VARIATION MATTERS: THE IMPACTS OF PLATFORM VARIATION AND CONTENT VARIATION ON AD EFFECTIVENESS IN SOCIAL MEDIA AS MEDIATED BY PERCEIVED AD INTRUSIVENESS

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ABSTRACT

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The present study examines the uses of variation strategies in social media advertising. Social media advertising may vary in place in that it runs on different platforms and vary in content in that it features different ad executions. Drawing upon psychological reactance theory and the repetition-variation literature, this study proposes that variation strategies in platform or content reduce perceived ad intrusiveness due to the addition of new information or aesthetic values. As a result, the decrease in perceived ad intrusiveness leads to enhanced ad effectiveness. Moreover, this study investigates whether the superimposition of platform variation and content variation further elevates ad effectiveness through reducing perceived ad intrusiveness compared to using variation in only one aspect.

This experimental study employed a 2 (repeated ads vs. varied ads) by 2 (single platform vs. multiple platforms) between-subject factorial design. Facebook, Twitter, and Instagram were selected as the platforms to present stimulus ads. Three real ads from the social media pages of a British coffee shop brand Caffé Nero were used to create stimuli. Social media users residing in the United States were recruited on Amazon Mechanical Turk and a total of 1,306 participants completed the study.

The findings indicate that platform variation has a conditional indirect effect on brand attitude and purchase intention through perceived ad intrusiveness, and this effect is moderated by content strategy. Specifically, when repeated ads are used, the use of multiple platforms

reduces perceived ad intrusiveness, resulting in more favorable brand attitude and greater purchase intention as opposed to the use of a single platform. In contrast, when varied ads are used, no significant differences are found in the outcome variables between single platform and multiple platforms. In other words, the superimposition of variations in both platform and content does not lead to the best outcomes, but no variation in either platform or content is rated as most intrusive, eliciting the least favorable brand attitude and the lowest purchase intention among the four conditions.

The present study makes theoretical contributions to the body of knowledge by revealing the underlying mechanism and boundary conditions of the advantage of cross-platform advertising over single-platform advertising. It also offers actionable insights for media planners, IMC strategies, and social media advertisers as follows: 1) In terms of brand attitude and purchase intention, multiple platforms outperform single platform in the social media context only when paired with repeated ads; 2) For single-platform campaigns in social media, it is better to use varied ads than repeated ads; 3) For multiple-platform campaigns in social media, repeated ads are as effective as varied ads. In summary, utilizing variation strategies, either in platform or content, improves ad effectiveness in social media.

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CHAPTER 1

INTRODUCTION

Fueled by the relentless march of technology innovation, people are migrating to a social, mobile, network-based media landscape nowadays. Concomitantly, the new additions of media platforms such as social media have enlarged marketer's media repertoire for carrying out integrated marketing communication campaigns (Campbell, Cohen, & Ma, 2014; Mangold & Faulds, 2009). Social media advertising has become the fastest growing department within digital advertising, boasting a total of $25.14 billion of ad spending in 2015, a jump of 40.8% over 2014 (eMarketer, 2015). This momentum will keep growing in the next few years, with ad spending estimated to reach $41 billion in 2017.

In keeping with this social media wave, academics have called for a paradigm shift in integrated marketing communication by adding social media as "a hybrid element of the promotion mix" (Mangold & Faulds, 2009, p. 357). To answer this call, the present study aims to investigate effective strategies of integrated marketing communication campaigns running on social media platforms regarding variations in platform and content. Specifically, it will compare the effectiveness of advertising campaigns running on multiple social media platforms versus a single platform. Moreover, content strategy repetition versus variation will also be examined in the social media context. In this study, repetition refers to the strategy that the same ad is repeated multiple times in a campaign, and variation involves the creative strategy that ads used in a campaign show variation in execution elements but display a congruent theme (Voorveld & Valkenburg, 2015). Drawing upon psychological reactance theory and the repetition-variation literature, the present study proposes that variations in platform and content reduce perceived ad

intrusiveness in the social media context. Perceived ad intrusiveness, referring to consumer's perception about "the degree to which advertisements in a media vehicle interrupt the flow of an editorial unit" (Ha, 1996, p.77), is associated with negative consequences such as feelings of irritation and ad avoidance (Edwards, Li, & Lee, 2002). Thus, a decrease in perceived ad intrusiveness will result in an increase in advertising effectiveness in terms of recognition, attitude, and behavioral intention.

The present study has theoretical and practical implications in the following aspects. First, this study contributes to theory advancement in cross-media advertising by unpacking the underlying mechanism and boundary conditions of the advantage of cross-platform advertising over single-platform advertising. The findings will enlighten which strategies are most effectives in reducing perceived ad intrusiveness so as to achieve better outcomes. Second, the present study enriches our understanding on variation strategies in investigating whether coupling platform variation with content variation further increases the effectiveness. It provides a new insight to the repetition-variation literature, by revealing that the choice between repeated ads and varied ads depends on platform context. Last but not least, this study finds perceived ad intrusiveness as a mediating mechanism for the relationship between variation and ad effectiveness. Previous research on ad intrusiveness has identified several antecedents, such as exposure frequency (Ying, Korneliussen, Grønhaug, 2009), congruence of the ad with the context (Edwards et al., 2002), and animation effect (Ying et al., 2009). The present study extends this line of inquiry to the social media context and examines antecedents in terms of platform selection and content strategy. It will contribute to the growing body of knowledge on perceived ad intrusiveness with efforts devoted to depicting a fuller picture of its antecedents and consequences.

CHAPTER 2

LITERATURE REVIEW AND HYPOTHESES

Social Media Advertising

Social media is a broad term that encompasses a wide range of Internet-based applications that enable user-generated content to be exchanged and consumed on the Internet (Kaplan & Haenlein, 2010; Mangold & Faulds, 2009), such as social networking sites (e.g., Facebook, LinkedIn), micro blogging sites (e.g., Twitter, Weibo), photo/video sharing sites (e.g., Instagram, YouTube), virtual communities (e.g., Second Life), and social bookmarking sites (e.g., Delicious, Reddit). In light of its growing popularity, social media has played an increasingly important role in marketer's media planning agenda (Campbell et al., 2014). According to the Pew Internet Center (2015), in 2015, 65% of adults, who are 76% of Internet users in the United States, use at least one social networking site. The prevalence of social media is even more prominent among young people 18-29 years old, with 90% of them using social media. Hence, marketers cannot afford to neglect social media as a critical touch point connecting with consumers, especially young consumers. Accordingly, social media advertising has become the fastest growing department within digital advertising, boasting a total of $25.14 billion of ad spending in 2015, a jump of 40.8% over 2014 (eMarketer, 2015). This momentum will keep growing in the next few years, with ad spending estimated to reach $41 billion in 2017.

In light of the momentum of social media popularity, academics have envisioned that social media will play an increasingly important role in the integrated marketing communication (IMC) configuration, calling for a paradigm shift in IMC by adding social media as "a hybrid element of the promotion mix" (Mangold & Faulds, 2009, p. 357). Social media is "hybrid" in

the sense that it is not only useful in serving as platforms for brands to convey their messages to consumers, but also handy for consumers to exchange opinions and content with each other (Kaplan & Haenlein, 2010; Khang, Ki, & Ye, 2012; Mangold & Faulds, 2009; Wright, Khanfar, Harrington, & Kizer, 2010). This hybrid nature suggests social media undertakes two roles in the IMC strategies: the first role is the same with traditional mass communication as platforms for placing promotional messages, and the second role is an extension of interpersonal communication and network communication, in that sticky, viral messages are diffused on social media platforms so as to magnify the influences of advertising messages (Mangold & Faulds, 2009; Wright et al., 2010).

Given the role of social media as a new addition to the IMC repertoire, there is a growing need to demystify how IMC campaigns can optimize social media platforms in order to achieve the best outcomes. The essence of IMC concerns with conveying a consistent message via multiple channels with a variety of strategies with the aim of building brand images (Kitchen & Bergmann, 2015; Schultz & Patti, 2009). Naturally, platform and content are two critical elements in the constitution of IMC campaigns. Advertising researchers have noted the importance of platform variation in social media advertising:"as companies develop social media strategies, platforms such as YouTube, Facebook, and Twitter are too often treated as stand-alone elements rather than part of an integrated system" (Hanna, Rohm, Crittenden, 2011, p. 265). Furthermore, Hanna et al. (2011) suggest that social media platforms operate in concert to build a synergistic experience for consumers, as "social media enables both reach and engagement through judicious use of all formats and platforms" (p. 268). Hence, academic research is called upon to compare the effectiveness of multiple platforms versus single platform at individual level with regard to social media advertising. In terms of content strategy, repetition versus

variation has been well studied in advertising literature ((Belch, 1981; Schumann, Petty, & Clemons, 1990; Yaveroglu & Donthu, 2008; Schumann & Clemons, 1989; Schumann, Petty, & Clemons, 1990), but no consensus has been reached as to which strategy is more effective in various contexts, in particular in social media context. To address these inquiries regarding platform selection and content strategy, the present study examines the impacts of platform variation and content variation on ad effectiveness through perceived ad intrusiveness in the social media context. The findings are expected to shed light to identify the most effective strategies for social media advertisers. This study will also contribute to theory advancement in terms of discovering new antecedents for perceived ad intrusiveness as well as enriching our understanding of the role of perceived ad intrusiveness in IMC campaigns.

Cross-Media Advertising

In light of the proliferation of new media technologies, cross-media research has received increasing attention in academia as well as industry. Studies at the individual level mostly employ experimental methods to decode the psychological mechanisms of advertising effects. The first of its kind appeared in the *Journal of Advertising Research* in 1970s, suggesting that there was an interaction effect of exposure to multiple media on subsequent responses (Lodish, 1973). Before the Internet era, this line of research had focused on the effectiveness of combinations of mass media platforms, for instance, radio and newspaper (Jagpal, 1981), television and radio (Edell & Keller, 1989), and print and television (Confer & McGlathery, 1991; Tang, Newton, & Wang, 2007). With the prevalence of online communications, recent years have seen a growing interest in online-offline media combinations in the cross-media advertising scholarship, print and online banner ads (Wakolbinger, Denk, & Oberecker, 2009),

television and web (Chang & Thorson, 2004; Lim Ri, Egan, & Biocca, 2015; Voorveld, Neijens, & Smit, 2011), and SMS message and website (Wang, 2007).

In terms of advertising effectiveness, previous studies have mixed findings. Among them, only a few focused on the synergistic effect of traditional media, such as print, television, and radio. Edell and Keller (1989) found the audio track of a television commercial that they had been previously exposed to served as a cue for them to retrieve the memory, so that the commercial was replayed in their mind even when they heard it on radio. This effect was terms "forward encoding" afterward (Voorveld et al., 2012). However, this effect was mainly on cognitive level; no improvement on comprehension and evaluation was found for the combination of radio and television as opposed to a single medium. Focusing on print-television campaigns used for television drama promotion, Tang et al. (2007) found such campaigns had advantages over single medium campaigns in cognitive, affective, and conative outcomes. More specifically, compared with television only conditions, people who watched ads in print and on television were more attentive to and expressed more favorable attitudes toward the program; they also indicated greater willingness to view the drama.

The bulk of empirical studies in this area in the past decade were devoted to examining the combination of online and offline media. Drawing upon the multiple source effect theory (Harkins & Petty, 1981a; 1981b; 1987), Chang and Thorson (2004) proposed that multiple media platforms may be deemed as multiple sources of information and people who received information from multiple sources would perceive the information to be more credible and were more likely to process the information through deep thinking. Their experimental study confirmed that the combination of television and website had better outcomes than a single platform (either television or website) in raising message credibility and generating more

positive thoughts, but no advantages were found in attitude toward the ad, attitude toward the brand and purchase intention. Also looking at the combination of television and website, Vandeberg et al. (2015) went a step further in extending cross-media effects to implicit measures of memory and brand evaluation. However, no significant differences were found in the implicit measures between cross-media conditions and single-medium conditions, suggesting that cross-media advantages were driven by explicit memory mechanisms rather than implicit mechanisms. This was corroborated by the finding that participants in the cross-media conditions scored higher on explicit measures than those in the single-medium conditions. Nevertheless, for a study focusing on print and online banner ads, the descriptive data revealed that ads presented on cross media elicited slightly higher brand recall than those on a single medium, but the tests failed to reach statistical significance at $\alpha = .05$ level (Wakolbinger et al., 2009).

The studies reviewed so far focused the combination of two media platforms. An IMC campaign usually involves more than two media platforms, however, the findings of such studies were even more equivocal and complicated. Looking into the use of Internet banner ad, print, and email in one campaign, Chatterjee (2012) investigated the differences in brand recall and brand attitude immediately after exposure and one week later between multiple media and a single medium The experiment found the edge of multiple platforms showed up on immediate and delayed brand recall and immediate brand attitude, but not on delayed brand attitude. However, another study researching the effects of three-media (television, print, and Internet) campaigns found less positive results (Dijkstra, Buijtels, & van Raaij, 2005). After controlling for product knowledge, product involvement, and general attitude toward advertising, television-only campaigns evoked more cognitive responses than cross-media campaigns, and no

significant differences were found in affective and conative responses between cross-media and single-medium conditions.

To summarize, cross-media advertising studies at the individual level provide mixed support for cross-media advantages. A pattern can be spotted from the studies reviewed above: cross-media advantages were found on cognitive responses such as attention, elaboration, and recall by most studies (Chang & Thorson, 2004; Chatterjee, 2012; Edell & Keller, 1989; Tang et al, 2007; Vandeberg et al., 2015); however, the same edge as to affective and conative measures was more equivocal. Hence, more research is needed to unpack the puzzles in cross-media advertising, in particular with regard to the new media platforms such as social media. In the past few years, only a handful of empirical studies have been concerned with the use of social media platforms in cross-media advertising, such as Spotts, Purvis, and Patnaik's (2014) study on the Super Bowl Games, social media conversations, and Internet search activity, and Pynta et al.'s (2014) study on the simultaneous use of television and social media. These studies focused on the combination of traditional media and social media, investigating social media engagement initiated by consumers who were exposed to television content rather than consumer's responses to television-social media campaigns launched by advertisers on the two platforms. Therefore, in a strict sense, they are not real "cross-media" campaigns from an advertiser's perspective.

The present study focuses on cross-social-media advertising campaigns, which are a niche cross-platform promotional strategy for savvy marketers. As estimated by eMarketer (2015), Facebook (including Instagram) topped the U.S. digital display ad market with a total of $6.82 billion in ad revenue , and Twitter ranked 3rd on the list with $1.34 billion. Facebook (including Instagram) and Twitter together accounted for 30.2% of the digital display ad market. The upward momentum of social media advertising will keep growing in the next few years,

with Facebook (including Instagram) and Twitter taking 33.7% of the market in 2017. In contrast with this digital wave, the market shares of traditional media have been shrinking and will keep decreasing in the years to come (eMarketer, 2016). Therefore, more and more marketers are making use of multiple social media platforms as their major touch points with consumers (Fulgoni & Lipsman, 2014). For example, SPC, an Australian food manufacturer launched a social media campaign on Facebook and Twitter when it was in serious financial trouble. The campaign was a success and persuaded consumers to purchase SPC's products in order to save this long established brand. Therefore, this study intends to investigate how to build up a seamless, congruent consumer experience across social media platforms in order to achieve premium advertising outcomes. It will contribute to the cross-media advertising literature by expanding the scope of media platforms involved in cross-media advertising to social media and demystifying the theoretical mechanisms.

Advertising Repetition versus Variation

Advertising repetition effects are defined as "the differential effects of a given exposure within a sequence of exposures" (Pechmann & Stewart, 1988, p. 287). Repetition is a common strategy that has been used for decades to enhance brand recall and influence consumer attitude (Campbell & Keller, 2003; Janiszewski, Noel, & Sawyer, 2003; Schmidt & Eisend, 2015; Zajonc, 1968). Nevertheless, an abundance of prior studies have been devoted to investigating the wear out effect, i.e., "an advertisement has no significant effect on consumers or may even have a negative effect at a certain level of exposure" (Schmidt & Eisend, 2015, p. 416). There has been consensus that advertising repetition has an inverted U shaped course of effect on recall and attitude (e.g., Kohli, Harich, & Leuthesser, 2005; Nordhielm, 2002; Pechmann & Stewart, 1988;

Tellis, 2004), which means after a certain point of exposure, repetition effects deteriorate due to boredom or redundancy (Berlyne, 1970; Cacioppo & Petty, 1979; Krugman, 1972).

In order to reduce the negative consequences caused by over exposure to the same ad, advertisers have developed variation strategies to reduce boredom and increase ad effectiveness (Burnkrant & Unnava, 1987; Grass & Wallace, 1969; Gorn & Goldberg, 1980; McCullough & Ostrom, 1974). Variation strategies mostly deal with advertising content, such as variations in message structure, style, and format (Belch, 1981; Schumann, Petty, & Clemons, 1990; Yaveroglu & Donthu, 2008). Schumann and his colleagues (Schumann & Clemons, 1989; Schumann, Petty, & Clemons, 1990) specifically differentiated two types of variation strategies used in advertising content creation. One type was substantive variation, referring to the strategy that the central aspects of an ad are altered across multiple presentations such as arguments or attributes. For example, the application of substantive variation in an advertising campaign for a coffee brand could be to promote the coffee price in one ad and to promote the taste in a second ad. By contrast, the other type was cosmetic variation: while the central theme is consistent across the ads, the peripheral aspects including color, format, illustration, or print style, are varied. An example of cosmetic variation would be promoting the taste of a coffee brand while entailing changes in the illustrations across multiple presentations.

The present study aims to investigate the effectiveness of IMC campaigns running on various social media platforms regarding the use of content strategies. A content analysis of cross-media campaigns in Netherlands revealed that most campaigns showed a high level of consistency across ads, in that ads across different media within an IMC campaign featured the same message, key visuals, colors, and slogans (Voorveld & Valkenburg, 2015). To put it in Schumann and Clemons' (1989) terms, IMC campaigns mostly adopt the cosmetic variation

strategy instead of the substantive variation strategy so that ads within a campaign are highly similar and convey a consistent theme. Moreover, the use of consistent execution elements make it easy for consumers to retrieve previous exposures and strengthen memory traces for the focal brand (Appleton-Knapp, Bjork, & Wickens, 2005; Braun-LaTour & LaTour, 2004). Therefore, following this logic, the present study compares the usefulness of cosmetic variation versus repetition in an IMC campaign.

The effectiveness of variation versus repetition has been investigated in various contexts. With regard to print ads, Unnava and Burnkrant (1991) compared the effects of repeated exposures to the same ad with exposures to varied executions of ads in terms of attention and brand recall. The results showed that varied executions enhanced brand recall significantly; however, no significant differences were found in attention, nor did attention contributed to the difference in brand recall. Also in the print ad context, Yoo, Bang, and Kim (2009) conducted two experimental studies to compare the effectiveness of varied ads with a congruent theme, varied ads with incongruent themes, and repeated exposures in advertising campaigns of fashion brands and banks. With regard to brand attitude and purchase intention, varied ads with a congruent theme improved ad effectiveness in comparison with varied ads with incongruent themes, however, they did not show any advantage over repeated exposures. Specifically focusing on narrative advertising involving varying plots, Chang (2009) compared the effectiveness of four strategies with three experimental studies: using the same plot repeatedly, using a continuous plot, using different plots with the same characters, and using different plots with different characters. The results showed that participants found it more difficult to comprehend narrative ads using different plots, regardless of the character sets, than those using

the same plot or a continuous plot; the difficulty in comprehension resulted in less favorable attitude toward the ads and the brand.

Hence, given the mixed findings in the literature, researchers have noted that the choice between variation versus repetition strategies in advertising campaigns is contingent on contextual factors. In an experimental study on online banner ad effectiveness, Yaveroglu and Donthu (2008) found when the target ad co-appeared with other ads in the same product category, repetition led to greater brand name memory than variation did; by contrast, when the target ad showed up with ads from other unrelated product categories, variation resulted in greater brand name memory and higher intention to click the target ad.

To date, no studies have examined the content variation strategy on social media platforms. In light of the prominent role that social media plays in the IMC mix nowadays, this void warrants scholarly attention in elucidating the most effective content strategy in social media. Following this line of reasoning, the present study investigates how content strategy repetition versus variation interacts with platform strategy single versus multiple in terms of perceived ad intrusiveness and ad effectiveness. In particular, this study proposes that perceived ad intrusiveness mediates the relationship between variation strategies and ad effectiveness pertaining to recognition, attitude, and behavioral intention.

Perceived Ad Intrusiveness

Ad intrusiveness is an important concept that may affect consumer judgment of the focal product and brand in a negative way (Bauer & Greyser, 1968; McCoy, Everard, Galletta, & Moody, 2012; McCoy, Everard, Polak, & Galletta, 2008). One of the most used definitions of ad intrusiveness was noted by Ha (1996): "the degree to which advertisements in a media vehicle interrupt the flow of an editorial unit" (p. 77). Based on Ha's definition, Edwards, Li, and Lee

(2002) refined the conceptualization of ad intrusiveness by specifying that this concept concerned consumer subjective perceptions of ads rather than intrinsic characteristics of the ads per se. In this sense, perceived ad intrusiveness is defined as "the degree to which a person deems the presentation of information as contrary to his or her goals (either functional or hedonic)" (Edwards et al., 2002, p.85).

Apparently, perceived ad intrusiveness is often associated with negative feelings such as irritation and annoyance due to the interruption of people's primary tasks (Bauer & Greyser, 1968; Edwards, et al., 2002; Li, Edwards, & Lee, 2002; McCoy, et al., 2012; McCoy et al., 2008). This concept has been investigated in terms of reducing ad effectiveness of a variety of ad formats, in particular in the online context. The bulk of empirical studies in this area have been focused on banner advertisements or pop-up ads. Edwards et al. (2002) explored this issue from a psychological reactance perspective, suggesting that ads whose content was congruent with the primary task were perceived as less intrusive than were incongruent ones; moreover, the more cognitive load the primary task took, the more intrusive consumers perceived the ads to be. McCoy, Everard, Polak, and Galletta (2008) tested the relationship between user control, ad intrusiveness and ad effectiveness variables including ad recognition, attitude, and behavioral intentions. They found that user control affected attitude toward the site and behavioral intentions through ad intrusiveness, while user control had a direct effect on ad recognition. However, the authors noted that the latter finding may be due to the poor measure of ad recognition. Later on, McCoy and his colleagues conducted a follow-up experimental study to examine how the frequency of exposure to banner advertisements affected ad intrusiveness and ad effectiveness (McCoy et al., 2012). Participants were directed to navigate a computer store website and were exposed to a stimulus advertisement either 1, 4, 8, or 12 times. Results showed

that the more times participants were exposed to the ad, the more intrusive they perceived the ads to be; consequently, the increase in ad intrusiveness resulted in a decrease in purchase intention. In light of ubiquitous digital tracking activities in online environments, a recent study by Bleier and Eisenbeiss (2015) incorporated the element of personalization into their research on ad intrusiveness. Through a series of experiments, they found that the effects of personalization on ad intrusiveness varied across users browsing the Web in different modes. Specifically, for users in a goal-oriented browsing mode, if they viewed a website whose function was not congruent with the banner ad, i.e., a news network, they would perceive the ads to be more intrusive; for users who did not have a specific goal while browsing the web, no differences in ad intrusiveness were found between personalized ads and non-personalized ads, regardless of the function congruence.

In addition to online display ads, researchers have also looked at perceived ad intrusiveness in the context of in-program advertising. Bellman, Treleaven-Hassard, Robinson, Rask, and Varan (2012) confirmed the effects of commercial loading on ad intrusiveness. Participants viewed an online video program with different levels of commercial loads (0, 1, 2, 3, 5, 10, and 15 ad-minutes) in a laboratory setting. Results showed that participants perceive the videos with the three highest level of commercial loading (5 minutes and more) to be more intrusive than the others. Also through a laboratory study, Brechman, Bellman, Schweda, and Varan (2015) investigated the use of interactive branded overlays along with product placement within the program. They found that the overlay of interactive banners in a program distracted viewers' attention from product placements in the program and therefore deteriorated recall. Moreover, this distracting effect was coupled with an increase in perceived ad intrusiveness.

Nevertheless, this negative effect on perceived ad intrusiveness was diminished when the product placement featured in the program was highly prominent.

In summary, a wealth of studies have examined perceived ad intrusiveness's antecedents and consequences in various contexts. The antecedents include content congruency (Edwards et al., 2002), cognitive load required by the primary task (Edwards et al.,), user control (McCoy et al., 2008), repetition frequency (McCoy et al., 2012), commercial length (Bellman et al., 2012), and personalization (Bleier & Eisenbeiss, 2015). The consequences deal with ad recognition, recall, attitude toward the brand, and purchase intention (e.g., Brechman et al., 2015; McCoy et al., 2008; 2012). Hence, perceived ad intrusiveness can be viewed as a mediating mechanism between ad executions and ad effectiveness. In order to provide a more thorough conceptualization of perceived ad intrusiveness, the next section will discuss its theoretical root - psychological reactance theory.

Psychological Reactance Theory

The theoretical root of perceived ad intrusiveness stems from psychological reactance theory (Brehm, 1966; Brehm & Brehm, 1981), which states that negative feelings may be triggered in response to a persuasive message if message receivers feel that the message threatens their freedom or control of a situation. As a result, they may act against the persuasion in the way that helps them to restore freedom (Burgoon, Alvaro, Grandpo, & Voulodakis, 2002; Dillard & Shen, 2005; Rains, 2013). The nature of psychological reactance involved both cognitive and emotional elements: counterarguments and anger respectively (Dillard & Shen, 2005; Rains, 2013; Shen, 2015). Therefore, the activation of psychological reactance may cause impacts on message receivers in an opposite direction to message senders' intention. This effect

is also termed as "boomerang effect" (Byrne & Hart, 2009; MacKinnon & Lapin, 1998; Snyder & Wicklund, 1976).

Given psychological reactance's notable influence on persuasion effectiveness, this theory has been well studied in the field of social psychology and communication in terms of designing messages that can reduce psychological reactance, in particular in public health communication (e.g., Gardner & Leshner, 2016; Lienemann & Siegel, 2016; Quick & Bates, 2010; Quick, Scott, & Ledbetter, 2011). Likewise, advertising and marketing academics have long noticed the important role of psychological reactance in consumer behavior and media influence. Clee and Wicklund's (1980) classic essay addressed the applicability of psychological reactance in a wide range of consumer behaviors, such as personal selling, pricing, political behavior, environmental protection, and helping behavior. They noted that "the style or content of a persuasive communication" (p. 401) might trigger the motivation to resist due to message receivers' perception that message senders intended to control their behavior. Extending the framework proposed by Clee and Wicklund (1980), subsequent empirical studies have applied psychological reactance theory to various advertising and marketing scenarios, such as loyalty programs (Wendlandt & Schrader, 2007), online recommendation services (Lee & Lee, 2009; Kwon & Chung, 2010), in-game advertising (Mau, Silberer, & Constien, 2008), and commercial e-mail (Morimoto & Chang, 2006).

One line of research specifically associates psychological reactance with perceived ad effectiveness. According to an intertwined model of reactance (Rains, 2013; Shen, 2015) reaction involves both counterarguments and negative emotions, which may in concert lead to irritation and annoyance (Edwards et al., 2002; Li et al., 2002). In this sense, reactance provides a nice explanation for the psychological mechanism of perceived ad intrusiveness. For example,

Edwards et al. (2002) documented that forced exposure to pop-up ads was a form of persuasive communication that initiated consumers' psychological reactance so that they felt pop-up ads to be intrusive while browsing the website. In the context of product placement in a computer game, Mau, Silberer, and Constien (2008) found after participants played the game, their attitude toward the game deteriorated as a negative reactance to forced exposure to product placement; in turn, attitude toward the game affected attitude toward the advertised brand. Therefore, these empirical studies further demonstrated that psychological reactance may address the negative influences of perceived ad intrusiveness on ad effectiveness.

Research Hypotheses

The present study investigates variation strategies involving platform selection (single versus multiple) and content execution (repeated versus varied) in the social media context. A major format of social media advertising is the newsfeed ad, referring to ads showing up in the middle of a newsfeed. As this ad format interferes with the major task users engage in, by definition it induces some extent of ad intrusiveness (Ha, 1996; Edwards et al., 2002). The literature suggests that the use of multiple media platforms in advertising campaigns is not only effective in increasing audience reach (Havlena, Cardarelli, & De Montigny, 2007; Jin, Shobowale, Koehler, & Case, 2012; Media Post, 2015), but also in creating "added value" in addition to the sum of the individual media effects (Assael, 2011; Naik & Raman, 2003), such as enhancing attention, elaboration, and recall (Chang & Thorson, 2004; Chatterjee, 2012; Edell & Keller, 1989; Tang et al, 2007; Vandeberg et al., 2015), and raising attitude toward the ad and the brand as well as purchase intention (Lim, Ri, Egan, & Biocca, 2015). However, perceived ad intrusiveness has not been taken into account in terms of the outcomes. In fact, varied contexts associated with the ad serve as retrieval cues in the memory structure (Unnava & Burnkrant,

1991). As a result, a complex, multi-pathway memory network is formed with the focal brand as the nucleus, and thereby information cues stored in the associative network are easy to retrieve (Anderson, Bothell, Lebiere, & Matessa, 1998; Bower; 1996; Vendeberg et al., 2015). Consequently, psychological reactance may be reduced due to the variety of contexts and the ease of accessing the retrieval cues. Therefore, it is hypothesized that ads on multiple platforms are perceived as less intrusive than ads on one platform.

H1: Participants exposed to ads for a brand on multiple platforms will perceive the ads to be less intrusive than those exposed to the same ads on a single platform.

As mentioned previously, cross-platform advantages over single platform campaigns have been found on cognitive, affective, and conative outcomes (Chang & Thorson, 2004; Chatterjee, 2012; Edell & Keller, 1989; Lim et al., 2015; Tang et al, 2007; Vandeberg et al., 2015). Hence, it is expected the same advantages for both the ads and the brand involved will be found for multiple social media platforms as opposed to a single platform.

H2: Participants exposed to ads for a brand on multiple platforms will have a) greater brand recognition, b) more favorable attitude toward the ad, c) more favorable attitude toward the brand, d) greater viral behavioral intention for the ads, and e) greater purchase intention than those exposed to the same ads on a single platform.

The present study proposes that content variation may optimize consumer experience pertaining to social media advertising compared to repetition. Edwards et al. (2002) suggest that perceived informational and entertainment value is an antecedent of ad intrusiveness, in that if consumers perceive the ads to have higher value, they feel the ads less intrusive. In this sense,

varied ads provide consumers more informational and aesthetic value than do repeated ads (Haugtvedt, Schumann, Schneier, & Warren, 1994; Schumann, Petty, & Clemons, 1990); thus, it is expected that varied ads will be perceived as less intrusive than repeated ads in the social media context.

H3: Participants exposed to varied ads for a brand will perceive the ads to be less intrusive than those exposed to repeated ads.

