Park, Lee and Han (2007) reported significant effects of information format under a low product involvement condition, where consumers reported stronger purchase intention based on product popularity rather than an informative product review. Micu and Pentina (2014) found that product involvement moderated viewers' level of elaboration and attitude change for two types of online advertisements – advertisement only vs. advertisement with news story. Yang's (2015) eye-tracking experiment suggested that online advertisements with negative frames served as a peripheral cue to gain the longest fixation duration under a low involvement condition.

Based on the consistent findings in previous research, it is expected that product involvement would moderate the effects of native advertising format in the current study. Linked in-feed advertisements require viewers to go to a different website, which involves higher level of elaboration and trust, while endemic in-feed advertisements should be a slightly better fit for low product involvement scenarios.

> **H1:** Product involvement moderates the effects of advertising format on (a) perceived advertising credibility; (b) attitude-toward-the-advertisement; (c) brand interest; and (d) purchase intention.

Website reputation

Because native advertising tends to match the webpage they live within, one needs to take into consideration the host website when discussing the effects of native advertisements. Vehicle source effect is "a measure of the relative value of an advertisement exposure as a function of the exposed vehicle" (Aaker & Brown, 1972). Research in traditional media has repeatedly found that media vehicles could have significant influence on the effectiveness of an advertisement (Choi & Rifon, 2002; Freiden, 1982). Generally speaking, high-status media vehicles tend to generate more positive responses than low-status media vehicles (Dutta-Bergman, 2004; Rosengren & Dahlen, 2013). In online advertising, website reputation affects how audiences perceive advertisements on the website (Choi & Rifon, 2002; Kim & Choi, 2012; Kim, Zhang, & Lankes, 2009; Shamdasani, Stanaland, & Tan, 2001). For example, in Choi and Rifon's (2002) online advertising effects model, web reputation had positive and direct effects on advertising credibility (trustworthiness and expertise) and subsequently influenced consumers' advertising/brand attitude and purchase intention. Kim, Zhang and Lankes (2009) suggested positive perception of the website could also lead to better brand recall.

A few studies discussed potential (mostly negative) influences of native advertisements on website reputation (Wu, et al., 2016), but little is known about the impact of website reputation on native advertising. Based on previous research, it is reasonable to expect that website reputation would moderate the effects of native advertisements. Endemic in-feed advertisements are editorially similar to and live within the host website, so website reputation should have greater influence on endemic advertisements than linked in-feed advertisements.

H2: Website reputation moderates the effects of advertising format on (a) perceived

advertising credibility; (b) attitude toward the advertisement; (c) brand interest; and (d)

purchase intention.

As mentioned above, information source often serves as a peripheral cue in ELM

research (Park, Lee, & Han, 2007; Kaufman, Stasson, & Hart, 1999; Petty, Brinol, & Priester,

2007). Scholars have found that individuals would easily accept a message that was high in

credibility without carefully processing the information (Petty, Brinol, & Priester, 2007).

However, Shamdasani, Stanaland and Tan (2001) reported that website reputation positively

enhanced online advertising effectiveness in high-involvement conditions. Due to the mixed

results, a general two-tailed hypothesis was proposed.

H3: Product involvement moderates the effects of website reputation on (a) perceived

advertising credibility; (b) attitude-toward-the-advertisement; (c) brand interest; and (d)

purchase intention.

Method

A 2 (advertising format: endemic in-feed advertisement vs. linked in-feed

advertisement) $\times$ 2 (website reputation: low vs. high) $\times$ 2 (product involvement: low vs. high)

mixed between- and within factorial design was adopted to explore the effects of advertising

format (between factor), website reputation (between factor), and product involvement (within

factor) on perceived advertising credibility, attitude-toward-advertisement, brand interest, and

purchase intention.

Participants

Undergraduate students at a large southern university in the United States served as

subjects in the experiment. The use of a student sample was theoretically appropriate because the

current study was to test if the expected effects appeared, not generalizability of a larger

population (Lang, 1996). In addition, the focus of the current study was news websites.

According to a recent study (Mitchell, Shearer, Gottfried, & Barthel, 2016), over 50% of 18-29

year-old Americans get news through online channels, higher than any other age group. About

34% of them get news through websites/Apps, even higher than social media (32%). Another

survey by American Press Institute (2015) also reported that 69% of Millennials (age 18-34) get

news at least once a day, which means they are important news consumers. The total sample size

was 105 with a median age of 26. Each subject was assigned randomly to one of the four

experimental conditions: high-reputable website with endemic in-feed advertisements (n=25),

low-reputable website with endemic in-feed advertisements (n=26), high-reputable website with

linked in-feed advertisements (n=25), and low-reputable website with linked in-feed

advertisements (n=29).

Stimulus materials

Twenty undergraduate students participated in a pretest to help identify high-reputable

and low-reputable news sites. Students were asked to rank the top 10 most-visited news websites

published by *Pew Research Center* in January 2015 (Olmstead & Shearer, 2015), including

Yahoo-ABC News, CNN, NBC, *Huffington Post*, CBS, *USA Today*, *BuzzFeed*, *The New York*

Times, FOX, and *Daily Mail*. Seventy percent of the participants (n=14) rated *USA Today* as the

most reputable website, while only 5% of the participants (n=1) considered *BuzzFeed* as a

reputable website. This result was consistent with Pew Research Center's (2018) findings that

indicated more than half of online news consumers routinely checked news content from

traditional news sites such as *USA Today*, *CNN,* and the *New York Times*. Although digital news

brands, such as *BuzzFeed* and the *Huffington Post,* had gained fairly high "hits", they were still

considered as non-journalistic content outlets and even "click baits" by many online users (Pew Research Center, 2018). Based on the pretest, researchers decided to use "usatoday.com" as a template of high-reputable website and use "buzzfeed.com" as a template of low-reputable website.

During the pretest, participants also rated product involvement for seven selected products on a 10-item, 7-point semantic differential scale developed by Zaichkowsky (1994). Participants identified iPhone 6s (smartphone) as a high-involvement product (M = 6.34, SD = 0.74) and Jackson Hewitt (tax return software) as a low-involvement product (M = 3.78, SD = 1.10). This is in line with results from previous studies (e.g., Flores, Chen, & Ross 2014; Park, Kim, Shon, & Shim 2013). To ensure the accuracy of product selection, product involvement was measured again with the same scale during the main experiment. Significant differences were found between iPhone 6s (M = 5.37, SD = 1.45) and Jackson Hewitt (M = 3.98, SD = 1.28), $t(324) = 9.26$, $p < .01$.

