8-3-2020

Processing Flow of Facebook Newsfeed Ads: Exploring Product Characteristics and Promotions in Fluid Social Media Use

Xiaowen Xu
University of Connecticut - Storrs, xiaowen.xu@uconn.edu

Processing Flow of Facebook Newsfeed Ads: Exploring Product Characteristics and Promotions in Fluid Social Media Use

Xiaowen Xu, PhD

University of Connecticut, 2020

ABSTRACT

Advertising through sponsored posts in social media newsfeeds has been an important marketing strategy in recent years. Empirical research that addresses how social media users process the content of this advertising format – and the effects of this format on influencing brand-related attitudes and purchase decision-making – remains limited. More theoretical efforts and empirical investigations are needed for explaining the technological and marketing factors that could have an impact on the persuasive effects of newsfeed ads.

This study applied the theory of technology fluidity and the flow construct, in addition to promotional strategies and the FCB Grid that describes product characteristics, to construct a conceptual framework. A 2 (product type: think vs. feel) by 2 (product involvement: high vs. low) by 2 (sales promotion offer: yes vs. no), between-subject experiment was conducted to test the proposed hypotheses and research questions. A series of ANCOVAs and mediation analyses were used for testing the hypotheses and research questions.

Results suggest that while product type influences immersion with the ad, product involvement level makes a difference in purchase intention; both of them affect attitude toward the brand. Inclusion of a sales promotion offer, however, does not generate a main effect on any of the dependent variables; it does produce an interaction effect with product attributes factors on

attitude toward the brand and purchase intention. Furthermore, the influences of fluidity on attitude toward the brand and purchase intention are both mediated through sense of control and immersion, sequentially.

These findings have advanced the theoretical and empirical understanding of Technology Fluidity Theory and Flow Theory, establishing how fluidity experienced during user-technology interaction may influence users' interface with the newsfeed advertising content to experience a flow state. Likewise, the study found the FCB Grid to be a useful typology to describe product characteristics for related advertising effects. The study concludes by calling for establishing a more comprehensive and consistent theoretical framework that could clearly explain user processing of and reactions toward newsfeed advertising.

Processing Flow of Facebook Newsfeed Ads: Exploring Product Characteristics and Promotions in Fluid Social Media Use

Xiaowen Xu

B.S., Journalism, Tsinghua University (China), 2010

M.A., East Asian Regional Studies, Columbia University, 2012

M.A., Communication, Michigan State University, 2014

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctoral of Philosophy

at the

University of Connecticut

2020

APPROVAL PAGE

Doctor of Philosophy Dissertation

Processing Flow of Facebook Newsfeed Ads: Exploring Product Characteristics and Promotions in Fluid Social Media Use

Presented by

Xiaowen Xu, B.A., M.A.

Major Advisor _____

Carolyn A. Lin

Associate Advisor _____

David Atkin

Associate Advisor _____

Ross Buck

University of Connecticut

2020

ACKNOWLEDGEMENTS

"Water drops pierce stone; rope saws cut wood." – Chinese proverb

Ten years of graduate work seems a long journey with a lot of perseverance; but everything also seemed to happen just yesterday: plane rolling on the parking apron at the J.F.K. airport, staff members unloading baggage, a couple rain drops drizzling on the window quietly. This was my first sight of the U.S., toward the end of my first 14-hour international flight from China, and at the beginning of a new trip as an incoming graduate student. Excited, curious, but also uncertain (and worn out), I wondered how the new life would unfold...

Looking back at my journey, I would like to acknowledge so many people for their help and support along the way. The greatest acknowledgement goes to my major advisor, Dr. Carolyn A. Lin, for her knowledge, integrity, and kindness. She is like a parent who trains the kids strictly with the authentic hope for their success but also provides the warmest care and comfort at times of difficulty and disorientation. I would not have finished this program without your guidance and support in my research, career and life. I feel cherished to be able to build such a close bond with you.

I would like to thank the other members of my dissertation committee, Dr. David J. Atkin and Dr. Ross Buck, as well as other faculty members who have helped me during these years. I would like to thank Dr. Atkin for advising me on several projects and guiding me through the academic trip, with his decades of experience, full energy and impressive sense of humor. I would also like to thank Dr. Buck, as a role model, for enlightening my enthusiasm and courage to search for knowledge as a student and truth as an intellect.

I would also like to thank my fellow graduate cohort— Ambyre, Kara M., Kara W., Anu, and Erin. We really make a team, always inspiring and encouraging each other along the way. Our weekly cohort Zoom meetings during the COVID-19 pandemic helped alleviate my stress

and depression while being overwhelmed by all kinds of duties. Other friends who entered the graduate program earlier or later than me—Tai-Yee Wu, Yue Wu, Jasmine Yi Wang, Ye Chen, Suji Park, Jen Xu, Aditi Rao, Anna Young, Dongdong Yang—you all helped and sustained me at different stages throughout this journey. I wish you all the best and, for those who still work in academia, I hope that we could always bump into each other in future conferences.

To acknowledge their tremendous support, I also want to thank my family and friends, especially my parents. Without my mom and dad's all-around nourishing, guidance, and sacrifice, I would have not come to this place. I want to acknowledge the emotional support from my godbrother Andy Jin along the way. And special thanks to my husband Bin, and love of my life, for always standing aside with me with unconditional support and patience. Last but not the least, I want to thank our newly adopted kitten Waya for accompanying me through my everyday work under the unprecedented quarantine period. If what I have gained so far can be deemed of the slightest value, that is all attributable to the generous inputs and blessings from my family.

06. 2020

Edison, NJ

TABLE OF CONTENTS

LIST OF TABLES AND FIGURE

CHAPTER 1: INTRODUCTION

1.1 Background

As the largest social media platform worldwide, Facebook now embraces 2.6 billion monthly active users globally, as of the first quarter of 2020 (Clement, 2020a, 2020b). Seven-in-ten adults (69%) reported in a survey that they ever used the platform; roughly three-quarters of these Facebook users (74%) visited the site daily, half of whom did so several times a day (Perrin & Anderson, 2019). Reportedly 2 million advertisers used Facebook ads (Irvine, 2020). Facebook's advertising revenue rose to a record $20.7 billion in the fourth quarter of 2019 and expanded its number of advertisers by 14% to 8 million from October 2019 (Williams, 2020). Overall Facebook ad impressions increased by 37% in 2019 (Aboulhosn, 2020).

In 2011, Facebook began to develop sponsored posts/stories, which show up in a user's newsfeed like a regular post from a Facebook friend. Unlike newsfeed posts from oneself or one's social network, such newsfeed ads are often denoted as "sponsored" at the top of the post to indicate their commercial nature (Interactive Advertising Bureau, 2015). Newsfeed ads on mobile devices were launched in 2012. Companies could post online advertisements on a user's Facebook newsfeed, with the advantage of collecting social cues from users – "likes," "shares," and comments– as a regular newsfeed post. Currently, 94% of Facebook ad revenue is from mobile, and newsfeed advertising is the major advertising format on the mobile device (Aboulhosn, 2020). Newsfeed ads have several unique advantages. First, browsing a constant stream of newsfeed content is the major activity on social media, especially with "infinite scrolling" on a mobile phone, which makes it easy for consumers to be exposed to ads appearing in this section (Fulgoni & Lipsman, 2014). Second, newsfeed advertising embraces the function of organic posts that can collect social cues – such as "likes," "shares" and comments– within

and beyond the user's personal "friend" network. Third, social media companies provide a large enough user pool for advertisers to target a specific consumer population and send personalized messages (Wojdynski, 2016). Furthermore, unlike banner ads, regular ad blockers cannot screen out this type of ads, as they are integrated in the organic newsfeeds.

Even though many researchers have examined the effects of advertising on Facebook (Celebi, 2015; Chi, 2011; Dao et al., 2014; Duffett, 2015; Morimoto & Macias, 2009; Tucker, 2014) and other social media (Chi, 2011; Kelly et al., 2010; Knoll, 2016; Mir, 2015; Taylor, Lewin, & Strutton, 2011; Zhang & Mao, 2016), empirical examinations of how consumers perceive and process newsfeed ads and the effects of these ads on consumer response to the product remains limited. This is because advertising could take on various forms on Facebook beyond newsfeed ads to include banner display ads, friend-endorsed ads (e-WOM), brand page, and more. Hence, findings for general "social media advertising" or "Facebook advertising" do not fully explain the specific form of newsfeed advertising.

Previous research has investigated different aspects of newsfeed ads, including ad impressions (Lu & Holcomb, 2016), attitude toward social media ads (Knoll, 2016; Kodjamanis & Angelopoulos, 2013; Lin & Kim, 2016) and effects of newsfeed ads on brand impressions (Lu & Holcomb, 2016; Marvin, 2016), adoption or buying decisions (Jieun, Lee & Hong, 2016). According to a survey of Facebook users, 7% of respondents reported that they were influenced by sponsored ads and 52% reported that their brand purchase decisions were influenced by their Facebook friends' suggestions (Kodjamanis & Angelopoulos, 2013). At the same time, another survey also showed that over 80% of Facebook users never or seldom clicked on Facebook ads or sponsored content (eMarketer, 2012), which shows the ineffectiveness of newsfeed ads in consumer conversion. As newsfeed ads are deemed a highly valuable tool for marketers to

communicate with consumers, how consumers interface and interact with the advertising messages embedded as part of their Facebook newsfeeds – as well as how they respond to the product advertised in such messages – is of great interest to both scholars and practitioners.

The effect of the newsfeed advertising has only been explained through a handful of conceptual frameworks such as user motivation, intrusiveness and privacy (Jung et al., 2016; Lin & Kim, 2016), social influence (Agarwal, Lee, & Whinston, 2019; Chang, Chen, & Tan, 2012), social ties (Chang et al., 2012), ad disclosure (Jung & Heo, 2019), ad content variations (Huang, 2019), consistency and sociability (Fan, Lu, & Gupta, 2017) and the informativeness, emotional appeals, and creativity of the ad (Lee & Hong, 2016). Another handful of studies compared newsfeed ads with sidebar banner ads in Facebook (Bang & Lee, 2016; Van den Broeck et al., 2017, 2018). However, technology factors and marketing factors – such as product categories and promotional strategies – have yet to draw more scholarly attention in the context of newsfeed advertising.

1.2 Study Objectives

As newsfeed advertising literature remains limited, more research is needed on the various factors that could facilitate or impede the persuasive effects of newsfeed ads. The current study will examine the cognitive processing of this innovative ad format from the theoretical lens of flow. The concept of flow (Csikszentmihalyi, 1975, 1998) is characterized by a special feeling of "a unified flowing from one moment to the next" (Csikszentmihalyi, 1998, p. 36). Esteban-Millat and colleagues (2014) consider that when an individual is in a flow state, the individual is "fully involved in and focused on" (p. 373) an activity and loses awareness of the surrounding environment. In particular, three dimensions of flow – sense of control, concentration (or focused attention), and enjoyment – will be evaluated as consumer responses

toward the ad and precedents to attitudes and behavioral intention toward the brand (Gao et al., 2015; Ghani, 1995; Ghani & Deshpande, 1994; Koufaris, 2002). A set of technology factors, product-related factors and promotional factors will then be examined in this study to explicate their individual and interactive influences on the flow experience and further on ad effectiveness. The next section will introduce each of these factors.