Moreover, it has been well documented that content variation enhances advertising effectiveness in a diversity of contexts, such as print ads (Haugtvedt, Schumann, Schneier, & Warren, 1994; Schumann, Petty, & Clemons, 1990), narrative advertising (Chang, 2009), online banner ad (Yaveroglu & Donthu,2008), and IMC campaigns (Voorveld & Valkenburg, 2015). Therefore, it is hypothesized that variation will also result in better outcomes in terms of recognition, attitude, and behavioral intention for both the ads and the brand involved on the social media platforms.

H4: Participants exposed to varied ads for a brand will have a) greater brand recognition, b) more favorable attitude toward the ad, and c) more favorable attitude toward the brand, d) greater viral behavioral intention for the ads, and e) greater purchase intention than those exposed to repeated ads.

To date, no previous studies have examined the interaction effect of platform variation and content variation in an experimental setting. Voorveld and Valkenburg (2015) content analyzed 12 cross-platform campaigns in Dutch and corroborated the findings with tracking data. They found that most cross-platform campaigns used the same colors, logo, and slogans, and the high congruency among ads on different platforms contributed to advertising outcomes by enhancing ad recognition, brand recall, and attitude toward the ad. Therefore, it is expected that

there is an interaction effect between platform variation and content variation; specifically, varied ads on multiple platforms have the best outcomes as the enhanced variety may increase the informational and entertainment values of the ads so as to reduce psychological reactance and increase ad effectiveness (Edwards et al. 2002). Hence, the following hypotheses are posited.

H5: There is an interaction effect of platform variation and content variation on perceived ad intrusiveness.

H6: Participants exposed to varied ads on multiple platforms will perceive the ads to be less intrusive than those who are exposed to varied ads on a single platform, repeated ads on multiple platforms, repeated ads on a single platform.

H7: There is an interaction effect of platform variation and content variation on a) brand recognition, b) attitude toward the ad, c) attitude toward the brand, d) viral behavioral intention, and e) purchase intention.

H8: Participants exposed to varied ads on multiple platforms have a) greater brand recognition, b) more favorable attitude toward the ad, c) more favorable attitude toward the brand, d) greater viral behavioral intention for the ads, and e) greater purchase intention than those who are exposed to varied ads on a single platform condition, repeated ads on multiple platforms, and repeated ads on a single platform.

Drawing upon psychological reactance theory (Brehm, 1966; Brehm & Brehm, 1981), perceived ad intrusiveness has been found to lead to a reduction in ad effectiveness as it may increase feelings of irritation and ad avoidance (Bauer & Greyser, 1968; Edwards et al., 2002; Li et al., 2002). Previous studies have identified several antecedents of perceived ad intrusiveness, including content congruency (Edwards et al., 2002), cognitive load required by the primary task

(Edwards et al.,), user control (McCoy et al., 2008), repetition frequency (McCoy et al., 2012), commercial length (Bellman et al., 2012), and personalization (Bleier & Eisenbeiss, 2015). These factors pose threats to personal freedom or control of a situation; thereby, the reactance activated makes consumers perceive the ads to be more intrusive. Consequently, perceived ad intrusiveness induces negative effects on ad recognition, attitude, and behavioral intention (e.g., Brechman et al., 2015; McCoy et al., 2008; 2012). In this way, perceived ad intrusiveness can be viewed as a mediating mechanism between ad executions and ad effectiveness.

As proposed by previous hypotheses, variations in content and platform in social media reduce reactance to advertisements, and therefore result in a decrease in perceived ad intrusiveness. In turn, as shown in previous studies (Brechman et al., 2015; McCoy et al., 2008; 2012), the decrease in perceived ad intrusiveness leads to an increase in ad effectiveness. Therefore, the present study proposes that ad intrusiveness is the mediating mechanism for the relationship between variation strategies and advertising outcomes in terms of recognition, attitude, and behavioral intention. Figure 1 presents the hypothesized model.

H9: Platform variation affects a) brand recognition, b) attitude toward the ad, c) attitude toward the brand, d) viral behavioral intention, and e) purchase intention through perceived ad intrusiveness. The mediating relationship is moderated by content variation.

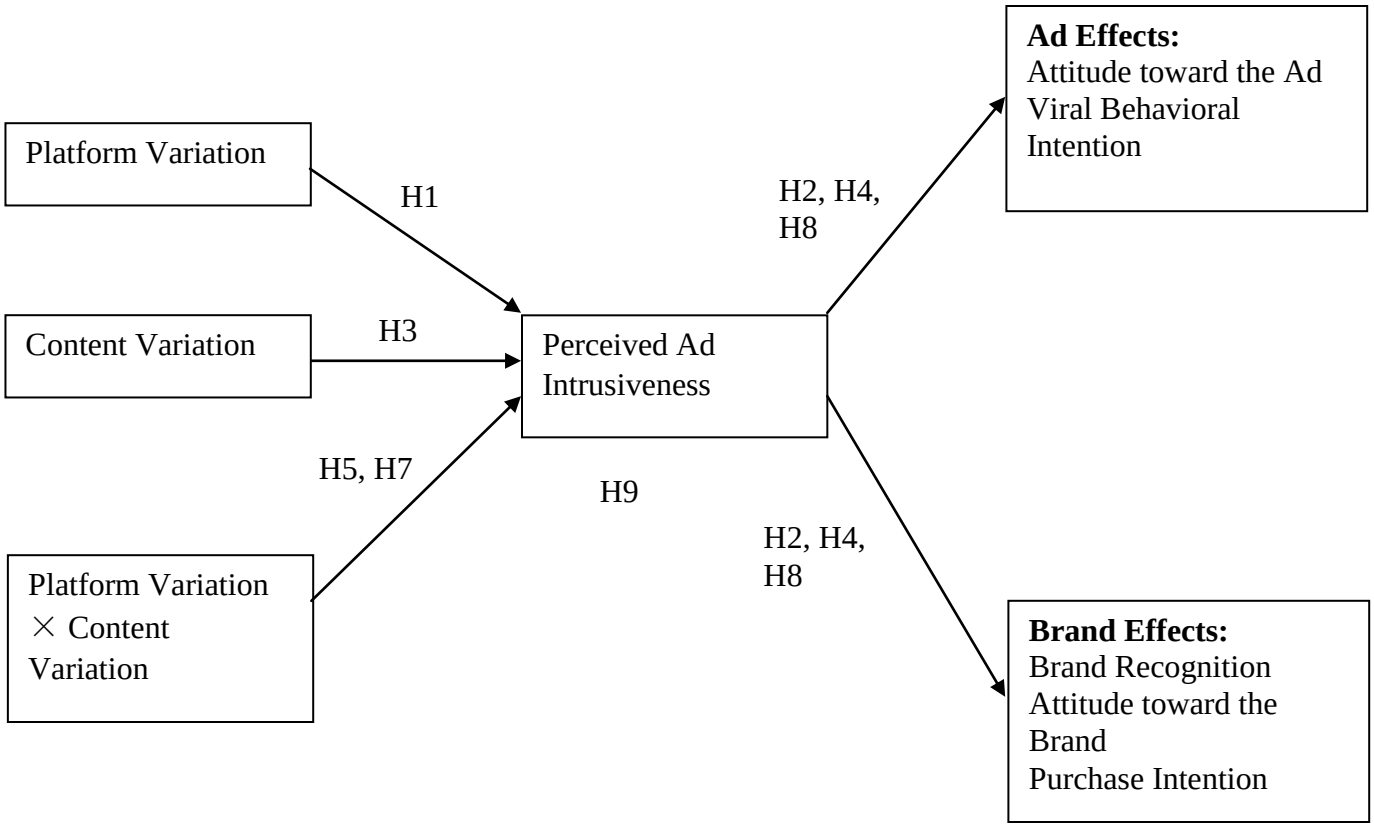

Figure 1 The Hypothesized Model

CHAPTER 3

METHOD

This study employs a 2 (content strategy: repetition vs. variation) × 2 (platform strategy: multiple platforms vs. single platform) between-subject factorial design. As for the type of social media involved in the study, Facebook, Twitter and Instagram are chosen as they are among the most prevalent social media sites in the United States and account for the lion's share of social media ad spending (eMarketer, 2015). Coffee shop is a product class that people are familiar with and visit frequently in daily life to consumer the products offered, so it is chosen as the focal product category for this study.

People 18 years and above who are social media users in the United States are the target population. Eligible participants were recruited through Amazon Mechanical Turk (MTurk)[1] for both the pre-test and the main study. MTurk is an online labor system run by Amazon.com, providing easy access to people who are willing to accomplish online tasks in exchange for small monetary incentives. Research reveals that MTurk samples display a more diversely demographic distribution than college student samples, and the data obtained through MTurk is as reliable and valid as those collected by traditional methods (Buhrmester, Kwang, & Gosling, 2011; Casler, Bickel, & Hackett, 2013). Therefore, MTurk is deemed as "a vehicle for performing low-cost and easy-to-field experiments" (Berinsky, Huber, & Lenz, 2012, p. 351).

Pretest

A pretest was conducted to select an appropriate brand for the experiment. In order to minimize the influence of previous experience and knowledge with the brand under study, the present study selected a brand that was unfamiliar to U.S. consumers. In the pretest, participants

[1] https://www.mturk.com/mturk/welcome

viewed a list of six coffee shop brand logos from Britain and Australia and indicated their familiarity with each brand. The sequence of the six coffee shop brands in the questionnaire was randomized to eliminate order effect. Only social media users living in the United States were recruited on MTurk for the pretest. A total of 69 participants completed the survey, but 3 failed the attention check question and therefore were excluded from the analysis. The pretest sample was composed of 31 male (47%), 34 female (51.5%), and 1 preferring not to answer. The majority of the sample was Caucasian (71.2%). Their age ranged from 19 to 69 years old (M = 37.02, SD = 12.23). Each participant received $0.2 for taking part in the pretest.

The six coffee shop brands were Caffé Nero, Costa Coffee, CIBO Espresso, Coffee#1, Gloria Jean's Coffees, and Hudsons Coffee. Means and standard deviations of the brand familiarity scores were listed in Table 1. As the brand familiarity score of Caffé Nero (M = 1.72, SD = 1.24) was one of the lowest among the six brands, it was chosen for the main study. Caffé Nero is a European style coffee house chain with its headquarter based in London. It runs coffee shops in the United Kingdom, Ireland, the United Arab Emirates, Poland, and Cyprus[2].

[2] http://www.caffenero.co.uk/story/History_01.aspx

Table 1 Means and Standard Deviations of Brand Familiarity for Six Coffee Shop Brands (N = 66)

Coffee Shop Brand	Mean	SD
Caffé Nero	**1.72**	**1.20**
Costa Coffee	2.01	1.45
CIBO Espresso	1.94	1.45
Coffee#1	1.72	1.24
Gloria Jean's Coffees	2.38	1.82
Hudsons Coffee	1.76	1.25

Note: Brand familiarity was measured by a 3-item, semantic differential scale from 1 to 7: 1 = not familiar at all, 7 = very familiar; 1 = no information at all, 7 = a great deal of information; 1 = no experience at all, 7 = a lot of experience (Biswas, 1992). Scores of the 3 items were averaged to form a composite index.

Participants

Participants received financial compensation ($1) in exchange for their participation in the main study. Those who had taken part in the pretest were not allowed to participate in the main study. Attention check questions were inserted in the questionnaire to ensure the quality of the data. A total of 1,306 participants took part in the main study. After removing 28 incomplete cases, 169 cases that failed the attention check questions, and 12 cases who did not have an account on any of the three social media platforms involved in this study, the final dataset consisted of 1,097 participants. Among them, 550 (50.1%) were female, 542 (49.4%) were male, and 5 (0.5%) preferred not to answer. Their age ranged from 18 to 79 years old with an average age of 34.71 (SD = 11.12). In terms of ethnicity, 862 participants (78.6%) were Caucasian, followed by African American (N = 70, 6.4%), Hispanic/Latino (N = 66, 6.0%), Asian (N = 77,

7.0%), American Indian/Alaska Native (N = 5, 0.5%), Native Hawaiian/Other Pacific Islander (N = 4, 0.4%), and other (N = 13, 1.2%). In regard to income, 218 participants (19.9%) reported their annual family income "less than $25,000," 354 participants (32.3%) fell into the category "$25,000 - $49,999," 241 (22.0%) reported "$50,000 - $74,999," 153 (13.9%) reported "$100,000 - $124,999," 63 (5.7%) reported "$100,000 - $ 124,999," 29 (2.6%) reported "$125,000 - $149,999," and 38 (3.5%) reported "$150,000 or more."

Group difference tests were conducted to determine if there was any significant difference across four experimental conditions. No significant difference regarding demographic distribution was found: Sex: $\chi^2(3) = 1.08$, $p = .781$; Age: $F(3, 1093) = .47$, $p = .702$; Ethnicity: $\chi^2(3) = 3.61$, $p = .307$; Income: $\chi^2(18) = 14.57$, $p = .692$. Table 2 summarizes the demographic statistics of the sample across the conditions.

Table 2 Demographic Statistics Across Four Experimental Conditions (N = 1097)

	Single Platform		Multiple Platforms		
	Repeated Ads	Varied Ads	Repeated Ads	Varied Ads	Total
Total	281 (25.6%)	272 (24.8%)	261 (23.8%)	283 (25.8%)	1097 (100%)
Sex[a]					
Male	139 (49.5%)	128 (47.1%)	132 (50.6%)	143 (50.5%)	542 (49.4%)
Female	141 (50.2%)	144 (52.9%)	127 (48.7%)	138 (48.8%)	550 (50.1%)
Ethnicity[a]					
Caucasian	211 (75.1%)	222 (81.6%)	207 (79.3%)	222 (78.4%)	862 (78.6%)
Non- Caucasian	70 (24.9%)	50 (18.4%)	54 (20.7%)	61 (21.6%)	235 (21.4%)
Income[a]					
Less than $25,000	44 (15.7%)	64 (23.5%)	50 (19.2%)	60 (21.2%)	218 (19.9%)
$25,000 - $49,999	90 (32.1%)	83 (30.5%)	86 (33.0%)	95 (33.6%)	354 (32.3%)
$50,000 - $74,999	71 (25.4%)	51 (18.8%)	55 (21.1%)	64 (22.6%)	241 (22.0%)
$75,000 - $99,999	36 (12.9%)	39 (14.3%)	40 (15.3%)	38 (13.4%)	153 (14.0%)
$100,000 - $124,999	18 (6.4%)	17 (6.3%)	16 (6.1%)	12 (4.2%)	63 (5.7%)
$125,000 - $149,999	11 (3.9%)	9 (3.3%)	4 (1.5%)	5 (1.8%)	29 (2.6%)
$150,000 or more	10 (3.6%)	9 (3.3%)	10 (3.8%)	9 (3.2%)	38 (3.5%)
Age[b]	34.06 (10.86)	35.06 (10.99)	34.72 (11.17)	35.01 (11.48)	34.71 (11.12)

Note: a. Number of cases with percentages in parentheses. b. Mean values with standard deviations in parentheses.

Stimuli and Procedure

In order to enhance the external validity of the experiment, real ads from Caffé Nero's social media pages were used to create experimental stimuli. Three pictorial ads featuring a common theme with cosmetic variations were selected to represent the variation strategy. For the single platform/varied ads condition, a fictitious Facebook newsfeed page, a fictitious Twitter newsfeed page, and a fictitious Instagram newsfeed page were created with ad 1, ad 2, and ad 3 appearing sequentially along the news feed. The news content was consistent across the three platforms. Participants viewed one of the three pages in this condition. Likewise, in the single platform/repeated ads condition, participants viewed either a Facebook page, a Twitter page, or an Instagram page, each carrying ad1, ad 2 or ad 3 three times at different locations of the newsfeed. For the multiple platforms/varied ads condition, a Facebook page, a Twitter page and an Instagram page were created, with each page carrying ad 1, ad 2, ad 3 respectively. Participants were exposed to all three pages and the sequence of the 3 pages was randomized. In the multiple platforms/repeated ads condition, participants viewed three webpages (Facebook, Twitter, and Instagram) with either ad 1, ad 2, or ad 3 appearing repeatedly and the sequence of the three pages was randomized. The design of this study was to ensure that the effects of multiple platforms vs. single platform are not limited to only one platform or only one ad. The stimuli were evaluated for internal validity and external validity by an expert panel consisting of 5 experienced professors in advertising and communication. Table 3 describes the stimulus materials used in each experimental condition.

Table 3 Summary of Experimental Conditions

	Repeated Ads	Varied Ads
Single platform	Facebook (ad 1 + ad 1 + ad 1) OR Facebook (ad 2 + ad 2 + ad 2) OR Facebook (ad 3 + ad 3 + ad 3) OR Twitter (ad 1 + ad 1 + ad 1) OR Twitter (ad 2 + ad 2 + ad 2) OR Twitter (ad 3 + ad 3 + ad 3) OR Instagram (ad 1 + ad 1 + ad 1) OR Instagram (ad 2 + ad 2 + ad 2) OR Instagram (ad 3 + ad 3 + ad 3)	Facebook (ad 1 + ad 2 + ad 3) OR Facebook (ad 2 + ad 3 + ad 1) OR Facebook (ad 3 + ad 1 + ad 2) OR Twitter (ad 1 + ad 2 + ad 3) OR Twitter (ad 2 + ad 3 + ad 1) OR Twitter (ad 3 + ad 1 + ad 2) OR Instagram (ad 1 + ad 2 + ad 3) OR Instagram (ad 2 + ad3 + ad 1) OR Instagram (ad 3 + ad 1 + ad 2)
Multiple platforms	Facebook (ad 1) + Twitter (ad 1) + Instagram (ad 1) OR Facebook (ad 2) + Twitter (ad 2) + Instagram (ad 2) OR Facebook (ad 3) + Twitter (ad 3) + Instagram (ad 3)	Facebook (ad 1) + Twitter (ad 2) + Instagram (ad 3) OR Facebook (ad 2) + Twitter (ad 3) + Instagram (ad 1) OR Facebook (ad 3) + Twitter (ad 1) + Instagram (ad 2)

Note: The Facebook, Twitter, and Instagram pages appeared in a randomized order in multiple platforms conditions.

Data collection was conducted by an online survey. Questionnaires and experimental treatments were administered on a survey website Qualtrics. Social media users in the United States were recruited on MTurk. After reading the consent form, participants who indicated their agreement to be part of the study were instructed to complete a pre-treatment survey, including whether they have an account on Facebook, Twitter, and Instagram, attitude toward coffee, and their coffee consumption habits. After that, they were exposed to the stimuli. This study used a randomized block design embedded in the Qualtrics website, which randomly assigned

participants to one of the four conditions: repeated ads on a single platform, varied ads on a single platform, repeated ads on multiple platforms, and varied ads on multiple platforms as described in Table 2. In the single-platform conditions, participants viewed either a Facebook page, a Twitter page, or an Instagram page with 3 ads inserted in the newsfeed for 30 seconds, and then they were automatically directed to the next stage of the survey. By contrast, in the multiple-platforms conditions, participants were exposed to a Facebook page, a Twitter page, and Instagram page with each page carrying a stimulus ad. They viewed each page for 10 seconds and then automatically advanced to the next page. The newsfeed content in the single platform conditions and multiple platforms conditions was the same to rule out possible influence of newsfeed content on consumer response to ads. After participants finished viewing the stimuli, they were instructed to complete survey questions as to perceived ad intrusiveness, brand recognition, attitude toward the ad, attitude toward the brand, viral behavioral intention, and purchase intention. At the end of the survey, participants reported their demographic information. After they completed the study, they were thanked for their participation and received their compensation.

Measures

Measure of perceived ad intrusiveness were drawn from Li et al. (2002). This scale yielded satisfactory reliability coefficients and factor loadings with regard to ads in various contexts (Li et al., 2002). Moreover, the relationship between this scale and theoretically relevant constructs was well substantiated (Edwards et al., 2002; Li et al., 2002). Seven items were measured with a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree), such as "When the ads was shown, I thought it was distracting;" "When the ads was shown, I thought it is interfering;" and "When the ads was shown, I thought it was invasive." The

reliability coefficient was .94. The mean and standard deviation values of the composite score were *M* = 2.70, *SD* = 1.11. The composite score was normally distributed (*Skewness* = .15, *Kurtosis* = -.91).

Brand recognition was measured by showing participants a list of 9 brand logos and asking them to select the one they just viewed on the social media page(s) (McCoy et al., 2008). Their responses were coded as either 0 (not correct) or 1 (correct). Over three-fourths of the participants recognized the brand correctly (N = 851, 77.6%).

Attitude toward the ad/brand was measured by asking participants to evaluate the specific ad they saw or the specific brand featured in the ad they saw on a 7-point bipolar scale anchored by negative/positive, bad/good, and unfavorable/favorable (MacKenzie & Lutz, 1989). The Cronbach's alpha values were .95 and .97 respectively. The composite scores of the two measures were normally distributed (Aad: *M* = 4.81, *SD* = 1.47, *Skewness* = -.57, *Kurtosis* = .18; Bad: *M* = 4.93, *SD* = 1.46, *Skewness* = -.57, *Kurtosis* = .18).

Viral behavioral intention was measured by a Likert-type scale adapted slightly from Alhabash et al. (2013). Participants were asked to indicate their agreement to 7 items such as "This Facebook post is worth sharing with others"; "I will recommend this Facebook post to others"; and "I will 'like' this post on Facebook." Items were modified for for Twitter and Instagram based on their features. The reliability coefficient was $\alpha = .96$. The distribution of the composite score of this measure met the assumption of normality (*M* = 1.99, *SD* = 1.06, *Skewness* = .86, *Kurtosis* = -.27).

Purchase intention was assessed by asking participants to indicate their intention to purchase the advertised brand on a 7-point semantic differential scale anchored by unlikely/likely, improbable/probable, and impossible/possible ((MacKenzie, Lutz, & Belch, 1986). The

Cronbach alpha's value was .95. The distribution of the composite score was roughly normal (*M* = 3.64, *SD* = 1.98, *Skewness* = .09, *Kurtosis* = -1.29).

Three variables were included as covariates and measured before participants were exposed to the stimulus materials: attitude toward coffee consumption, amount of coffee consumption, frequency of visiting a coffee shop. Attitude toward coffee consumption was measured by a 5-item Likert-type scale adapted slightly from Perry (1973), including "Drinking coffee is a very relaxing experience;" "The risk involved in drinking coffee is minimal compared to the pleasure;" "Drinking coffee is usually harmless;" "Drinking coffee is very enjoyable;" and "There are some merits to drinking coffee that nondrinkers cannot appreciate." The reliability coefficient was $\alpha = .87$. The mean and standard deviation values were *M* = 3.73, *SD* = .95.

Amount of coffee consumption was measured by asking participants to indicate how many cups of coffee they drank on an average day. The mean and standard deviation values were *M* = 1.42, *SD* = 1.62. Frequency of visiting a coffee shop was assessed by asking participants to answer how many days in a week they visited a coffee shop on average: 1) 0 days, 2) 1-2 days, 3) 3-4 days, 4) 5-6 days, and 6) everyday. The mean and standard deviation values were *M* = 1.57, *SD* = .86.

No significant difference in the three control variables was found across the four conditions: attitude toward coffee consumption: $F(3, 1093) = .28$, $p = .840$; amount of coffee consumption: $F(3, 1093) = .53$, $p = .660$; frequency of visiting a coffee shop: $F(3, 1093) = 1.92$, $p = .125$.

Table 4 Items, Descriptives and Reliability Coefficients of Dependent Measures

	Mean	SD	Alpha
Perceived ad intrusiveness[a]	2.70	1.11	.94
When the ads were shown, I thought it was distracting.			
When the ads were shown, I thought it was disturbing.			
When the ads were shown, I thought it was forced.			
When the ads were shown, I thought it was interfering.			
When the ads were shown, I thought it was intrusive.			
When the ads were shown, I thought it was invasive.			
When the ads were shown, I thought it was obtrusive.			
Brand recognition	-	-	-
Please view the brands listed below and select the one you just saw on the social media page(s).			
Attitude toward the ad[b]	4.81	1.47	.95
Please evaluate the ad you viewed on Facebook/Twitter/Instagram using the following scale: negative/positive			
Bad/good			
Unfavorable/favorable			
Attitude toward the brand[b]	4.93	1.46	.97
Please evaluate the brand that was featured in the ads you viewed on the social media page(s) using the following scale: negative/positive			
Bad/good			
Unfavorable/favorable			
Viral behavioral intention[a,c]	1.99	1.06	.96
This coffee shop post is worth sharing with others on Facebook.			
I will recommend this coffee shop post to others on Facebook.			
I will like this coffee shop post on Facebook.			
I will share this coffee shop post on Facebook.			
I will comment on this coffee shop post on Facebook.			
I will like this brand on Facebook.			
I will post about this brand on Facebook.			
Purchase intention[b]	3.64	1.98	.95
Please indicate your intention to visit the advertised coffee shop and consume the products it offers using the following scale: unlikely/likely			
Improbable/probable			
Impossible/possible			

Note: a. on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). b. on a scale ranging from 1 to 7. c. sample items presented are for Facebook; items used for Twitter and Instagram were modified slightly in light of the features of the platforms.

CHAPTER 4

RESULTS

Test of Within-Condition Homogeneity

This study employed a 2 (platform variation: single platform/multiple platforms) by 2 (content variation: repeated ads/varied ads) between-subject factorial design; therefore, 4 primary conditions were determined: 1) single platform/repeated ads, 2) single platform/varied ads, 3) multiple platforms/repeated ads, and 4) multiple platforms/varied ads. In order to ensure the research findings were not limited to one specific ad or one specific platform, 3 platforms (Facebook, Twitter, and Instagram) were used in the single platform conditions and 3 ads (ad 1, ad 2, and ad 3) were used in the repeated ads conditions. Therefore, before hypothesis testing, a series of preliminary tests were conducted to determine if there were significant differences across platform or across ad within each condition.

Within the single platform/repeated ads condition (N = 281), 9 sub-conditions were created: Facebook/ad1+ad 1+ad1, Facebook/ad 2+ ad 2 + ad 2, Facebook/ad 3+ad 3+ad 3, Twitter/ad 1+ad 1+ad 1, Twitter/ad 2+ad 2+ad 2, Twitter/ad 3+ad 3+ad 3+ad 3, Instagram/ad 1+ad 1+ad 1, Instagram/ad 2+ad 2+ad 2, and Instagram/ad 3+ad 3+ad 3. Group difference tests were conducted on dependent variables and control variables between the 9 sub-conditions. There were significant differences on brand recognition (χ^2 (8) = 31.63, p = .000). It was easier to recognize the brand name when ad 3 (90.0% of participants recognized the brand) was presented than when ad1 (67.4% of participants recognized the brand) or ad 2 (64.2% participants recognized the brand) was presented, regardless of the platform. Except brand recognition, no significant differences were found on the other variables; therefore data for the

other variables were combined for hypothesis testing. Table 5 presents the group difference tests for within-condition homogeneity for the single platform/repeated ads condition.

Table 5 Tests of Within-Condition Homogeneity for the Single Platform/Repeated Ads Condition (N = 281)

	χ^2 or F	df	p
Perceived ad intrusiveness	.45	8, 272	.888
Brand recognition	31.63	8	.000*
Attitude toward the ad	.30	8, 272	.967
Attitude toward the brand	.80	8, 272	.602
Viral behavioral intention	1.51	8, 272	.154
Purchase intention	1.69	8, 272	.102
Attitude toward coffee consumption	.78	8, 272	.620
Amount of coffee consumption	1.12	8, 272	.348
Frequency of visiting a coffee shop	1.51	8, 272	.154

Note: * indicates $p < .05$.

Within the single platform/varied ads condition (N = 272), 9 sub-conditions were created using three platforms featuring different order of ad appearance: Facebook/ad1+ad 2+ad 3, Facebook/ad 2+ ad 3+ad 1, Facebook/ad 3+ad 1+ad 2, Twitter/ad 1+ad 2+ad 3, Twitter/ad 2+ad 3+ad 1, Twitter/ad 3+ad 1+ad 2, Instagram/ad 1+ad 2+ad 3, Instagram/ad 2+ad 3+ad 1, and Instagram/ad 3+ad 1+ad 2. Group difference tests were conducted on dependent variables and control variables between the 9 sub-conditions. No significant differences were found, so data for the 9 sub-conditions were combined for hypothesis testing. Table 6 presents the group difference tests for within-condition homogeneity for the single platform/varied ads condition.

Table 6 Tests of Within-Condition Homogeneity for the Single Platform/Varied Ads Condition (N = 272)

	χ^2 or *F*	df	*p*
Perceived ad intrusiveness	1.46	8, 263	.173
Brand recognition	3.76	8	.878
Attitude toward the ad	.63	8, 263	.752
Attitude toward the brand	.28	8, 263	.971
Viral behavioral intention	.16	8, 263	.996
Purchase intention	.40	8, 263	.920
Attitude toward coffee consumption	.13	8, 263	.998
Amount of coffee consumption	.54	8, 263	.824
Frequency of visiting a coffee shop	1.08	8, 263	.378

Note: * indicates $p < .05$.

Within the multiple platforms/repeated ads condition (N = 260), 3 sub-conditions were created using 3 ads: Facebook/ad 1+Twitter/ad1+Instagram/ad1, Facebook/ad 2+Twitter/ad 2+Instagram/ad 2, and Facebook/ad 3+Twitter/ad 3+Instagram/ad 3. The three social media pages were exposed to participants in a randomized order. There was significant difference on brand recognition across the 3 sub-conditions ($\chi^2(2) = 6.08$, p = .048). It was easier for participants exposed to ad 3 (87% of participants recognized the brand) to recognize the brand name than those exposed to ad1(77.3% of participants recognized the brand) and those exposed to ad 2 (72.2% of participants recognized the brand). No significant differences between the 3 sub-conditions were found on all the other variables, so their data for the 3 sub-conditions were

combined for hypothesis testing. Table 7 presents the group difference tests for within-condition homogeneity for the multiple platforms/repeated ads condition.

Table 7 Tests of Within-Condition Homogeneity for the Multiple Platforms/Repeated Ads Condition (N = 260)

	χ^2 or F	df	p
Perceived ad intrusiveness	.18	2, 258	.834
Brand recognition	6.08	2	.048*
Attitude toward the ad	.75	2, 258	.475
Attitude toward the brand	1.16	2, 258	.315
Viral behavioral intention	.06	2, 258	.941
Purchase intention	.61	2, 258	.546
Attitude toward coffee consumption	1.63	2, 258	.197
Amount of coffee consumption	.50	2, 258	.610
Frequency of visiting a coffee shop	1.05	2, 258	.352

Note: * indicates $p < .05$.

Within the multiple platforms/varied ads condition (N = 282), 3 sub-conditions were created using 3 combinations of platform and ad: Facebook/ad 1+Twitter/ad 2+Instagram/ad3, Facebook/ad 2+Twitter/ad 3+Instagram/ad 1, and Facebook/ad 3+Twitter/ad 1+Instagram/ad 2. The three social media pages were exposed to participants in a randomized order. No significant differences between the 3 sub-conditions were found on all dependent variables and control variables. Therefore, data for the 3 sub-conditions were combined. Table 8 presents the group difference tests for within-condition homogeneity for the multiple platforms/varied ads condition.