Web pages used for the main study were created by researchers based on the design of two news sites (usatoday.com and buzzfeed.com) and two company websites (apple.com/iPhone, and jacksonhewitt.com). Endemic in-feed advertisements and linked in-feed advertisements were also designed by researchers by modifying existing advertisements for iPhone 6s and Jackson Hewitt. In Group 1, participants were shown two *USA Today* homepages with a thumbnail of an endemic in-feed advertisement (iPhone 6s first, then Jackson Hewitt). When clicking on the thumbnail, the full article appeared on a subpage within *USA Today* website. In Group 2, participants were shown the same endemic in-feed advertisements on *BuzzFeed*. In Group 3, participants were shown two *USA Today* homepages with a thumbnail of a linked in-feed advertisement (iPhone 6s first, then Jackson Hewitt). When clicking on the thumbnail,

participants were directed to the company website to view the full article. In Group 4,

participants were shown the same linked in-feed advertisements on *BuzzFeed*. Many previous

experiments used static screenshots as stimulus materials (e.g., Flores, Chen, and Ross 2014). In

comparison, the webpages used in current study were more interactive, which should help

increase the effectiveness of measurements.

Procedure

Before seeing any experimental scenarios, participants were asked to complete a set of

measures that evaluated the perceived credibility of *USA Today* or *BuzzFeed*, depending on the

experimental condition. Participants were then shown a homepage of this website with an

advertisement for iPhone 6s. They were given a few minutes to view the advertisement and

answer questions that measured perceived advertising credibility, attitude-toward-the-

advertisement, brand interest, purchase intention, and product involvement. After completing

questions for the first advertisement, participants were shown the same homepage with an

advertisement for Jackson Hewitt, and complete the same dependent measurements, as well as a

few demographic questions.

Measures

The measurements in this study were adapted from previous studies with necessary

modifications.

Advertising and website credibility. Two dimensions of source credibility,

trustworthiness and expertise, were measured with two five-item, seven-point semantic

differential scales developed by Erdogan (1999). Participants were asked to indicate whether

they thought the website or the advertisement was undependable/dependable, dishonest/honest,

unreliable/reliable, insincere/sincere, untrustworthy/trustworthy, not an expert/expert,

inexperienced/experienced, unknowledgeable/knowledgeable, unqualified/qualified, and unskilled/skilled. For advertising credibility, the coefficient alpha for trustworthiness was .95 and .96 for expertise. For website credibility, the coefficient alpha for trustworthiness was .95 and .94 for expertise.

Attitude-toward-the-advertisement. Muehling and McCann's (1993) 5-item semantic differential scale was used to measure participants' attitude toward each advertisement. Participants were asked to rate the advertisement as good/bad, like/dislike, favorable/unfavorable, interesting/uninteresting, and appealing/unappealing. The coefficient alpha was .94.

Brand interest. Participants' interest in the advertised brand was measured with a four-item, seven-point Likert scale developed by Machleit, Madden, and Allen (1990). Participants were asked if they were intrigued by the brand, if they would like to know more about the brand, if they were curious about it, and if they thought learning more about the brand would be useful. The coefficient alpha was .92.

Purchase intention. Purchase intention was measured with a seven-point scale adapted from previous research (Yoon, Kim, & Kim, 1998). Participants were asked how likely they would buy the product on a scale ranging from 1 (not at all likely) to 7 (very much likely).

Product involvement. It was measured by Zaichkowsky's (1994) the Personal Involvement Inventory. Participants were asked whether the products were important/unimportant, boring/interesting, relevant/irrelevant, exciting/unexciting, means nothing/means a lot, appealing/unappealing, fascinating/mundane, worthless/valuable, involving/uninvolving, and not need/needed. The coefficient alpha was .94.

Results

Using advertising format and website reputation as two between-group factors, and product involvement as a within-group variable, a repeated measures test was run and main effects and interaction effects were observed and analyzed. Two dimensions of website credibility for *USA Today* and *BuzzFeed* were measured prior to the experiment and included in the test as two covariates to control their potential impact on the dependent variables.

Advertising format

The research question (RQ1) concerned the general effects of advertising format. Results showed significant main effects in source expertise, $F(1, 99) = 4.91, p < .05$; attitude-toward-the-advertisement, $F(1, 99) = 4.35, p < .05$; and brand interest, $F(1, 99) = 4.12, p < .05$ (see Table 1). Endemic in-feed advertisements ($M = 5.07, SD = 1.45$) received higher rating on source expertise than linked in-feed advertisements ($M = 4.60, SD = 1.05$). Stronger brand interest was also reported for endemic in-feed advertisements ($M = 4.23, SD = 1.29$) than linked in-feed advertisements ($M = 3.78, SD = 1.13$). However, participants indicated more favorable attitude toward linked in-feed advertisements ($M = 4.14, SD = 1.02$) than endemic in-feed advertisements ($M = 3.75, SD = .97$).

PLACE TABLE 1 ABOUT HERE

Advertising format and product involvement

The first hypothesis (H1) examined the moderating role of product involvement. This hypothesis was partially supported. Interaction effects were found in attitude-toward-the-advertisement, $F(1, 99) = 4.13, p < .05$; and purchase intention, $F(1, 99) = 8.30, p < .01$ (see

Table 1). For the high-involvement product (iPhone 6s), participants reported more favorable attitude toward linked in-feed advertisements (M = 4.11, SD = 1.38) than endemic in-feed advertisements (M = 3.43, SD = 1.58). However, participants reported stronger purchase intention for endemic in-feed advertisements (M = 6.18, SD = 1.14) than linked in-feed advertisements (M = 5.32, SD = 1.82). No significant differences in attitude-toward-the-advertisement or purchase intention were identified for the low-involvement product (Jackson-Hewitt).

Advertising format and website reputation

The second hypothesis (H2) explored interaction effects between website reputation and advertising format. This hypothesis was also partially supported. Significant interaction effects were found in brand interest, $F(1, 99) = 6.16$, $p < .05$ (see Table 1). For the high-reputable website (*USA Today*), endemic in-feed advertisements (M = 4.93, SD = 1.07) generated stronger brand interest than linked in-feed advertisements (M = 3.95, SD = 1.11).