Firstly, technology factors have yet to draw much scholarly attention in the newsfeed ad context. Facebook newsfeed advertising is a type of "native advertising," defined as advertising that resembles the look, feel, and format of the surrounding media content (Wojdynski, 2016). From the technological perspective, newsfeed advertising represents an innovative approach between the ad message and the individual consumer that is "native" to the social media platform. Technology fluidity (Lin, 2003) sets a useful framework for the technology factor to study newsfeed advertising effectiveness. The concept describes a medium's interoperability that allows users to take advantage of multiple technical affordances simultaneously to obtain a flow experience via greater social presence and media richness (Lin, 2003). With technical affordances offered by various communication modalities (e.g., text, images, videos, comments, "likes" and "shares"), social media platforms such as Facebook is considered a fluid medium that fosters human-technology and human-to-human interactions online (Fotis, 2015). Hence, it is logical to assume that newsfeed ads that are strategically integrated with a user's "organic" newsfeeds in a technically fluid manner will appear more "native" to the platform and create less disruption in a user's flow experience to improve ad effectiveness. Based on past research that suggested impacts of technological features on flow, the current study will test a possible mediation effect of flow bridging technology fluidity and ad effectiveness.

Secondly, as newsfeed ads become popular among marketers on Facebook, it is of interest to explore whether this same form of advertising would equally favor different types of products. Nevertheless, this question has yet to be more fully or thoughtfully investigated (Van den Broeck, Poel, & Walrave, 2017, 2018). The current study intends to fill this theoretical gap by focusing on products along two dimensions of the FCB Grid (Ratchford, 1987). Based on the FCB Grid, products are categorized into involvement type (think vs. feel) and involvement level (high vs. low). In terms of product type, "think" products are bought mainly for utilitarian or functional reasons (e.g., to solve a problem), whereas "feel" products are bought primarily to fulfill emotional or value-expressive needs (e.g., ego gratification, social acceptance, entertainment) (Fennell, 1978; Mitchell, 1981). Product involvement level refers to the enduring personal relevance of a product based on consumers' needs, values, and interests (Zaichkowsky, 1994). When involvement with the product is high, people will be more likely to focus on the message argument/information about the product; when involvement with the product is low, people will be inclined to formulate evaluations based on non-central information to the advertised brand (e.g., attractiveness of the source, emotional appeal or aesthetic design of the ad) (Chaiken, 1980; Petty, Cacioppo, & Heesacker, 1981). The current study will test products that either elicit more functional vs. emotional response – in conjunction with products that draw higher vs. lower consumer involvement – to delineate the effects of newsfeed ads on consumer decision-making.

Finally, a third factor of promotional tactics will also be incorporated to explicate the effect of newsfeed advertising on flow experience and user attitudes. Past research has revealed the positive value of sales promotions in increasing consumer interest of advertisements (Rettie & Brum, 2001), in addition to brand preferences, brand sales and purchase satisfaction

(Compeau & Grewal, 1998; Darke & Dahl, 2003; Schultz & Block, 2014). Existing research that examines the relationship between sales promotions in an ad and flow is rather limited (Kim & Han, 2014; Martins, Costa, Oliveira, Gonçalves, & Branco, 2019). Even less research is available in addressing sales-promotion incorporated in newsfeed ads. Due to the personalized feature of social media advertising, users may get the impression that they are pre-selected for the specific promotion by the brand. Yet the inclusion of a sales promotion offer in the ad post also unveils its promotional intent, which may impair the "native" feeling of the ad post in one's newsfeed. Hence the potential ramifications of adding a sales promotion offer in a newsfeed ad are thus worth a closer examination. This study will probe how consumers respond to ads with or without sales promotion offers that are posted as newsfeeds.

In sum, the current study aims to examine how newsfeed ads on Facebook are evaluated from the perspective of technology-interaction characteristics and cognitive immersion process, by applying the framework of Theory of Technology Fluidity (Lin, 2000) and Flow Theory (Csikszentmihalyi, 1975), respectively. This study will investigate how newsfeed ads are experienced and evaluated as a function of two marketing elements – product and promotion – in the context of social media advertising. Specifically, main effects and interaction effects among three factors – product type, product involvement and sales promotion – will be analyzed and presented in a factorial-design experiment.

1.3 Organization

This dissertation consists of five chapters. Following the current chapter on the introduction of the background, Chapter 2 provides a comprehensive overview of the major theoretical framework. The first subsection gives a general review of empirical studies on social media advertising and particularly newsfeed advertising. The second subsection delineates Flow

Theory (Csikszentmihalyi, 1975, 1977), with an emphasis on the three major dimensions of flow: sense of control, concentration (focused attention) and enjoyment. The next subsection introduces the conceptual framework of Technology Fluidity. Subsection Four explains the FCB Grid pertaining to the two product characteristics: product type and product involvement. The last subsection discusses sales promotion in digital advertising.

Chapter 3 extends the general overview of major theories and concepts from Chapter 2 to present a series of hypotheses and research questions that will address the relationships between all the variables measured. Relevant theoretical justifications are elaborated in detail to support the assumptions proposed in the hypotheses and research questions.

Chapter 4 introduces the method of this study. After the description of the pre-test used to determine the experimental manipulation and ad stimuli, the chapter details the design, sample and procedure of the main study. Measurements for all the variables, including manipulation check questions are then presented.

Chapter 5 summarizes analysis results, beginning with a report on the sample profile, descriptive statistics and zero-order correlations. Preliminary results on the measures are then offered, including exploratory and confirmatory factors analysis and reliability tests. This will be followed by a report of the results for manipulation check, hypotheses and research questions.

Chapter 6 calls attention to the theoretical and practical implications of these empirical results. It also sheds lights on the limitations and suggests future research directions. The dissertation finishes with a discussion on how the current study contributes to a more comprehensive conceptual model for studying the flow experience with and effectiveness of social media newsfeed advertising.

CHAPTER 2: LITERATURE REVIEW

2.1 Newsfeed Advertising

2.1.1 Social Media Advertising

In 2019, about 79% of the population in the United States had a social network profile (Clement, 2020). Social media have provided a promising venue for digital marketing (Lee, Kim, & Sundar, 2015; Taylor et al., 2011), with several distinct advantages over traditional media or other digital platforms. Firstly, social media enable companies to communicate with consumers across temporal and geographical boundaries and to even forge brand communities to strengthen consumer loyalty, due to the high interactivity, engagement and transmissibility characteristics (Chamorro-Mera, Miranda, & Rubio, 2014; Kumar, Bezawada, Rishika, Janakiraman, & Kannan, 2016). Secondly, the self-expressive nature and profile-based feature render social media a valuable source for advertisers to have better knowledge about their consumers' likes and dislikes to create and deliver targeted advertising approaches and content (Klaus, 2013). Thirdly, the social networking functions on social media make it easier to develop word-of-mouth on an unprecedented scale, either from celebrities and influencers, or friends and peers, forming a social commerce environment (Kim, Lee, & Chung, 2017).

As the biggest social media platform, advertising is the most important source of Facebook's revenue. Facebook's offer of "self-service" advertising capability allows smaller businesses and advertisers to create advertising in a convenient way and target users based on their demographics and hobbies (Stone, 2010). As a free-subscription social media site, Facebook allows users to stay in touch with their family, friends and connect to new people around the world. Meanwhile, Facebook is also "a very helpful tool to marketers because of its extensive and specific collection of demographic information about its users, which in turn

enables marketers to reach several different target audiences" (Bannister, Kiefer, & Nellums, 2013, p. 3).

Empirical research regarding social media advertising effectiveness has shown incongruent and even contradictory results. While some research confirmed positive influences of social media advertising on attitude toward the brand (Yang, 2012), ad clicks and buying behaviors (Mir, 2015; Yang, 2012), others suggested consumers' negative attitudes toward (Taylor et al., 2011) and avoidance of social media advertisements (Kelly, Kerr, & Drennan, 2010). To some extent, consumers understand that they have to bear with advertisements in exchange for free content and services provided by social media sites; but they could still find such ads annoying and interrupting their flow of online activities (Taylor et al., 2011). In order to mitigate such negative consumer feelings, marketers need to create appealing contents in advertising on social media that meet consumer needs (van Doorn & Hoekstra, 2013; Kelly et al., 2010). In this sense, social media advertising is not necessarily deemed negative in the eyes of users, yet needs to ignite users' interest in a non-interruptive way with effective implementation.

2.1.2 Newsfeed Advertising on Facebook

Since the first "Facebook Flyer" promoting local businesses of the Harvard University community in 2004, Facebook has been developing various advertising formats (Phrasee, 2018), among which newsfeed advertising is an innovative format. Facebook provides a list of most common types of newsfeed ads – based on the primary purpose of the advertisers – which includes link-click ad, like-page ad, event-response ad, local-awareness ad, lead-generation ad, app-install ad, discount-offer ad, boosted page post, and dynamic retargeting ad (Facebook, n.d.).

Due to the evolving nature of using newsfeeds as a tool for advertising, not many studies have investigated the effects of newsfeed advertising on attitude and buying decisions, since they

gain popularity on social media platforms (Kodjamanis & Angelopoulos, 2013; Lin & Kim, 2016; Lee & Hong, 2016). Lin and Kim (2016) examined different factors that influenced Facebook newsfeed advertising effectiveness in a survey with college students. They found that privacy and intrusiveness concerns were both antecedents to perceived usefulness of newsfeed advertising. Both of these variables also influenced consumer attitudes toward newsfeed advertising, yet only privacy concerns had an impact on purchase intention.

Youn and Shin (2019) found in their survey with teens that ad benefit appraisal (perceived ad value and relevance) induced greater engagement with Facebook newsfeed ads, whereas risk perceptions (perceived goal impediment, ad intrusiveness, and sponsorship deceptiveness) produced higher privacy concerns, ad avoidance, and perceived need for regulatory control. Peer communication about Facebook newsfeed ads rendered teens less critical about advertising practices. In a later survey, the same authors reported that adolescents' persuasion knowledge of personalized Facebook newsfeed ads had a positive impact on their ad benefit assessment, but not on privacy risk assessment; product benefit-risk assessment was found to have an effect on skepticism toward newsfeed ads (Youn & Shin, 2020). Adolescents showed persuasion knowledge of social media newsfeed ads, but with an ambivalent attitude toward these ads (Youn & Kim, 2019a). Youn and Kim (2019b) also identified that users' perception of autonomy to control ad exposure decreased their perceived ad intrusiveness; perceived ad intrusiveness together with perceived threat to freedom increased psychological reactance and avoidance toward Facebook newsfeed advertising.

Jung, Shim, Jin, and Khang's (2016) scenario-based survey examined variables that influenced the effectiveness of newsfeed ads ("organic impressions"), homepage ads and social impressions (ads featuring friends' names) on Facebook. Findings suggest that perceived

information value, entertainment value, and promotional rewards value of the organic impression ad failed to have a significant impact on attitude toward the ad and intention to become a fan of the brand. In addition, attitude toward the ad and fan-intention were each negatively related to invasiveness and privacy concern; consumers also preferred social impression ads that featured friends' names in their newsfeed more than sidebar ads.

Agarwal et al. (2019), however, identified mixed impacts from friend endorsement of products via newsfeed ads. Using a field experiment, they conducted a random-bidding newsfeed ad campaign for a mobile shopping app on Facebook, in order to explore the effects of friends-tagged "likes" versus the total number of "likes" on ad engagement. Results showed that newsfeed ads "liked" by friends produced a lower click-through rate, as compared to the ones without such endorsement. Furthermore, the total "likes" statistics published for the newsfeed ad did not correlate with the user's decision on clicking the ad and were negatively associated with app-installation decision. However, once the user clicked the ad, the negative effect of total "likes" on the app-installation decision was attenuated, if friends on Facebook endorsed the app.

Lee and Hong (2016) surveyed a sample of undergraduate students in Korea on their reactions towards a newsfeed ad stimulus on Facebook. They found that informativeness and advertising creativity were antecedents to favorable attitude toward "liking" the ad, but not emotional appeal of the ad. Their findings also showed that perceived social pressure of conformity to "liking" newsfeed ads was positively related to behavioral intention to "like" the ad, which was further positively associated with purchase intention.