Table 8 Tests of Within-Condition Homogeneity for the Multiple Platforms/Varied Ads Condition (N = 282)

	χ^2 or F	df	p
Perceived ad intrusiveness	1.62	2, 280	.199
Brand recognition	.75	2	.688
Attitude toward the ad	.03	2, 280	.972
Attitude toward the brand	.37	2, 280	.694
Viral behavioral intention	.26	2, 280	.771
Purchase intention	.11	2, 280	.900
Attitude toward coffee consumption	.91	2, 280	.402
Amount of coffee consumption	1.73	2, 280	.180
Frequency of visiting a coffee shop	.37	2, 280	.694

Note: * indicates $p < .05$.

Taken together, except brand recognition, the other dependent variables and control variables did not show significant differences across platform or ad within each of the four conditions. Therefore, their data were combined so that hypothesis testing was conducted across the four conditions. In terms of brand recognition, the result suggested it was easier for participants who were exposed to ad 3 to recognize the brand name than those who were exposed to ad 1 and ad 2 in the repeated ads conditions, regardless of the platform. This would be taken into consideration when testing hypotheses regarding brand recognition.

Hypothesis Testing Strategies

Hypothesis 1 through 8 concerned with the main effects and interaction effects of platform variation and content variation on the dependent variables, including perceived ad intrusiveness, brand recognition, attitude toward the ad, attitude toward the brand, viral

behavioral intention, and purchase intention. Except brand recognition, the other dependent variables were continuous variables. Therefore, a series of two-way Analysis of Covariance (ANCOVA) tests from a General Linear Modeling approach were conducted to test the relevant hypotheses with attitude toward coffee consumption, amount of coffee consumption and frequency of visiting a coffee shop as covariates. Table 9 summarizes the descriptives of the dependent variables across four experimental cells. The normality of distribution within each cell was checked with regard to perceived ad intrusiveness, attitude toward the ad, viral behavioral intention, attitude toward the brand, and purchase intention. This assumption was met for all the five variables. Moreover, the assumption of homogeneity of variance across cells was tested by Levene's test. The assumption was met for perceived ad intrusiveness ($F(3, 1093) = 1.22$, $p = .300$) and viral behavioral intention ($F(3, 1090) = 1.31$, $p = .269$), and was not supported for attitude toward the ad ($F(3, 1093) = 3.93$, $p = .008$), attitude toward the brand ($F(3, 1093) = 3.20$, $p = .023$), and purchase intention ($F(3, 1093) = 2.67$, $p = .046$). As demonstrated in the previous section, group difference tests confirmed that there were no significant differences between sub-conditions within each cell, so the deviation from the homogeneity of variance was not attributed to systematic factors associated with experimental variables. Moreover, given the large sample size and very close cell sizes, the violation of this assumption would have minimal effect on type I error (Hinkle, Wiersma, & Jurs, 2003). Additionally, standard deviations of the variables in each cell were very close, not showing huge variances across the four cells. Therefore, in this case, the slight violation of the homogeneity of variance was acceptable for using two-way ANCOVA. Besides, there are three assumptions specifically regarding the covariates: 1) the relationship between the covariate and the dependent variable is linear; 2) the regression lines expressing these relationships are the same across groups; and 3) the covariate and the treatment

is independent with each other (Hinkle, Wiersma, & Jurs, 2003). Visualization of the regression lines showed that the lines showed a linear pattern and the relationship between each covariate and each dependent variable was roughly the same slope across group. Moreover, the design of the experiment ensured assumption 3 was met, in that the covariates were measured before the treatment and the treatment was manipulated by the experimenter without any influence from the covariates. SPSS 22.0 (IBM Corp., 2013) was used for the abovementioned analyses.

Table 9 Means and Standard Deviations of Dependent Variables for Four Experimental Conditions

	Repeated Ads		Varied Ads		
	Single Platform (N = 281)	Multiple Platforms (N = 261)	Single Platform (N = 272)	Multiple Platforms (N = 283)	Total (N = 1097)
Perceived ad intrusiveness[a]	3.03 (1.14)	2.46 (1.05)	2.63 (1.10)	2.66 (1.05)	2.70 (1.11)
Brand recognition[b]	211 (75.4%)	207 (79.6%)	221 (81.3%)	212 (75.4%)	851 (77.9%)
Attitude toward the ad[a]	4.60 (1.63)	4.86 (1.38)	4.92 (1.45)	4.86 (1.39)	4.81 (1.47)
Attitude toward the brand[a]	4.61 (1.58)	5.06 (1.31)	5.04 (1.47)	5.01 (1.40)	4.93 (1.46)
Viral behavior intention[a]	1.94 (1.10)	2.06 (1.03)	1.91 (1.02)	2.05 (1.07)	1.99 (1.06)
Purchase intention[a]	3.38 (2.01)	3.86 (1.90)	3.71 (2.11)	3.64 (1.89)	3.64 (1.98)

Note: a. Mean values with standard deviations in parentheses. b. Number of cases (brand recognition = 1) with percentages in parentheses.

Given that brand recognition was a dichotomous variable, binary logistic regression analyses from a Generalized Linear Modeling approach were performed to test relevant hypotheses after controlling for attitude toward coffee consumption, amount of coffee consumption, and frequency of visiting a coffee shop. As shown in the previous section, ad 3

resulted in better brand recognition than ad 1 and ad 2 in repeated ads conditions, regardless of the platform. Nevertheless, the data for each ad were comparable between the single platform/repeated ads and multiple platforms/repeated ads condition. In order to test the main effect of platform variation, brand recognition was analyzed for ad 1, ad 2, and ad 3 respectively to see whether the hypothesized relationship held across the 3 ads in repeated ads conditions. In contrast, as participants were exposed to the three ads in a randomized order in the varied ads conditions, their aggregate brand recognition scores were comparable between the single platform/varied ads and multiple platforms/varied ads condition. Binary logistic regression was performed to compare the two cells in terms of the effect of platform variation. As for the main effect of content variation and the interaction effect, the data within each of the four cells were combined for hypothesis testing. The abovementioned analyses were performed with the aid of SPSS 22.0.

With regard to the moderated mediation model proposed by hypothesis 9, a Structural Equation Modeling approach with maximum likelihood estimation was adopted to account for the correlations among the dependent variables. Mplus 7.0 (Muthén & Muthén , 2010) was utilized for assessing the model fit and estimating the path parameters. Attitude toward coffee consumption, amount of coffee consumption, and frequency of visiting a coffee shop were included as covariates.

All the hypotheses were tested at $\alpha = .05$ level. Accordingly, 95% confidence intervals were reported.

Main Effect of Platform Variation

Hypothesis 1 posited that participants exposed to ads on multiple platforms would perceive the ads to be less intrusive than those exposed to the same ads on a single platform. As

shown in Table 10, after controlling for attitude toward coffee consumption, amount of coffee consumption, and frequency of visiting a coffee shop, platform variation had a significant main effect on perceived ad intrusiveness, $F(1, 1090) = 16.84$, $p = .000$, $\eta^2 = .015$. Participants exposed to ads on three social media platforms ($M = 2.56$, $SD = 1.06$) perceived the ads to be less intrusive than those exposed to the same ads on one platform ($M = 2.83$, $SD = 1.14$). Therefore, hypothesis 1 was supported.

Table 10 The ANCOVA Table of Perceived Ad Intrusiveness

	df	*F*	*p*	η^2
Intercept	1	467.55	.000*	.300
Attitude toward coffee consumption	1	2.76	.097	.003
Amount of coffee consumption	1	.05	.826	.000
Frequency of visiting a coffee shop	1	.26	.611	.000
Content variation	1	2.29	.131	.002
Platform variation	1	16.84	.000*	.015
Content × Platform	1	20.09	.000*	.018
Error	1090			

Note: * indicates $p < .05$.

Hypothesis 2a predicted that participants exposed to ads on multiple platforms would be more likely to recognize the brand than those exposed to ads on a single platform. As brand recognition in the repeated ads conditions had significant difference across the three ads, separate tests were conducted for each ad to compare the single platform/repeated ads and multiple platforms/repeated ads condition. Results showed that for ad 1 (n = 184), the full model was not

significant, Likelihood Ratio χ^2 (4) = 7.63, p = .106. Although the parameter of platform variation was significant, Wald χ^2 (1) = 6.66, p = .010, due to the insignificance of the full model, there was not enough evidence for a significant effect of platform variation on brand recognition for ad 1. As for ad 2 (n = 164), the full model was not significant, Likelihood Ratio χ^2 (4) = 8.06, p = .090. Although the parameter of platform variation was significant, Wald χ^2 (1) = 7.32, p = .007, due to the insignificance of the full model, there was lack of evidence for a significant effect of platform variation on brand recognition for ad 2. With respect to ad 3 (n = 194), the full model was significant, Likelihood Ratio χ^2 (4) = 14.20, p = .007. Moreover, the parameter of platform variation was significant, Wald χ^2 (1) = 9.13, p = .003. People who viewed ad 3 repeatedly on a single platform (90.0%, n = 110) were more likely to recognize the brand than those who viewed ad 3 repeatedly on multiple platforms (71.4%, n = 84), with an increase of odds of 1.23. As for the comparison of brand recognition between the two varied ads cells, the full model was not significant, Likelihood Ratio χ^2 (4) = 3.27, p = .521. The parameter of platform variation was not significant, Wald χ^2 (1) = 2.68, p = .101. When presented with varied ads, people who viewed these ads on multiple platforms (75.4%, n = 281) were not more likely to recognize the brand than those who viewed the ads on a single platform (81.3%, n = 272). Taken together, hypothesis 2a was not supported.

Hypothesis 2b examined whether participants exposed to ads on multiple platforms would express more favorable attitude toward the ad than those exposed to the same ads on a single platform. As shown in Table 11, the main effect of platform variation on attitude toward the ad was not statistically significant, F(1, 1090) = 1.48, p = .224. There was no significant difference in attitude toward the ad between participants exposed to ads on three social media

platforms (M = 4.86, SD = 1.38) and those exposed to ads on one platform (M = 4.76, SD = 1.55). Therefore, hypothesis 2b was not supported.

Table 11 The ANCOVA Table of Attitude toward the Ad

	df	F	p	η^2
Intercept	1	385.72	.000*	.261
Attitude toward coffee consumption	1	30.31	.000*	.027
Amount of coffee consumption	1	.29	.592	.000
Frequency of visiting a coffee shop	1	2.14	.144	.002
Content variation	1	3.14	.077	.003
Platform variation	1	1.48	.224	.001
Content × Platform	1	3.06	.081	.003
Error	1090			

Note: * indicates $p < .05$.

Hypothesis 2c investigated whether participants exposed to ads on multiple platforms would report more favorable attitude toward the brand than those exposed to the same ads on a single platform. Results showed that platform variation had a significant main effect on attitude toward the brand, $F(1, 1090) = 6.41$, $p = .011$, $\eta^2 = .006$. The use of multiple platforms was effective in enhancing attitude toward the brand (M = 5.03, SD = 1.36) than that of a single platform (M = 4.82, SD = 1.54). Therefore, hypothesis 2c was supported.

Table 12 The ANCOVA Table of Attitude toward the Brand

	df	*F*	*p*	η^2
Intercept	1	404.19	.000*	.271
Attitude toward coffee consumption	1	34.80	.000*	.031
Amount of coffee consumption	1	.33	.567	.000
Frequency of visiting a coffee shop	1	4.10	.043*	.004
Content variation	1	5.10	.024*	.005
Platform variation	1	6.41	.011*	.006
Content × Platform	1	7.38	.007*	.007
Error	1090			

Note: * indicates $p < .05$.

Hypothesis 2d predicted that participants exposed to ads on multiple platforms would report greater viral behavioral intention than those exposed to the same ads on a single platform. There was no significant effect of platform variation on viral behavioral intention, $F(1, 1087) = 3.35$, $p = .067$. No significant difference in viral behavioral intention was found between participants exposed to ads on three social media platforms ($M = 2.06$, $SD = 1.49$) and those exposed to ads on one platform ($M = 1.93$, $SD = 1.06$). Therefore, hypothesis 2d was not supported.

Table 13 The ANCOVA Table of Viral Behavioral Intention

	df	*F*	*p*	η^2
Intercept	1	88.71	.000*	.075
Attitude toward coffee consumption	1	1.15	.284	.001
Amount of coffee consumption	1	7.06	.008*	.006
Frequency of visiting a coffee shop	1	73.82	.000*	.064
Content variation	1	.01	.929	.000
Platform variation	1	3.35	.067	.003
Content × Platform	1	.21	.648	.000
Error	1087			

Note: * indicates $p < .05$.

Hypothesis 2e proposed participants exposed to ads on multiple platforms would report greater purchase intention than those exposed to the same ads on a single platform. Results showed that the main effect of platform variation on purchase intention was not significant, $F(1, 1090) = 2.58$, $p = 109$. No significant difference was found between participants exposed to ads on multiple platforms ($M = 3.75$, $SD = 1.89$) and those exposed to ads on a single platform ($M = 3.54$, $SD = 2.06$). Therefore, hypothesis 2e was not supported.

Table 14 The ANCOVA Table of Purchase Intention

	df	*F*	*p*	η^2
Intercept	1	15.96	.000*	.014
Attitude toward coffee consumption	1	44.14	.000*	.039
Amount of coffee consumption	1	2.93	.087	.003
Frequency of visiting a coffee shop	1	75.17	.000*	.065
Content variation	1	.55	.460	.000
Platform variation	1	2.58	.109	.002
Content × Platform	1	4.55	.033*	.004
Error	1090			

Note: * indicates $p < .05$.

Main Effect of Content Variation

Hypothesis 3 predicted that participants who were exposed to varied ads for a brand would perceive the ads to be less intrusive than those exposed to repeated ads. As shown in Table 10, after controlling for attitude toward coffee consumption, amount of coffee consumption, and frequency of visiting a coffee shop, content variation had no significant main effect on perceived ad intrusiveness, $F(1, 1090) = 2.29$, $p = .131$. Participants exposed to varied ads ($M = 2.64$, $SD = 1.07$) perceived the ads slightly less intrusive than those exposed to repeated ads ($M = 2.75$, $SD = 1.14$), but the difference was not statistically significant. Therefore, hypothesis 3 was not supported.

Hypothesis 4a investigated whether participants exposed to varied ads would report greater ad recognition than those exposed to repeated ads. Binary logistic regression was conducted to test the effect of content variation, which was coded as dummy variable, after

controlling for attitude toward coffee consumption, amount of coffee consumption, and frequency of visiting a coffee shop. Results showed the full model was not significant, Likelihood Ratio χ^2 (4) = 2.91, p = .574. Moreover, the Wald criterion also indicated content variation was not a significant predictor on brand recognition, Wald χ^2 (1) = .08, p = .779. People who were exposed to varied ads were not more likely to recognize the brand (78.3%, n = 553) than those who were exposed to repeated ads (77.4%, n = 540). Therefore, hypothesis 4a was disconfirmed.

Hypothesis 4b predicted participants exposed to varied ads would have more favorable attitude toward the ad than those exposed to repeated ads. As shown in Table 11, there was no significant effect of content variation on attitude toward the ad, F(1, 1090) = 3.14, p = .077. Although participants exposed to varied ads (M = 4.89, SD = 1.42) had more favorable attitude toward the ad than those exposed to repeated ads (M = 4.73, SD = 1.52), but the difference was not statistically significant at α = .05 level. Therefore, hypothesis 4b was not supported. Hypothesis 4c proposed that participants exposed to varied ads would have more favorable attitude toward the brand than those exposed to repeated ads. As shown in Table 12, there was a significant effect of content variation on attitude toward the brand, F(1, 1090) = 5.10, p = .024, η^2 = .005. Hypothesis 4c was supported, in that participants exposed to varied ads (M = 5.03, SD = 1.44) expressed more favorable attitude toward the brand than those exposed to repeated ads (M = 4.82, SD = 1.47). Hypothesis 4d posited participants exposed to varied ads would express greater viral behavioral intention than those exposed to repeated ads. As shown in Table 13, there was no significant difference in viral behavior intention between participants exposed to repeated ads (M = 2.00, SD = 1.06) and those exposed to varied ads (M = 1.99, SD = 1.05), F(1, 1087) = .21, p = .648. Thus, hypothesis 4d was not supported.

Hypothesis 4e predicted that participants exposed to varied ads would have greater purchase intention than those exposed to repeated ads. As shown in Table 14, the effect of content variation on purchase intention was not significant, $F(1, 1090) = .55$, $p = .460$. There was no significant difference in purchase intention between participants exposed to repeated ads (M = 3.61, SD = 1.97) and those exposed to varied ads (M = 3.67, SD = 1.99). Therefore, hypothesis 2e was not supported.

Interaction Effect of Platform Variation and Content Variation

Hypothesis 5 predicted an interaction effect of platform variation and content variation on perceived ad intrusiveness. Hypothesis 6 proposed that participants exposed to varied ads on multiple platforms would perceive the ads to be less intrusive than those in the other cells. Results indicated that the interaction effect was significant, $F(1, 1090) = 20.09$, $p = .000$, $\eta^2 = .018$. Thus, hypothesis 5 was supported. However, the direction of the interaction effect was not consistent with hypothesis 6. Specifically, when repeated ads were used, participants who viewed them on multiple platforms (M = 2.46, SD = 1.05) would perceive the ads less intrusive than those who viewed the same ads on a single platform (M = 3.03, SD = 1.14). In contrast, when varied ads were presented, there were no difference in perceived ad intrusiveness between the single platform (M = 2. 63, SD = 1.10) and multiple platforms condition (M = 2.66, SD = 1.05). Thus, the multiple platforms/repeated ads condition reported the lowest score on perceived ad intrusiveness, so hypothesis 6 was not supported.

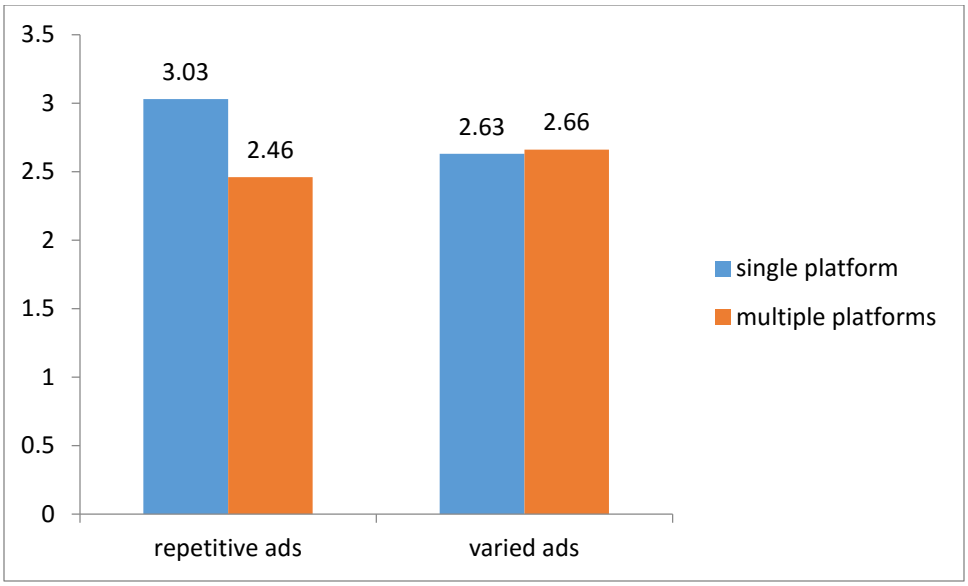

Figure 2 The Interaction Effect of Platform Variation and Content Variation on Perceived Ad Intrusiveness

Hypothesis 7a concerned with an interaction effect on brand recognition. Specifically, hypothesis 8a predicted that that participants exposed to varied ads on multiple platforms would be more likely to recognize the brand than those in the other three cells. After controlling for attitude toward coffee consumption, amount of coffee consumption, and frequency of visiting a coffee shop, binary logistic regression was conducted to test the two hypotheses. The full model with the main effects and interaction effects was not significant, Likelihood Ratio χ^2 (3) = 4.28, p = .233. Therefore, there was lack of evidence for a significant interaction effect of content variation and platform variation on brand recognition, so hypothesis 6a and 7a were disconfirmed.

Hypothesis 7b posited that there was a significant interaction effect of platform variation and content variation on attitude toward the ad. Hypothesis 8b speculated that participants exposed to varied ads on multiple platforms would express more favorable attitude toward the ad than those in the other three cells. The interaction effect between content variation and platform

variation on attitude toward the ad was not significant, $F(1, 1090) = 3.06$, $p = .081$. In addition, a comparison of the mean values of the four cells showed that participants exposed to varied ads on a single platform expressed the most favorable attitude toward the ad ($M = 4.92$, $SD = 1.45$), which was greater than those exposed to repeated ads on a single platform ($M = 4.60$, $SD = 1.63$). The mean values of the multiple platforms/repeated ads condition ($M = 4.86$, $SD = 1.38$) and the multiple platforms/varied ads condition ($M = 4.86$, $SD = 1.39$) were the same. Therefore, neither hypothesis 7b nor 8b was supported.

Hypothesis 7c predicted an interaction effect of platform variation and content variation on attitude toward the brand, and hypothesis 8c proposed that participants exposed to varied ads on multiple platforms would have the most favorable attitude toward the brand. Results showed that the interaction effect was significant, $F(1, 1090) = 7.38$, $p = .007$, $\eta^2 = .007$. Thus, hypothesis 7c was supported. For repeated ads, participants who viewed them on multiple platforms expressed more favorable attitude toward the brand ($M = 5.06$, $SD = 1.31$) than those who viewed them on a single platform ($M = 4.61$, $SD = 1.58$). However, the same edge of multiple platforms was not shown with regard to varied ads. For varied ads, no difference was found in attitude toward the brand between participants who viewed them on multiple platforms ($M = 5.01$, $SD = 1.40$) and those who viewed them on a single platform ($M = 5.04$, $SD = 1.47$). The multiple platforms/repeated ads condition reported the greatest mean value of attitude toward the brand. Therefore, hypothesis 8c was not supported.

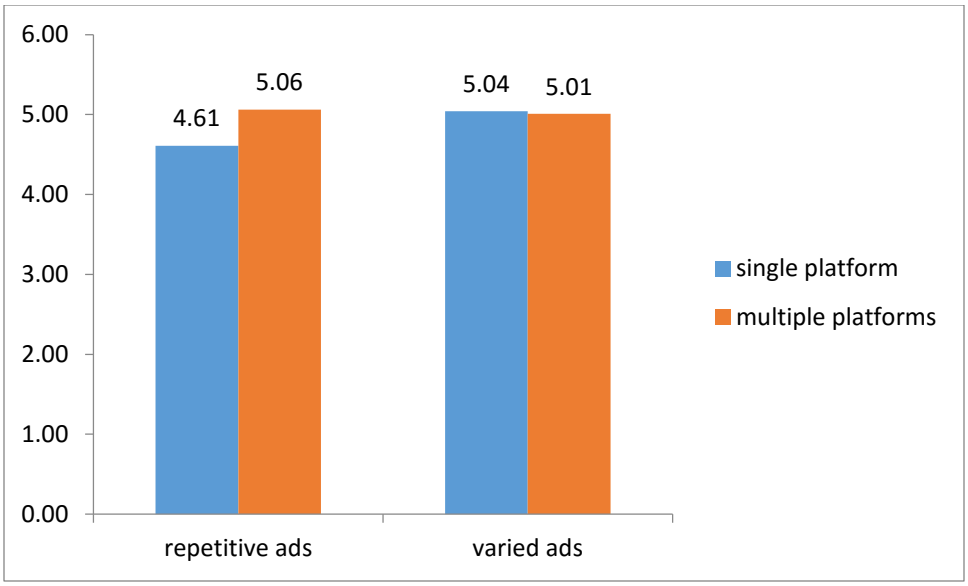

Figure 3 The Interaction Effect of Content Variation and Platform Variation on Attitude toward the Brand

Hypothesis 7d examined the interaction effect on viral behavioral intention, and hypothesis 8d investigated whether participants exposed to varied ads on multiple platforms would express greater viral behavioral intention than those in the other three cells. The interaction effect between platform variation and content variation on viral behavioral intention was not significant, $F(1, 1090) = .21$, $p = .648$, so hypothesis 7d was disconfirmed. Participants exposed to repeated ads on multiple platforms reported the greatest viral behavioral intention ($M = 2.06$, $SD = 1.03$), which was slightly greater than those exposed to varied ads on multiple platforms ($M = 2.05$, $SD = 1.07$). The mean values of the single platform/repeated ads condition ($M = 1.94$, $SD = 1.10$) and the single platform/varied ads condition ($M = 1.91$, $SD = 1.02$) were very close as well. Therefore, hypothesis 8d was not supported.

Hypothesis 7e dealt with the interaction effect on purchase intention, and hypothesis 8e posited that participants exposed to varied ads on multiple platforms would express greater purchase intention than those in the other three cells. Results showed an significant interaction of

content variation and platform variation on purchase intention, $F(1, 1090) = 4.55$, $p = .033$, $\eta^2 = .004$. Therefore, hypothesis 7e was supported. Repeated ads presented on multiple platforms resulted in greater purchase intention ($M = 3.86$, $SD = 1.90$) than the same ads presented on a single platform ($M = 3.38$, $SD = 2.01$). By contrast, not so much difference in purchase intention was found as to varied ads on a single platform ($M = 3.71$, $SD = 2.11$) and multiple platforms ($M = 3.64$, $SD = 1.89$). Among the four cells, the multiple platforms/repeated ads condition was most effective in enhancing purchase intention. Therefore, hypothesis 8e was not supported.

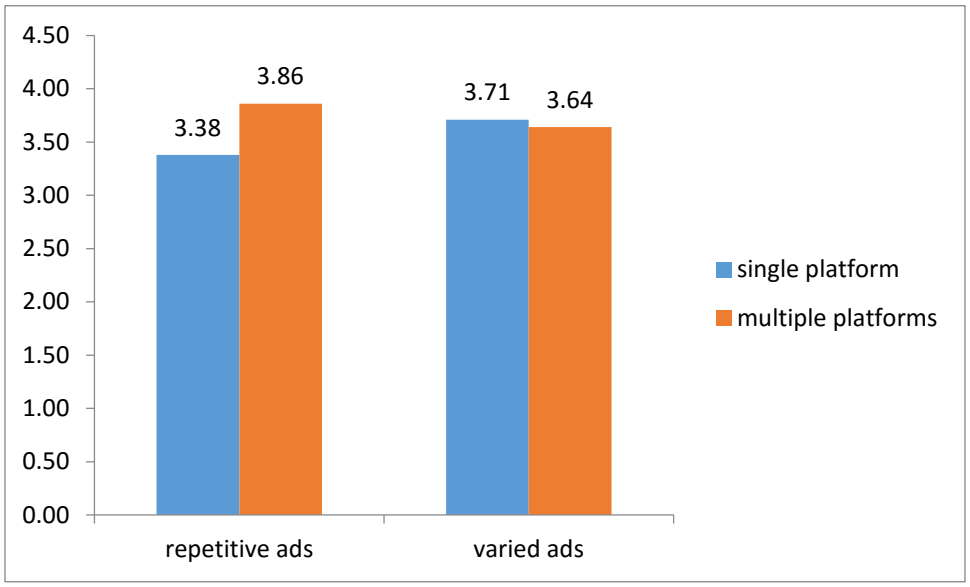

Figure 4 The Interaction Effect of Content Variation and Platform Variation on Purchase Intention

The Moderated Mediation Model

Hypothesis 9 proposed a moderated mediation model that compassed the relationships between all variables. Specifically, platform variation affected brand recognition, attitude toward the ad, attitude toward the brand, viral behavioral intention, and purchase intention through perceived ad intrusiveness; the mediating mechanism was moderated by content variation. The

hypothesized model was tested using structural equation modeling with maximum likelihood estimation. As displayed in Figure 1, platform variation and content variation, which were mean centered, were included as independent variables. In addition, a product term Platform $\times$ Content was created to represent the interaction effect, which was also entered in the model as an independent variable. Perceived ad intrusiveness was specified as a mediator. Dependent variables were brand recognition, attitude toward the ad, attitude toward the brand, viral behavioral intention, and purchase intention. In addition, attitude toward coffee consumption, amount of coffee consumption, and frequency of visiting a coffee shop were regressed on the mediator and dependent variables as control variables. The residual variances between the dependent variables were correlated. In order to assess the conditional indirect effects, asymmetric bootstrapping with 5,000 replicates was performed to compute bias-corrected confidence intervals (Preacher, Rucker, & Hayes, 2007).

The results showed that the chi-square test of model fit was not significant, $\chi^2(15) = 20.71$, $p = .146$. The comparative fit index (CFI) was .998 and the Tucker-Lewis index (TLI) was .994. The root mean square error of approximation (RMSEA) was .019 and the standardized root mean square residual (SRMR) was .009. As suggested by Hu and Bentler (1999), for models with maximum likelihood estimation, cutoff values for a good model fit were RMSEA $\leqslant .06$, SRMR $\leqslant .08$, CFI $\geqslant .95$, and TLI $\geqslant .95$. Therefore, all the model indices indicated that the model fit the data well.

The estimated parameters for each direct path are presented in Figure 5. Platform variation had a significant effect on perceived ad intrusiveness, $\beta = -.26$, *s.e.* = .07, $p = .000$, 95% CI [-.392, -.130]. People who viewed ads on multiple platforms would perceive the ads less intrusive (a decrease of .26) than those who the same ads on a single platform. The effect of

content variation on perceived ad intrusiveness was not significant, β = -.11, *s.e.* = .07, p = .092, 95% CI [-.235, .021]. There was a significant interaction effect between platform variation and content variation on perceived ad intrusiveness, β = .57, *s.e.* = .13, p = .000, 95% CI [.301, .822].