Advertising format, website reputation, and product involvement

The last hypothesis (H3) examined interaction effects between product involvement and website reputation. This hypothesis was partially supported. Significant effects were found in source trustworthiness, $F(1,99) = 4.55$, $p < .05$; attitude-toward-the-advertisement, $F(1, 99) = 10.89$, $p < .01$; and brand interest, $F(1, 99) = 4.66$, $p < .05$. For the high-involvement product, source trustworthiness was rated higher for the high-reputable website (*USA Today*; M = 5.02, SD = 1.18) than the low-reputable website (*BuzzFeed*; M = 4.32, SD = 1.37). For the low-involvement product, participants reported more favorable attitude-toward-the-advertisement for *USA Today* (M = 4.07, SD = 1.47) than *BuzzFeed* (M = 3.45, SD = 1.25); as well as stronger brand interest for *USA Today* (M = 4.09, SD = 1.53) than *BuzzFeed* (M = 3.04, SD = 1.45).

More importantly, three-way interaction effects were found in source trustworthiness, $F(1,99) = 8.05$, $p < .05$; attitude-toward-the-advertisement, $F(1,99) = 28.37$, $p < .01$; brand interest, $F(1,99) = 19.35$, $p < .01$; and purchase intention, $F(1,99) = 8.72$, $p < .05$.

High-involvement product (iPhone 6s). On the high-reputable website (*USA Today*), the linked in-feed advertisement ($M = 4.38$, $SD = 1.60$) was rated as more favorable than the endemic in-feed advertisement ($M = 2.67$, $SD = 1.05$), $F(1,48) = 19.85$, $p < .01$. On the low-reputable website (*BuzzFeed*), however, the endemic in-feed advertisement ($M = 6.29$, $SD = 1.12$) was rated more favorably than the linked in-feed advertisement ($M = 4.92$, $SD = 2.13$).

Low-involvement product (Jackson-Hewitt). On the high-reputable website (*USA Today*), the endemic in-feed advertisement ($M = 4.91$, $SD = 1.16$) was rated higher in brand interest than the linked in-feed advertisement ($M = 3.27$, $SD = 1.44$), $F(1,48) = 19.75$, $p < .01$. On the low-reputable website (*BuzzFeed*), the endemic in-feed advertisement ($M = 4.92$, $SD = .97$) was rated as more trustworthy than the linked in-feed advertisement ($M = 4.30$, $SD = .96$), $F(1,53) = 5.65$, $p < .05$. However, the linked in-feed advertisement ($M = 4.05$, $SD = 1.16$) was rated more favorably than the endemic in-feed advertisement ($M = 3.27$, $SD = 1.18$), $F(1,53) = 6.01$, $p < .05$. The linked in-feed advertisement ($M = 3.49$, $SD = 1.52$) generated stronger brand interest than the endemic in-feed advertisement ($M = 2.53$, $SD = 1.20$), $F(1,53) = 6.71$, $p < .05$. The linked in-feed advertisement ($M = 3.93$, $SD = 1.58$) also generated stronger purchase intention than the endemic in-feed advertisement ($M = 2.92$, $SD = 1.60$), $F(1,53) = 5.52$, $p < .05$ (see Table 2).

PLACE TABLE 2 ABOUT HERE

Discussion

The current study investigated the influences of in-feed native advertising format, host website reputation, and product involvement on individuals' evaluative responses to the advertisement and the brand. Main effects and interaction effects were reported for perceived advertising credibility, attitude-toward-the-ad, brand interest, and purchase intention.

Theoretical implications

In general, endemic in-feed advertisements were rated higher than linked in-feed advertisements on source expertise. Endemic in-feed advertisements also generated stronger brand interest. Many scholars believe native advertising is more informative and less irritating, because of its editorial style content, which might lead to more positive advertising responses (Becker-Olsen, 2003; Tutaj & Van Reijmersdal, 2012). In this case, endemic in-feed advertisements provided a higher level of integration with news content, compared to linked in-feed advertisements, which could explain the higher scores on source expertise and brand interest. However, participants reported less favorable attitude toward endemic in-feed advertisements than linked in-feed advertisements. A possible explanation is that audiences expect to read news content rather than commercial content on a news site (Cole & Greer, 2013; Van Reijmersdal et al. 2005; Tutaj & Van Reijmersdal, 2012), so the particular format of native advertising might be seen as deceiving or misleading, especially the more integrated endemic in-feed advertisements.

However, advertising format alone does not tell the whole story. Its impact should be considered in relation to other influential factors. In the current study, product involvement and website reputation were identified as two moderating variables.

It was found that endemic in-feed advertisements generated significantly stronger brand interest than linked in-feed advertisements, but only for the high-reputable website (*USA Today*). Scholars in TV research (Ruijgrok, 2000) and magazine studies (Van Reijmersdal, Neijens, & Smit, 2005) suggested that sponsored content on a more credible media vehicle could receive more attention, which would help increase brand interest. Participants in the current study rated *USA Today* significantly higher on trustworthiness ($M = 5.42$, $SD = 1.11$) and expertise ($M = 5.64$, $SD = .95$) than *BuzzFeed* ($M = 3.73$, $SD = 1.28$; $M = 3.72$, $SD = 1.37$; respectively). The credibility and authority of the host website, *USA Today*, might have been transferred to the advertisements, resulting the increase of brand interest.

As for product involvement, significant results were found only for the high-involvement product (iPhone 6s). Participants reported more favorable attitude toward linked in-feed advertisements, but stronger purchase intention toward endemic in-feed advertisements. According to the ELM (Park, Lee, & Han, 2007; Petty, Brinol, & Priester, 2007), higher product involvement leads to higher level of elaboration, so individuals tend to be more motivated to process a persuasive message. In the current study, linked in-feed advertisements led participants to the brand website that provided more useful information about the advertised product, such as price, function, and appearance. Endemic in-feed advertisements, however, only showed viewers a story indirectly related to the product. It is possible that linked in-feed advertisements for the high-involvement product satisfied consumers' needs for information and thus received more favorable responses.