Focusing on the content aspect, Huang (2019) compared the use of repeated ad content and varied ad content on a single social media platform versus multiple platforms. Results

suggest that when repeated ads were used, conducting the campaign over multiple platforms could reduce ad intrusiveness – resulting in more favorable brand attitude and greater purchase – compared to the use of a single platform. Nevertheless, when varied ads were used, no significant differences in the dependent variables were observed between conducting the campaign on a single platform versus multiple platforms.

Lee and An (2017) studied how content characteristics of newsfeed ads on social media influenced ad sharing behaviors. Results revealed that participants exposed to emotionally-charged ads were more psychologically aroused and had a higher intention to share the ad than those exposed to emotionally neutral ads.

Chang et al. (2012) did an experiment to explicate interaction effects of three factors on advertising effectiveness in social networking sites: tie strength, endorser expertise, and product type. They found that for hedonic products, there was a significant positive effect of tie strength on influencing purchase intention. However, for utilitarian products, endorser expertise turned out to be a significantly positive predictor for purchase intention.

Additional research adopts the perspective of native advertising and delves into the sponsor disguise/disclosure and consumer recognition of newsfeed advertising to examine the effects of newsfeed ads. Native advertising, as a somewhat "covert" native advertising format, represents the type of "paid ads that are so cohesive with the page content, assimilated into the design, and consistent with the platform behavior that the viewer simply feels they belong" (Interactive Advertising Bureau, 2015, p. 3). Conceptually, newsfeed advertising can be understood as a specific type of native advertising, which mimics the content or function of its host website (Sharethrough, 2012; Wojdynski, 2016; Wojdynski & Evans, 2020). On a social media platform such as Facebook, newsfeed ads similarly adopt the form of regular newsfeed

posts and are mingled as part of a user's Facebook page content. They appear in the location and take the form of regular newsfeed posts, disguised as an organic part of Facebook contents.

Thus, the persuasiveness of native advertising hinges on a consistent awareness and recognition of such content as advertising. If consumers realize that a covert advertising message is actually a paid advertisement, instead of a non-advertising message that reached them organically from the social media platform, they will feel more negatively toward the message and the advertiser behind it (Wojdynski & Evans, 2020). Researchers also studied disclosure implementation and message characteristics that would enhance or reduce consumers' ability to recognize the nature of "covertly" placed ads (An, Kerr, & Jin, 2019; Jung & Heo, 2019; Boerman, Willemsen, & Van Der Aa, 2017; Evans, Phua, Lim, & Jun, 2017). Therefore, consumers have the opportunity to interact with these ads by performing platform-specific behaviors, such as "liking," "commenting," or "sharing" an ad post (Lee, Kim, & Ham, 2016). Furthermore, users could interact with newsfeed ads (read, view, or watch) on the original platform (a.k.a., Facebook) without visiting a different website (Lee et al., 2016).

To summarize, it is noticeable that few studies have investigated the effectiveness of newsfeed advertising from a technology perspective or considered the context of social media use as a form of two-way computer-mediated interactive activity. Social media users, especially younger users, have become more and more savvy about digital marketing tactics. These tactics are less of an issue with sponsor disclosure and consumer recognition of them, but have more to do with whether digital ads are implemented to appeal to users' attention and interest without interrupting their primary media use. As demonstrated by Lee et al. (2016), the negative impact due to consumer recognition of the advertiser's persuasive intent and manipulation could be mitigated, if the ad is not seen as too disruptive. For example, Lin and Kim's (2016) study

reported that perceived intrusion of sponsored ads on a user's Facebook page did not affect user attitude or purchase intention toward brands, but a negative effect was found for perceived invasion of user privacy.

While the merits of a native ad rest on its seamless integration into the standard content of a digital media platform, the success of advertising messaging may rely on its visual prominence in getting audience attention and whether the audience rejects the commercial intent behind the newsfeed message. Newsfeed advertising research has not fully considered the interface between a consumer and advertising content as a user-technology interaction process, where an ad could only be evaluated favorably when it does not disrupt the user-technology interface and content-use flow on social media.

The current study aims to conduct an experiment to explore how newsfeed ads on Facebook are assessed from the perspective of technology interactivity, product attributes and promotional messaging through the consumer-content flow experience via cognitive immersion. Specifically, the study will construct and test a conceptual framework based on Flow Theory and Theory of Technology Fluidity.

2.2 Flow Theory

2.2.1 Concept of Flow

The origin of flow theory stemmed from Csikszentmihalyi's (1975) study of professionals and amateurs of certain activities (e.g., dancing, chess play, rock climbing), who described their immersion with their beloved activities as a holistic feeling and optimal experience of "a unified flowing from one moment to the next" (Csikszentmihalyi, 1977, p. 36). This conceptualization defines the flow state as one where an individual is "fully involved in and focused on" (Esteban-Millat et al., 2014, p. 373) an activity and loses awareness of the unrelated, outside environment.

Csikszentmihalyi (1998) presented a comprehensive definition of "flow" as follows: (1) clear and distinct goals; (2) temporary loss of self-consciousness; (3) distorted sense of time; (4) actions merging with awareness and immediate feedback; (5) high concentration on the task; (6) high level of control; (7) a balance between the available skills of the individual and the task challenges; (8) autotelic experiences. Csikszentmihalyi (1998) maintained that almost any activity can produce flow when relevant elements are present. Voiskounsky's (2008) review of the flow concept noted that these characteristics were not sufficiently rigorous and needed a more thorough operationalization in empirical research.

Scholars have yet to arrive at a consistent conceptualization of flow. Chen, Wigand and Nilan (2000) broke down the original dimensions in Csikszentmihalyi (1988, 1990) and formed three major factors of flow associated with web use: antecedents, experience, and consequences. Specifically, the "antecedents" factor is characterized by clear goals, immediate feedback, potential control, and merger of action and awareness of Web users; the "consequences" factor consists of positive affect and autotelic experience. These authors also proposed four additional concepts as sub-dimensions of the "experience" factor; these include concentration, time distortion, telepresence and loss of self-consciousness. In another study, Chen (2006) described flow as "characterized by enjoyable feelings, concentration, immersion, and intensive involvement" (p. 222).

Trevino and Webster (1992) depicted flow in human-computer interaction as a playful and exploratory experience containing four dimensions, including control, attention, interest and curiosity (also see Webster, Trevino, & Ryan, 1993). Ghani and Deshpande (1994) argued that "two key characteristics of flow are (a) total concentration in an activity and (b) the enjoyment one derives from an activity" (p. 382) (also see Ghani et al., 1991; Ghani, 1995). Skadberg and

Kimmel (2004) maintained that flow for website browsing was characterized by time distortion, enjoyment, and telepresence. Agarwal and Karahanna (2000) summarized the following five important dimensions across major studies on flow: time dissociation, focused immersion, heightened enjoyment, curiosity, and control.

Adopting the dimensions used by for human-technology interactions, Hsu and Lu (2004) defined flow as "an extremely enjoyable experience" (p. 857) with four components: control, attention, curiosity and intrinsic interest. Hoffman and Novak (1996) suggested that the four dimensions proposed by Hsu and Lu (2004) were not representations but antecedents of flow. They, instead, defined flow as an optimal experience "achieved when a sufficiently motivated user perceives a balance between his or her skills and the challenges of the interaction, together with focused attention" (p. 15) that could entail positive consequences (e.g., enjoyable feelings, exploratory behaviors).

Guo and Poole (2009) believed that flow was a global, second-order factor with six first-order factors involving concentration, control, transformation of time, loss of self-consciousness, autotelic experience, and merger of activity and awareness. Luna, Peracchio and de Juan (2002) conceptualized flow as consisting of both cognitive and affective components. According to them, while the cognitive component includes challenge-skills balance, focused attention, perceived control and unambiguous demands (sense of knowing what to do and what the website is supposed to offer), the affective component is attitude toward the website. However, in the same paper, these authors also mentioned that the cognitive component involves "antecedents of flow" (p. 402). Hence, it is unclear whether these concepts are the underlying components of flow or antecedents of flow in their conceptualization.

In sum, various elements have been linked to the concept of flow in empirical studies on Internet use activities and communication technology use. These studies have examined, for instance, the concepts of congruence between skills and challenges (Csikszentmihalyi, 1975), interactivity, tele-presence (Hoffman & Novak, 1996), feedback (Guo & Poole, 2009), control (Hsu & Lu, 2004; Novak et al., 2000), full attention (Hsu & Lu, 2003), loss of self-consciousness (Csikszentmihalyi, 1975), perceived playfulness (Csikszentmihalyi, 1975; Webster et al., 1993; Hoffman & Novak, 1996), enjoyment (Agarwal & Karahanna, 2000), perceived usefulness (Hsu & Lu, 2003), curiosity/ exploratory behavior (Trevino & Webster, 1992; Webster et al., 1993) and so forth (Bridges & Florsheim, 2008; Ghani & Deshpande, 1994; Koufaris, 2002). These relevant concepts are modeled as different levels of causes, characteristics or consequences of flow, which adds to the difficulty of drawing a consensus on the conceptualization and measurement of the flow construct. For example, in some work, flow was considered as a unidimensional concept, involving a merger of actions and awareness (e.g., Novak et al., 2000) and treating the various conceptualizations discussed above as either antecedents or results of flow. In other studies, however, flow is recognized as a multidimensional construct that describes some of conceptual definitions presented above (e.g., Hsu & Lu, 2004; Trevino & Webster, 1992).

As pointed out by Hoffman and Novak (2009), "no two researchers seem to measure flow in the same way (p. 8)." For example, some scholars measured flow as a unidimensional concept by giving a description of flow (focusing on involvement, concentration, enjoyment and so on) and then had participants answer the extent to which they had experienced such a state during the activity of interest (e.g., Hsu & Lu, 2004; Novak et al., 2000). This self-reported method,

however, has been questioned for its untenable assumption that respondents could understand the concept based on the written description (Rettie, 2001).

On the other hand, those scholars who maintained a multi-dimensional view measured flow with multiple items for each dimension (Chen, 2006; Ghani & Deshpande, 1994; Webster et al., 1993); these items were then aggregated to form a measure for flow. This approach has not remained free from criticism; some scholars argue that the holistic experience of flow may not be fully captured with a set of discrete feelings (Rettie, 2001). Other methods include eye-tracking with virtual reality systems (Takatalo, Nyman, & Laaksonen, 2008) and ESM experience sampling (Larson & Csikszentmihalyi, 2014), where participants were notified by a pager randomly (several times a day) to complete a diary describing their experience of Internet use in real time, as well as qualitative methods such as interviews (e.g., Pace, 2004).

Lazoc and Caraivan (2012) discussed current shortcomings with the flow literature in the online context: "(1) a rather strong discrepancy in defining constructs and in forming the model structures; (2) frequent avoidance of distinct type of activities … and type of applications; (3) the inability to adapt interactivity measurement instruments to Web 2.0 evolutions" (p. 29). Due to this lack of agreement, predictive models that account for the main factors influencing the outcome of flow have been seen as non-conclusive in the literature. Voiskounsky (2008) suggested that flow in the Internet-mediated environments should be considered as problem-, instruction- and competence-specific; the experience of flow will depend on particular interfaces and applications.

Despite the ambiguous definition of flow, it is important to determine what aspects that the current study would examine about the concept. This study defines flow as individual engagement with an online platform (such as Facebook). It will focus on three aspects of flow,

based on prior literature: control, concentration (or focused attention) and enjoyment (Ghani, 1995). These dimensions have been commonly examined in flow and technology-use research (e.g., Koufaris, 2002; Gao et al., 2015), and are relevant to the current study context.

The assumption of the current study is that advertisers need to strike a balance between eliciting focused attention and enjoyment among users, while keeping them maintain a sense of control of their primary social media use activities without feeling a disruption or intrusion imposed by newsfeed ads. Only by maintaining such a balance will the ads and the media environment in which they are embedded produce an optimal flow experience for consumers.