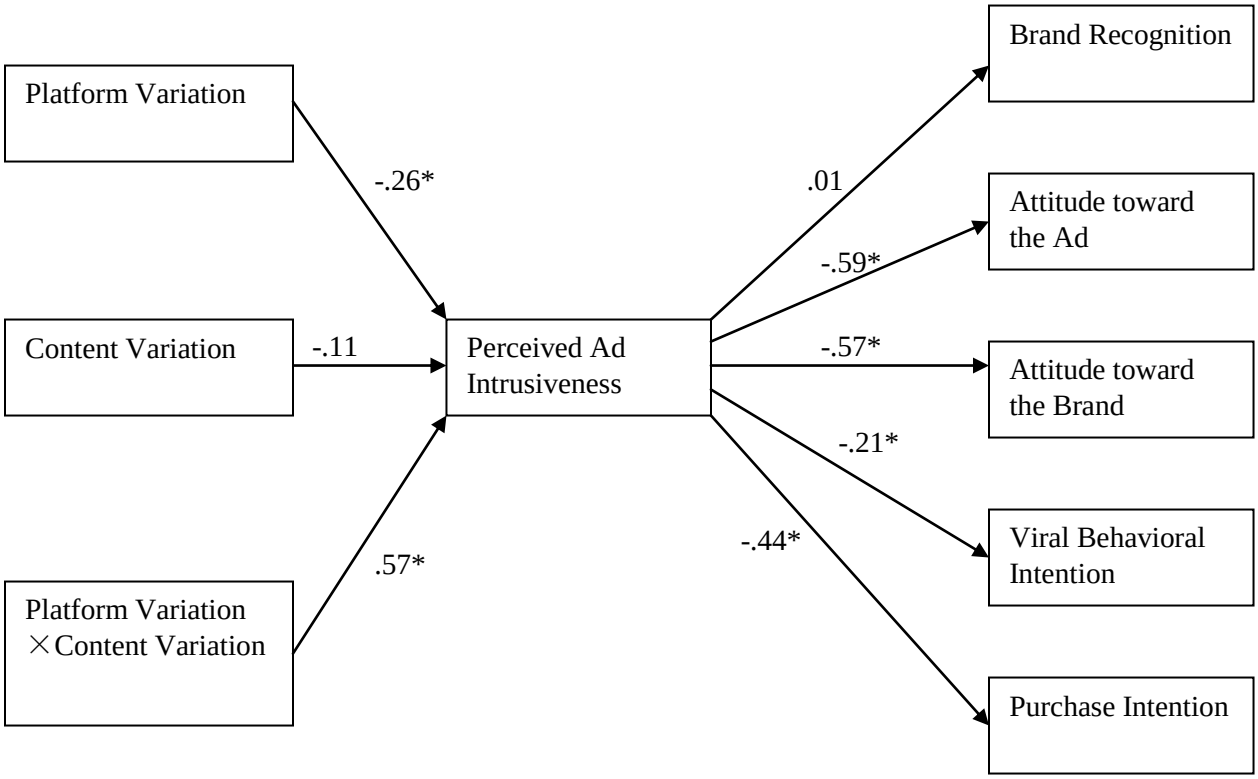

Figure 5 Estimated Parameters of the Hypothesized Model with SEM
Note: * indicates p < .05.

Hypothesis 9a specifically investigated the conditional indirect effect of platform variation on brand recognition through perceived ad intrusiveness moderated by content variation. The path from perceived ad intrusiveness to brand recognition was not significant, β = .01, *s.e.* = .012, p = .713, 95% CI [-.019, .027]. The estimated indirect effect of platform variation on brand recognition through perceived ad intrusiveness failed to reach statistical significance, β = -.01, *s.e.* = .003, p =.723, 95% CI [-.008, .005]. Likewise, the indirect effect of content variation on brand recognition though perceived ad intrusiveness was not significant, β

= .00, *s.e.* = .001, *p* =.752, 95% CI [-.005, .002]. The indirect effect of the interaction on brand recognition through perceived ad intrusiveness was not significant, β = .01, *s.e.* = .007, *p* =.721, 95% CI [-.011, .017]. Overall, the moderated mediation model explained very little variance in brand recognition, R^2 = .003. Therefore, hypothesis 9a was not supported.

Hypothesis 9b assessed the same moderated mediation model with attitude toward the ad as dependent variable. Results showed there was a significant path from perceived ad intrusiveness to attitude toward the ad, β = -.59, *s.e.* = .041, *p* = .000, 95% CI [-.672, -.512]. The indirect effect of platform variation on attitude toward the ad through perceived ad intrusiveness was significant, β = .15, *s.e.* = .041, *p* = .000, 95% CI [.077, .239]. However, the indirect effect of content variation on attitude toward the ad through perceived ad intrusiveness was not significant, β = .07, *s.e.* = .039, *p* = .098, 95% CI [-.013, .142]. There was an significant indirect effect of the interaction term on attitude toward the ad through perceived ad intrusiveness, β = -.34, *s.e.* = .082, *p* = .000, 95% CI [-.502, -.180]. For repeated ads, the indirect effect of platform variation on attitude toward the ad through perceived ad intrusiveness was significant, β = .33, *s.e.* = .061, 95% CI [.218, .457]. In contrast, for varied ads, the indirect effect was not significant, β = -.01, *s.e.* = .053, 95% CI [-.117, .090]. The model explained 24.1% of variance in attitude toward the ad. Therefore, hypothesis 9b was supported.

Hypothesis 9c proposed the same moderated mediation model with attitude toward the brand as dependent variable. Results showed the path from perceived ad intrusiveness to attitude toward the brand was significant, β = -.57, *s.e.* = .040, *p* = .000, 95% CI [-.647, -.488]. The indirect effect of platform variation on attitude toward the brand through perceived ad intrusiveness was significant, β = .15, *s.e.* = .039, *p* = .000, 95% CI [.072, .229]. The indirect effect of content variation on attitude toward the brand through perceived ad intrusiveness was

not significant, β = .06, *s.e.* = .038, p = .097, 95% CI [-.012, .136]. There was a significant indirect effect of the interaction term on attitude toward the brand through perceived ad intrusiveness, β = -.32, *s.e.* = .079, p = .000, 95% CI [-.483, -.172]. For repeated ads, the indirect effect of platform variation on attitude toward the brand through perceived ad intrusiveness was significant, β = .32, *s.e.* = .059, 95% CI [.205, .438]. However, for varied ads, the indirect effect was not significant, β = -.01, *s.e.* = .052, 95% CI [-.115, .089]. The model accounted for 23.6% of variance in attitude toward the brand. Therefore, hypothesis 9c was supported.

Hypothesis 9d proposed that platform variation had an indirect effect on viral behavioral intention through perceived ad intrusiveness moderated by content variation. Results indicated there was a significant path from perceived ad intrusiveness to viral behavioral intention, β = -.21, *s.e.* = .028, p = .000, 95% CI [-.267, -.158]. The indirect effect of platform variation on viral behavioral intention through perceived ad intrusiveness was significant, β = .06, *s.e.* = .016, p = .001, 95% CI [.027, .093]. The indirect effect of content variation on viral behavioral intention through perceived ad intrusiveness was not significant, β = .02, *s.e.* = .014, p = .103, 95% CI [-.004, .053]. There was a significant indirect effect of the interaction term on viral behavioral intention through perceived ad intrusiveness, β = -.12, *s.e.* = .033, p = .000, 95% CI [-.193, -.064]. Specifically, for repeated ads, the indirect effect of platform variation on viral behavioral intention through perceived ad intrusiveness was significant, β = .12, *s.e.* = .026, 95% CI [.071, .173]. However, for varied ads, the indirect effect was not significant, β = -.01, *s.e.* = .020, 95% CI [-.045, .032]. The model accounted for 14.5% of variance in viral behavioral intention. Therefore, hypothesis 9d was supported.

Hypothesis 9e dealt with the same moderated mediation model with purchase intention. Results indicated the path from perceived ad intrusiveness to purchase intention was significant,

β = -.44, *s.e.* = .051, p = .000, 95% CI [-.537, -.335]. The indirect effect of platform variation on purchase intention through perceived ad intrusiveness was significant, β = .11, *s.e.* = .033, p = .001, 95% CI [.056, .185]. The indirect effect of content variation on purchase intention through perceived ad intrusiveness was not significant, β = .05, *s.e.* = .029, p = .103, 95% CI [-.007, .108]. There was a significant indirect effect of the interaction term on purchase intention through perceived ad intrusiveness, β = -.25, *s.e.* = .065, p = .000, 95% CI [-.389, -.134]. For repeated ads, the indirect effect of platform variation on purchase intention through perceived ad intrusiveness was significant, β = .24, *s.e.* = .051, 95% CI [.153, .356]. However, for varied ads, the indirect effect was not significant, β = -.01, *s.e.* = .040, 95% CI [-.088, .071]. The model accounted for 21.4% of variance in purchase intention. Therefore, hypothesis 9e was supported.

Taken together, the final model suggests a moderated mediation mechanism for the effect of platform variation on attitude toward the ad, attitude toward the brand, viral behavioral intention, and purchase intention through perceived ad intrusiveness. This relationship is moderated by content variation. For repeated ads, people who viewed these ads on multiple platforms perceive the ads to be significantly less intrusive that those who viewed the same ads on a single platform, resulting in more favorable attitude toward the ad, more favorable attitude toward the brand, greater viral behavioral intention, and greater purchase intention. Conversely, for varied ads, the choice between a single platform and multiple platform does not matter that much. People who viewed varied ads on a single platform and multiple platforms have no significantly different scores on perceived ad intrusiveness and other outcomes. Overall, the use of variation strategies enhances ad effectiveness, as the repeated ads/single platform achieves the poorest outcomes among the four conditions.

Table 15 Summary of Hypothesis Testing ($\alpha = .05$)

Hypothesis	Dependent Variable	Supported
H1: Participants exposed to ads for a brand on multiple platforms will perceive the ads to be less intrusive than those exposed to the same ads on a single platform.	Perceived ad intrusiveness	Yes
H2: Participants exposed to ads for a brand on multiple platforms will have a) greater brand recognition, b) more favorable attitude toward the ad, c) more favorable attitude toward the brand, d) greater viral behavioral intention for the ads, and e) greater purchase intention than those exposed to the same ads on a single platform.	a) Brand recognition	No
	b) Attitude toward the ad	No
	c) Attitude toward the brand	Yes
	d) Viral behavioral intention	No
	e) Purchase intention	No
H3: Participants exposed to varied ads for a brand will perceive the ads to be less intrusive than those exposed to repeated ads.	Perceived ad intrusiveness	No
H4: Participants exposed to varied ads for a brand will have a) greater brand recognition, b) more favorable attitude toward the ad, and c) more favorable attitude toward the brand, d) greater viral behavioral intention for the ads, and e) greater purchase intention than those exposed to repeated ads.	a) Brand recognition	No
	b) Attitude toward the ad	No
	c) Attitude toward the brand	Yes
	d) Viral behavioral intention	No
	e) Purchase intention	No
H5: There is an interaction effect of platform variation and content variation on perceived ad intrusiveness.	Perceived ad intrusiveness	Yes
H6: Participants exposed to varied ads on multiple platforms will perceive the ads to be less intrusive than those exposed to varied ads on a single platform, repeated ads on multiple platforms, repeated ads on a single platform.	Perceived ad intrusiveness	No
H7: There is an interaction effect of platform variation and content variation on a) brand recognition, b) attitude toward the ad, c) attitude toward the brand, d) viral behavioral intention, and e) purchase intention.	a) Brand recognition	No
	b) Attitude toward the ad	No
	c) Attitude toward the brand	Yes
	d) Viral behavioral intention	No

Table 15 (cont'd)

	e) Purchase intention	Yes
H8: Participants exposed to varied ads on multiple platforms have a) greater brand recognition, b) more favorable attitude toward the ad, c) more favorable attitude toward the brand, d) greater viral behavioral intention for the ads, and e) greater purchase intention than those exposed to varied ads on a single platform condition, repeated ads on multiple platforms, and repeated ads on a single platform.	a) Brand recognition	No
	b) Attitude toward the ad	No
	c) Attitude toward the brand	No
	d) Viral behavioral intention	No
	e) Purchase intention	No
H9: Platform variation affects a) brand recognition, b) attitude toward the ad, c) attitude toward the brand, d) viral behavioral intention, and e) purchase intention through perceived ad intrusiveness. The mediating relationship is moderated by content variation.	a) Brand recognition	No
	b) Attitude toward the ad	Yes
	c) Attitude toward the brand	Yes
	d) Viral behavioral intention	Yes
	e) Purchase intention	Yes

CHAPTER 5

DISCUSSION AND CONCLUSION

Summary of Findings

The present study examines the impacts of platform variation and content variation on advertising effectiveness in social media. Drawing upon psychological reactance theory and the repetition-variation literature, this study proposes that repeated strategies in either platform or content lead to growing psychological reactance, which reflects in increased perceived ad intrusiveness in this specific context. Conversely, variation strategies in platform or content reduce perceived intrusiveness due to the addition of new information or aesthetic values (Edwards et al., 2002). As a result, the decrease in perceived ad intrusiveness improves advertising effectiveness such as brand recognition, attitude toward the ad, attitude toward the brand, viral behavioral intention, and purchase intention. Furthermore, this study investigates whether the superimposition of content variation and platform variation further elevates ad effectiveness through reducing perceived ad intrusiveness. A moderated mediation model is hypothesized with respect to the effect of platform variation on ad effectiveness through perceived ad intrusiveness, which is conditional on content variation.

The experimental study employed a 2 (repeated ads vs. varied ads) by 2 (single platform vs. multiple platforms) between-subject factorial design. Facebook, Twitter, and Instagram were selected as the platforms to present stimulus ads, as they are the most widely used social media platforms in the United States. Three real ads from the social media pages of a British coffee shop brand Caffé Nero were captured to create stimuli. Overall, the findings indicate the effects of variation strategies are mainly on brand related variables such as attitude toward the brand and

purchase intention rather than ad related variables including attitude toward the ad and viral behavioral intention. Specifically, the interaction effect between platform variation and content variation suggests that for repeated ads, the use of multiple platforms results in less perceived ad intrusiveness, more favorable attitude toward the brand and greater purchase intention as opposed to the use of a single platform. By contrast, for varied ads, no significant differences are found in the outcome variables between single platform and multiple platforms. In other words, the superimposition of variations in both platform and content does not lead to the best outcomes. Moreover, no significant main effects or interaction effects were found on brand recognition, attitude toward the ad, and viral behavioral intention.

The hypothesized moderated mediating relationship is supported for four dependent variables: attitude toward the ad, attitude the brand, viral behavioral intention, and purchase intention. Therefore, there is evidence that perceived ad intrusiveness serves as a mediator linking the relationship between variation strategies and ad effectiveness. However, such mechanism does not hold for brand recognition.

The Effects of Platform Variation

The present study confirms that there is an indirect effect of platform variation on brand attitude and purchase intention through perceived ad intrusiveness only when paired with repeated ads. However, no significant effect on brand recognition, attitude toward the ad, and viral behavioral intention is found . The findings speak to the current scholarship on cross-platform advertising in multiple aspects.

Most previous studies regarding the use of two or more media platforms in an advertising campaign find cross media advantages as to cognitive measures such as attention, elaboration, and recall (Chang & Thorson, 2004; Chatterjee, 2012; Edell & Keller, 1989; Tang et al, 2007;

Vandeberg et al., 2015). However, the findings of the current study deviate from the literature and do not spot any effect on brand recognition. One possible explanation derives from the forced exposure in the experimental design. Participants were forced to view the stimulus social media pages on which the ads were placed for 30 seconds. Then they were instructed to select the brand they viewed from a list of 9 brands. Given that the task was placed immediately after they viewed the pages, the brand recognition task was relatively easy, in that 77.9% of the participants recognized the brand correctly. The ceiling effect of brand recognition score may be one possible reason for the insignificant findings. Future studies may retest the effect on brand recognition with shorter exposure time or longer time span between exposure to stimuli and the brand recognition task to see whether any difference occurs. A second possible explanation for the insignificant findings on brand recognition is that variance in ad per se plays a more important role in brand recognition than platform variation does. Results indicate that with repeated strategy, ad 3 generates better brand recognition than ad 1 and ad 2 do. This suggests a promising area as to which ad elements elicit better recognition paired with platform variation, meriting more scholarly attention for future endeavors .

In terms of the effectiveness of cross-platform advertising regarding attitude and behavioral intention, prior studies have equivocal findings with only a few supporting the edge of multiple platforms (Tang et al., 2007, Vandeberg et al., 2015) while others not (Chang & Thorson, 2004; Dijkstra, et al., 2005; Edell & Keller, 1989). The current study provides additional evidence as to the positive effects of multiple platforms in social media on brand attitude and purchase intention. It is worth noting that in the single platform conditions, this study used three different platforms, Facebook, Twitter, and Instagram, to address the variance between platform. Given that no significant difference was found across the three platforms,

their data were aggregated to compare with the multiple platforms conditions. Hence, the finding that multiple platforms outperform single platform is not confined to a specific platform. The generalizability across three platforms provides additional support that the advantage of multiple platforms as opposed to a single platform is derived from multiplicity in the number of platforms compared to singularity, rather than from features of a specific platform. Likewise, this study used three different ads (ad 1, ad 2, and ad 3) for content repetition conditions, so their data were combined to compare with content variation conditions. Hence, the findings are not limited to one specific ad in regard to brand attitude and purchase intention. These serve as strong evidence for showcasing the essential magic of cross-platform advertising versus single-platform advertising.

With respect to ad-related outcome variables, such as attitude toward the ad and viral behavioral intention, although the hypothesis tests of group differences failed to reach statistical significance at $\alpha = .05$ level, the pattern is consistent with the results of brand-related variables, in that repeated ads on multiple platforms elicit more favorable ad attitude and greater viral behavioral intention than the same ads on a single platform do, while no difference is found when varied ads are used. Moreover, the moderated mediation mechanism is valid for ad-related variables, indicating that ad attitude and viral behavioral intention are affected by platform variation through perceived ad intrusiveness. One possible explanation for the failure to find statistically significant difference using ANCOVA derives from the measurement of attitude toward the ad and viral behavioral intention. Given that this study involves the comparison between repeated ads and varied ads, participants were either exposed to one ad repeatedly or three ads. In the latter situation, attitude toward the ad and viral behavioral intention were measured with the three ads respectively, and then were averaged to form composite scores that

were comparable with measures in the repeated ads condition. Despite that no significant differences between the three ads are found in attitude toward the ad and viral behavioral intention within each cell, the inclusion of the three ads may induce more within-cell variances. Future studies are suggested to test the relationship with different ads in other product categories to see whether the effect sizes increase and results of the significance tests change.

When interpreting the results as compared with previous studies, it is necessary to note the uniqueness of this study. First, the present study is situated in the social media context. In light of the scarcity of cross-platform advertising studies involving social media, it is not clear whether the findings are applicable to social media advertising only or can be generalized to advertising on other platforms as well. Hence, more research is needed to investigate this area, as social media advertising will keep growing in the next few years (eMarketer, 2015). In addition, it is suggested to replicate the study with other platforms such as television and websites in the hope of increasing the generalizability of the theorization. Second, different from the majority of prior studies, which focus on two media platforms (e.g., Chang & Thorson, 2004; Vandeberg et al., 2015), this study involves three social media platforms. Echoing with Chatterjee's (2012) study on Internet banner ad, print, and email, this study confirms positive effect of multiple platforms on immediate brand attitude. However, most studies involving two platforms failed to find any significant effect on brand attitude (Chang & Thorson, 2004; Dijkstra, et al., 2005; Edell & Keller, 1989). Hence, a possible explanation is that the number of platforms matters, in that three platforms outperform two platforms. Researchers are recommended to devote more efforts to exploring the magic number of platforms involved in a campaign, which is expected to yield the best outcomes.

The Moderating Role of Content Variation

The major role of content variation in this study is a moderator of the effect of platform variation on perceived ad intrusiveness, brand attitude, and purchase intention. More specifically, cross-platform advertising enhances ad effectiveness as opposed to single platform only when repeated ads are used. When varied ads are used, the advantages of cross-platform advertising diminish; rather, variation in content may substitute variation in platform in terms of enhancing ad effectiveness, in that no significant difference is found between varied ads/single platform, varied ads/multiple platforms, and repeated ads/multiple platforms.

It has been well documented in the literature that repeated exposure to advertisements leads to negative consequences due to boredom (Berlyne, 1970; Cacioppo & Petty, 1979; Krugman, 1972; Schmidt & Eisend, 2015). A stream of studies have examined the effectiveness of repetition versus variation in various contexts (Chang, 2009; Yaveroglu & Donthu, 2008; Yoo et al., 2009). The present study extends this research stream by expanding the research scope of repetition versus variation studies to the social media context. In particular, it is found that repeated ads presented on a single platform are perceived to be most intrusive and rated lowest on ad attitude, brand attitude, and purchase intention. Therefore, this provides new support for the usefulness of adopting variation strategies as opposed to repetition strategies to boost ad effectiveness in the social media era. This study also demonstrates that the effect of content variation is conditional on platform variation, contributing to theory advancement in this area. In this vein, the current study fits nicely in the line of studies that have identified boundary conditions for the advantages of content variation, such as Yaveroglu and Donthu (2008), and further confirms that the choice between repetition and variation is contingent on contextual factors. More research is called for in terms of exploring other factors that may moderate the

effect of content variation on ad effectiveness, for instance, personal characteristics, platform affordances, product category, and brand features.

The present study takes an IMC perspective to approaching content strategy, by coupling content variation with platform variation, while prior studies focus on either content variation or platform variation. The essence of IMC campaigns is the integration of a variety of platforms and promotional strategies to convey coherent brand messages to consumers (Schultz, & Patti, 2009). In this sense, this study touches on the fundamental nature of IMC campaigns and answers this imperative question "which content strategy paired with which platform composition is most effective?" As noted by Voorveld and Valkenburg (2015), most IMC campaigns in Netherland used ads featuring a consistent theme and slightly varied executions. As an extension to Voorveld and Valkenburg (2015), the present study suggests that the use of one variation strategy is enough for enhancing effectiveness, regardless of whether it is platform variation or content variation. Moreover, the superimposition of variations in both platform and content does not carry additional power in terms of reducing perceived ad intrusiveness and increasing ad effectiveness. With the caveat that content variation and platform variation are not comparable in a standardized manner, it is speculated the effect of variations levels off when it reaches a certain point. Hence, these findings enrich our understanding on how to leverage platform and content strategies to achieve the best outcomes in IMC campaigns, providing insights for media planners, IMC strategists, and brand managers as to which strategies are most cost efficient.

The Mediating Role of Perceived Ad Intrusiveness

One important theoretical contribution this study makes is the discovery of the mediating mechanism: perceived ad intrusiveness mediates the relationship between variation strategies and ad effectiveness, including attitude toward the ad, attitude toward the brand, viral behavioral

intention, and purchase intention. As mentioned previously, perceived ad intrusiveness has been found to be a significant antecedent of ad effectiveness (Brechman et al., 2015; McCoy et al., 2008; 2012), its role in platform and content strategy, however, has long been overlooked.

The present study is an exploratory attempt investigating the underlying mechanism of platform variation and content variation on ad effectiveness. Within the framework of psychological reactance theory, the rigorous experimental design helps to substantiate the causal relationship between variation strategies and perceived ad intrusiveness by establishing time order and controlling for other possible factors through randomization (Shoemaker, Tankard, Jr., & Lasorsa, 2004). The linkage between perceived ad intrusiveness and ad effectiveness is largely guided by psychological reactance theory and built upon previous studies that have identified perceived ad intrusiveness as a mediating variable between ad strategies and ad effectiveness. For example, McCoy et al. (2012) find that the number of times participants viewed an ad affects purchase intention through perceived ad intrusiveness. In addition to the theoretical and methodological warrants, the conditional indirect effect through perceived ad intrusiveness is confirmed with the bootstrapping approach, by estimating the distribution of certain statistical parameters through resampling from the original sample (Preacher & Hayers, 2008; Preacher, Rucker, & Hayes, 2007). The bootstrapping approach has been demonstrated as a more appropriate strategy for testing indirect effect than Barron and Kenny's (1986) causal step approach and the Sobel test (Preacher & Hayers, 2008), and therefore is widely used in the social science disciplines. Hence, taken all the theoretical, methodological, and statistical evidence together, the findings are in support of a conditional causal relationship from platform variation to ad effectiveness through perceived ad intrusiveness. Replications are suggested to confirm this relationship with different samples.

This study provides a new theoretical insight into the current scholarship of cross-platform advertising strategies by opening the "black box" regarding attitude and behavioral intention. Researchers have used a couple of theories to explain the underlying mechanism of cross-platform advertising, such as the forward encoding hypothesis (Edell & Keller, 1989; Voorveld et al., 2011) and the multiple source effect theory (Harkins & Petty, 1981a; 1981b; 1987; Chang & Thorson, 2004). The forward encoding hypothesis states that for people with prior exposure to a television commercial, when they hear the audio track of the commercial, the commercial will be automatically replayed in their minds. The multiple source effect theory notes that audiences perceive ads shown on multiple media platforms as more credible and are more likely to engage in diligent elaboration about the ads. These theories are useful in accounting for the cognitive advantages of cross platform over single platform. However, they have little explanatory power as to consumer attitude and behavioral intention, which has been corroborated by empirical studies using these theories and finding no significant effect on attitude and behavioral intention (Edell & Keller, 1989; Chang & Thorson, 2004). Hence, the cross-media advertising scholarship has long been calling for more theoretical exploration. The present study answers this call by drawing upon psychological reactance theory and empirically substantiating the mediating role of perceived ad intrusiveness. The edge of cross-platform advertising lies in "variation," which is effective in reducing psychological reactance, improving brand attitude, and increasing the likelihood of purchasing the product. More interestingly, the edge diminishes when variation occurs in the content. In this sense, this study serves as a valuable complement to prior studies in shedding light on the psychological mechanisms of consumer attitude and behavioral intention.

In a similar vein, this study also suggests that psychological reactance theory is a nice theoretical framework to account for the comparison between repetition versus variation in content strategy. The conceptualization of this study is based on psychological reactance theory, which has been held as a theoretical mechanism for perceived ad intrusiveness by previous studies (e.g., Edward et al., 2002; Li et al., 2002; Mau et al., 2008). However, the role of psychological reactance was not measured or tested by the present study. Future studies are suggested to include reactance in the model and test if reactance mediates the relationship between variation strategies and perceived ad intrusiveness. The findings will provide additional evidence for the theoretical mechanism found in this study. Future research following this line will also shed light on the antecedents and consequences of perceived ad intrusiveness and contribute to the theorization of this construct per se.

Limitations and Suggestions

There are some limitations of this study that need to be taken into account when interpreting the findings. First, the inherent nature of social media involves interactivity, which means users are free to selectively view and interact with posts. The present study is an experiment in which participants were instructed to view the stimulus page(s) for a set amount of time. While being exposed to the stimuli, participants automatically advanced to the next page in order to control for the time spent on each page. Moreover, all links and widgets on the stimulus pages were inactive for controlling participants' behaviors. Thus, the forced exposure context, which is necessary for excluding possible confounds, is different from how people use social media in daily life. To address this issue, it is recommended that future research may use a big data approach tracking people's activities on social media platforms, including views, clicks, and buys. Insights from such organic data may complement the experimental method and reassess the

findings in a natural setting so as to enhance external validity. In addition, qualitative methods such as in-depth interview and focus group are also useful in scrutinizing how people feel about ad campaigns running on multiple social media platforms, helping to provide a complete picture of this issue.

According to Cohen (1992), the cutoff points for a small, medium, and large effect size for analysis of variance are $\eta^2 = .02$, $\eta^2 = .13$, and $\eta^2 = .26$ respectively. Based on the criteria, the effect sizes of the main effects and interaction effects in this study are small or even lower than .02. One possible reason for the small effect sizes is the lack of control in an online experiment. Due to the demand of a large sample size, this study collected data through an online survey, which, however, entailed the risks of lack of control during the experiment. As a result, the error variances were increased, leading to a reduced between-group variances. Future studies are suggested to replicate the present study in a laboratory setting to see whether the effect sizes increase. Another possible explanation for the small effect sizes is the use of three ads in the repeated ads conditions and the use of three platforms in the single platform conditions. The aim of the design was to ensure the effect was not limited to one specific ad or one particular platform. Although no significant differences were found across ads and across platforms within each experimental condition in attitude and behavioral intention, the design induced more within-group variances, which may to some extent account for the small between-group effect sizes. A third possible explanation is that the sample of this study has a wide demographic distribution in terms of ethnicity, age, and social economic status. Participants were randomly assigned to the four conditions and no significant differences were spotted pertaining to demographic variables, the heterogeneity of the sample, however, may account for the shrinkage of effect sizes of group differences. Though the wide demographic distribution of the current

sample increases the generalizability of the findings, future studies are recommended to replicate the study using homogeneous samples to further validate the theory.

The third limitation is concerned with the generalizability of this study. The present study used one product category--coffee shop for theory testing. According to the FCB grid that locates product categories in a 2 by 2 grid anchored by high/ low involvement and thinking/feeling (Ratchford, 1987), coffee is classified as medium-high involving and feeling, which indicates that consumer decision making for coffee is more emotion-driven than based on logical thinking. Given the characteristics of this product category, more research is needed to investigate whether the findings can be generalized to low involving and thinking-based product categories. Likewise, this study focused on one ad format-- newsfeed ad composed of picture and text, as this is the most prevalent ad format in social media and comparable across Facebook, Twitter, and Instagram. Future studies are encouraged to extend this study to other ad formats such as video ads. Moreover, it is interesting to examine the effects of variation strategies combining social media platforms with other media platforms, such as brand websites, video streaming websites, and mobile apps. This promising line of research will broaden the scope of the theorization and offer more actionable insights for IMC campaigns.

Conclusion

Human beings are novelty seeking (Dabholkar & Bagozzi, 2002; Hirschman, 1980; Pearson, 1970). According to Hirschman (1980), novelty seeking can be interpreted in two dimensions: The first dimension refers to "seeking new and potentially discrepant information" (p. 284), and the second dimension is termed as "variety seeking or stimulus variation" (p. 284). As for the second dimension, although no new information is provided, variation in stimuli may lessen boredom or fatigue and enhance the experience. The present study serves as a strong piece of evidence supporting this theorization in the field of advertising strategies and consumer behavior, indicating that platform variation has a conditional indirect effect on brand attitude and purchase intention through perceived ad intrusiveness moderated by content strategy.

Therefore, to cater to consumers' novelty seeking nature, the findings of this study provide the following suggestions for media planners, IMC strategists, and social media advertisers: 1) In terms of brand attitude and purchase intention, multiple platforms outperform single platform only when paired with repeated ads in the social media context; 2) For single-platform campaigns in social media, it is better to use varied ads than repeated ads; 3) For multiple-platform campaigns in social media, repeated ads are as effective as varied ads. In summary, utilizing variation strategies, either in platform or content, improves ad effectiveness in social media.

APPENDICES

APPENDIX A Consent Form

You are being invited to participate in a research study involving social media use. You will complete an online survey, which will take approximately 30 minutes. In the survey, you will view social media web pages and indicate your responses regarding attitude and intention.

You must be 18 years or older to participate. During the course of the study you may withdraw at any time without penalty. You may refuse to answer any questions you do not feel comfortable with. There are no foreseeable risks associated with participation in this study. The data for this project and your personal information will be kept confidential to the maximum extent allowable by law. The raw data is only available electronically and will be in double password protected file on the investigators' computers. Only the research personnel have access. The data will be stored for three years. No personally identifiable information will be recorded in the data file and only aggregate results will be reported.

Participation in this online survey is voluntary. Participants who take consent to take part in the study will be awarded $ 1 USD. *After you complete the survey on Qualtrics, you will see a 4-digit code at the end of the survey. Please be sure to enter the 4-digit code on the Mechanical Turk website to indicate you have completed the task.* Your Mechanical Turk Worker ID will be used to distribute payment to you but will not be stored with your survey data. You will receive the payment within 48 hours after you complete the study.