Three-way interaction effects among advertising format, website reputation, and product involvement further explained the moderating effects of product involvement and website reputation in more details. For the high-involvement product (iPhone 6s), the only difference was

found in attitude-toward-the-advertisement. Endemic in-feed advertisements were rated more favorably on *BuzzFeed,* while linked in-feed advertisements received higher scores on *USA Today*. This result may be related to the different nature of these two websites. *BuzzFeed* is a recently established digital news site with ongoing controversy for its source credibility and plagiarism problem and highly relies on online advertising for revenues. It is expected to see various types of advertisements on its website. On the other hand, *USA Today* is a traditional and formal journalistic news organization with higher credibility and professional standard. Therefore, the public expect its website to be news-oriented and have a clear line between advertising and news content. It is possible that participants in the current study might have considered endemic in-feed advertisements on *BuzzFeed* more acceptable than those on *USA Today*. This speculation is supported by comments from many participants on endemic in-feed advertisements on *USA Today*, such as: *"I believe that news websites should print the news, and not advertisements strategically placed to get people interested about the product;" "In my opinion, USA Today should let viewers know and become more aware that it is an advertisement that they are viewing instead of an actual news story."* No significant differences were found for source credibility, brand interest, or purchase intention. This is probably because, as suggested by the ELM, when in a high-involvement situation, consumers look for information directly related to the product or service and therefore are not affected by peripheral cues such as advertising format and website reputation.

For the low-involvement product, peripherals cues (advertising format and website reputation) were at work and more interaction effects were reported in source trustworthiness, attitude-toward-the-advertisement, brand interest, and purchase intention. On *USA Today*, endemic in-feed advertisements were rated higher for brand interest. On *BuzzFeed*, endemic in-

feed advertisements were rated as more trustworthy; but linked in-feed advertisements generated more favorable advertising attitude, and stronger brand interest and purchase intention. Previous ELM research has suggested that website reputation might work as a peripheral cue in low-involvement situations (e.g., Kaufman, Stasson, & Hart, 1999; Petty, Brinol, & Priester, 2007; Fleming, Petty, & White, 2005). Again, the credibility of a high-reputable website (*USA Today*) might have helped validate the endemic in-feed advertisements embedded in its content and viewers do not feel the need to confirm the information on the brand website. Endemic in-feed advertisements on a low-reputable website (*BuzzFeed*) might be acknowledged as more reliable, however, due to low credibility of the website, viewers would prefer to get confirmation on the brand website through linked advertisements, in order to make a more informed purchase decision.

Practical implications

For marketing and advertising professionals who plan to place advertisements on news websites, the findings suggested native advertising could be an effective option. However, potential moderating variables, such as product involvement and website reputation, should be taken into consideration when determining specific native advertising formats for marketing campaigns.

In general, endemic in-feed advertisements may be more helpful in generating higher credibility and stronger brand interest, compared to linked in-feed advertisements. However, because endemic in-feed advertisements are fully embedded in editorial content, some consumers may feel being deceived and develop negative feelings towards the advertisements. This is especially true for advertisements for high involvement products on a high reputable website such as *USA Today.* As Sonderman and Tran (2013) recommended, publishers must set

high standard for the content of native advertising and maintain a balance between profits and news credibility, because users may find this type of advertising practice unacceptable for a well-established news organization such as *USA Today*. Many participants in the current study recommended news sites be more clear about native advertising content and provide information that is appropriately integrated into the web page. It is essential to make sure users do not mistaken native advertisements as unbiased information.

For low involvement products on a less reputable website such as *BuzzFeed,* there seems to be more opportunities with linked in-feed advertisements. Compared to vague promotional messages hidden in endemic in-feed advertisements from a less reliable source, users would prefer information directly related to the product/service on the brand website, through linked in-feed advertisements.

Limitations and future research

While the current research contributes to the overall understanding of native advertising effectiveness, the following limitations must be considered when evaluating the findings. First of all, undergraduate students were used as samples. A more diverse group of participants would help provide more insight on the effects of native advertising on individuals with different demographic backgrounds. In addition, the current study focused on in-feed advertising on news websites. It would be interesting to explore how different types of native advertising work on social media. Finally, only two different styles of in-feed advertisements were examined in this study. According to IAB (2015), in-feed advertisements also can be categorized by content (such as content feed, product feed, and social feed) and media format (such as articles, images, videos, and music). Future research may investigate other types of native advertisements to gain a more comprehensive understanding.

Conclusion

Previous studies on native advertising have largely focused on advertising content or comparison with traditional advertising formats. This research adds to current literature by examining two specific types of native advertisements, endemic and linked in-feed advertisements, and their impact on advertising and brand responses. Product involvement and website reputation were identified as two moderating variables. Three-way interaction effects were found for source trustworthiness, attitude-toward-the-advertisement, brand interest, and purchase intention. In general, endemic in-feed advertisements seem to have the strongest effects for high involvement products on a high-reputable website, while linked in-feed advertisements appear to work better for low involvement products on a low-reputable website.

Table 1. Multivariate repeated measures for advertising responses.

| Factor	Measures	*df*	*F*	η²	*P*
Between-Subjects		(99)			
Advertising Format (A)	Trustworthiness	1	.442	.04	.51
	Expertise	1	4.91	.05	.03*
	Attitude	1	4.35	.04	.04*
	Brand Interest	1	4.12	.04	.04*
	Purchase Intention	1	0.81	.01	.37
Web Reputation (W)	Trustworthiness	1	0.76	.01	.38
	Expertise	1	0.67	.01	.42
	Attitude	1	1.23	.01	.27
	Brand Interest	1	14.8	.13	.00***
	Purchase Intention	1	3.44	.03	.07
A × W	Trustworthiness	1	1.11	.01	.30
	Expertise	1	0.33	.00	.57
	Attitude	1	0.74	.01	.39
	Brand Interest	1	6.16	.06	.01*
	Purchase Intention	1	0.14	.00	.91
Within-Subjects		(99)			
Involvement (I)	Trustworthiness	1	2.92	.03	.09
	Expertise	1	.53	.01	.47
	Attitude	1	5.06	.05	.03*
	Brand Interest	1	22.15	.18	.00***
	Purchase Intention	1	107.58	.52	.00***
I × A	Trustworthiness	1	.51	.01	.48
	Expertise	1	.12	.00	.73
	Attitude	1	4.13	.04	.04*
	Brand Interest	1	0.01	.00	.93
	Purchase Intention	1	8.30	.08	.005**
I × W	Trustworthiness	1	4.55	.04	.04*
	Expertise	1	.06	.01	.81
	Attitude	1	10.89	.09	.001***
	Brand Interest	1	4.66	.06	.03*
	Purchase Intention	1	.102	.01	.75
I × A × W	Trustworthiness	1	8.05	.08	.006*
	Expertise	1	.04	.00	.84
	Attitude	1	28.37	.22	.00***
	Brand Interest	1	19.35	.16	.00***
	Purchase Intention	1	8.72	.08	.004**

Note: * p < .05; ** p < .005; ***p< .001 website credibility for USA Today and BuzzFeed were included as covariates in the repeated measures but not reported in this table.