Moreover, different aspects of flow may exhibit different effects on a specific dependent variable; flow doesn't have to be studied as a holistic concept. As Webster et al. (1993) noted, an individual could experience different flow dimensions without sensing all of those dimensions in one activity encounter or interface, even though these dimensions are linked to each other. In fact, studying direct effects of sub-dimensions of flow may be more theoretically significant (Novak et al., 2000), but there is very limited research adopting this approach (Lee & Chen, 2010). Hence, this study will examine the individual effect of selected different flow dimensions. Such an approach can only be implemented, when treating flow as a multi-dimensional concept. The next sub-section will present relevant literature regarding each dimension of flow that has been selected for testing by the current study.

2.2.2 Sense of Control

Perceived control takes account of restrictions to which a behavior is subject to, and is a significant element in flow studies. Csikszentmihalyi (1990) stated that "we have all experienced times when, instead of being buffeted by anonymous forces, we do feel in control of our actions … (on such occasions) we feel a sense of exhilaration, a deep sense of enjoyment"

(p. 3). Webster et al. (1993) stated that "for an activity to encourage playful, exploratory behaviors, individuals should experience feelings of control over the computer interaction" (p. 413).

In online interactions, sense of control is rooted in an individual's perception of his/her ability to navigate a website in an effective and efficient manner or in how well the individual expects that the website will respond to his/her inputs (Novak et al., 2000). In the flow state, users experience feelings of control over the interaction with the technology and in control of their own actions and choices (Trevino & Webster, 1992). As Pelet, Ettis, and Cowart (2017) noted, "on a social network, users can feel both optimally challenged and confident that everything is under control following actions on the platform, such as uploading a photo, sharing a video, or commenting on a statement posted by a 'friend' " (p. 117).

Finneran and Zhang (2003) argued that an activity with computer-mediated environment is a combination of the task (the purpose of the activity) and the artifact (the technological tool). Thus, sense of control should be examined with the task and the artifact as two separate aspects. For example, one could feel a high sense of control with writing (task), but feel confused with the Microsoft Word program interface (artifact) for the writing task. In the current study, sense of control is more associated with the task (whatever the primary purpose one uses Facebook for) than the artifact (navigating the Facebook platform per se). Newsfeed ads, if seen as intrusive or disruptive of a Facebook user's primary task/activity on the platform (e.g., staying connected to family or friends or browsing for information), could lead users to feel a loss of or a sense of reduced control over their primary task of social media consumption behavior.

2.2.3 Concentration

Concentration is equivalent to focused attention, which reflects the amount of mental effort or cognitive capacity allocated to a task (Kahneman, 1973). Attention contains both direction (the focus of mental effort) and intensity (the amount of mental effort used) (MacKenzie et al., 1986). Csikszentmihalyi (1988, 1990) suggested that to experience flow, individuals need to be deeply involved in the activity. For example, when highly concentrated, social media users are more likely to engage in constructive processing (relating the content to self) and elaborative processing. Focused attention is "associated with resistance to distraction and the ability to distinguish between relevant and irrelevant information" (Esteban-Millat et al., 2014, p. 378). Calvo-Porral, Faíña-Medín, & Nieto-Mengotti (2017) argued that flow is conceptually identical to cognitive concentration, both referring to the holistic sensations when acting with total involvement. Similarly, Clarke and Haworth (1994) noted that optimal experience in flow is characterized by cognitive involvement level.

Past studies have suggested that distinctive and unusual ad executions were more attention-grabbing (Shimp, 2003), which could enhance ad recall, attitude toward the ad and click-through intention (Yoo, Kim, & Stout, 2004); however, prominent appeals to attention may also elicit reactance such as interruption to the primary media activity and irritation. Pelet et al. (2017) pointed out that the variety of activities on social media, sometimes on a small mobile phone screen, requires deep concentration from a user – to process all types of information – such as notifications for comments and likes, posting, shares, etc. Previous research maintains that web users have a short attention span due to limited resources of time, explosion of information, increased level of autonomy, and multitasking tendency, etc. (Koufaris, 2002). There are many stimuli—inside or outside the social media platform— which can distract user attention when processing an advertisement in social media.

2.2.4 Enjoyment

Enjoyment lies at the center of the flow concept, as flow is conceptualized as an intrinsically enjoyable experience (Csikszentmihalyi, 1975). Some scholars dubbed this as "autotelic" or self-rewarding, intrinsically-motivated experience (Chen et al., 2000, Chen, 2006; Esteban-Millat et al., 2014; Rettie, 2001). This means that individuals enjoy performing a behavior for the fun of it, rather than with expectation of tangible rewards or benefits (Esteban-Millat et al., 2014). Mahnke, Benlian, and Hess's (2014) literature review demonstrated that when experiencing flow, negative feelings may still occur simultaneously (e.g., annoyed, worried, nervous); it is the enjoyment produced by the flow experience that enhances intention to continue the activity.

Past research conceptualized enjoyment and concentration as a single composite variable for flow (e.g., Ghani, 1995; Ghani & Deshpande, 1994; Sánchez-Franco, 2006). "An individual in flow is completely engaged in a task, experiencing concentration and enjoyment" (Ghani et al., 1991, p. 229). These two factors are commonly incorporated in technology use research to measure flow, and have received support in marketing research (Ettis, 2017; Koufaris, 2002). Some scholars (Ghani et al., 1991; Ghani & Deshpande, 1994; Lu et al., 2009; Sanchez-Franco, 2006) even stated that enjoyment and concentration provide a parsimonious and sufficient framework to represent the flow state; these two dimensions were combined in these studies to form a single composite variable of flow, separate from the factor of sense of control (e.g., Ghani et al., 1991; Ghani & Deshpande, 1994). Therefore, the current study will treat enjoyment and concentration as a single factor of immersion.

2.2.5 Flow in Online Advertising/Marketing Research

Since its introduction by Csikszentmihalyi (1975), research of flow has been expanded to the symbolic systems like computer and new technology use (Hoffman & Novak, 1996; Finneran & Zhang, 2005). Trevino and Webster (1992) noted that flow was an important element in understanding human-computer interactions and user attitude toward technologies in human-computer interactions. Flow experience is thus relevant in the social media use environment.

Scholars have noted the importance for digital advertisers and marketers to create flow experiences for online consumers. According to Rettie's (2001) focus group study, there is a prevailing negative feeling about Internet advertising, as respondents found these ads were particularly irritating when they were in "flow" surfing the Internet. As Voiskounsky (2008) stated, "the currently available experience leads to useful recommendations aimed at avoiding some possibly restrictive decisions as well as lessening the negative influences on the visitors and customers of the existing e-shops and at perfecting the design and the usability of the would-be e-marketing sites" (p. 82). Although Flow Theory has been examined in advertising and e-marketing research, it has not been fully explored in the context of social media advertising.

Esteban-Millat et al. (2014) indicated that "facilitating optimal online navigation and shopping experiences, characteristic of a state of flow, can lead to desirable shifts in consumer shopping behavior" (p. 372). Hoffman and Novak (1996) contended that online marketers need to engage consumers by maintaining them in a constant "flow" state, as consumers who experience the flow state during Internet shopping will exhibit more exploratory behaviors than those who do not. Therefore, even though Facebook users do not *aim* to see an ad, being in a flow state when interacting with social media may render them more open to marketing materials as part of their exploration of the platform.

Past work indicated that flow experience with a website was a significant determinant of consumer attitudes toward the website as well as the intention to revisit and spend additional time on the website (Hsu et al., 2012; Mathwick & Rigdon, 2004; Skadberg & Kimmel, 2004). Other findings also support the notion that flow could influence consumer attitude toward the brand (Korzaan, 2003; Obadă, 2013) and purchase intention directly (Mahnke et al., 2014; Siekpe, 2005; Kim & Han, 2014) or via the mediation of attitude toward purchasing online (Korzaan, 2003).

2.3 Technology Fluidity

The theory of technology fluidity states that when a medium is capable of transmitting between or operating simultaneously on multiple modalities, it is more fluid and more likely to enhance mediated technology use experience (Lin, 2000). Media technologies vary in their degrees of fluidity; the Internet in general is considered high in technology fluidity, facilitating easiness of switching from one technology modality to another (Lin, 2008). One example of a highly fluid platform is the virtual video conferencing system, which affords real-time two-way transmission of audio information, video content, text material and audio-visual recording functions and interactions. Technology fluidity theory expands social presence theory and media richness theory "by looking at how the transmutability of a medium influences the audience's technology adoption decision" (Lin, 2003, p. 355). A more fluid communication medium or technology platform facilitates higher presence of interactions between users, and improves the audience perceptions of media richness (Lin, 2003). Lin (2004) noted that the concept of technology fluidity pertains to both the technical as well as the social character of a medium. Highly fluid technologies could better serve the synchronous and interactive feature of computer-

mediated communication, and the growing trend of media multitasking and transmedia use activities.

For instance, technology fluidity was incorporated in a conceptual model – communication and information technology adoption paradigm– that examines the factors relevant to shaping adoptions of new technologies (Lin, 2003), along with innovation attributes, social presence, and media richness. In another empirical study, Lin (2004) found that the more flexible and versatile one perceived the Internet, the more interested one was in adopting the webcasting technology (streaming video); this pattern was found for both the overall usage of webcasting and specific usage of 1) news and features and 2) local tourism content (also see Lin, 2008). Perceived technology fluidity of online radio – the ability to "search, download, store, play back and share" contents in different forms – was also found to predict online radio adoption, in addition to positive adoption beliefs and attitudes (Lin, 2009, p. 890). Using this theory, Fotis (2015) argued that social media such as Facebook represent a fluid medium, due to offers of a variety of communication modalities (e.g., text, hyperlinks, images/ photos, video, "likes" and "shares") for its users to enjoy the technology-interaction experience. A recent study also found that technology fluidity played an important role in adopting circumvention tools designed to bypass online censorship in China (Mou, Wu, & Atkin, 2014).

Fluidity is conceptually similar to some other technology use constructs such as modality interactivity. Modality interactivity refers to the "various methods of interaction offered by the interface, such as clicking, scrolling, dragging, and hovering" (Sundar, Jia, Waddell, & Huang, 2015, p. 55). From a usability perspective, modality interactivity refers to how a technology affords users the ability to manipulate objects on a medium, stimulate their movements in a variety of ways, and expand their perceptual bandwidth (Sundar, 2007). Past research has shown

that modality interactivity enhanced fun and sense of control—both as flow dimensions—in user engagement with and favorable attitudes toward an e-commerce website (Sundar et al., 2015; Xu & Sundar, 2014). While modality interactivity focuses more on concrete affordances and usability aspects of the medium, fluidity anchors more on the extent which users can exploit these affordances to complete their tasks, and the overall "smooth" experience through interacting with the medium. Therefore, although the concept of interactivity has been examined in the context of flow experience, it is theoretically distinct to study the effect of fluidity as a new construct in relation to flow state.

The theory of technology fluidity is also uniquely suited for studying consumer behavior in a digital media and online shopping context. When consumers become shoppers online, they are also interacting with digital technology. Advertising on a social media venue needs to be integrated as part of the web-surfing experiences to enable a fluid interface with multimedia modalities inherent to a social media platform. For instance, according to a consumer panel study, when social media ads are embedded seamlessly into the host website, they can lead a user to believe that these ads are newsfeeds posted by a friend (Love, 2015) and perceive the fluidity of their interaction with website as intact. On the contrary, if the newsfeed ad appears to be abruptly different from regular newsfeed posts, then the perceived fluidity of the social media platform could be impaired.