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury, please contact the researcher Guanxiong Huang at (517)-353-9909, or email huanggu1@msu.edu. You may also contact her via mail at 404 Wilson Road, Room 309 in the Communication Arts & Sciences Building, Michigan State University, East Lansing, MI 48824.

If you have any questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail irb@msu.edu or regular mail at Olds Hall, 408 West Circle Drive #207, MSU, East Lansing, MI, USA.

If you agree with the above information and volunteer to participate in this research, please click the ">>" button to indicate your agreement. Then your will be directed to the survey. Thank you very much for the collaboration!

APPENDIX B Survey Instrument

PART I. Social Media Use and Coffee Consumption

Q. Do you have a Facebook account?
- ○ Yes
- ○ No

Q. Do you have a Twitter account?
- ○ Yes
- ○ No

Q. Do you have an Instagram account?
- ○ Yes
- ○ No

Q. How many cups of coffee do you drink on an average day?

_____

Q. How many days in a week do you visit a coffee shop on average?
- ○ 0 day
- ○ 1-2 days
- ○ 3-4 days
- ○ 5-6 days
- ○ everyday

Q. Please indicate your level of agreement to the following statements about your attitude toward coffee consumption.

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
Drinking coffee is usually harmless.	○	○	○	○	○
Drinking coffee is very enjoyable.	○	○	○	○	○
The risk involved in drinking coffee is minimal compared to the pleasure.	○	○	○	○	○
There are some merits to drinking coffee that nondrinkers cannot appreciate.	○	○	○	○	○
Drinking coffee is a very relaxing experience.	○	○	○	○	○

PART II. Manipulation

Q. Please click the choice below and then click the >> button to proceed.

○ Code 1

[NOTE: This question has a total of 36 options and randomly presents one of them. In this way participants are randomly assigned to one of the conditions. Code 1-9 correspond to the single platform/repeated ads condition. Code 10-18 correspond to the single platform/varied ads condition. Code 19-27 correspond to the multiple platforms/repeated ads condition. Code 28-36 correspond to the multiple platforms/varied ads condition. After participants click the code assigned, they will proceed to view the stimuli accordingly. They will see the instructions below depending on the condition assigned.]

[Single Platform Conditions] Next, you will view a social media page. Please browse the page as you usually do in daily life. Make sure you scroll down and view the whole page. You will stay on the page for 30 seconds, and then automatically advance to the next page.

[Multiple Platform Conditions] Next, you will view three social media pages. Please browse each page as you usually do in daily life. You will stay on each page for 10 seconds and then automatically advance to the next page.

[Stimuli]

PART III. Dependent Measures

[NOTE: The dependent measures vary slightly depending on the condition assigned. The measures used for code 1 are presented below.]

Next, you will answer some questions about the ads on the page you just viewed.

Q. Please indicate your level of agreement to the following statements about the ads.

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
When the ads were shown, I thought they were distracting.	○	○	○	○	○
When the ads were shown, I thought they were disturbing.	○	○	○	○	○
When the ads were shown, I thought they were interfering.	○	○	○	○	○
When the ads were shown, I thought they were intrusive.	○	○	○	○	○
When the ads were shown, I thought they were invasive.	○	○	○	○	○
When the ads were shown, I thought they were forced.	○	○	○	○	○
When the ads were shown, I thought they were obtrusive.	○	○	○	○	○

Q. Please view the brands listed below and select the one you saw on the social media page.

[NOTE: The potions appear in a random order.]

○ 

Figure 6 Brand Recognition Choice 1

○ 

Figure 7 Brand Recognition Choice 2

○ 

Figure 8 Brand Recognition Choice 3

○ 

Figure 9 Brand Recognition Choice 4

○ 

Figure 10 Brand Recognition Choice 5

Figure 11 Brand Recognition Choice 6

Figure 12 Brand Recognition Choice 7

Figure 13 Brand Recognition Choice 8

Figure 14 Brand Recognition Choice 9

Q. Please indicate your degree of agreement to the following statements.

Figure 15 Ad 1 on Facebook

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
This coffee shop post is worth sharing with others on Facebook.	○	○	○	○	○
I will recommend this coffee shop post to others on Facebook.	○	○	○	○	○
I will like this coffee shop post on Facebook.	○	○	○	○	○
I will share this coffee shop post on Facebook.	○	○	○	○	○
I will comment on this coffee shop post on Facebook.	○	○	○	○	○
I will like this brand on Facebook.	○	○	○	○	○
I will post about this brand on Facebook.	○	○	○	○	○

Q. Please evaluate this ad using the following scale.

Negative	○	○	○	○	○	○	○	Positive
Bad	○	○	○	○	○	○	○	Good
Unfavorable	○	○	○	○	○	○	○	Favorable

Q. Please evaluate the brand that was featured in the ads you viewed on the social media page using the following scale.

Negative	○	○	○	○	○	○	○	Positive
Bad	○	○	○	○	○	○	○	Good
Unfavorable	○	○	○	○	○	○	○	Favorable

Q. Please indicate your intention to visit the advertised coffee shop and consume the products it offers.

Unlikely	○	○	○	○	○	○	○	Likely
Improbable	○	○	○	○	○	○	○	Probable
Impossible	○	○	○	○	○	○	○	Possible

PART IV. Demographics

Q. Your sex:
- ○ Male
- ○ Female
- ○ Prefer not to answer

Q. In which year were you born?
Year _____

Q. Which of the following categories describes your ethnicity best?
- ○ Caucasian
- ○ African American
- ○ Hispanic/Latino
- ○ Asian
- ○ American Indian/Alaska Native
- ○ Native Hawaiian/Other Pacific Islander
- ○ Other, please specify _____

Q. What is your family's annual income?
- ○ Less than $25,000
- ○ $25,000 - $49,999
- ○ $50,000 - $74,999
- ○ $75,000 - $99,999
- ○ $100,000 - $124,999
- ○ $125,000 - $149,999
- ○ $150,000 or more

[End of Survey]

Thank you for participating. This study is to investigate the effect of platform variation and content variation on advertising effectiveness. The social media pages you viewed are fictitious. If you have any question about the study, you may contact the investigator Guanxiong Huang (huanggu1@msu.edu).

Your validation code is XXXX.

To receive payment for participating, click “Accept HIT” in the Mechanical Turk window, enter this validation code, then click “Submit”.

APPENDIX C Stimuli

Descriptions of The Experimental Conditions

Single Platform/Repeated Ads (Code 1-9)

- Code 1: Facebook (ad 1 + ad 1 + ad 1)
- Code 2: Facebook (ad 2 + ad 2 + ad 2)
- Code 3: Facebook (ad 3 + ad 3 + ad 3)
- Code 4: Twitter (ad 1 + ad 1 + ad 1)
- Code 5: Twitter (ad 2 + ad 2 + ad 2)
- Code 6: Twitter (ad 3 + ad 3 + ad 3)
- Code 7: Instagram (ad 1 + ad 1 + ad 1)
- Code 8: Instagram (ad 2 + ad 2 + ad 2)
- Code 9: Instagram (ad 3 + ad 3 + ad 3)

Single Platform/Varied Ads (Code 10-18)

- Code 10: Facebook (ad 1 + ad 2 + ad 3)
- Code 11: Facebook (ad 2 + ad 3 + ad 1)
- Code 12: Facebook (ad 3 + ad 1 + ad 2)
- Code 13: Twitter (ad 1 + ad 2 + ad 3)
- Code 14: Twitter (ad 2 + ad 3 + ad 1)
- Code 15: Twitter (ad 3 + ad 1 + ad 2)
- Code 16: Instagram (ad 1 + ad 2 + ad 3)
- Code 17: Instagram (ad 2 + ad 3 + ad 1)
- Code 18: Instagram (ad 3 + ad 1 + ad 2)

Multiple Platforms/Repeated Ads (Code 19-27)

- Code 19-21: Facebook (ad 1) + Twitter (ad 1) + Instagram (ad 1)
- Code 22-24: Facebook (ad 2) + Twitter (ad 2) + Instagram (ad 2)
- Code 25-27: Facebook (ad 3) + Twitter (ad 3) + Instagram (ad 3)
- [NOTE: The three pages appear in a random order.]

Multiple Platforms/Varied Ads (Code 28-36)

- Code 28-30: Facebook (ad 1) + Twitter (ad 2) + Instagram (ad 3)
- Code 31-33: Facebook (ad 2) + Twitter (ad 3) + Instagram (ad 1)
- Code 34-36: Facebook (ad 3) + Twitter (ad 1) + Instagram (ad 2)
- [NOTE: The three pages appear in a random order.]