Table 2 Participants' responses in different treatment groups

Treatment			M (SD)				
Product Involvement	**Advertising Format**	**Website Reputation**	**Advertising Trustworthiness**	**Advertising Expertise**	**Attitude**	**Brand Interest**	**Purchase Intention**
High	Endemic	High	5.24 (1.21)	5.21 (1.35)	2.67 (1.05)	4.95 (1.48)	6.07 (1.18)
		Low	4.36 (1.39)	4.85 (1.37)	4.18 (1.67)	4.57 (1.67)	6.29 (1.12)
	Linked	High	4.81 (1.14)	4.62 (1.27)	4.38 (1.60)	4.62 (1.63)	5.79 (1.25)
		Low	4.28 (1.38)	4.50 (1.39)	3.88 (1.14)	3.80 (1.73)	4.92 (2.13)
Low	Endemic	High	3.98 (1.59)	5.24 (1.24)	4.88 (1.16)	4.91 (1.16)	4.08 (1.83)
		Low	4.92 (.97)	5.01 (1.23)	3.28 (1.18)	2.53 (1.20)	2.92 (1.60)
	Linked	High	4.57 (1.13)	4.63 (1.26)	4.32 (1.17)	3.27 (1.44)	3.88 (1.60)
		Low	4.30 (.96)	4.64 (1.06)	4.05 (1.16)	3.49 (1.52)	3.93 (1.58)

Appendix: Screenshots of Stimulus Advertisements (iPhone)

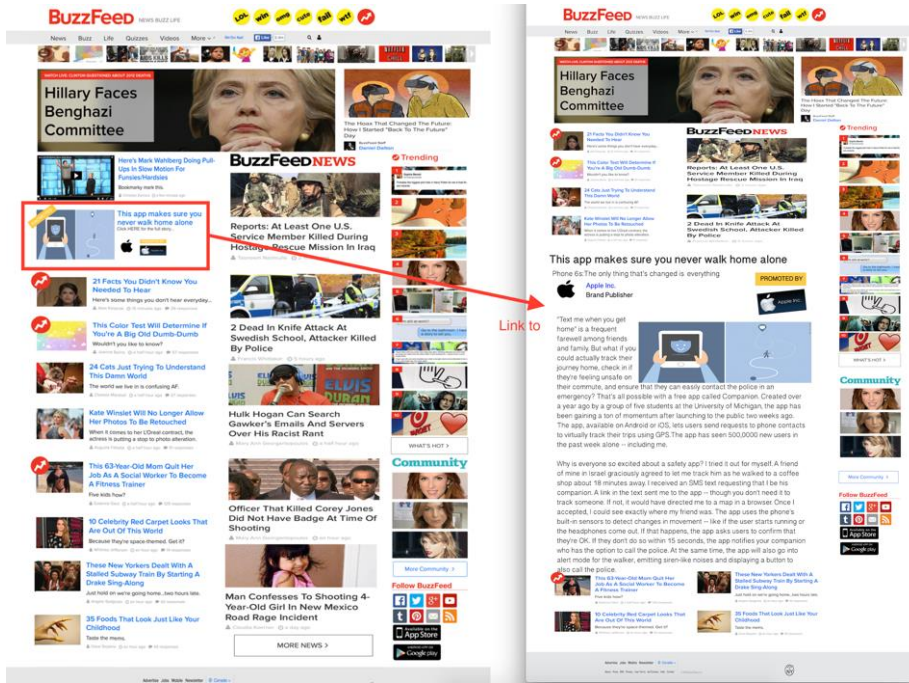1. USA Today Endemic in-feed advertisement (link to an article on USA Today website)
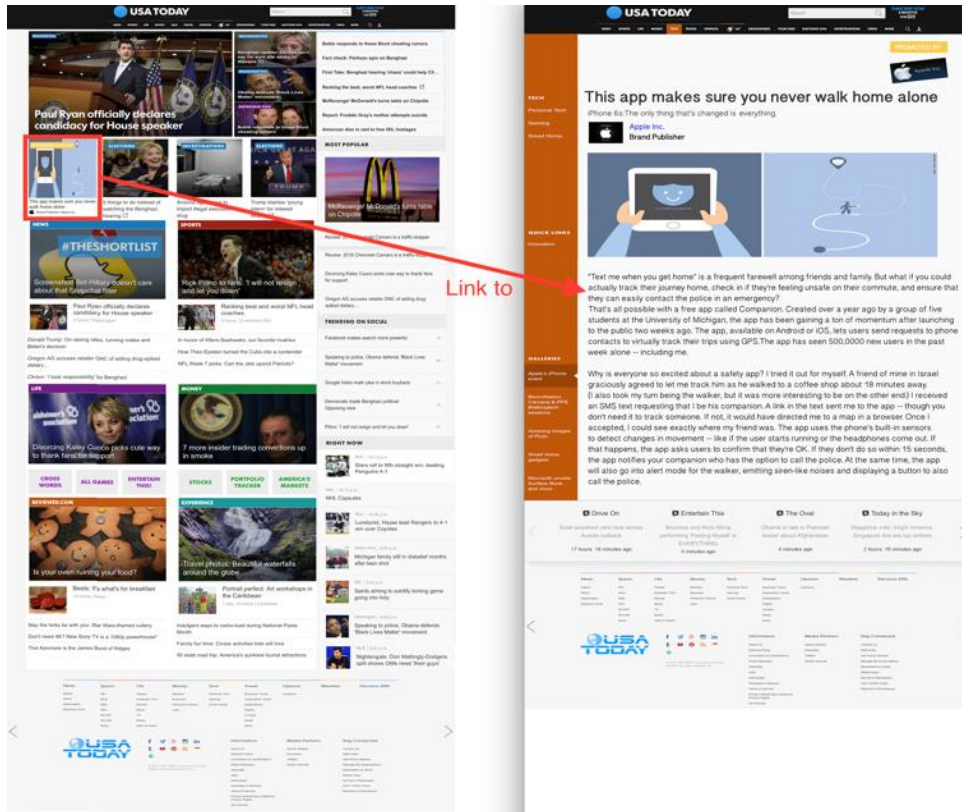
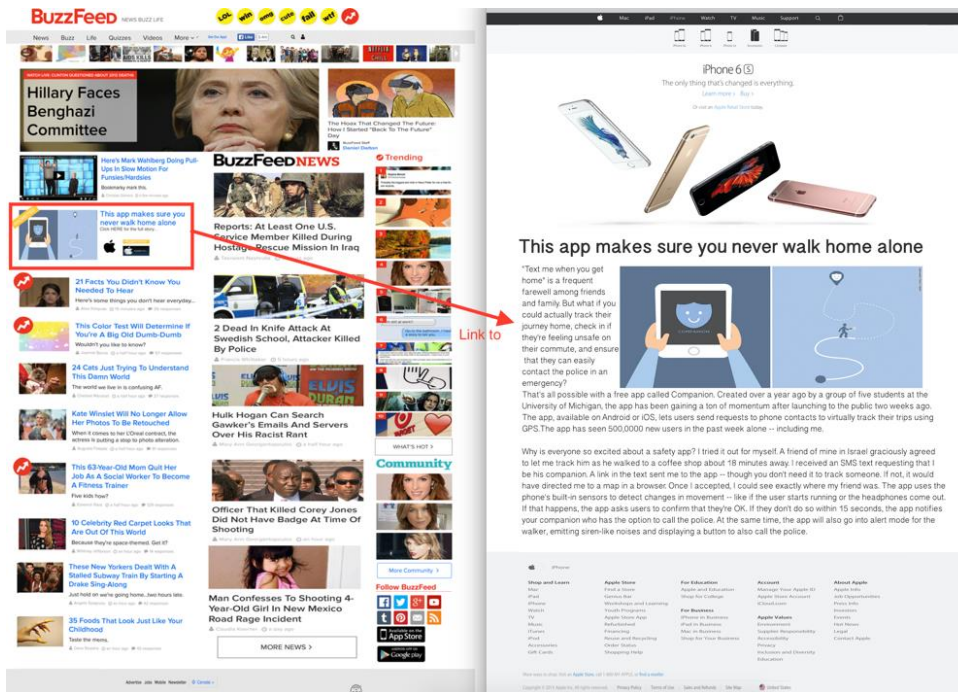2. USA Today Linked in-feed advertisement (link to an article on Apple website)
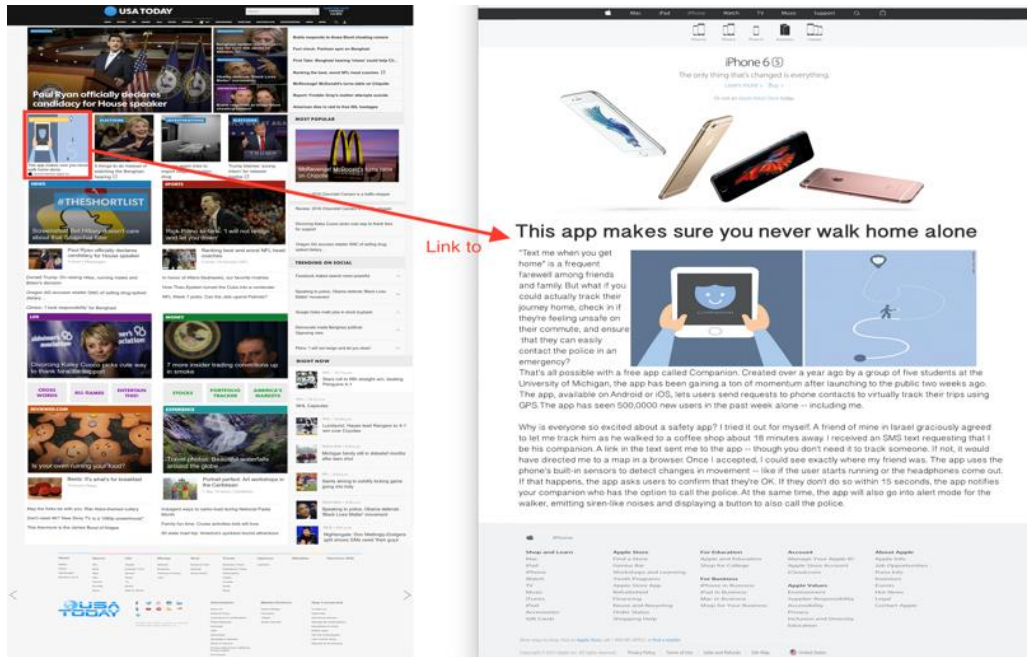
3. BuzzFeed Endemic in-feed advertisement (link to an article on BuzzFeed website)