2.4 The FCB Grid: Product Type and Involvement

2.4.1 Product Type

Based on the classic Foote, Cone and Belding (FCB) scale, Ratchford (1987) proposed categorizing products with two dimensions – the level of involvement that ranges from high to low – and a continuum that encompasses an array of think and feel products. The "Think/Feel"

product distinction is portrayed as a dimension orthogonal to high/low product involvement, which forms a 2 by 2 matrix. Products and services can be classified using this matrix, according to a) whether the purchase decision-making is influenced by cognitive (thinking) versus affective (feeling) information processing and b) whether the product or service is associated with high or low involvement level and (Claeys, Swinnen, & Van den Abeele, 1995).

"Think" products are bought mainly for utilitarian or cognitive reasons (e.g., to solve a problem), whereas "feel" products are purchased primarily to fulfill emotional or value-expressive needs (e.g., ego gratification, social acceptance, entertainment) (Fennell, 1978; Mitchell, 1981). Evaluations of "think" products are analytical and logical, dependent on utilitarian functions, inherent product features and perceived usefulness. Consumers usually use rational decision-making criteria when selecting and purchasing them (Jiang, Chan, Tan, & Chua, 2010). On the contrary, evaluations of "feel" products are synthetic and intuitive, based on image and holistic judgements (Ratchford, 1987), and consumers' heterogeneous needs and preferences (Jiang et al., 2010). "Think" products involve more attention to functional performances and objective product qualities, while "feel" products dictate more attention to subjective meanings and intangible product attributes (Park & Young, 1983).

There are other equivalent terms to represent "think/feel" product types. For instance, Park and Young (1986) conceptualized cognitive involvement and affective involvement to distinguish between rational and emotional aspects of consumer behavior. Hirschman and Holbrook (1982) pointed out the difference between instrumental and hedonic consumption motivations – where products could be categorized as "utilitarian" or "hedonic" goods – based on relative motives their specific features serve to satisfy (Dhar & Wertenbroch, 2000; Lim & Ang, 2008; Strahilevitz & Myers, 1998). Other scholars categorized products as "functional" or

"value-expressive," which are respectively related to consumers' cognitive and affective motives of purchase (Kim et al., 2017).

One should also note the continuous nature of the "think/feel" dimension; even though a product can be capable of simultaneously eliciting both emotional and rational responses, it is the relative amount of "think" or "feel" characteristics that defines the product type (Chaudhuri, 1993). Ratchford (1987) noted that "while think and feel are separate dimensions, they can, for parsimony, be combined into a single scale, which measures the relative amount of each which is present in a given purchase decision (p. 26)." Measuring "think" and "feel" on a single scale was deemed helpful to get "a baseline estimate of the amount of rational versus emotional decision-making which was likely for a wide variety of products (p. 36)."

2.4.2 Product Involvement

Ratchford (1987) maintained that involvement implies attention to something because it is somehow relevant or important. According to Sherif and Cantril (1947), a person is involved with an object when it is in the person's ego domain. Lastovicka and Gardner (1979) noted that involvement was a multi-dimensional concept constituted of familiarity, commitment and normative importance. Laurent and Kapferer (1985) as well as Kapferer and Laurent (1985) proposed a product involvement profile with five facets – interest, pleasure, sign value, risk importance and risk probability – suggesting that involvement may be a collection of varying profiles scoring differently on multiple continuums (also see Kapferer & Laurent, 1993).

Product involvement refers to a motivational state influenced by perceptions of the enduring personal relevance of the object based on inherent needs, values, and interests (Day, Stafford, & Camacho, 1995; Zaichkowsky, 1994). Cilingir and Basfirinci (2014) defined product involvement as "an ongoing commitment on the part of the consumer with regard to

thoughts, feelings, values, and behavioral response to a product category" to "reflect a personal phenomenon that expresses the consumer's beliefs and feelings about an object in a specific situation" (p. 289). Laurent and Kapferer's work (1985) posited that consumer involvement with products could stem from different antecedents such as importance (personal meaning), risk importance and probability, product's pleasure value, symbolic value, and more.

The current study will adopt the FCB grid to operationalize involvement level for two reasons: 1) FCB provides a parsimonious framework for examining involvement level as a main factor (Jain & Srinivasan, 1990); and 2) FCB incorporates involvement level with product type under the same theoretical framework. The following discussion will review the relationship between product type and product involvement level.

2.4.3 Relationship between Type and Involvement

The original FCB grid did not specifically explain the relationship between the two dimensions– product type and involvement level; this has ignited considerable disagreement among scholars. For instance, while Ratchford (1987) treated the two dimensions as orthogonal and non-relate, other researchers thought otherwise. -Park and Mittal (1985) maintained that think/feel and involvement are linked; if a product is high in thinking or high in feeling (or both), it will be perceived as high in involvement level. Similarly, Vaughn (1986) suggested that involvement may be a higher-order theoretical construct, which encompasses both emotional and rational modes of processing. Buck, Chaudhuri, Georgson, and Kowta (1995) proposed the ARI model, depicting the relationship between affect, reason and involvement with objects or messages. They supported a unified conceptualization for product involvement type and level, with high involvement level as the simultaneous occurrence of affective involvement (syncretic processing) and cognitive involvement (analytic processing). By contrast, Rossiter, Percy and

Donovan (1991) viewed involvement level as a distinct dimension in the grid from the think/feel aspects, but recognized the correlation between these constructs. Jain and Srinivasan (1990) compared different measurements of product involvement with empirical data, using college students; their results found that these scales had unique components and also overlapped with each other in different aspects.

Ratchford (1987) summarily pointed out that the nature of the relationship between think, feel and involvement still needs further empirical clarification. Ratchford (1987) also mentioned a possible cause of methodology artifacts: when the "think" versus "feel" types was each gauged on separate scales instead of bi-polar scales, the "think" factor tended to load on the same factor with involvement, which suggests that high "think" products tend to be high-involvement products. As Claeys et al. (1995) noted, "although potentially correlated with involvement, the construct of 'think/feel' offers a separate and intuitively appealing perspective for product classification" (p. 6). To better understand the interrelated nature of these two related constructs, the current study will treat them as orthogonal dimensions.

2.5 Sales Promotion

Sales promotion is defined as "a direct inducement that offers an extra value or incentive for the product to the sales force, distributors, or the final consumer with the primary objective of creating an immediate sale" (Shi, Cheung, & Prendergast, 2005, p. 471). It involves "a temporary and tangible modification of supply" (Shi et al., 2005, p. 471) and exerts the strongest impact on short-term consumption among the strategies included in the marketing mix, i.e., product, price, place and promotion (Laroche, Pons, Zgolli, Cervellon, & Kim, 2003). Incentives facilitate consumer processing of brand information contained in an ad. Macinnis, Moorman and

Jaworski (1991) argued that the greater the incentive that consumers receive from an ad, the higher level of brand information processing that may be engaged from the ad.

Customers are interested in tangible benefits and may focus more on messages that include financial benefits or incentives (Hoffman & Novak, 1996). A promotion offers an immediate economic incentive to buy a product (Oliver & Shor, 2003). Sales promotion strategy – including issuing coupons and discounts – has long been used by companies and advertisers to enhance audience interest in advertisements (Rettie & Brum, 2001) as well as increase brand preferences, brand sales and purchase satisfaction (Compeau & Grewal, 1998; Darke & Dahl, 2003; Schultz & Block, 2014). Promotion-offer messages provided by online retailers are found to boost the brand image (Faryabi, Sadeghzadeh, & Saed, 2012), enhance the perceived value of the product (Park & Lennon, 2009), and facilitate consumer purchases (Oliver & Shor, 2003) in online shopping and online advertising literature.

However, as of this writing, research that examines sales-promotion strategy incorporated in newsfeed ads remains lacking. This study will be among the first to explore how consumers respond to newsfeed ads that are posted with or without a coupon offer. The inclusion of a coupon offer in the newsfeed ad post makes the advertiser's promotional intent salient to users, which goes against the original intent of "native" nature of newsfeed advertising. This study intends to examine the possible ramifications resulting from the discrepant practice of creating a "native" newsfeed post with a sales promotion offer highlighting its persuasive nature.

Following a general overview of relevant theories and concepts, the next chapter will present a series of hypotheses and research question of the current study. Specific literature will be reviewed in detail to support these predictions.

CHAPTER 3: HYPOTHESES AND RESEARCH QUESTIONS

3.1 Relationships between Flow Dimensions

As a central concept of the current study, it is important to delineate the inter-relationship between the two flow dimensions: sense of control and immersion (concentration and enjoyment). Past research has failed to reach a consensus as to whether sense of control is an antecedent or outcome variable of flow experience (Ghani, 1995; Hoffman & Novak, 2009; Novak et al., 2000). Consistent with Csikszentmihalyi and Csikszentmihalyi's (1998) conceptualization, many scholars believe that a sense of being in control is a dimension of flow (e.g., Guo et al., 2009). For example, Agarwal and Karahanna (2000) and Huang (2006) treated sense of control as a contributor to a higher-order flow construct. Ghani (1995) as well as Ghani and Deshpande (1994) considered sense of control to be an important antecedent of flow (measured as concentration and enjoyment) in human-computer interaction, contingent on the balance between a user's skill and challenge. Having a sense of control could sustain attention and facilitates flow; when a user perceives a loss of control, then flow is interrupted and online activity could come to an abrupt stop (Pelet et al., 2017).

By contrast, Chen et al. (2000) reported that while concentration is treated as the threshold condition or start of flow, sense of control is considered a dimension that reflects the flow experience; enjoyment is viewed as a product of flow. These authors further identified sense of control as symptoms *after* entering the flow state – a state after the "antecedents" (e.g., matched skills and challenges) and "threshold condition" of flow (merging of activity and awareness, concentration), and before the "product" (autotelic enjoyment) of flow. In other words, when a person is continuously involved in and concentrated on an activity well, the individual may experience a sense of total control over the situation (Chen et al., 2000). Other

scholars were not consistent on this question. For example, Hoffman and Novak's (1996, 2009) models treated sense of control as a *consequence* of flow, yet the same concept was considered as an *antecedent* of flow in other work (Novak et al., 2000).

However, most scholars agree that these dimensions of flow are conceptually and empirically related to each other (Novak et al., 2009; Webster et al., 1993). By implication, as the primary task of interacting with a social media platform is to read the newsfeeds and processing newsfeed ads is a secondary activity, the extent to which the newsfeed ad interrupts the primary task may make a difference in how users react to the ads themselves. Thus, if a newsfeed ad does not disrupt a user's primary social-media use task and the user feels in control of reading his/her newsfeeds, then she/he may pay more attention to the ad and develop positive affective responses toward the ad. This assumption then supports the idea that sense of control acts an antecedent to immersion. Thus, the current study will also test the alternative model, where sense of control is treated as a result of immersion. A research hypothesis is proposed to test this assumption that a positive relationship exists between these two flow constructs as follows:

H1: Immersion with the newsfeed ad will be positively related to sense of control.

3.2 Technology Design and Flow

While the concept of flow emphasizes the content-interface experiences with the medium, the concept of fluidity focuses more on the interaction with the technical/design features of a media technology. Technical/design features of the interface have been found to affect flow in past research. A poorly designed website could disrupt the fluid interaction between the user and the webpage interface because it irritates the user and demands excessive cognitive efforts (Martins et al., 2019). Finneran and Zhang (2005) warned that technology is

more an “artifact” (tool or toy) than an “activity,” so the technology use behavior should be studied in the context of a specific user task or goal. Different artifact characteristics could be examined and compared to see how they each influences flow (Finneran & Zhang, 2005).