Code 1

Figure 16 Repeated Ad 1 on Facebook

Code 2

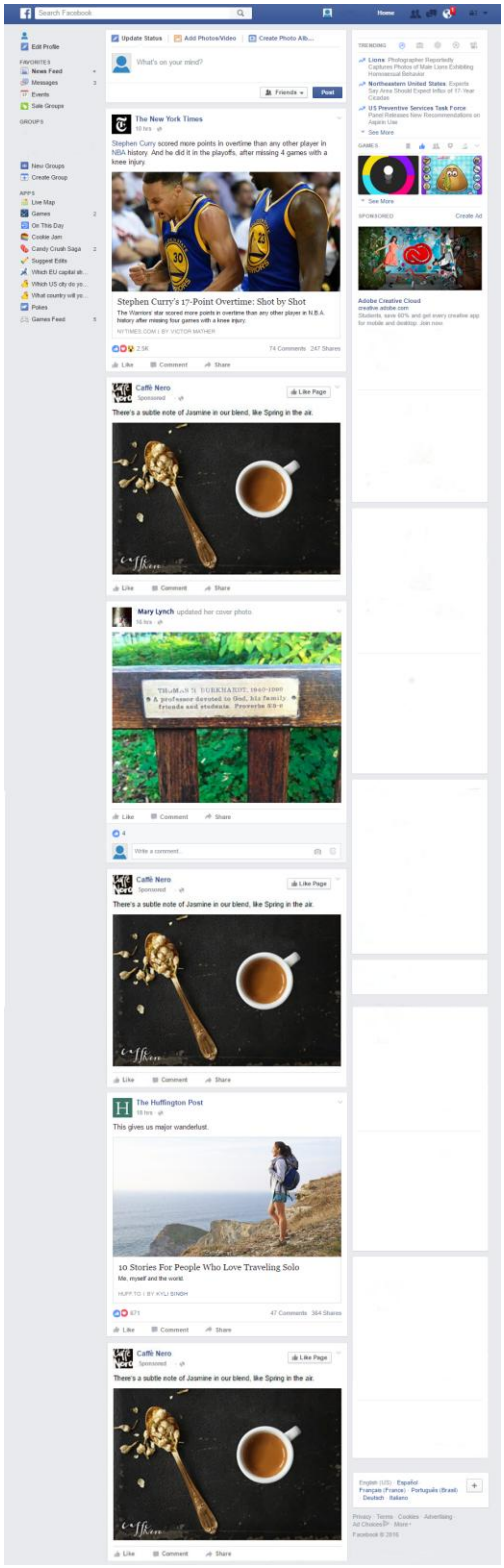

Figure 17 Repeated Ad 2 on Facebook

Code 3

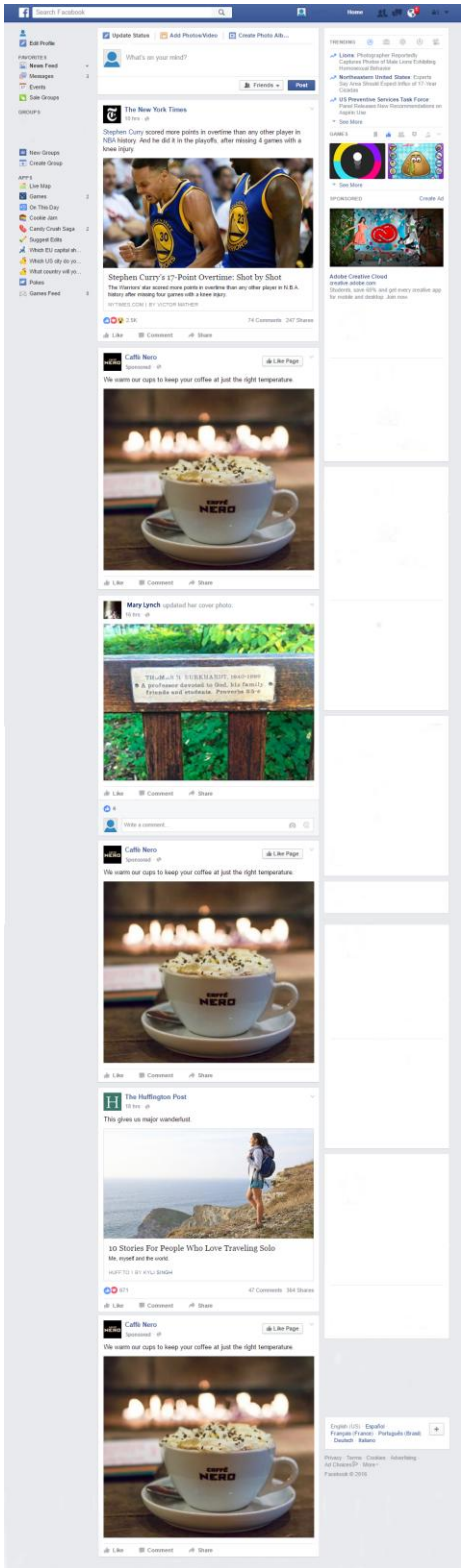

Figure 18 Repeated Ad 3 on Facebook

Code 4

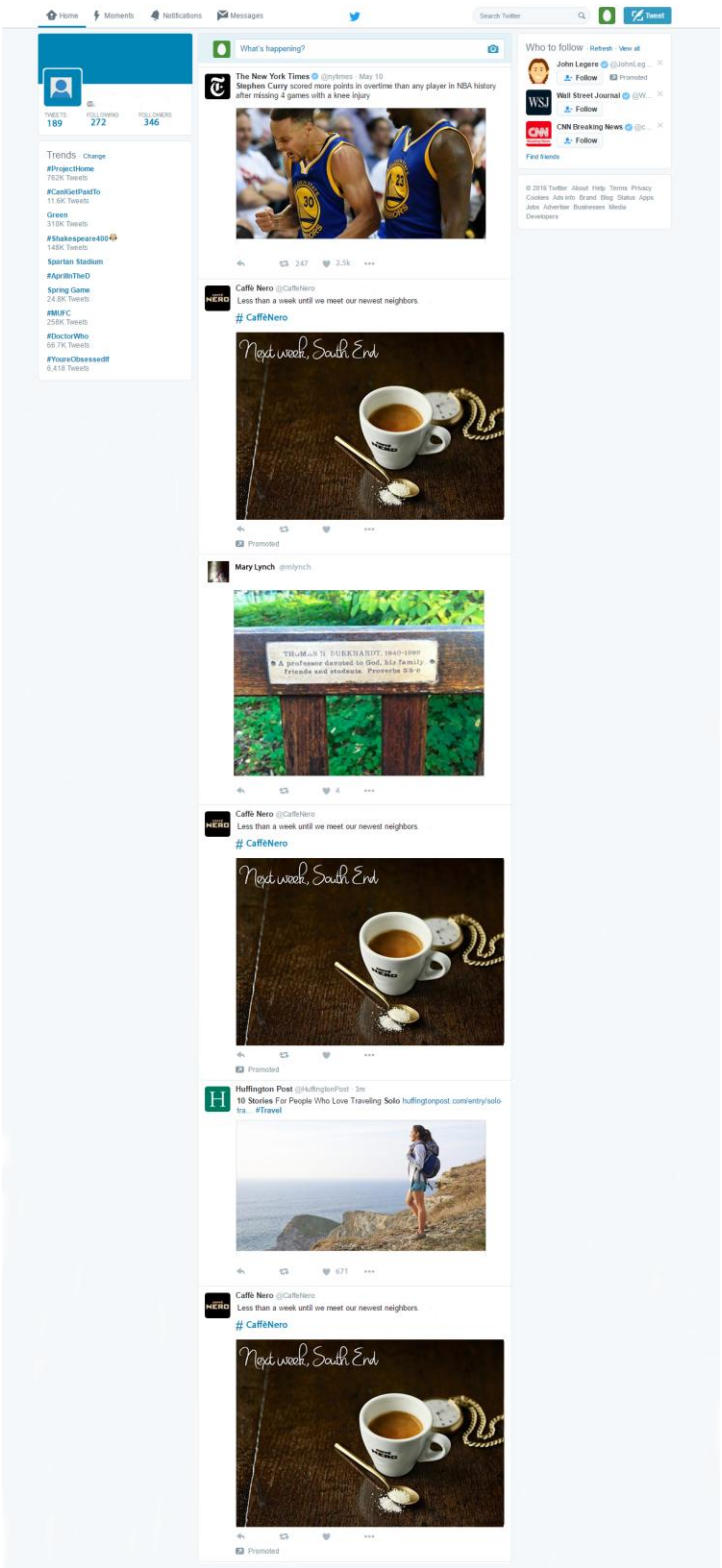

Figure 19 Repeated Ad 1 on Twitter

Code 5

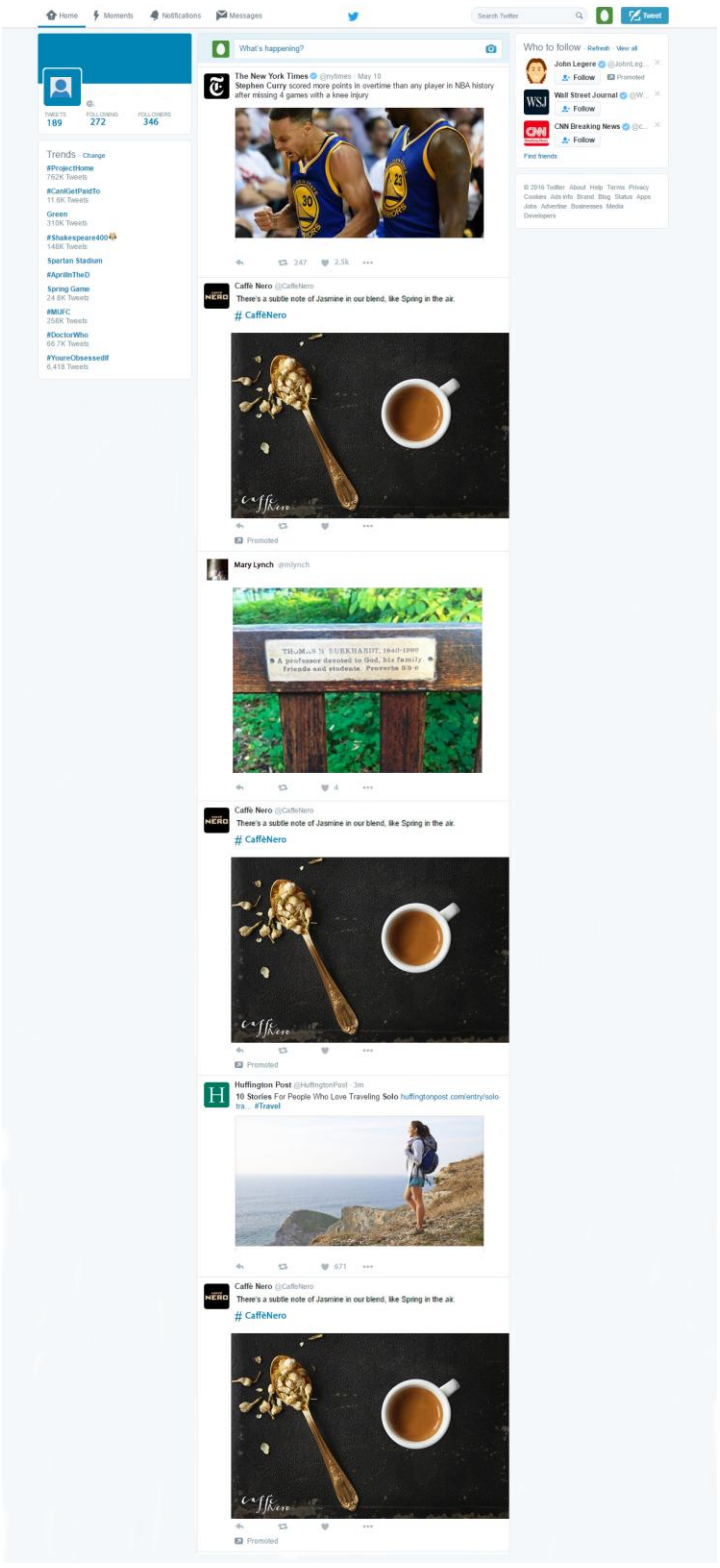

Figure 20 Repeated Ad 2 on Twitter

Code 6

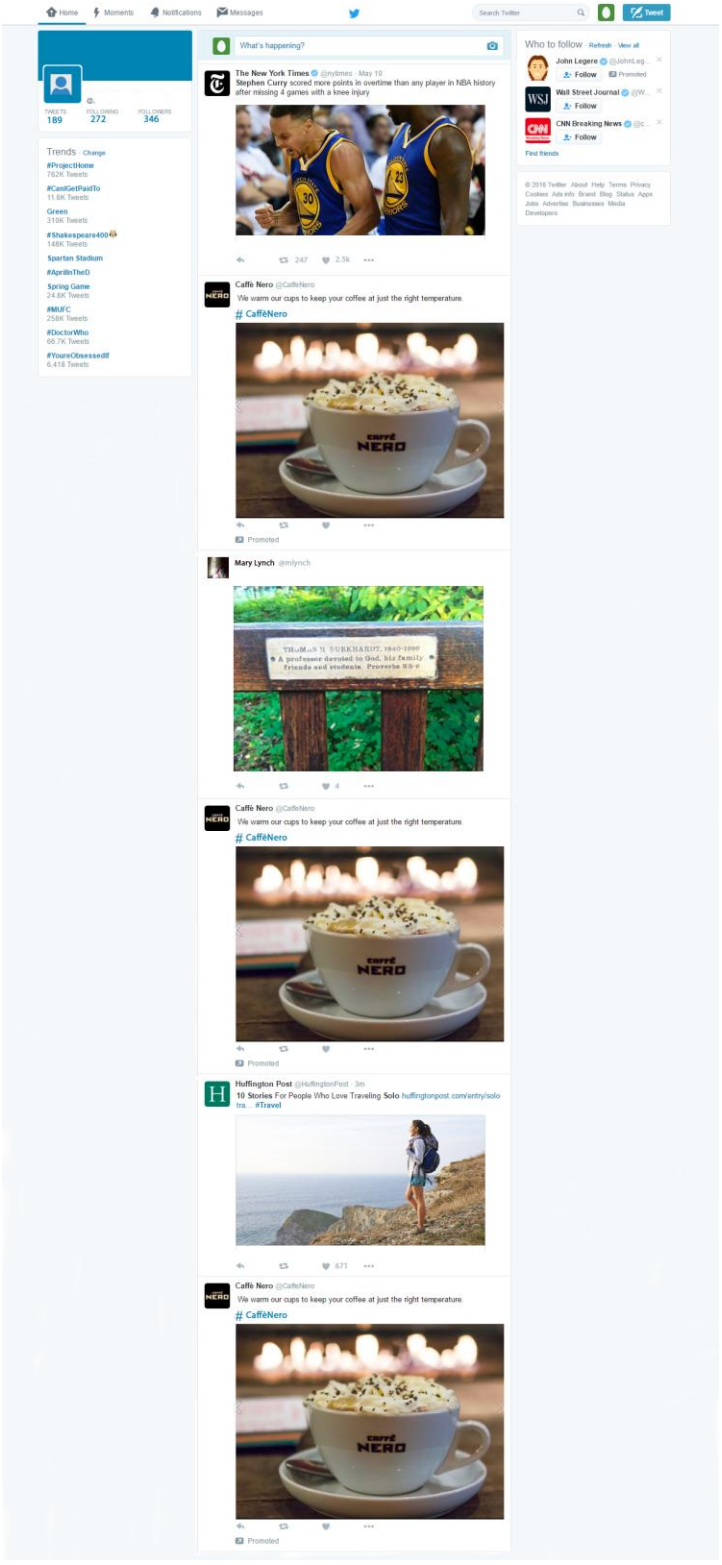

Figure 21 Repeated Ad 3 on Twitter

Code 7

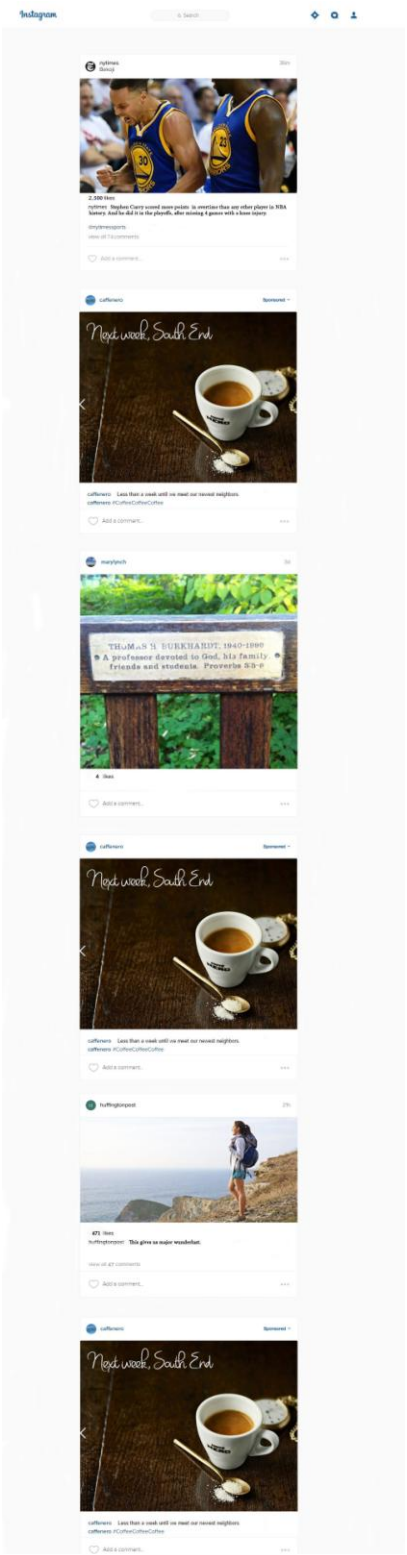

Figure 22 Repeated Ad 1 on Instagram

Code 8

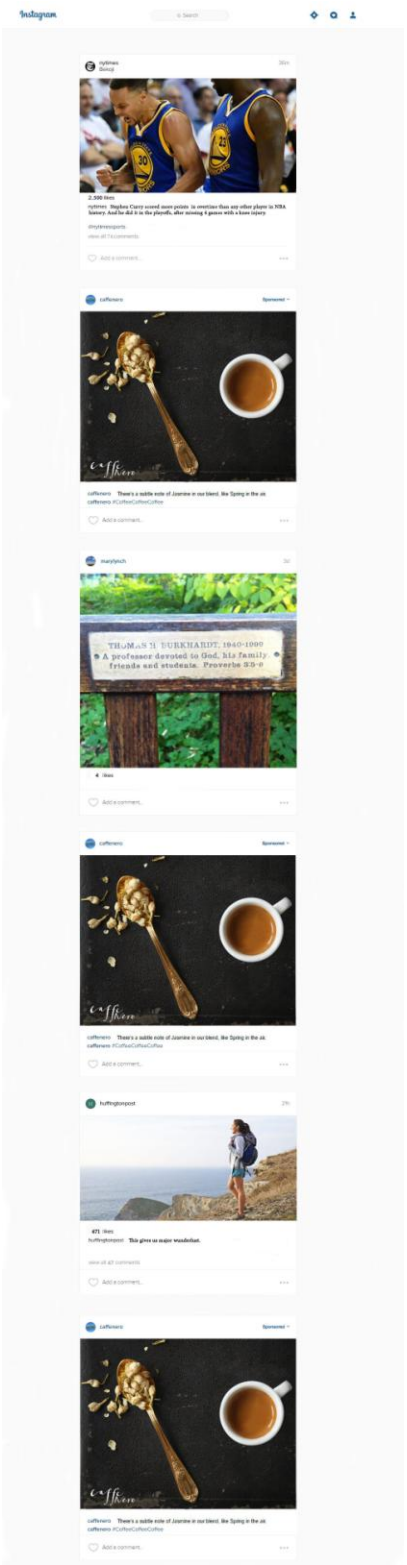

Figure 23 Repeated Ad 2 on Instagram

Code 9

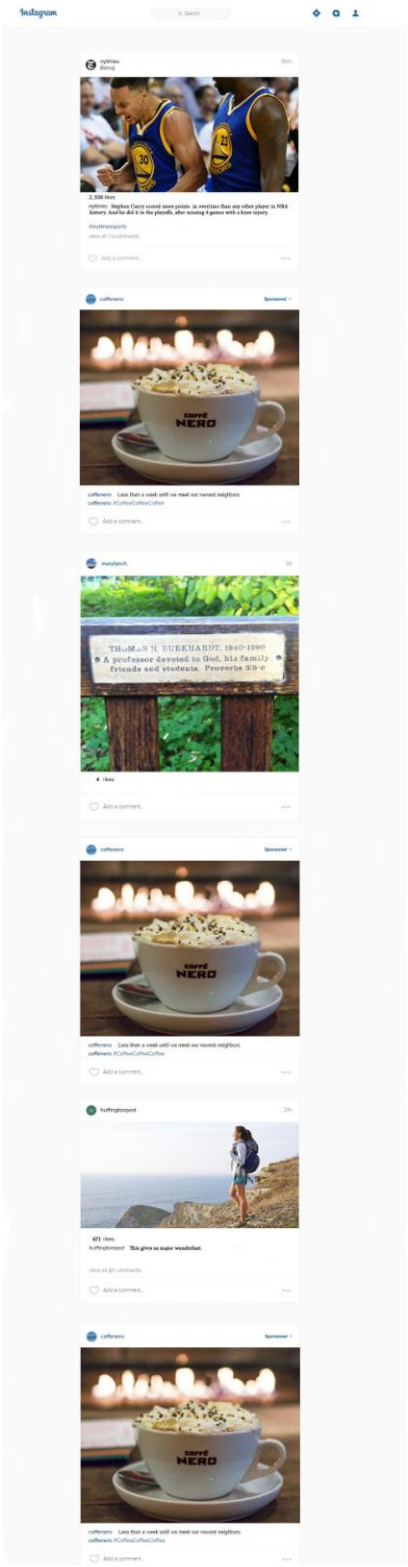

Figure 24 Repeated Ad 3 on Instagram

Code 10

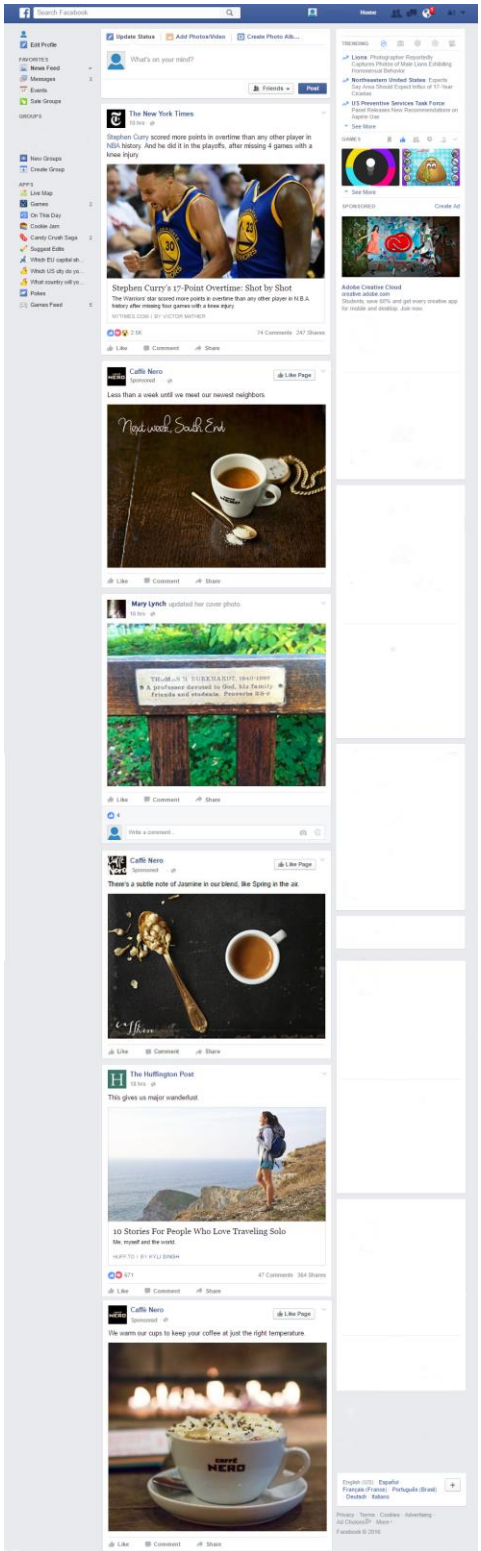

Figure 25 Varied Ads (Ad 1 + Ad 2 + Ad 3) on Facebook

Code 11

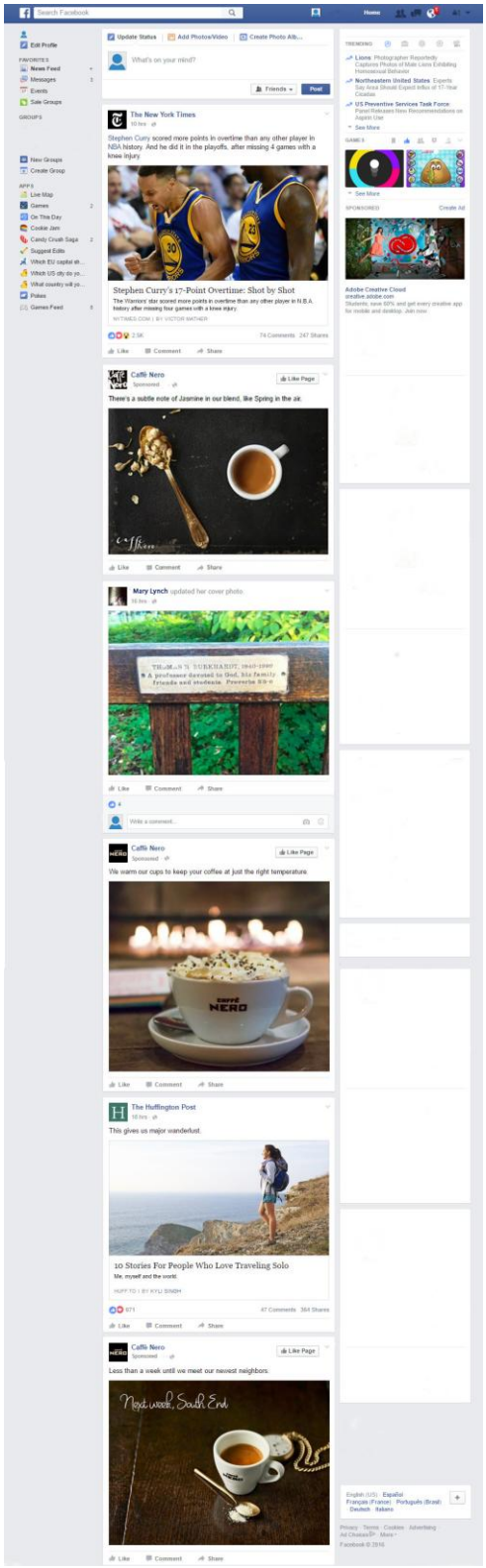

Figure 26 Varied Ads (Ad 2 + Ad 3 + Ad 1) on Facebook

Code 12

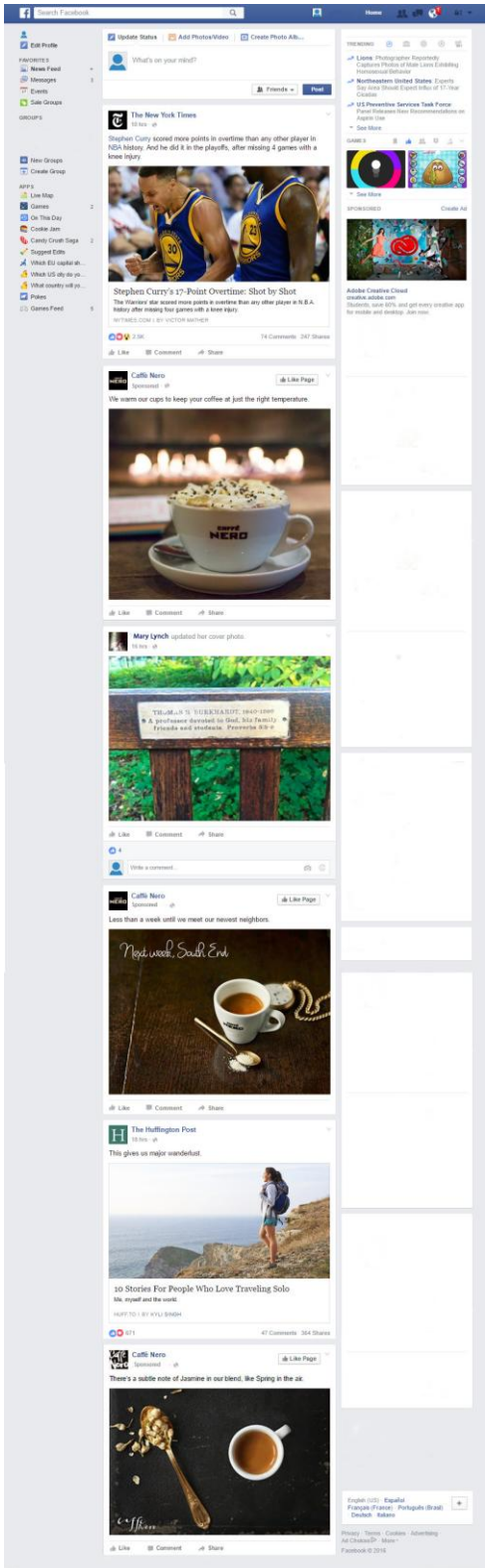