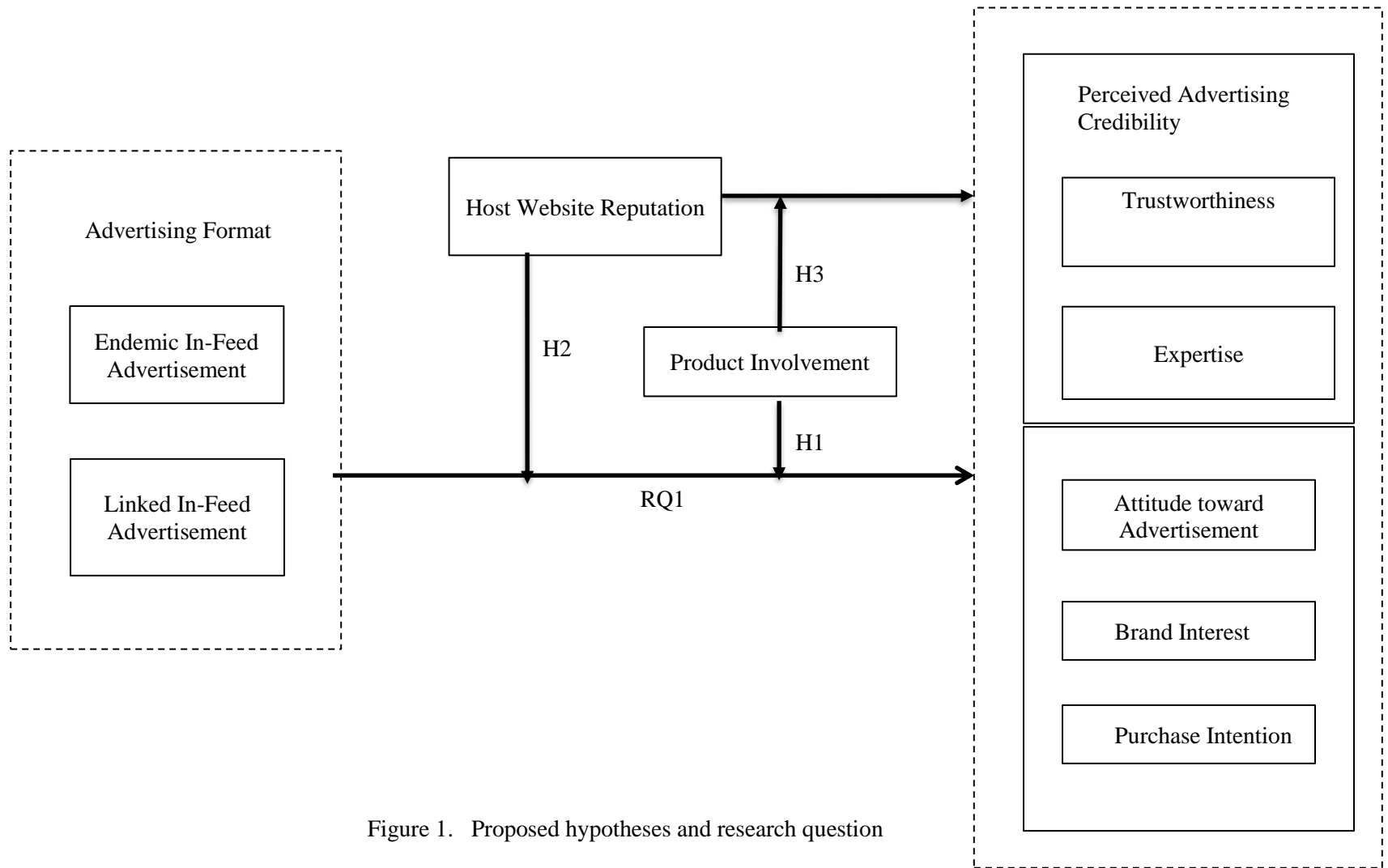4. BuzzFeed Linked in-feed advertisement (link to an article on Apple website)