The connection between technological factors and flow has been explored in the literature. Nel and colleagues (1999) found that as users’ overall ratings for an individual website grew, their perceived flow derived from interacting with the site – measured by sense of control, attention, curiosity and intrinsic interest– also increased accordingly. Hoffman and Novak (1996, 2000) found that interactivity and media richness both enhanced flow experience in hypermedia computer-mediated environment. Guru and Nah (2001) applied media richness theory and reported its positive impact on flow. Skadberg and Kimmel (2004) proposed a flow model that contained the web page design as an antecedent to achieving a satisfactory flow experience. Specifically, attractiveness and interactivity of the web page design was found to influence perceived telepresence, which further led to enhanced flow experience. Martins et al. (2019) found that design quality of the brand website promoted in smartphone advertisements – being attractive, proper fonts and colors, multimedia features – positively influenced flow experience with the website.

van den Broeck et al. (2017) argued that when newsfeed ads, as in-stream served ads, impeded the goal of Facebook users, it would be accepted less by users. Respondents intended to avoid newsfeed advertising even more than sidebar display advertising, due to the former’s disruptive placement in the content flow of the Facebook homepage (Van den Broeck et al., 2018). By contrast, when users perceive their interaction with a technology to be fluid and without disruptions, they should be more likely to experience a greater level of flow with the newsfeed ad. These empirical findings suggest that technology factors on a platform are an

indispensable correlate when studying the flow experience with advertising on that platform. To validate this assumption, a hypothesis is postulated below to verify the relationship between technology fluidity and flow.

H2a-b: Perceived fluidity of the Facebook use experience will be positively related to a) sense of control and b) immersion with the ad.

Based on past studies, flow caused by web design features (e.g., interactivity, telepresence, complexity, novelty) could further influence consumer responses such as attitude toward the brand and the brand website (Chang & Wang, 2008; Luna et al., 2002; van Noort, Voorveld, & van Reijmersdal, 2012), behavioral intentions to use/visit the website again (Chang & Wang, 2008; Koufaris, 2002; Hoffman & Novak, 1996; van Noort et al., 2012) and brand purchase intentions (Huang, 2012; Jiang et al., 2010; Van Noort et al., 2012). To further validate the direct link between technology factors and brand related attitude and intention, the following hypotheses are posited:

H3a-b: Perceived fluidity of Facebook use experience will be positively related to a) attitude toward the brand and b) purchase intention.

3.3 Product Type, Flow and Advertising Effectiveness

Extant research has presented limited evidence with regard to the relationship between product type and flow. Senecal, Gharbi, and Nantel (2002) has examined the influences of different aspects of flow (enjoyment, challenge, sense of control, and concentration) on utilitarian shopping value (purchasing for the product's functions) and hedonic shopping value (purchasing for fun or affective goals) online. Undergraduate participants were asked to shop online for a CD player, and complete a survey questionnaire assessing their experience. Results

showed that enjoyment, concentration, and challenge all positively predicted hedonic shopping value, but none of the four aspects of flow predicted utilitarian shopping value.

Huang (2003) found that while focused attention was associated with evaluations of utilitarian performance of a website, sense of control is more conducive to hedonic than utilitarian performance evaluations. As suggested in these previous studies, it seems that flow may be more relevant to hedonic motivation or evaluation than to functional motivation or evaluation of an object. Specifically, Argyris, Muqaddam and Liang (2020) noted a theoretical linkage between flow and the positive affects expected to gain from consuming hedonic products, as both were anchored on the "enjoyment" aspect of online shopping experience. The desired affective state of flow should facilitate the processing of and learning about a "feel" product that is anticipated to bring emotional value, more so than a think product. It is therefore logical to assume that a feel-type product may elicit higher level of sense of control and immersion than a think-type product, as raised in the following hypothesis:

H4a-b: A "feel" product type will lead to a higher a) sense of control and b) immersion with the ad than a "think" product type.

As Mittal (1989) maintained, consumers tend to pay more attention to and elaborate more on information about functional products than for expressive products. More extensive brand comparisons are made and more brand features are examined for functional products than for expressive products. On the contrary, Drossos and colleagues (2013) studied the effectiveness of mobile text-message advertising, which has limited length in conveying detailed information needed for promoting "think" products. When consumers perceive a product that necessitates high cognitive involvement, they tend to form negative attitude toward the stimulus mobile ad; when they find a product that requires high affective involvement, their attitude towards the mobile ad tends to be more positive. Given that high cognitive involvement products stimulate

more searching and cognitive effort, text-messaging ads would demonstrate less effect, as they don't provide users sufficient resources to evaluate the product. On the contrary, purchase decision-making for high affective involvement products is often superficial and peripheral; it is thus easier for text-messaging ads to elicit positive emotions about "feel" products just enough to form favorable impressions (Drossos et al., 2013).

In a follow-up study, Drossos et al. (2014) also found that purchase intention toward the mobile text ad was higher for low-cognitive products than for high-cognitive products. However, there was no difference in purchase intention for high versus low affective products. Dahlén and Bergendahl (2001) examined banner ads for their effectiveness on functional versus expressive products. They argued that banner ads are a type of passive advertising, containing limited information about the product; users are exposed to these ads without active solicitation. Therefore, they reasoned that brand attitude will be more favorable toward banner ads for expressive products than for functional products.

Relative to mobile text advertising, newsfeed advertising on Facebook also provides limited information about the brand or product. A typical newsfeed ad features a snapshot image and a couple lines of texts, with the aim of appealing to the users to click and redirect them to seek more brand information. Hence, the newsfeed advertising format may evoke more positive attitudes toward "feel" products than "think" products, owing to its abbreviated format that offers limited brand or product information to motivate more in-depth elaborations for functional features of the advertised product.

An alternative explanation for this ad avoidance or ad seeking behavior could be drawn from the perspective of user schema on social media use. People typically tend to post content with symbolic meaning on social media, according to Kim, Lee and Chung (2017). These

authors also indicated that a native ad promoting a self-expressive product (sneakers) was seen as more congruent with and thus more relevant to the social media platform (Instagram) – with which a user interacts – than a functional product (batteries). This perceived congruence was also found to further increase positive attitude toward the brand and purchase intention toward self-expressive products. To further verify the impact of product type on attitude and purchase intention in the current study context, the following hypotheses are proposed:

H5a-b: A "feel" product type will lead to a) more positive attitude toward the brand and b) higher purchase intention than a "think" product type.

3.4 Product Involvement, Flow and Advertising Effectiveness

As a key variable in message processing models, consumer involvement with a product was found to exert a positive effect on motivation and cognitive efforts to process advertising messages (Chang, 2004; Cilingir & Basfirinci, 2014; Gordon, McKeage, & Fox, 1998; Laczniak, Muehling, & Grossbart, 1989), elaboration on the product information in advertising (Celsi & Olson, 1988; Petty, Cacioppo, & Schumann, 1983), and complex decision processes (Gordon et al., 1998). Advertising is adept to have more relevance, when the product is personally important (Mitchell, 1979). Purchasing decisions for low involvement products tend to be habitual, whereas purchasing decisions for high involvement products requires planning via a more formal search and evaluation process (Bennett, Härtel, & McColl-Kennedy, 2005; Bloch, Sherrell, & Ridgway, 1986). The dual process models – elaboration likelihood model (or ELM) (Petty & Cacioppo, 1986) and heuristic-systematic model (or HSM) (Chaiken, 1980) – specify two different routes of information processing: central vs. peripheral in the ELM, or heuristic vs. systematic in the HSM. On the central/systematic processing route, an individual is more likely to elaborate on the message with strong motivation and ability to process the information. By comparison, on the peripheral/heuristic route, an individual is less likely to elaborate on the

message, due to a lack of motivation or ability to process the information (Chaiken, 1980; Petty & Cacioppo, 1986).

Accordingly, numerous studies have substantiated that high product involvement motivates individual's processing of a persuasive message and therefore is associated with the central/systematic processing route. Low product involvement, on the other hand, is more likely to trigger the peripheral/heuristic route, due to low perceived personal relevance with the product (Petty et al., 1983; Petty, Cacioppo, & Heesacker, 1981). Potential consumers may take on different routes of processing a persuasive message. When involvement with the product is high, people will focus more on the message argument/information about the brand/ product and use logic and reasoning to evaluate the brand message; when involvement with the product is low, people will be more likely to form their evaluation based on information not central to the brand message (e.g., attractiveness of the source, emotional appeal or aesthetic design of the message) (Chaiken, 1980; Cilingir & Basfirinci, 2014; Prendergast, Tsang, & Chan, 2010; Petty et al., 1981).

As a result of heightened relevance, individuals with higher product involvement will also allocate more attention to advertising stimuli and spend more time processing ad messages, compared to those with low product involvement (Celsi & Olson, 1988). Koufaris (2002) found that higher product involvement led to a more positive flow experience in online shopping – encompassing enjoyment and concentration – due to increased interest in the product. But this was not true of perceived control with the website. Yoo, Kim, and Stout's (2004) experiment revealed both main effects and moderation effects – between an individual's product involvement and use of animation features – on a news website' banner advertising effectiveness for books. Specifically, they found that self-reported product involvement (i.e., books) enhanced

attention to the ad. Cowley and Barron (2008) argued that users found an ad less entertaining, if they were not involved with the product. Based on the theoretical assumptions discussed above, the following hypothesis will test the effects of product involvement on immersion with a newsfeed ad:

H6: High involvement product will lead to higher immersion with the newsfeed ad than low involvement product.

In addition, due to a lack of empirical work in the area, a research question is raised regarding the potential effect of product involvement on sense of control:

RQ1: Will high involvement product lead to higher sense of control with the newsfeed ad than low involvement product?

Furthermore, as suggested by Mitchell (1981), when an individual processes an ad for the purpose of evaluating the brand, s/he is involved in brand processing route and the ad may have a strong impact on his/her evaluation of the brand; when an individual's attention is paid to an ad—but not for the purpose of assessing the brand – then s/he is engaged in non-brand processing route (Mitchell, 1981). Under a non-brand processing route, a consumer may find the ad to be entertaining and aesthetically pleasant, without actually being influenced in his/her attitude toward the brand (Laczniak et al., 1989).

Individuals that have a high involvement level with a product may engage in the brand processing route in order to evaluate the brand, whereas a low product involvement is more likely associated with a non-brand processing route. Hence, attitude toward the brand is more subject to the ad for a high involvement product than for a low involvement product. As Mou, Zhu, and Benyoucef (2019) noted, "when product involvement is high, consumers are more likely to regard a commodity as a good product. This commodity will provide the personal

pleasure, excitement, and status desired by consumers. Thus, consumers will have a higher level of purchase intention for this product" (p. 5).

Empirically, product involvement has been shown to promote product searches (Bennett et al., 2005) and increased product purchases (Andrews, Durvasula, & Akhter, 1990). Cole and Greer's (2013) experiment reported that those having a high involvement with the stimulus product (i.e., home theatre system) had more positive attitude toward the product and higher purchase intention – after reading a promotional article on a magazine – compared to those having a low involvement. Similarly, Te'eni-Harari, Lehman-Wilzig, and Lampert (2009) found that individual's involvement level with the product (i.e., chocolate) positively influenced his/her attitude toward the brand and purchase intention after exposure to a print ad. Lin, Chen, and Hung (2011) found that product involvement level had a positive influence on brand attachment for bicycles; product involvement also had both a direct and indirect influence on repurchase intention through brand attachment.

van den Broeck et al.'s (2017) scenario-based factorial survey examined participant acceptance of Facebook ads in different placements (sidebar ads vs. newsfeed ads). They discovered that when encountering low-involvement products, sidebar ads were better accepted than newsfeed ads. But when encountering high-involvement products, participants accepted more newsfeed ads than sidebar ads. In other words, in-stream newsfeed ads were only found effective in influencing attitude toward the brand and purchase intention when consumers' product involvement was high, since greater cognitive elaboration was needed for newsfeed ads than banner ads (Becker-Olsen, 2003). In a subsequent experiment, Van den Broeck et al. (2018) identified an effect of individual-level product involvement on ad avoidance of newsfeed advertising versus sidebar display advertising. They further reported that similar patterns

reemerged; high product involvement was related to higher acceptance of newsfeed ads as well as lower ad avoidance intention and more favorable response toward the ad.