Figure 27 Varied Ads (Ad 3 + Ad 1 + Ad 2) on Facebook

Code 13

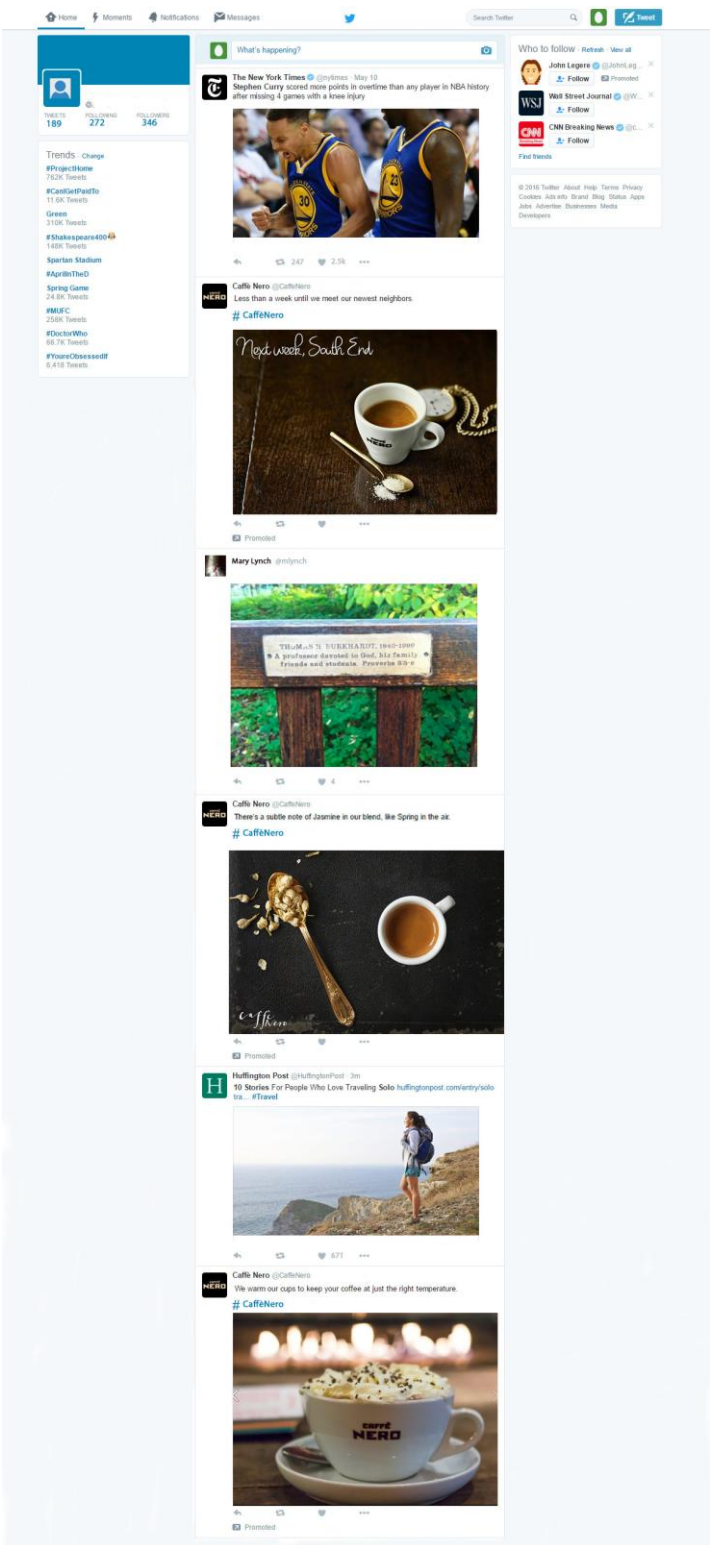

Figure 28 Varied Ads (Ad 1 + Ad 2 + Ad 3) on Twitter

Code 14

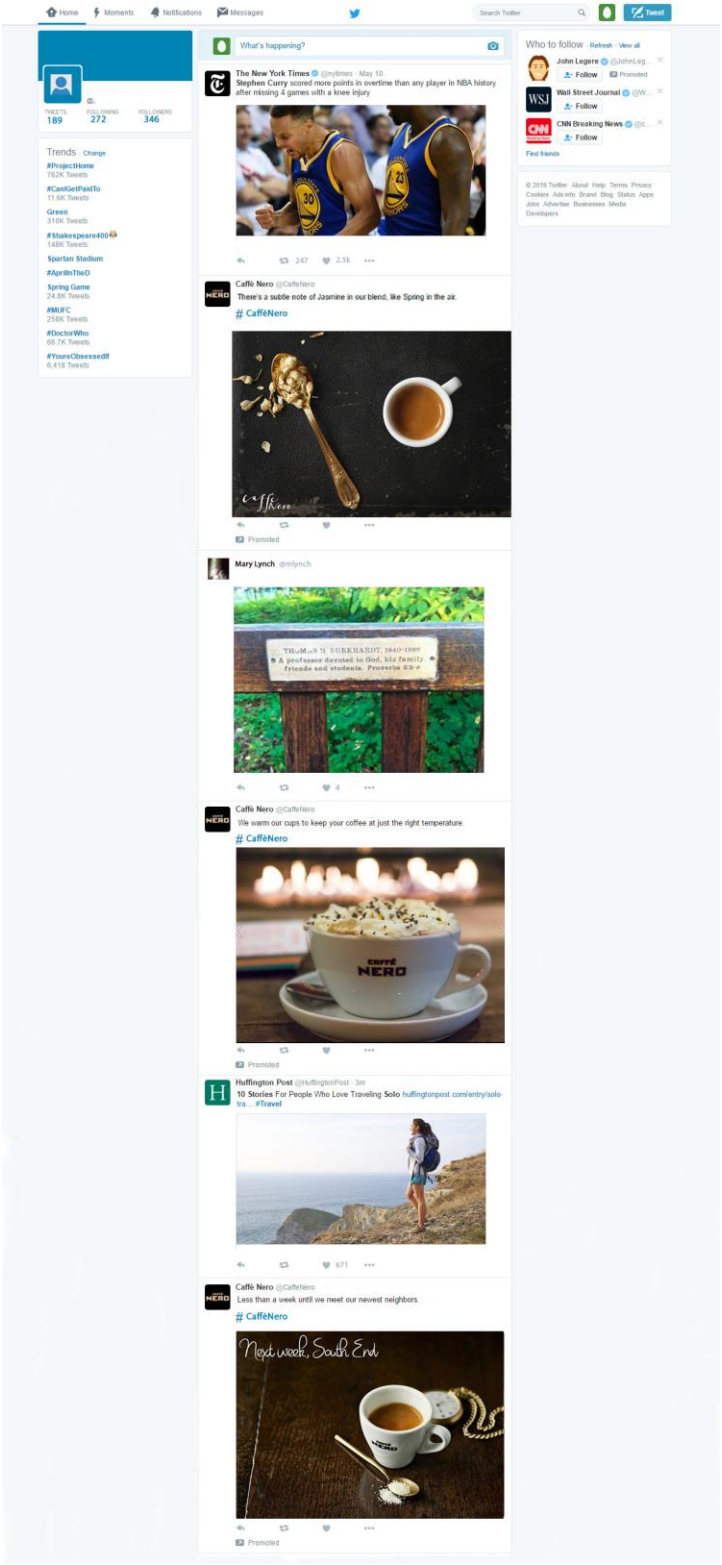

Figure 29 Varied Ads (Ad 2 + Ad 3 + Ad 1) on Twitter

Code 15

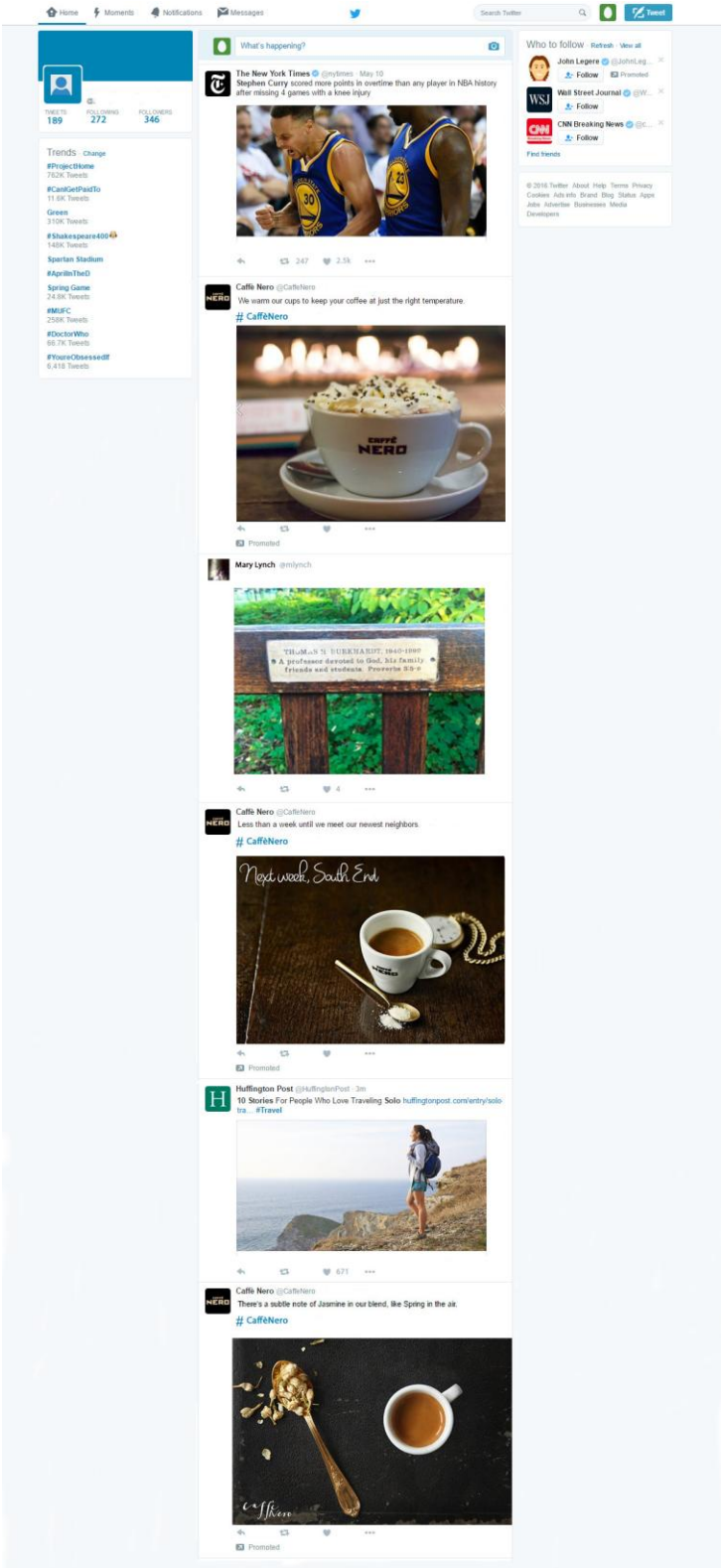

Figure 30 Varied Ads (Ad 3 + Ad 1 + Ad 2) on Twitter

Code 16

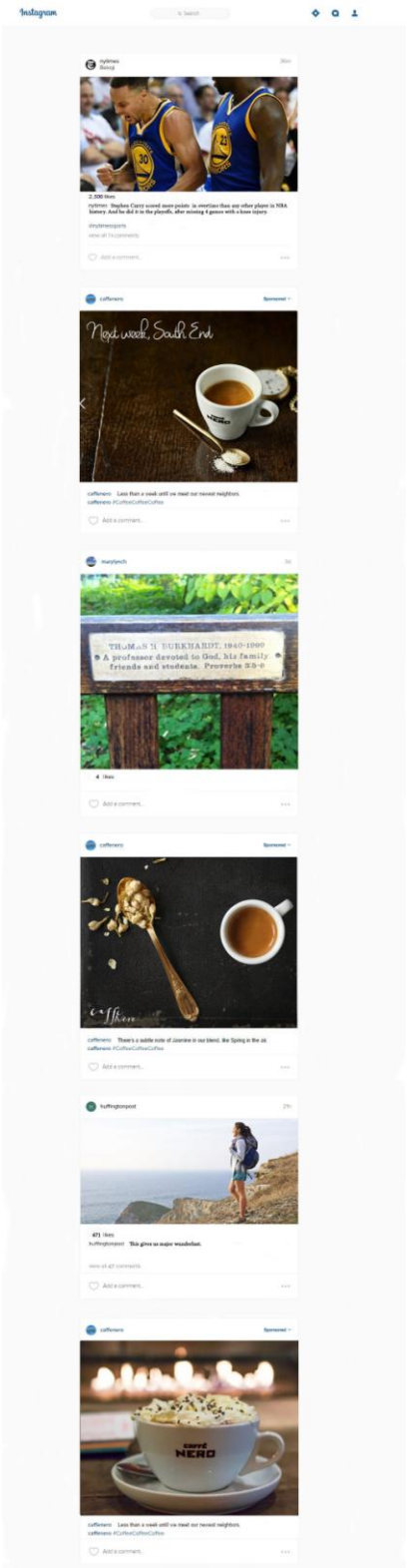

Figure 31 Varied Ads (Ad 1 + Ad 2 + Ad 3) on Instagram

Code 17

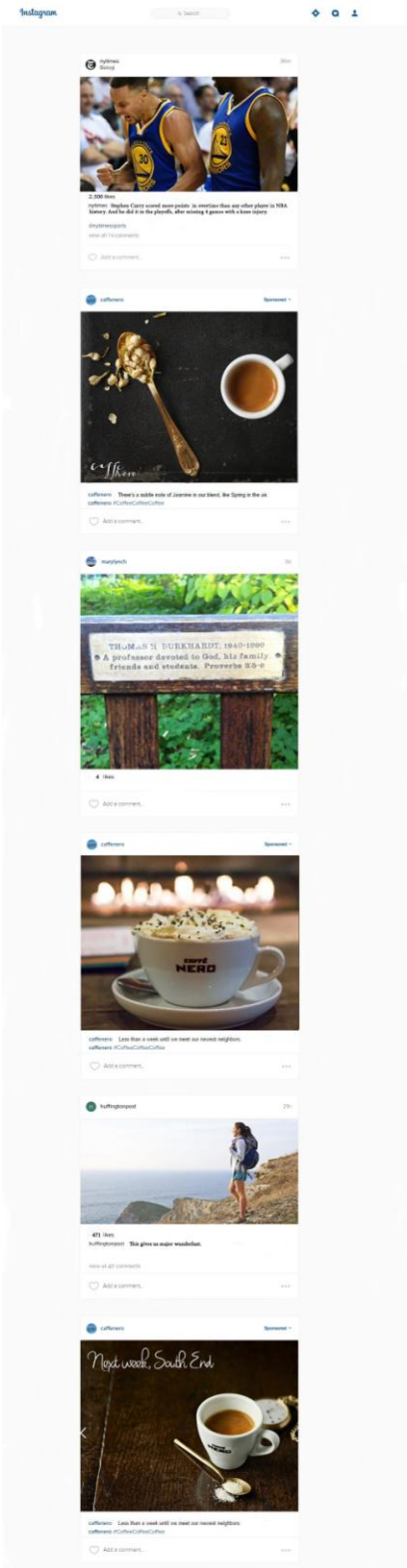

Figure 32 Varied Ads (Ad 2 + Ad 3 + Ad 1) on Instagram

Code 18

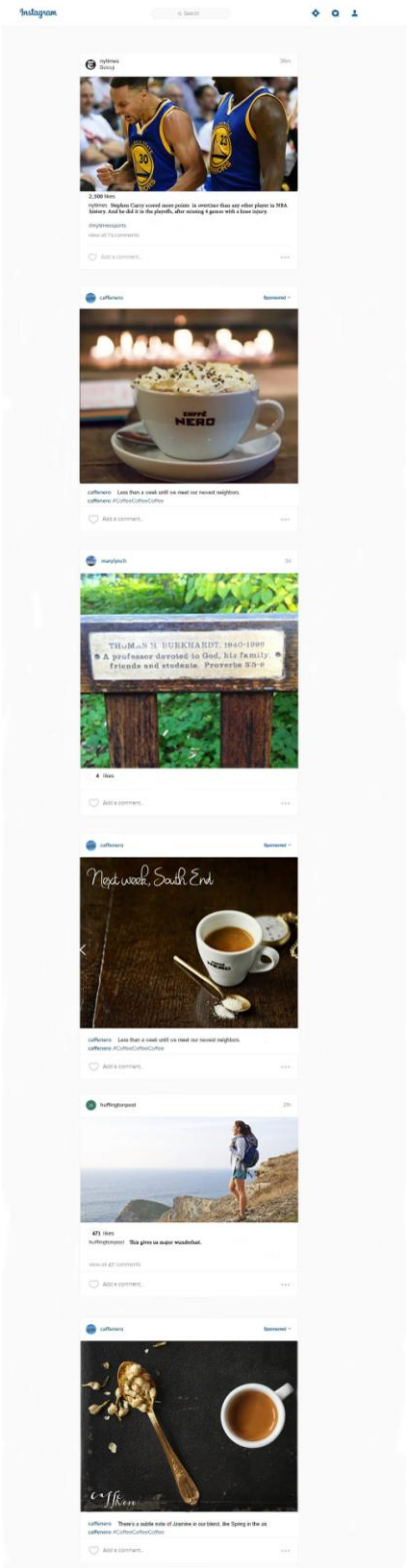

Figure 33 Varied Ads (Ad 3 + Ad 1 + Ad 2) on Instagram

Code 19-21

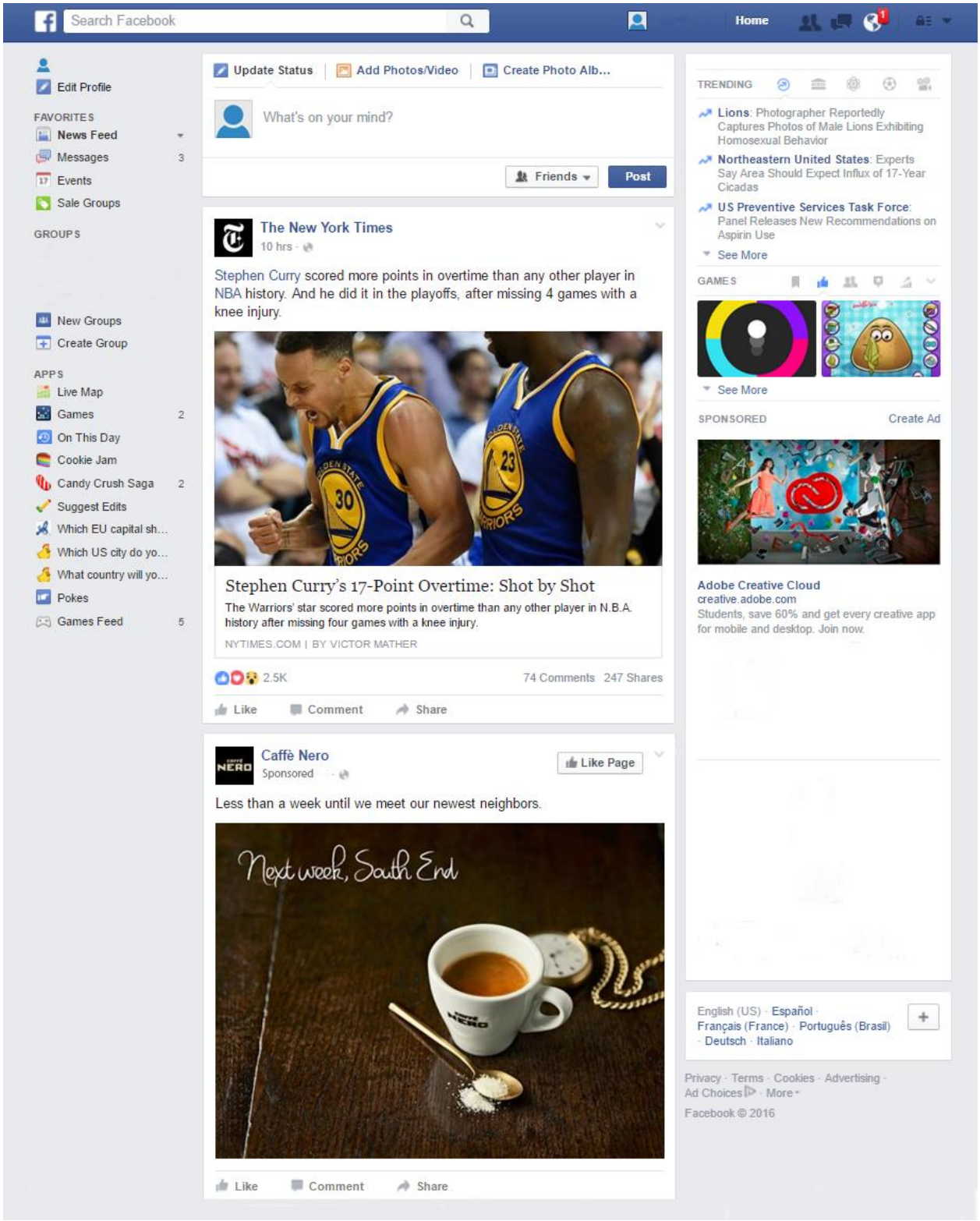

Figure 34 Ad 1 on Facebook

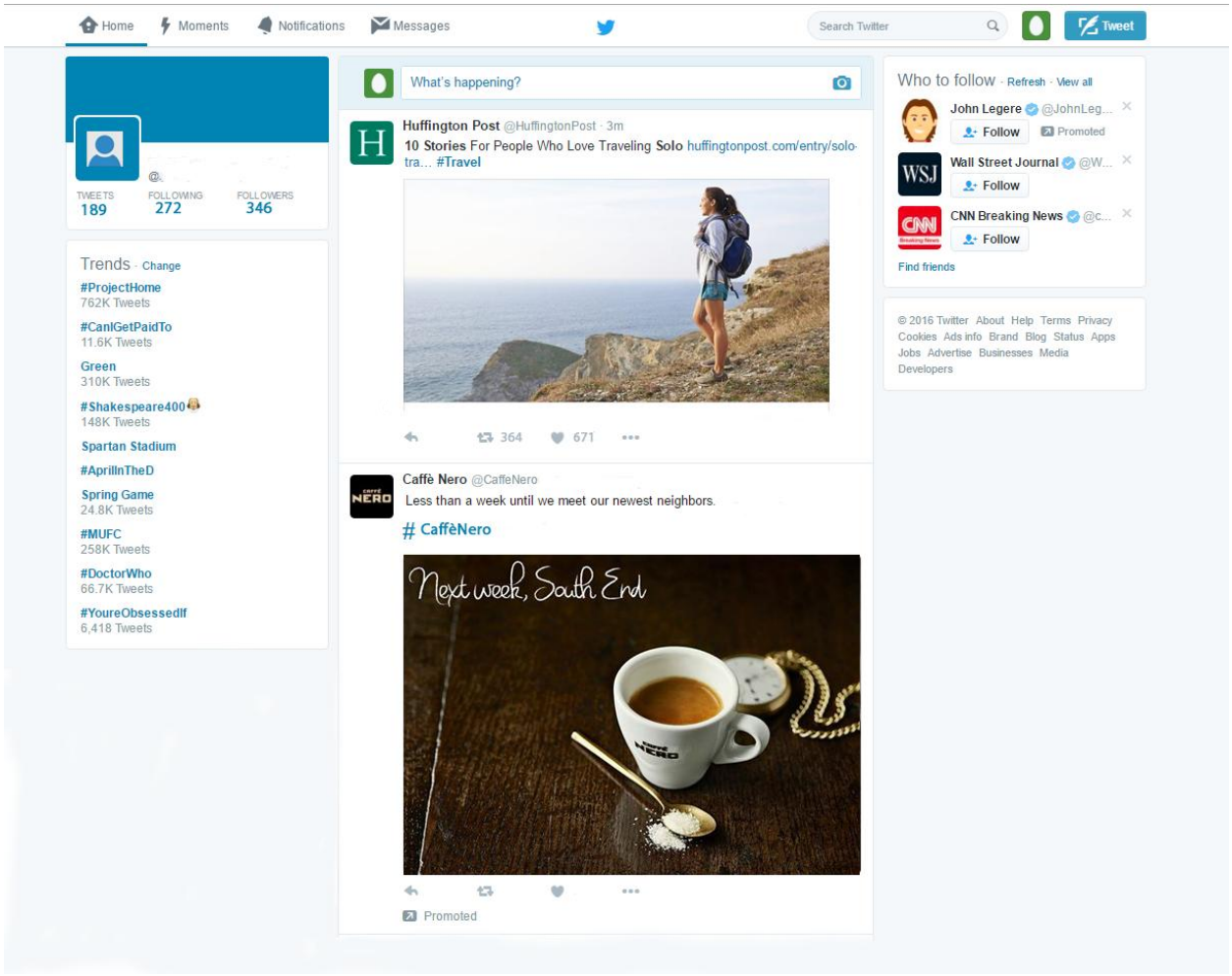

Figure 35 Ad 1 on Twitter

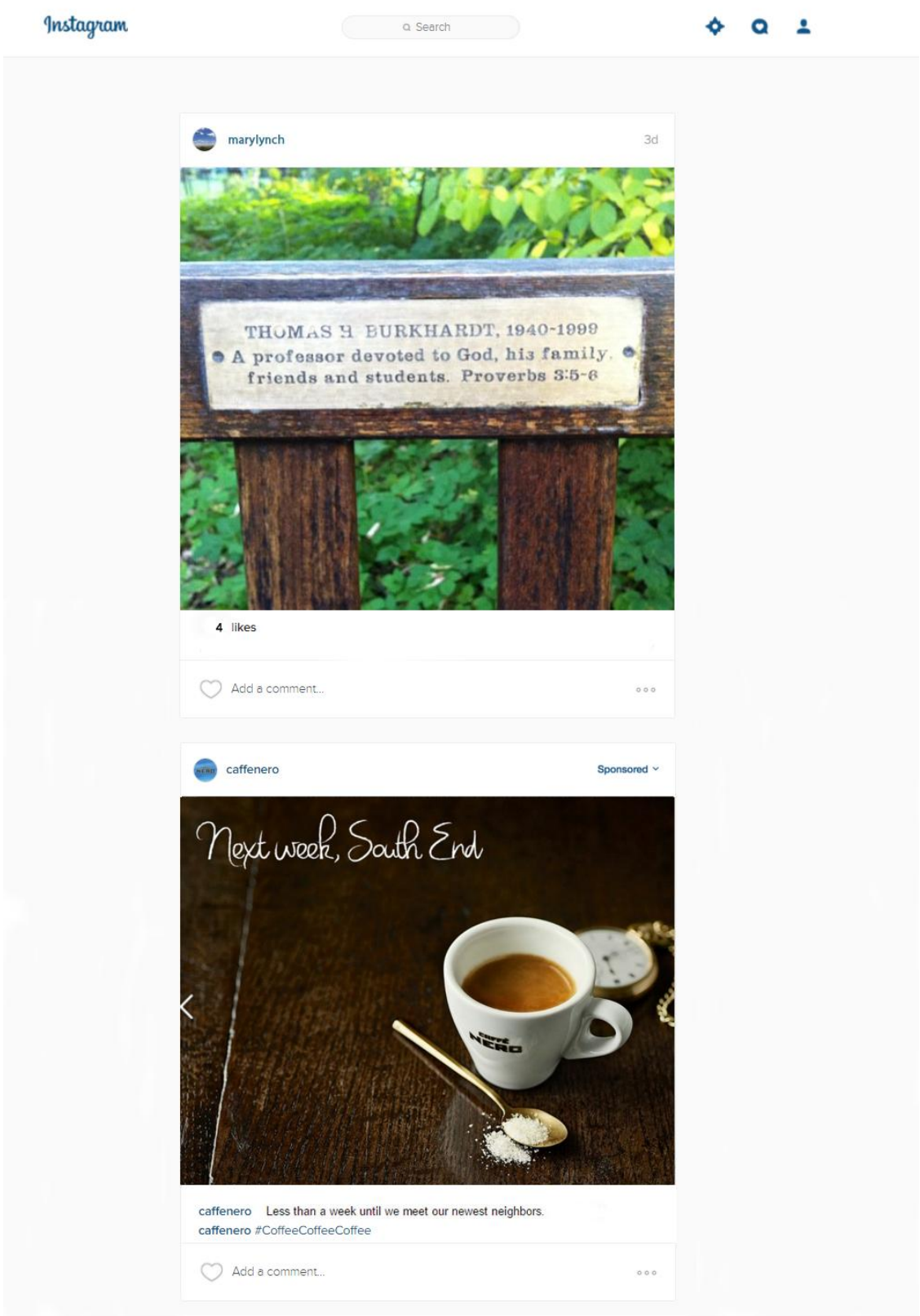

Figure 36 Ad 1 on Instagram

Code 22-24

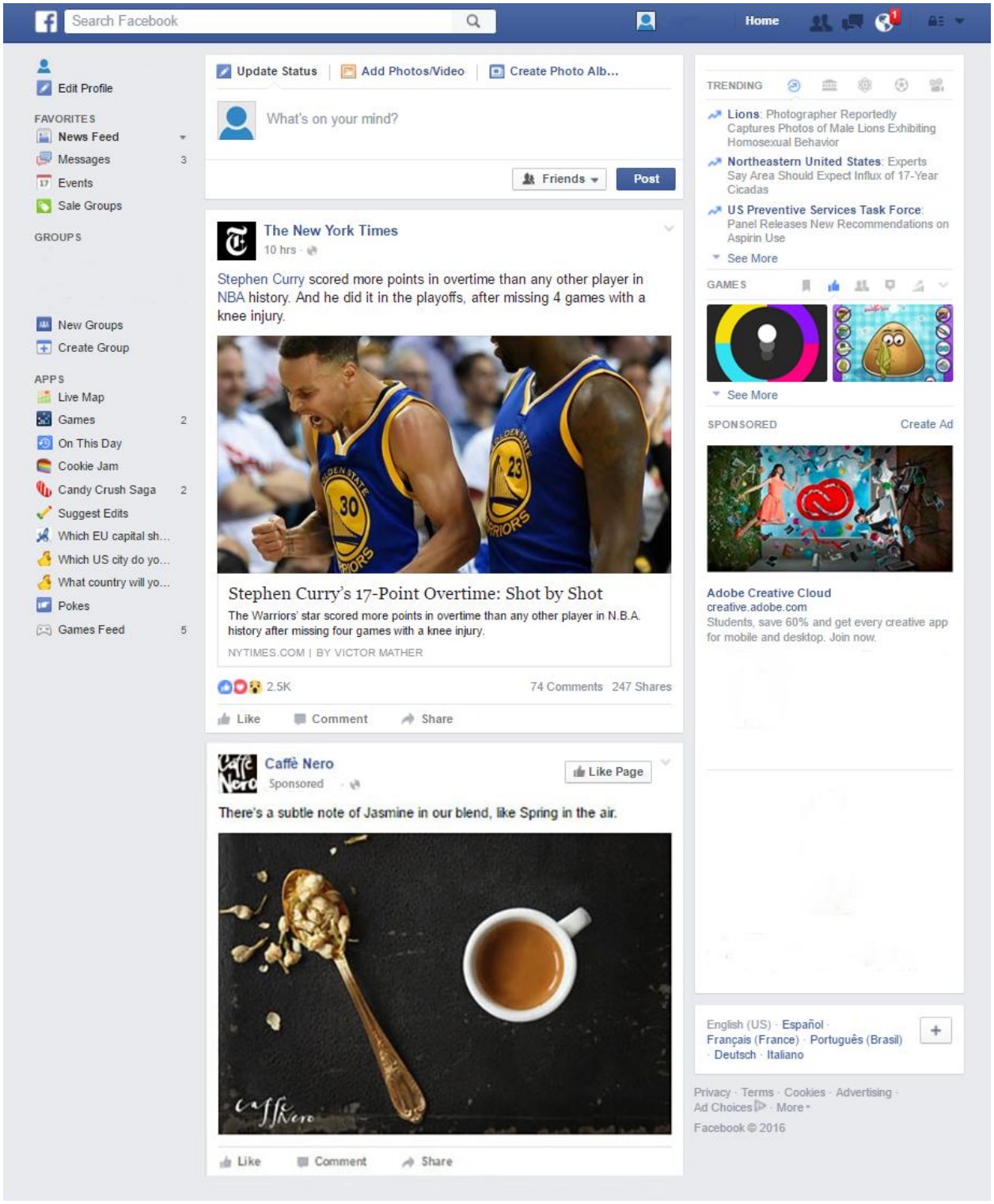

Figure 37 Ad 2 on Facebook

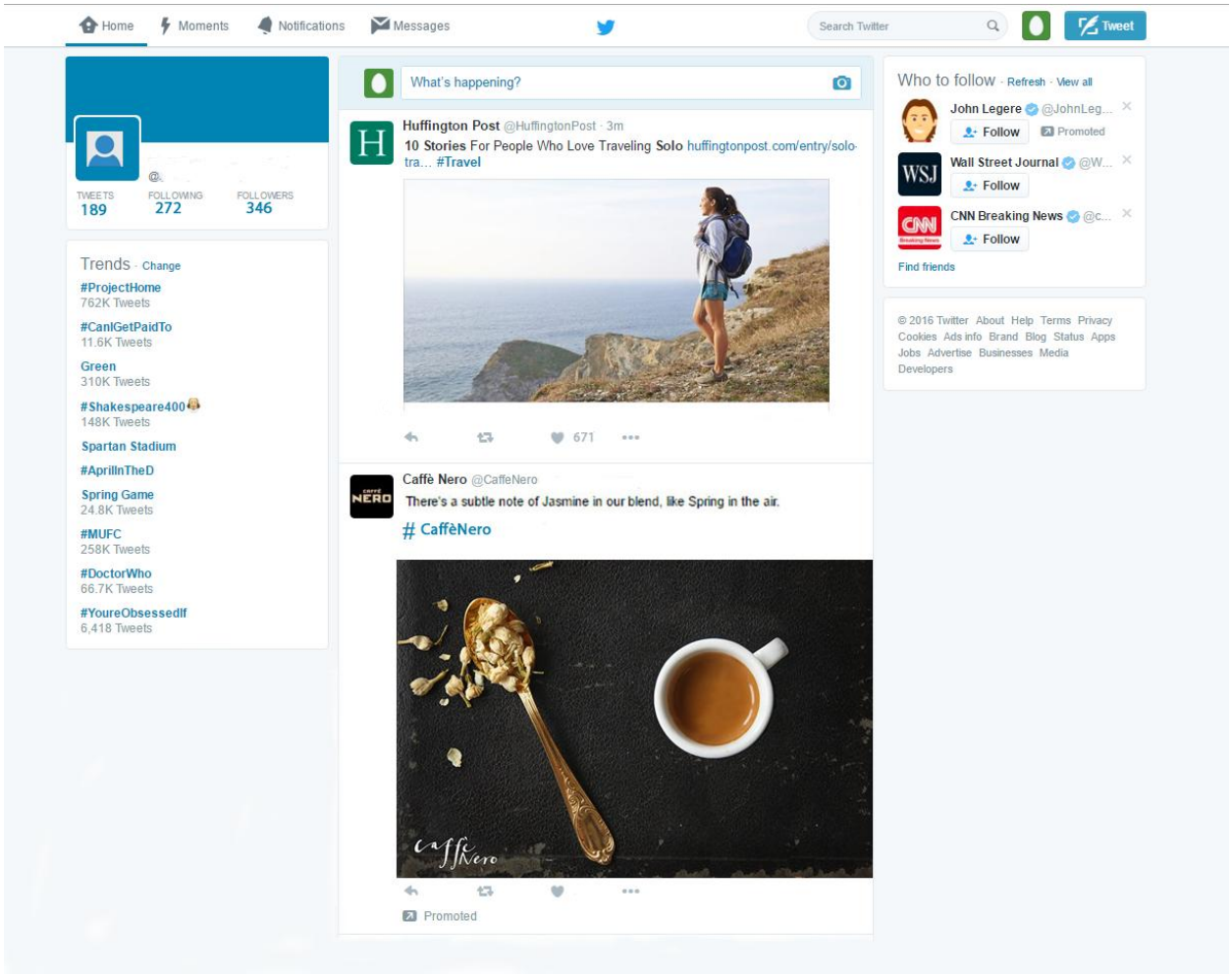