Figure 1. Proposed hypotheses and research question

References

Aaker, D. S., and P. K. Brown. 1972. Evaluating vehicle source effects. *Journal of Advertising Research* 12(4): 11-16.

American Press Institute. 2015. How millennials get news: Inside the habits of America's first digital generation. Accessed January 10, 2019. https://www.americanpressinstitute.org/ publications/reports/survey-research/millennials-news/single-page/

Becker-Olsen, K. L. 2003. And now, a word from our sponsor: A look at the effects of sponsored content and banner advertising. *The Journal of Advertising* 32(2): 17-32.

Boerman, S. C., E. A. Van Reijmersdal, and P. Neijens. 2014. Effects of sponsorship disclosure timing on the processing of sponsored content: A study on the effectiveness of European disclosure regulations. *Psychology and Marketing* 31(3): 214-224.

Carlson, M. 2015. When news sites go native: Redefining the advertising-editorial divide in response to native advertising. *Journalism* 16(7): 849-865.

Celsi, R. L., and J. C. Olson. 1988. The role of involvement in attention and comprehension processes. *Journal of Consumer Research* 15: 210-224.

Choi, S. M., and N. Rifon. 2002. Antecedent and consequences of web advertising credibility: A study of consumer response to banner ads. *Journal of Interactive Advertising* 3(1): 12-24.

Cole, J. T., and J. D. Greer. 2013. Audience response to brand journalism: The effect of frame, source, and involvement. *Journalism & Mass Communication Quarterly* 90(4): 673-690.

Colhoun, D. 2016. Disguising ads as stories. *Columbia Journalism Review.* Accessed December 11, 2017. http://www.cjr.org/behind_the_news/sponsored_content.php

Digital News Report. 2015. Executive summary and key findings of the 2015 report. *Reuters Institute*. Accessed December 11, 2017. http://www.digitalnewsreport.org/ survey/2015/executive-summary-and-key-findings-2015/

Dumenco, S. 2014. Here's what else is wrong with native advertising. *Advertising Age* 85(18): 35-36.

Dunn, J. 2017. Most Americans do not trust news they read on social media, survey says. Accessed December 11, 2017. http://www.businessinsider.com/facebook-fake-news- reader-trust-survey-chart-2017-1

Dutta-Bergman, M. J. 2004. Reaching Unhealthy Eaters: Applying a Strategic Approach to Media Vehicle Choice. Health Communication 16(4): 493-506.

eMarketer. 2017. eMarketer unveils estimates for native ad spending. Accessed December 11, 2017. https://www.emarketer.com/Article/eMarketer-Unveils-Estimates-Native-Ad- Spending/1015457

Erdogan, Z. B. 1999. Celebrity endorsement: A literature review. *Journal of Marketing Management* 15: 291-314. doi:10.1362/026725799784870379

Fleming, M. A., R. E. Petty, and P. H. White. 2005. Stigmatized targets and evaluation: Prejudice as a determinant of attribute scrutiny and polarization. *Personality and Social Psychology Bulletin* 31: 496-507.

Flores, W., V. Chen, and W. H. Ross. 2014. The effect of variations in banner ad, type of product, website context, and language of advertising on Internet users' attitudes. *Computers in Human Behavior* 31: 37-47.

Freiden, J. B. 1982. An evaluation of spokesperson and vehicle source effects in advertising. *Current Issues and Research in Advertising* 5(1): 77-87.

Gillespie, B., and J. Joireman. 2016. The role of consumer narrative enjoyment and persuasion awareness in product placement advertising. *American Behavioral Scientist* 60(12): 1510-1528.

Hill, P. 2013. Can native advertising help brands overcome "banner blindness"? *The Guardian*. Accessed December 11, 2017. http://www.theguardian.com

Howe, P., and B. Teufel. 2014. Native advertising and digital natives: The effects of age and advertisement format on news Website credibility judgments. *ISOJ* 4(1): 78-90.

Interactive Advertising Bureau. 2013. The native advertising playbook. *IAB*. Accessed December 11, 2017. http://www.iab.com/guidelines/native-advertising/

Kaufman, D., M. F. Stasson, and J. W. Hart. 1999. Are the tabloids always wrong or is that just what we think?: Need for cognition and perceptions of articles in print media. *Journal of Applied Social Psychology* 29: 1984-1997.

Kim, S., and S. M. Choi. 2012. An examination of effects of credibility and congruency on consumer responses to banner advertisements. *Journal of Internet Commerce* 11(2): 139-160. doi:10.1080/15332861.2012.689565

Kim, Y., P. Zhang, and R. D. Lankes. 2009. Future of information seeking on the Internet and web advertising: How can we guide web advertising for users' information seeking on a website? Paper accepted for presentation at iConference.