On the contrary, based on Chaiken's dual-process model, Drossos et al. (2014) argued that highly involved consumers are motivated to allocate substantial cognitive resources to process a message and evaluate properties of the advertised product. Since mobile text ads are limited in terms of the information they can convey, this will result in an imbalance between consumer-required resources for decision-making and available resources provided in such ads. Consistently, they found that mobile text ads actually generated higher purchase intention for low-involvement products than for high involvement products (Drossos et al., 2014).

Considering the similarly limited content presentation of a static newsfeed ad in providing sufficient information resources for decision-making, an ad for a high involvement product may also generate less positive attitudes and lower purchase intentions than an ad for a low involvement product. Owing to inconsistent empirical results evidenced in the literature thus far, the following research questions are proposed to further explore the influence of product involvement on newsfeed ad effectiveness:

RQ2a-b: Will high-involvement product induce a) more positive attitude toward the brand and b) higher purchase intention than a low-involvement product?

3.5 Sales Promotion and Advertising Effects

Even though using incentives in digital marketing is quite common, few studies have investigated how promotional offers may affect flow experience in online advertising. Most research on the effects of promotional offers on advertising adopted the advertising value framework (Ducoffe, 1995; Ducoff, 1996). Advertising value refers to "a subjective evaluation of the relative worth or utility of advertising to consumers (Ducoffe, 1995, p. 1)." This body of

research also investigates economic incentives (e.g., discount offer) as a factor in determining advertising value (Arora & Agarwal, 2019; Brackett & Carr, 2001; Kim & Han, 2014), which suggests that the ability to receive sales promotions is perceived by consumers as a value provided by advertising.

Kim and Han (2014) studied the relationships among perceived mobile advertising incentive value, flow (defined as concentration and time distortion), and purchase intention, using a consumer survey panel in South Korea. They identified a marginally positive impact ($p < .10$) from the use of sales discounts on flow with mobile advertising. Their findings also found that customers self-reported paying more attention to an advertising message that contains financial benefits. Martins et al.'s (2019) survey revealed that when consumers found smartphone advertisements providing more incentive value, they would experience higher flow (sense of control on purchasing and concentration) when processing the ad. They also found that incentive was the strongest predictor of flow, dwarfing other factors such as credibility, entertainment, informativeness, and irritation.

Following the same logic, the current study assumes that a newsfeed ad containing a sales promotion offer may attract more attention to the ad and increase consumer enjoyment when engaging with the ad content. What remains unclear is whether a newsfeed ad that offers a sales promotion incentive will influence sense of control. Therefore, a hypothesis and a research question are both constructed to test the effect of sales promotion offers on flow with the newsfeed ad:

H7: Participants in the sales promotion offer condition will have higher immersion with the newsfeed ad than those in the no-offer condition.

RQ3: Will participants in the sales promotion offer condition have higher sense of control with the newsfeed ad than those in the no-offer condition?

Sales promotions may also enhance consumers' brand perceptions and behavioral intentions (Shi et al., 2005) to have an immediate impact on brand sales, as exhibited in previous literature (Gupta, 1988). A price promotion can be seen as an informational source to help consumers overcome uncertainties with a previously unheard brand (Drossos et al., 2013). Aydin's (2018) survey found that inclusion of discount offers increased purchase intention for Facebook advertisements, as consumers were eager to obtain such financial benefits to fulfill their needs. Faryabi et al. (2012) conducted a survey on two mobile phone brands. They found that the more price discounts were offered (based on self-reported data) by an online store, the more consumers developed a positive image for the online store that promotes the brand; positive online store image further enhanced brand purchase intention.

Santini, Sampaio, Perin, and Vieira (2015) conducted a within-subject lab experiment with a college student sample and found that an ad including a discount offer generated a higher purchase intention for a laptop than an ad without such an offer. Similarly, according to Ünal, Ercis, and Keser's (2011) survey, sales discount promoted through mobile advertising positively affected consumer purchase intention. In van Doorn and Hoekstra's (2013) experiment, they manipulated the presence of discount (10% discount vs. no discount) to examine the effects of a discount on purchase intention; yet no main effect from discount offers was found.

Based on the theory , it is logical to posit that sales incentives may promote a more positive attitude toward the brand and purchase intention. Therefore, the following hypotheses are offered regarding these potential theoretical relationships in the newsfeed advertising context:

H8a-b: Participants in the sales promotion offer condition will have a) more positive attitude toward the brand and b) higher purchase intention than those in the no- offer condition.

3.6 Flow, Attitude and Purchase Intention

The final set of hypotheses and research questions will address associations between flow and ad effectiveness measures, which has been more frequently studied in the literature. Past studies have found that a greater sense of control over the Internet environment brings more positive experience with Internet use (Ghani et al., 1991; Jiang, 2010; Novak et al., 2000). Krouwer et al.'s (2019) semi-structured interviews found that mobile users did not mind native advertisements in a phone app, as long as they felt that they were in control and were able to decide whether they would click/read it or not. In fact, these mobile phone users reported having a greater sense of control over native ads than banner ads.

Ozkara, Ozmen and Kim's (2017) survey reported that sense of control has positive effects on purchase intention on an online shopping website. Domina, Lee, and MacGillivray (2012) also found a positive impact of sense of control on purchase intention toward virtual goods. But Bridges and Florsheim (2008) failed to find such an influence with online purchases. The results for a study on making unplanned purchase (e.g., Koufaris, 2002) were consistent with Bridges and Florsheim's (2008) non-significant findings. The following research question is formulated to further explore the relationship between sense of control when encountering the newsfeed ad and attitude toward the brand.

RQ4a-b: Will sense of control be positively related to a) attitude toward the brand and b) purchase intention?

Turning to the immersion factor of flow, Luna, Peracchio and de Juan (2003) constructed a process model on shopping website navigation, utilizing multiple, cross-cultural population samples. They found that the effect of focused attention was positively related to attitude toward the site. Similarly, Xia and Sudharshan's (2002) findings showed that when interruptions limited consumer concentration, their satisfaction with online shopping was also reduced.

Ettis (2017) showed that enjoyment and concentration had direct effects on purchase intention and revisiting intention to an online store, in addition to mediating the effect of website characteristics (online store atmospheric colors) on these intention variables. Huang (2012) surveyed consumers' responses toward buying virtual goods on Facebook. The survey identified a significant positive association between flow (operationalized as absorption, arousal and enjoyment) and purchase intention on Facebook. van Noort et al. (2012) suggested that flow experience in a specific brand website mediated the influence of website feature (interactivity) on attitude toward the brand and purchase intention.

Lee and Chen's (2010) study, however, found no significant effect of concentration on purchasing intention. Similarly, Domina et al. (2012) and Koufaris (2002) were unable to identify significant effects of concentration on purchase intention for virtual products or unplanned purchases. In another survey, no significant effects of concentration on online purchase intention were identified on a website either (Ozkara et al., 2017). Hence, concentration on the newsfeed ad may enhance one's attitude toward the advertised brand, but not necessarily behavioral intention for making a purchase.

To further verify these theoretical links between ad immersion and attitude toward the brand, a hypothesis is proposed below:

H9: Immersion with the newsfeed ad will be positively related to attitude toward the brand.

In addition, considering the inconsistent findings reported thus far, a research question is raised to further investigate the relationship between ad immersion and purchase intention:

RQ5: Will immersion with the newsfeed ad be positively related to purchase intention?

Extant research has verified the theoretical link between attitude toward the brand and purchase intention (e.g., Baek & Morimoto, 2012; Huang, 2012; Koufaris, 2002; van Noort et al.,

2012). Hence, the following hypothesis is posted to further validate such theoretical link in the current study context:

H10: Attitude toward the brand will be positively related to purchase intention.

Chang and Wang (2008) found that interactivity, as a technology factor, improved flow, which further enhanced attitude and intention to use online communication tools (e.g., using instant messages, BBS, blog). In addition, flow experience in a brand website was found to mediate the positive effects of website interactivity on attitude toward the brand and attitude toward the website as well as behavioral intentions for engaging in word-of-mouth activity (to recommend the brand), purchasing the brand and revisiting the website (van Noort et al., 2012). These empirical findings thus suggest a possible mediation role of flow in the connection between website technology features and attitude/behavior variables. Yet most of these studies focused on the context of flow with a website, rather than flow with an advertisement. Likewise, fluidity as a relative new technology interaction concept has not been examined in this line of literature.

In a preliminary study, Xu and Lin (2019) examined the theoretical links of technology fluidity and flow in relation to the effectiveness of newsfeed advertising format. Using a college student sample, their study found that perceived fluidity of Facebook positively influenced information seeking and advertising engagement motivations for using social media, which further enhanced flow experience with newsfeed ads, perceived ad usefulness and attitude toward the product. A later experiment (Xu & Lin, 2020) tested the direct link between fluidity and attitude/behavior variables, but failed to find such an effect of fluidity on either attitude toward the brand or purchase intention. These initial findings hence suggest that technology

fluidity will enhance the user's sense of control with the ad showing in one's newsfeed but may have either a direct or indirect impact on consumes' purchase decision-making.

Based on the theoretical rationale behind Hypothesis 1 (as described earlier), if a newsfeed ad is not deemed to interrupt user control on the primary social-media use, then the user may pay more attention to the ad and develop pleasant affective responses toward it. As such, it is logical to assume that technology fluidity may influence sense of control with the ad, which further leads to immersion (concentration and enjoyment) with the ad. User immersion with newsfeed content will then transfer to attitude toward and inclination for purchasing the brand. To test these theoretical assumptions, the following hypotheses testing the mediation effect of flow are raised:

H11: The effect of perceived fluidity of the Facebook use experience on attitude toward the brand will be mediated through sense of control and immersion, in that order.

H12: The effect of perceived fluidity of the Facebook use experience on purchase intention will be mediated through sense of control and immersion, in that order.

An alternative argument can also be logically made to suggest how an attention-grabbing and aesthetically pleasing newsfeed ad message may be viewed less as an intrusion in the mediated content, and could enhance users' sense of control with their Facebook use activities. This sense of control during interacting with the ad could then further influence their evaluations of the promoted brand. Since scholars have yet to come to a conclusion as to which of the two dimensions of flow may happen first, testing an alternative model by switching the original order of sense of control and immersion in the abovementioned mediation paths could provide a comparison to the two hypothesized models. By testing these models, the study could further

delve into the potential different impacts between the flow dimensions on attitude toward the brand and purchase intention.

Lastly, as past theoretical and empirical work has suggested possible interrelations between product type and product involvement (Buck et al., 1995; Park & Mittal, 1985; Vaughn, 1986), it is important to investigate the interaction effect between them. Moreover, sales promotion may also interact with product involvement to influence how individuals process and accept the advertisement. Heslin and Johnson's (1992) experiment found that incentives significantly enhanced attention time and memory of product descriptions in advertisements for participants with low product involvement, but not for those with high product involvement. Dastidar (2016) found that participants were more prone to purchase an on-sale low-involvement product (shampoo) than an on-sale high-involvement product (apparel). Ndubisi and Moi (2006) also reported that use of price discounts was associated with enhanced product trial for low-involvement products. These results imply that incentives, as a peripherical cue, have less effect on those who are already highly involved with the product category than on those who have low product category involvement. Little existing research has explored the extent to which how these two factors – product involvement and sales promotion – might interact to make a difference in consumer attitude toward newsfeed ads.

Research on product type and sales promotion is even less common, with Li, Yang and Liang's (2015) experiment indicating that price discount was effective in enhancing attitude toward online ads only for functional brands but not for symbolic/hedonic brands. They contend that when viewing ads for symbolic products, consumers focus more on the extrinsic benefits that they may bring and pay less attention to product price. A price discount may signal low quality and value for symbolic products, more so than functional products.