Figure 38 Ad 2 on Twitter

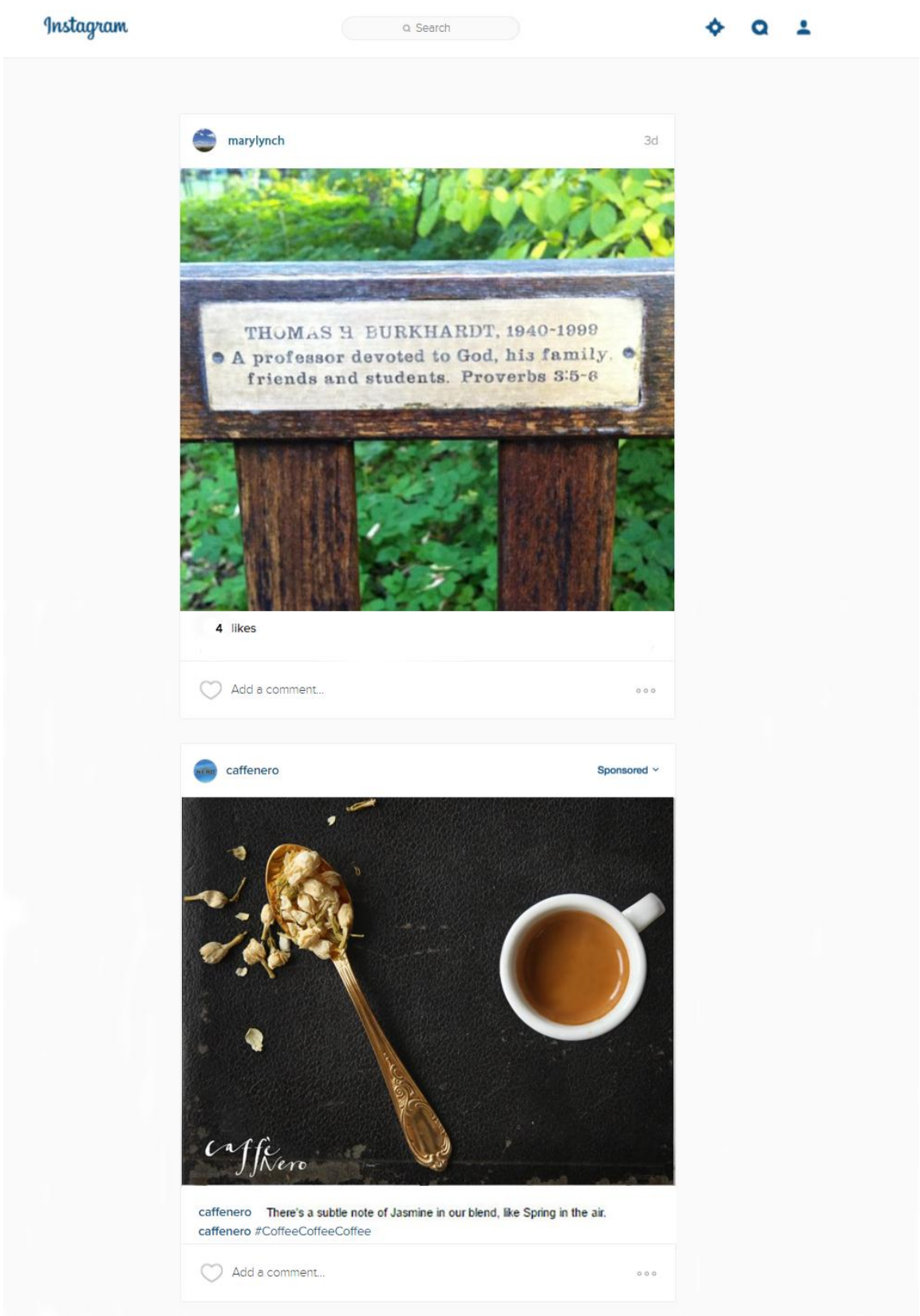

Figure 39 Ad 2 on Instagram

Code 25-27

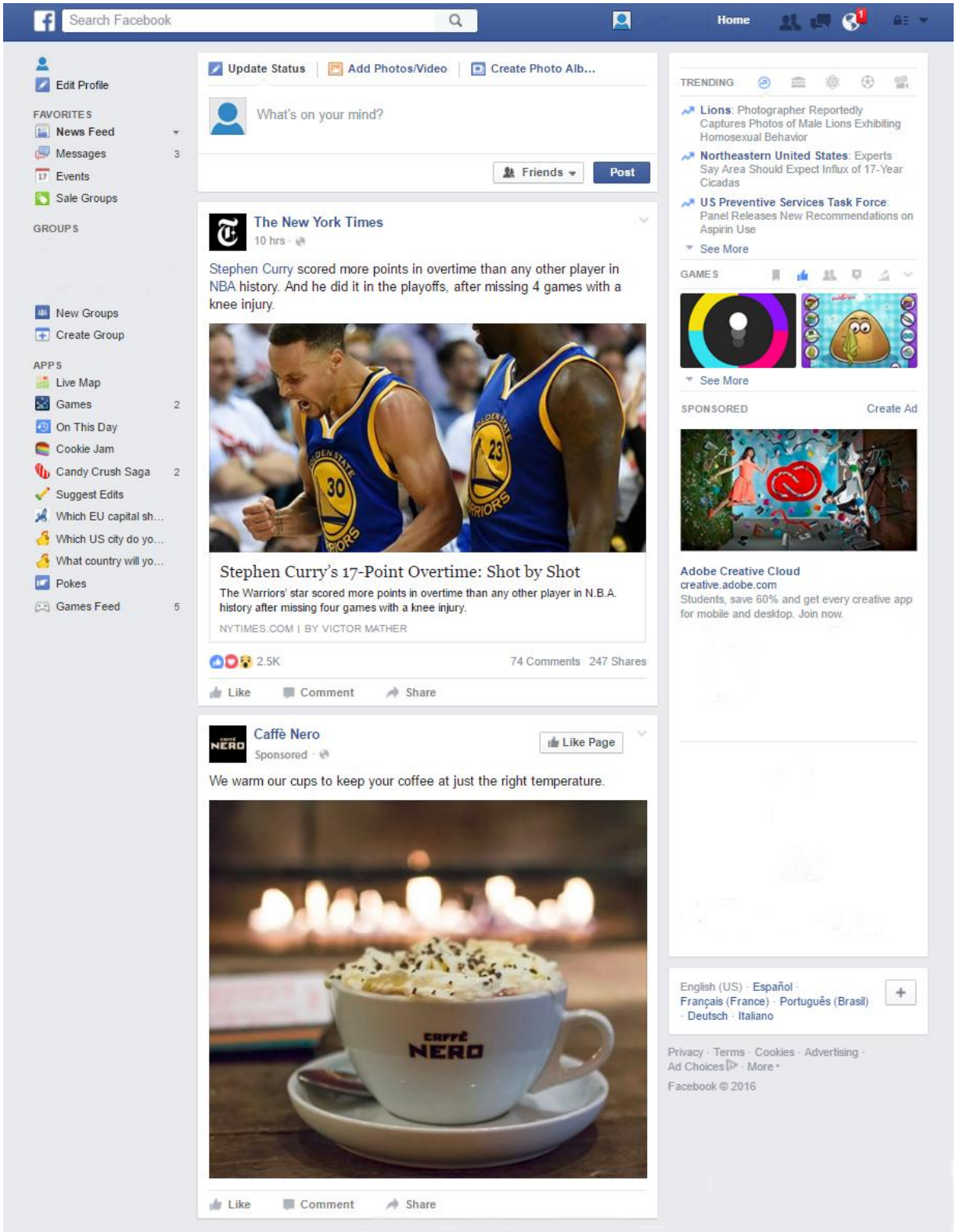

Figure 40 Ad 3 on Facebook

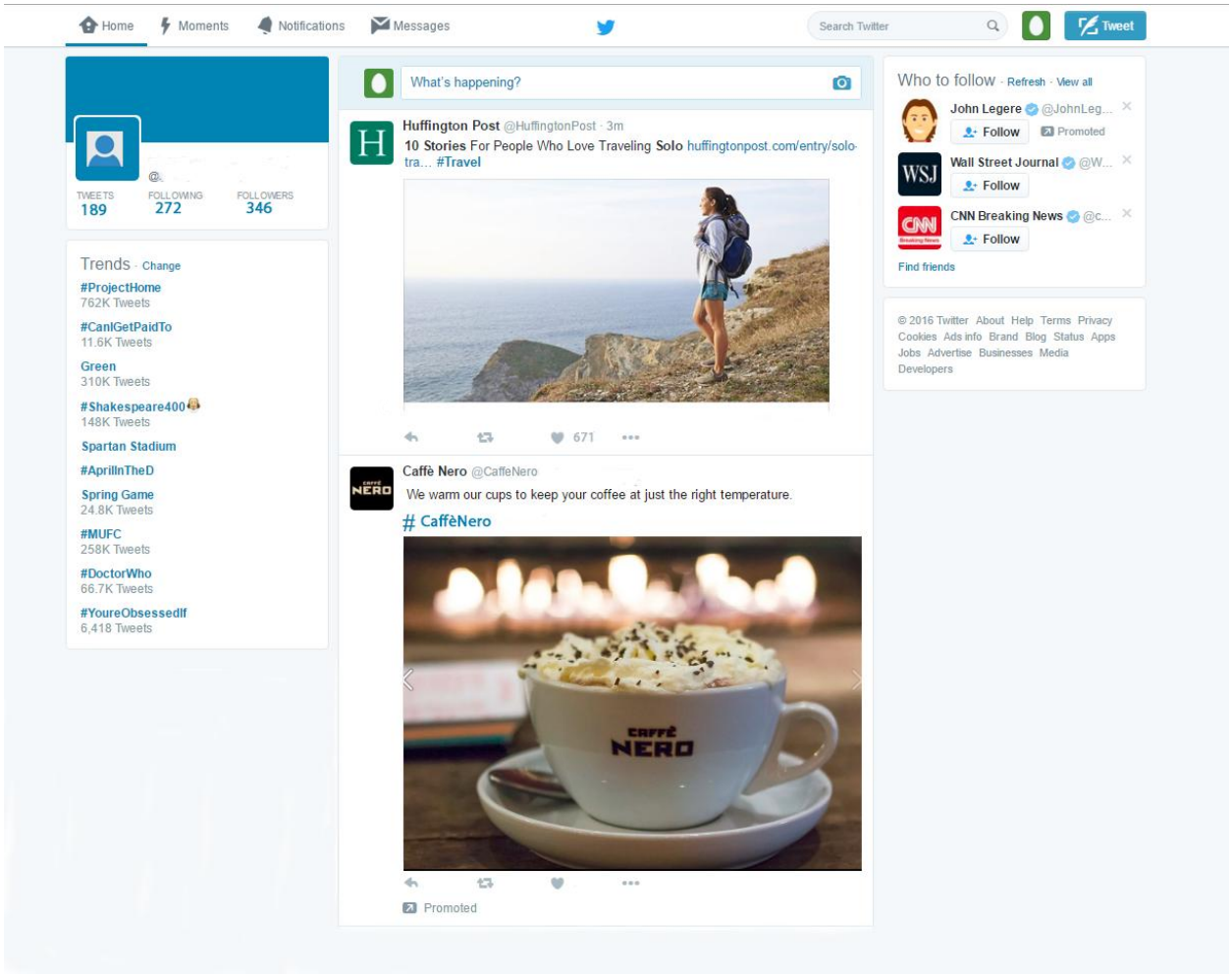

Figure 41 Ad 3 on Twitter

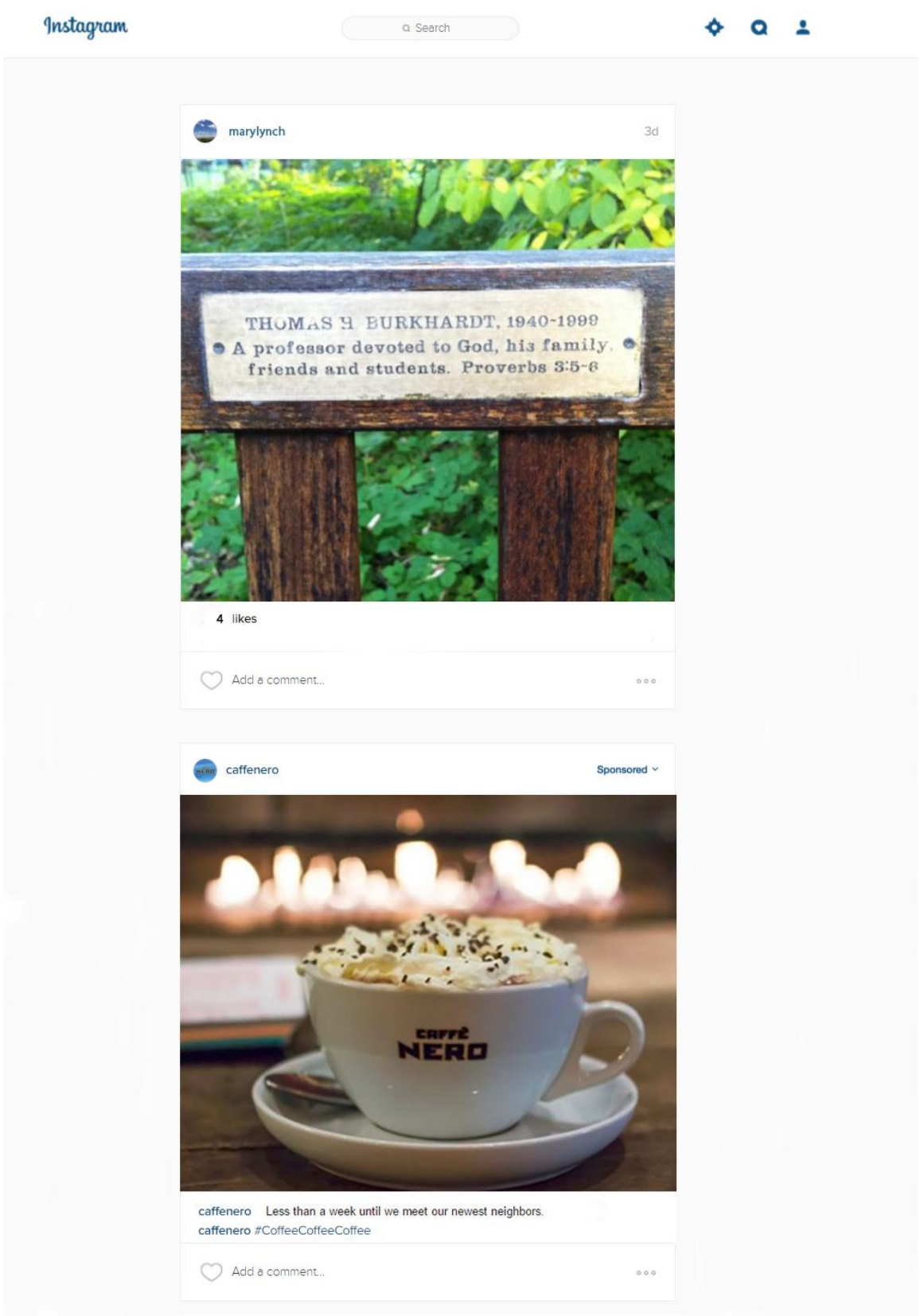

Figure 42 Ad 3 on Instagram

Code 28-30

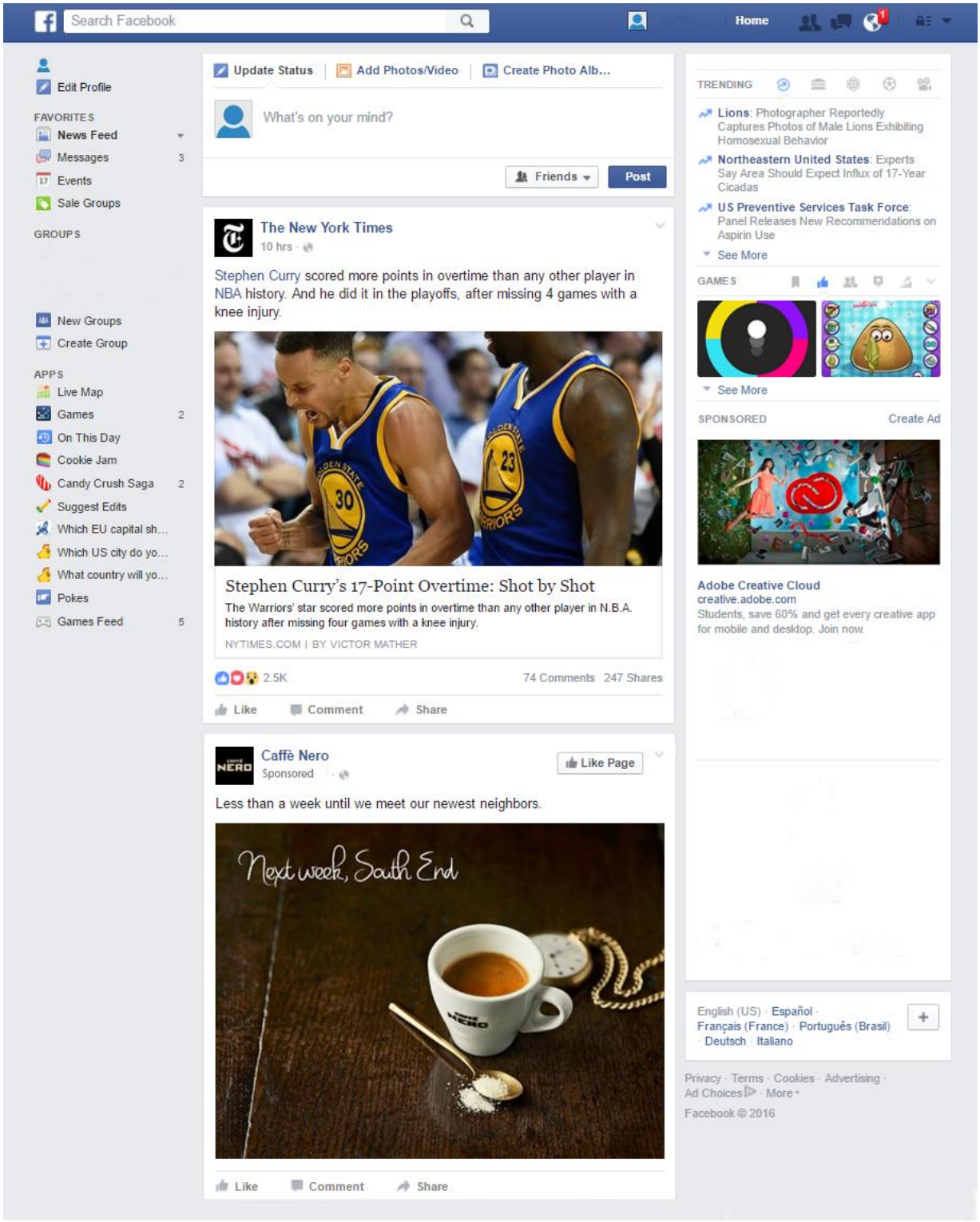

Figure 43 Ad 1 on Facebook

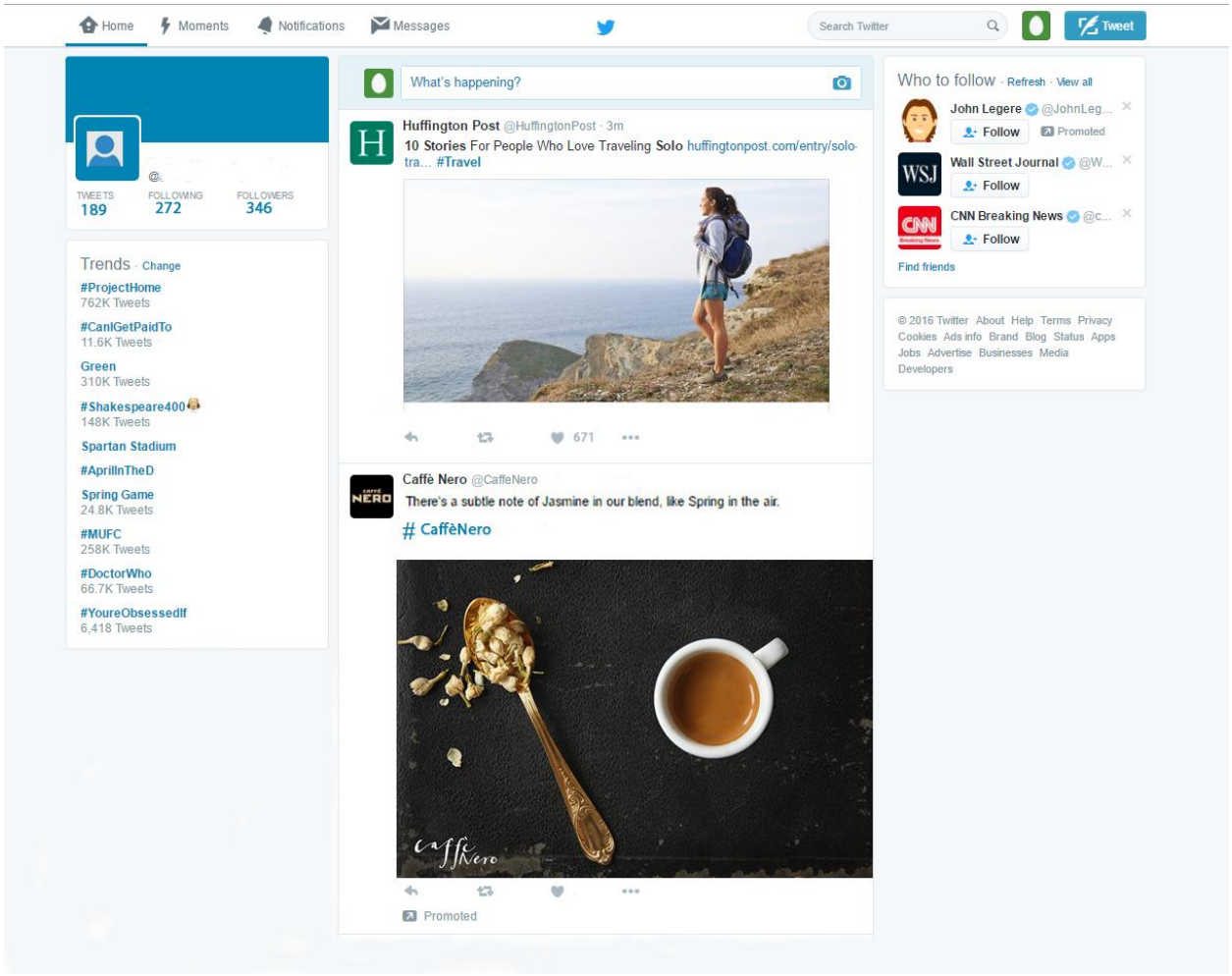

Figure 44 Ad 2 on Twitter

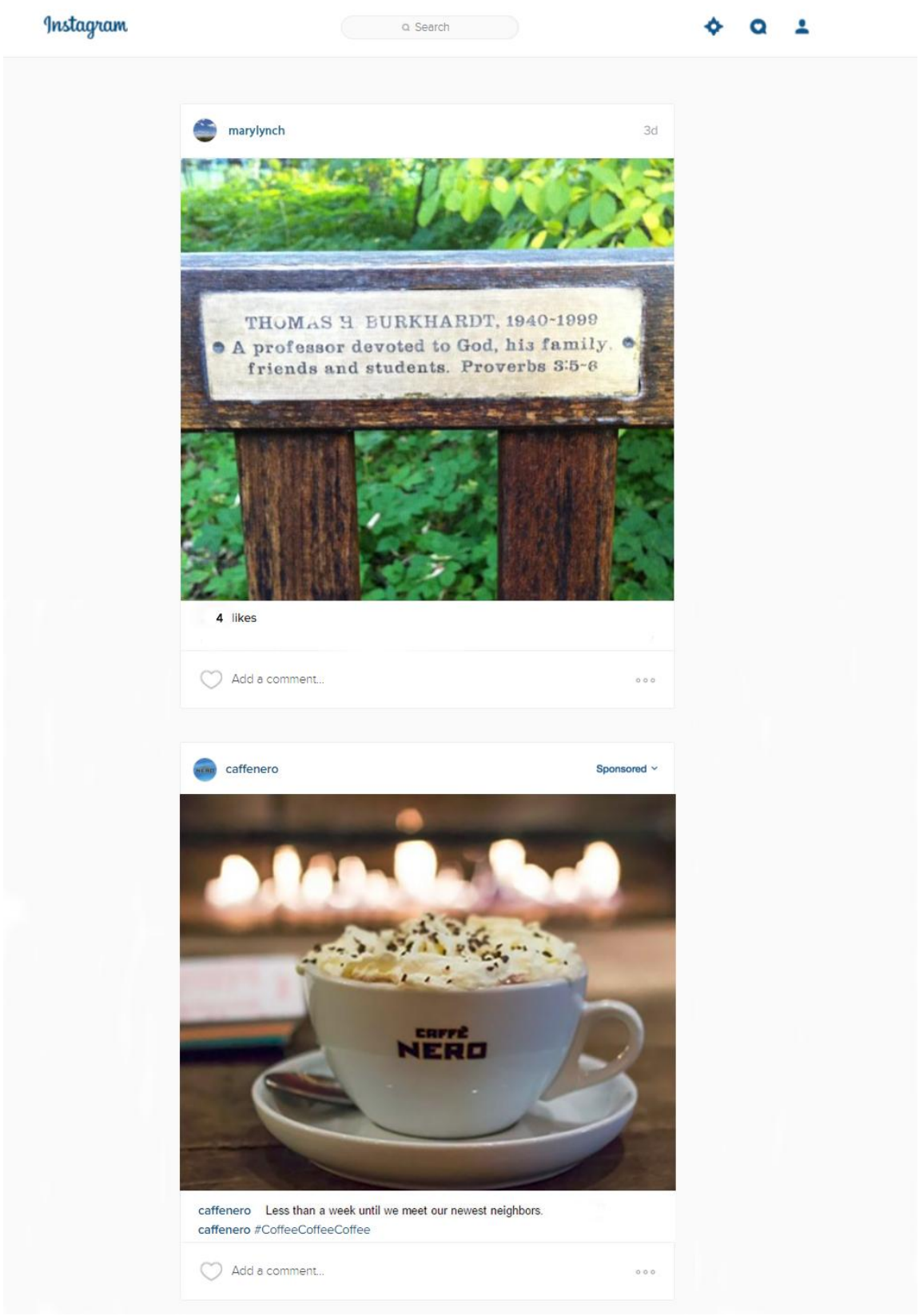

Figure 45 Ad 3 on Instagram

Code 31-33

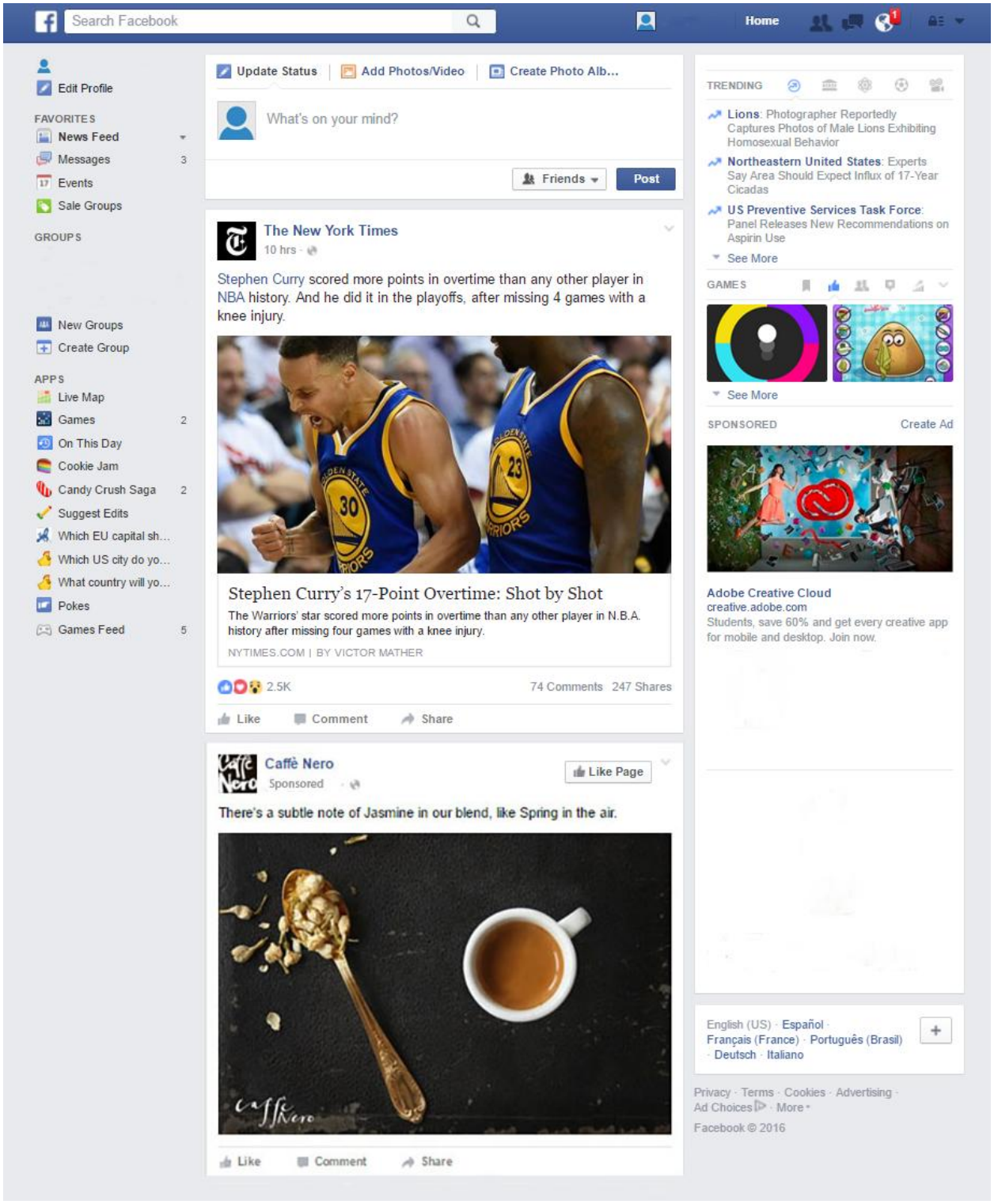

Figure 46 Ad 2 on Facebook

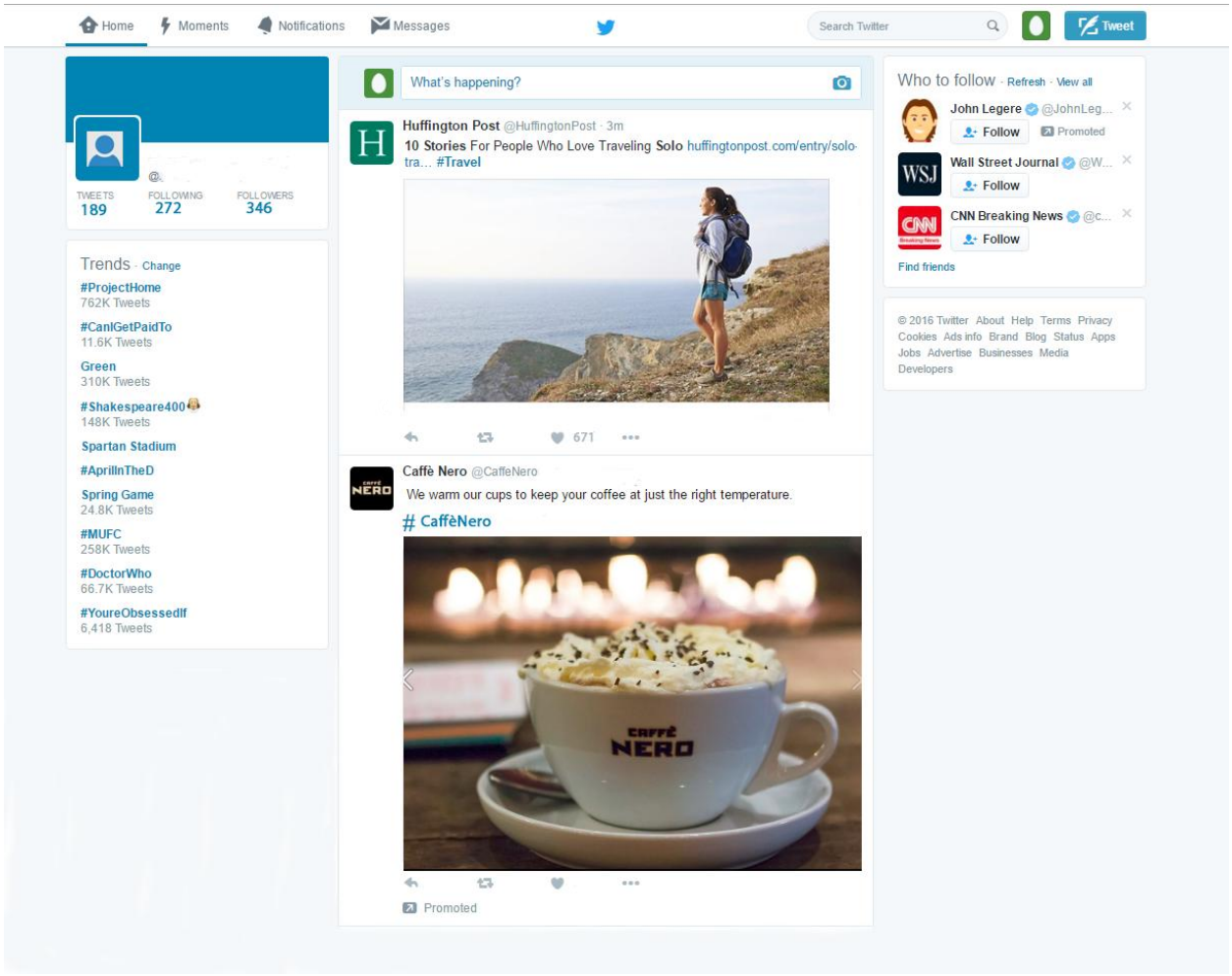

Figure 47 Ad 3 on Twitter

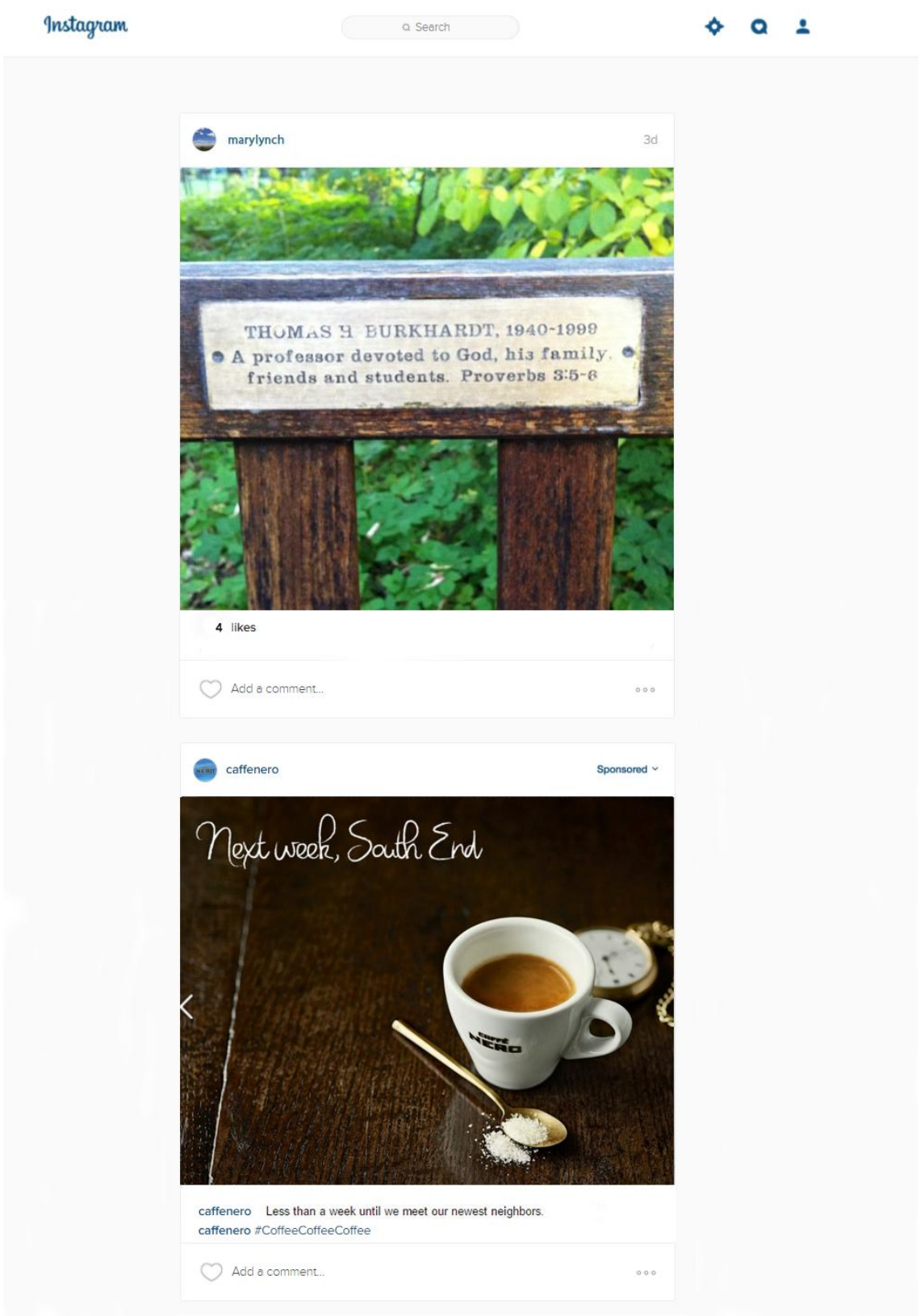

Figure 48 Ad 1 on Instagram

Code 34-36

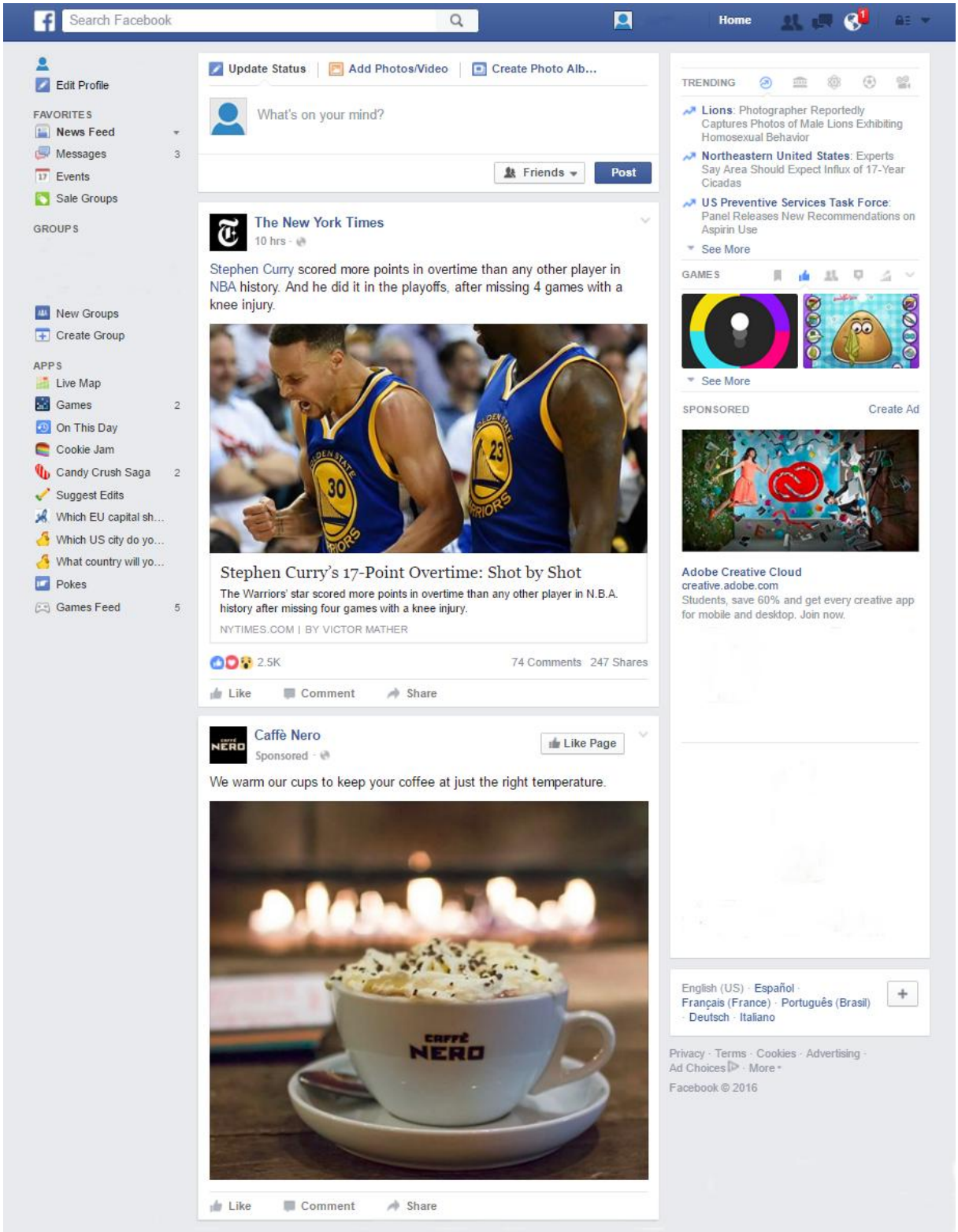

Figure 49 Ad 3 on Facebook

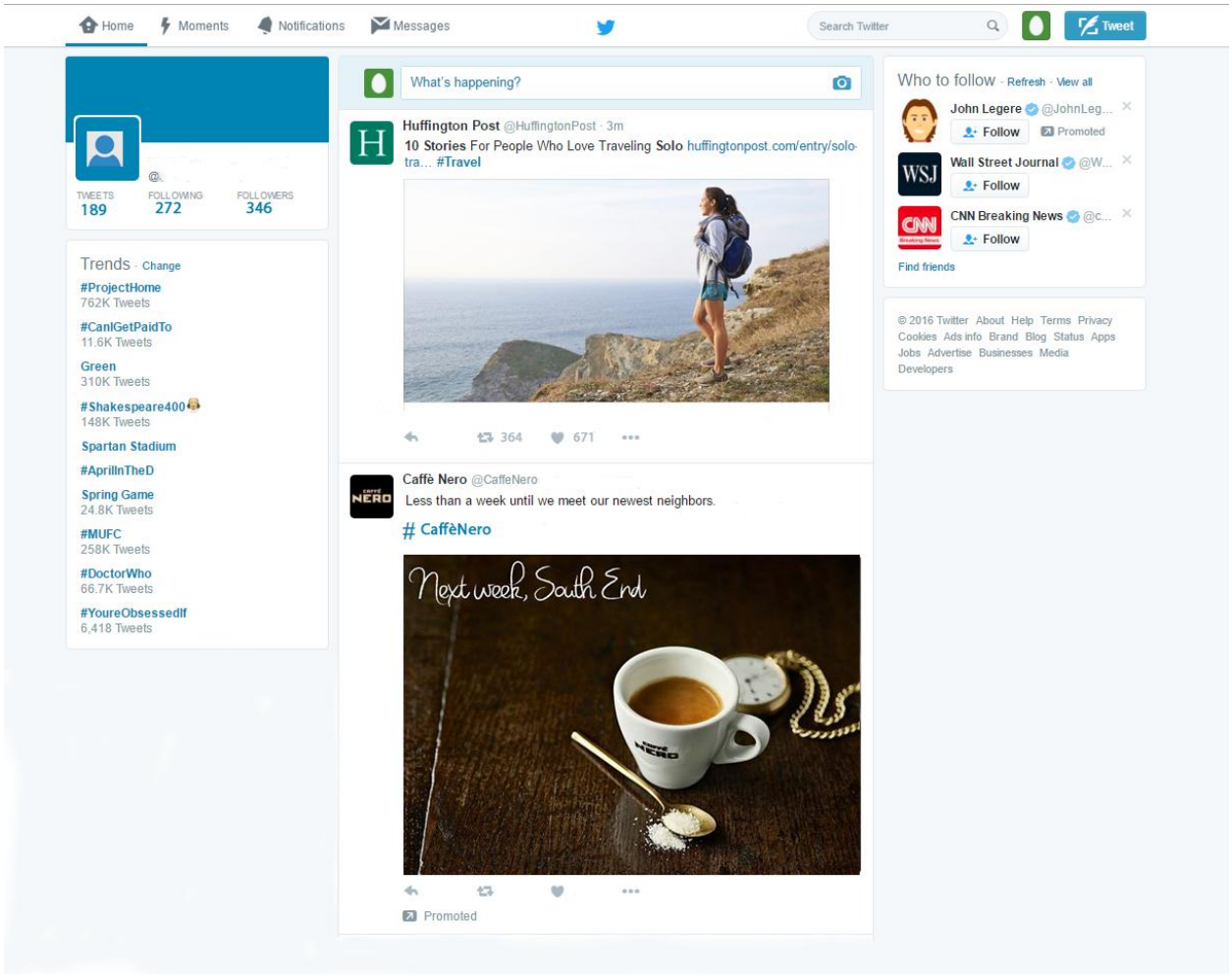

Figure 50 Ad 1 on Twitter

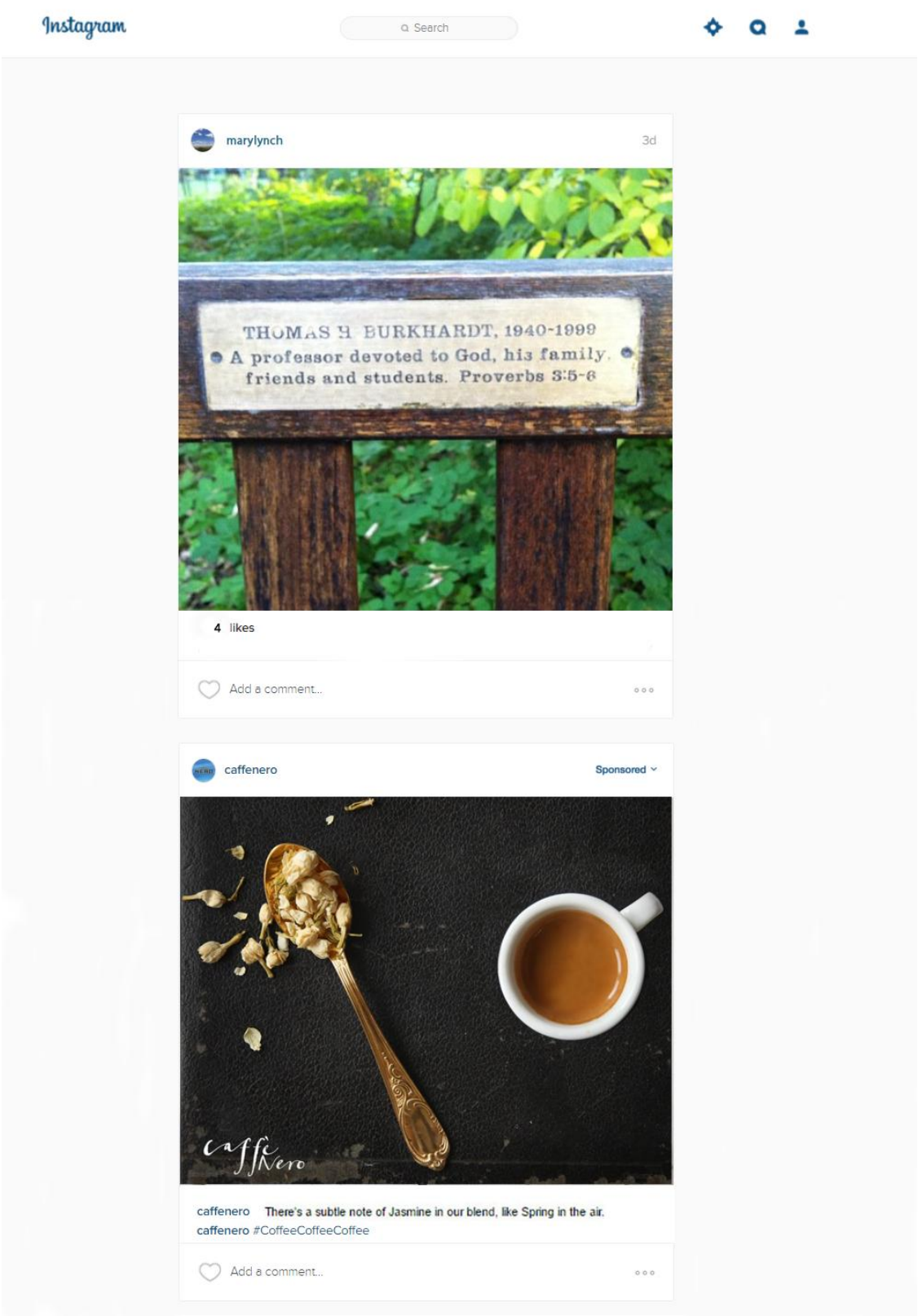

Figure 51 Ad 2 on Instagram

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