Knoll, S. 2015. Native advertising and sponsored content: Research on audience, ethics, effectiveness. *Journalist's Resource*. Accessed December 11, 2017. http://journalistsresource.org

Lang, A. 1996. The logic of using inferential statistics with experimental data from nonprobability samples: Inspired by Cooper, Dupagne, Potter, and Sparks. *Journal of Broadcasting & Electronic Media* 40: 422-30.

Lee, J., S. Kim, and C. D. Ham. 2016. A double-edged sword? Predicting consumers' attitudes toward and sharing intention of native advertising on social media. *American Behavioral Scientist* 60(12): 1425-1441.

Machleit, K. A., T. J. Madden, and C. T. Allen. 1990. Measuring and modeling brand interest as an alternative ad effect with familiar brands. *Advances in Consumer Research* 17: 223-230.

Maclnnis, D. J., C. Moorman, and B. J. Jaworski. 1991. Enhancing and measuring consumers' motivation, and opportunity, ability to process brand information from ads. *Journal of Marketing* 55(4): 32-53.

Micu, A. C., and I. Pentina. 2014. Integrating advertising and news about the brand in the online environment: Are all products the same? *Journal of Marketing Communications* 20(3): 159-175.

Mitchell, A., Shearer, J., Gottfried, M. and E. Barthel. 2016. The Modern News Consumer. *Pew Research Center*. Accessed January 19, 2019. http://www.journalism.org /2016/07/07/ pathways-to-news/

Muehling, D. D., and M. McCann. 1993. Attitude toward the ad: A review. *Journal of Current Issues and Research in Advertising* 15: 25-58. doi:10.1080/10641734.1993.10505002

Newman, N., R. Fletcher, A. Kalogeropoulos, D. A. Levy, and R. K. Nielsen. 2018. Reuters Institute Digital News Report 2018. *Reuters Institute*. Accessed September 11, 2018. https://agency.reuters.com/content/dam/openweb/documents/pdf/news-agency/report/dnr-18.pdf

Olmstead, K., and E. Shearer. 2015. Digital News -Audience: Fact Sheet. *Pew Research Center*. Accessed December 11, 2017. http://www.journalism.org/2015/04/29/digital-news-revenue-fact-sheet-2015/pj_15-04-28_fsa-digitalrev/

Park, D. H., and J. Lee. 2008. eWOM overload and its effect on consumer behavioral intention depending on consumer involvement. *ECRA* 7(4): 386.

Park, D. H., J. Lee, and I. Han. 2007. The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement. *Int. J. Electron. Commer* 11(4): 125-148.

Park, N., Y. C. Kim, H. Y. Shon, and H. Shim. 2013. Factors influencing smartphone use and dependency in South Korea. Computers in Human Behavior, 29: 1763-1770.

Petty, R. E., P. Brinol, and J. R. Priester. 2007. Mass media attitude change: Implication of elaboration likelihood model of persuasion. In J. Bryant, & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (pp.125-164). New York, NY: Routledge.

Pew Research Center 2018. News Use Across Social Media Platforms 2018. *Journalism & Media.* Accessed September 11, 2018. http://www.journalism.org/2018/09/10/news-use-across-social-media-platforms-2018/

Phelps, J., and E. Thorson. 1991. Brand familiarity and product involvement effects on the attitude toward an ad-brand attitude relationship. *ACR* 18: 202-209.

Rosengren, S., and M. Dahlen. 2013. Judging a Magazine by its advertising: Exploring the effects of advertising content on perceptions of a media vehicle. *Journal of Advertising Research* 53(1): 61-70. doi: 10.2501/JAR-53-1-061-070

Ruijgrok, M. 2000. Product placement in Goede Tijden Slechte Tijden: To do or not to do? Master's thesis, University of Amsterdam.

Schauster, E., P. Ferrucci, and M. Neill. 2016. Native advertising is the new journalism: How deception affects social responsibility. *American Behavioral Scientist* 60(12): 1408-1424.

Shamdasani, P. N., J. S. Stanaland, and J. Tan. 2001. Location, location, location: Insights for advertising placement on the web. *Journal of Advertising Research* 41(4): 7-21.

Sonderman, J., and M. Tran. 2013. Understanding the rise of sponsored content. *American Press Institute*. Accessed December 11, 2017. https://www.americanpressinstitute.org/publications/reports

Sweetser, K. D., G. Golan, S. J. Ahn, and A. Hochman. 2016. Native advertising as a new public relations tactic. *American Behavioral Scientist* 60(12): 1442-1457.

Tutaj, K., and E. A. Van Reijmersdal. 2012. Effects of online advertising format and persuasion knowledge on audience reactions. *Journal of Marketing Communications* 18(1): 5-18.

Van Reijmersdal, E., P. Neijens, and E. Smit. 2005. Readers' reactions to mixtures of advertising and editorial content in magazines. *Journal of Current Issues and Research in Advertising* 27(2): 39-53.

Warrington, P., and S. Shim. 2000. An empirical investigation of the relationship between product involvement and brand commitment. *Psychology and Marketing* 17(9): 761-782.

Wojdynski, B. W. 2016. The deceptiveness of sponsored news articles: How readers recognize and perceive native advertising. *American Behavioral Scientist* 60(12): 1475-1491.

Wu, M., Y. Huang, R. Li, D. Bortree, F. Yang, A. Xiao, and R. Wang. 2016. A tale of two sources in native advertising: Examining the effects of source credibility and priming on content, organizations, and media evaluations. *American Behavioral Scientist* 60(12): 1492-1509.

Xue, F., and P. Zhou. 2012. Greener on the other side?: A comparative content analysis of environmental claims in magazine advertisements in China and the United States. *Journal of Magazine & New Media Research* 13(2): 1-18.

Yang, S. 2015. An eye-tracking study of the elaboration likelihood model in online shopping. *Electronic Commerce Research and Applications* 14: 233-240.

Yoon, K., C. H. Kim, and M. S. Kim. 1998. A cross-cultural comparison of the effects of source credibility on attitudes and behavioral intentions. *Mass Communication and Society* 1: 153-173. doi:10.1080/15205436.1998.9677854

Zaichkowsky, J. L. 1994. The personal involvement inventory: Reduction, revision, and application to advertising. *Journal of Advertising* 23: 59-70.