3.7 Control Variable: Product Familiarity

Product familiarity involves representations of a consumer's prior experiences with a certain product, obtained through learning, first-hand experiences, media and word of mouth (Marks & Olson, 1981). As past research demonstrated, consumer attention to ads (Trel, 2017) as well as their attitude toward the brand and purchase intention (Chang et al., 2012; Cilingir & Basfirinci, 2014) could be positively influenced by their product familiarity level. Familiar products trigger the activation of existing knowledge and prior memory associated with the ads in consumers who were exposed to them; such familiarity could appeal to consumer attention and positively affect their responses toward an ad (Anderson & Jolson, 1980; Marks & Olson, 1981). As such, product familiarity was commonly treated as a control variable in ad effectiveness research (Chang et al., 2012; Cilingir & Basfirinci, 2014). The current study will test the concept of product familiarity as a control variable.

CHAPTER 4: METHOD

4.1 Pre-Test

4.1.1 Sample

A pre-test was conducted to identify a set of products for the stimuli to represent different product types. The study recruited a sample of college students (N = 115) from a general education course at the undergraduate level from a large northeastern university, with prior approval of the university's Institutional Review Board. The study was announced by the course instructor and students who wished to participate in the study were invited to visit the study webpage via a hyperlink provided on the course website (See Appendix I for the information sheet). Participants received extra course credit for their time and effort. The study yielded 105 valid responses, after removing those cases with substantial missing responses or straight-lined response patterns in the data.

4.1.2 Procedure

An online survey link was provided to participants, together with the informed consent form at the beginning. In order to determine the most appropriate products that can be manipulated for product involvement level and type, a total of 33 products were developed based on past literature (Buck et al., 1995; Claeys et al., 1995; Dahlén & Bergendahl, 2001; Drossos et al., 2014; Kim & Sung, 2009; Leroi-Werelds, Streukens, Brady, & Swinnen, 2014; Ratchford, 1987). This product list was shown to study participants. A full list of these products is shown in Appendix 2.

Participants were asked to consider whether a product resembles a "feeling" or "thinking" type. They were also instructed to evaluate whether their product involvement level is high vs.

low. At the end of the survey, participants were directed to a separate link to enter their information to receive course credit.

4.1.3 Measurements

Product Type (Think vs. Feel). The product type was evaluated based on the product's functional performance or emotional or aesthetic appeals, measured with two seven-point semantic differential items (Drolet, Williams, & Lau-Gesk, 2007). The polarized measurement items include a) The decision to buy a brand in this product category is mainly *logical and objective* (coded as 1) or *emotional and subjective* (coded as 7), and b) The decision to buy a brand in this product category is *based mainly on functional facts* (coded as 1) or *based mainly on feeling* (coded 7). The measurement items are worded in a way that a higher score represents a feel product and a lower score indicates a think product.

Product Involvement (High vs. Low). The product involvement level – or the degree to which one perceives the product as important – was measured using Ratchford's FCB scale (1987). These two seven-point semantic differential items include asking participants to evaluate a) the importance of choosing a brand for a product category on a scale ranging from 1 ("a very unimportant decision") to 7 ("a very important decision"), and b) the potential loss associated with making that decision on a scale ranging from 1 ("little to lose if you choose the wrong brand)" to 7 ("a lot to lose if you choose the wrong brand"). The scales are structured so that a higher score indicates higher involvement level with the product.

4.1.4 Results

One-sample t-tests were conducted to identify the products that fall under each of these product categories. The process for classifying product type and involvement type involved comparing the mean values scored for both measures to the mid-point of the scale, which was

"4." If a product scored a mean value on the product-type scale significantly higher or lower than 4, this would classify it as either a "feel" or "think" product, in that order. Similarly, when a product's mean score measured on the product-involvement scale was significantly higher (or lower) than 4, it would be designated as either a "high" or "low" involvement product, respectively. These two screening approaches yielded four products that achieved the best fit for each type of classification: 1) glue: a low involvement/think product; 2) snack: a low involvement/feel product; 3) auto insurance: a high involvement/think product; and 4) women's perfume: a high involvement/ feel product. Table 1 shows the means and standard deviations on the scales of the four selected products.

4.2 Main Study

4.2.1 Research Design

For the main study, a 2 (product type: think vs. feel) by 2 (product involvement: high vs. low) by 2 (sales promotion: no vs. yes) between-subject posttest-only experimental design was used to test the proposed hypotheses and research questions. Participants were randomly assigned to one of the eight study conditions and were asked to evaluate the ad stimulus featuring one of the four products selected in the pre-test.

4.2.2 Study Sample

College students were the target population selected for the current study, as young adults (aged 18-29) represent the largest social media user segment (Pew Research Center, 2019) and are the most important target of online advertising (Maheshwari, 2017). Even though younger people are migrating to newer social media platforms, there is still a noticeable 79% of the 18-29 age group that currently use Facebook (Chen, 2020).

A sample of 365 college students was recruited from a general education course from a large northeastern university, with advance approval of the university's Institutional Review Board. Participants received extra course credit for participation. The study was announced by the course instructor and students who wished to participate in the study were invited to visit the a hyperlink provided on the course website where they could sign up for the study. Participants received extra course credit for their time and effort.

If participants spent less than 15 minutes on the study or straight-lined their answers throughout part of the questionnaire, the responses associated with these cases were excluded from the final data file. Those participants who failed to provide correct answers to the manipulation check questions were also deleted from the data file. The final sample contained 307 participants.

4.2.3 Data Collection Procedure

Participants were asked to arrive at a research lab to complete the research task on a workstation. After logging onto the workstation, an information sheet was displayed at the beginning of the research instrument. Participants were asked to review the information sheet and give their consent by clicking the "Continue" button at the bottom of the page to start engaging the study (see Appendix 1 for the information sheet). Afterwards, the survey system (Qualtrics.com) randomly assigned them to one of the eight study conditions. Participants were then instructed to respond to background questions such as and media use behavior. They were then asked to review and evaluate one of the four ad stimuli, before answering the manipulation check questions. Following that, participants responded to measurement items for the constructs of technology fluidity, sense of control, immersion, attitude toward the brand and purchase intention. Demographic questions were presented at the end.

4.2.4 Experimental Stimulus

Mock ads that emulated the format of Facebook newsfeed ads were created by a graphic designer for the four products selected from the pre-test. Fictitious brand names were used in the study, as past literature suggests that prior familiarity with a brand could confound the effectiveness of online advertising (Danaher & Mullarkey, 2003). Brand names were carefully screened to avoid similarity to existing brands.

Four different mock ads that emulated the format of Facebook newsfeed ad posts represented – a product with consumer involvement of either "high" or "low" level – in combination with a product category of either a "think" or "feel" type. Each ad post contained a different product image but the same copy elements as follows: 1) a disclaimer of "sponsored post;" 2) the sponsor brand's logo; 3) copy narrative, including a static URL, text indicating "Discover [brand name]," and a "Learn More" static button. The sales promotion conditions had the same design for each product, yet added one more piece of discount offer information: "Enjoy 15% Off Now" both in the ad image and the headline.

4.2.5 Manipulation Check

The same measures in the pre-test were used to check the manipulation of product category type and product involvement level in the main study. The manipulation of product type was evaluated based on the product's functional performance or emotional or aesthetic appeals, measured with two seven-point semantic differential item. These measurement items that reflect opposite meanings include a) "The decision to buy a brand in this product category is mainly *logical and objective* (coded as 1) – *emotional and subjective* (coded as 7)," and b) "The decision to buy a brand in this product category is *based mainly on functional facts* (coded 1) – *based mainly on feeling* (coded 7)." The measurement items are worded in such a way that a higher

score represents a "feel" product and a lower score indicates a "think" product. These two items were averaged to form a composite variable for manipulation check.

Product involvement was measured with one item: "Choosing a brand for this product category is…," with choices ranging from 1 ("a very unimportant decision") to 7 ("a very important decision"). The scale is structured so that a higher score indicates higher involvement level with the product.

Participants were also requested to write down what product is being advertised in the Facebook ad that they just saw, with an open-ended question.

Manipulation check on sales promotion condition was measured with a question asking participants to choose one answer from the following choices: The ad that you just reviewed 1) does not contain a discount offer, 2) contains an instant 15% discount offer, 3) contains a 30% discount offer, 4) requires consumers to complete a survey, 5) contains a barcode for in-store purchase, and 6) contains a six-digit coupon code.

4.2.6 Measurement

Facebook Use. Participants were asked to estimate how much time per day they spend on Facebook with an open-ended question to fill in hours and minutes. They were also asked how often they access their Facebook page in a typical week, from "less than once per week (1)" to "throughout the day (8)."

Product Familiarity. Product familiarity was measured as a control variable, with a scale ranging from "not at all familiar (1)" to "extremely familiar (7)" adopted from Darley and Smith (1995).

Technology Fluidity. The measurement items were adapted from combining Facebook activity scale from Yang et al. (2013) and technology fluidity scale from Lin (2004). Perceived

fluidity of Facebook as a social media platform was gauged by the extent to which participants feel that they can easily perform ten interactive tasks and activities while interfacing with Facebook, if they see the mock ad (that they reviewed) in the newsfeed, using a seven-point scale (1= not easy to 7= very easy). The items include: 1) move across text, photo, graphic, audio, and video content formats on newsfeed; 2) surf across news, information and entertainment content on newsfeed; 3) communicate with other people; 4) check Friends' updates and posts; 5) interact with news, information and entertainment content on newsfeed; 6) freely flow from one newsfeed to the next; 7) "like" any items as you wish anytime; 8) post any items as you wish anytime (e.g., status update, photos); 9) share any items as you wish anytime; and 10) leave a comment on any items as you wish anytime."

Flow (sense of control and immersion). Sense of control was measured by adapting Webster et al.'s (1993) four-item measure. Participants were asked to respond to the following statements in relation to the mock newsfeed ad they viewed: "If I am browsing my Facebook newsfeed and spotting this ad, I feel: a) frustrated (1) – not frustrated (7) by having to differentiate the ad from other Facebook posts; b) agitated (1) – calm (7) about seeing the ad posted in newsfeeds; c) not in control (1) – in control (7) of my Facebook browsing flow; d) burdened by (1) – at ease with (7) seeing the ad in my Facebook use." Immersion measures were adapted from Ghani and Deshpande (1994) and Webster et al. (1993) and included eight items (seven-point scales). Four items assess the conceptual dimension of enjoyment: "When I look at the ad posted in my Facebook newsfeeds, I feel that it is: a) uninteresting (1) – interesting (7), b) not eye-catching (1) – eye-catching (7), c) not enjoyable (1) – enjoyable (7), d) dull (1) – exciting (7)." Another four items measure the conceptual dimension of concentration: "When I check out the ad, I feel: a) not drawn to it (1) – drawn to it (7), b) not absorbed (1) – highly

absorbed (7), c) not focused (1) – intensely focused (7), d) not stimulated (1) – very stimulated (7)."

Attitude toward the Brand. This construct was measured with four original items on a seven-point Likert-type scale (1 = strongly disagree to 7 = strongly agree). These items include: The brand in this ad: "is well made," "is what I would enjoy," "is what I would like to purchase," and "is the one that I should purchase." The principal component factor analysis generated one single factor with a high reliability coefficient.

Purchase Intention. Seven original items were constructed to describe purchase intention with different time frames, using a seven-point Likert-type scale (1 = strongly disagree to 7 = strongly agree). These items include: If I am browsing this ad in my Facebook newsfeed, I intend to purchase one or more such product by placing an order: 1) after clicking on the ad, 2) on the same day, 3) in a few days, 4) in a week, 5) in a couple of weeks, 6) in a month, and 7) in a few months.

Demographic Characteristics. Participants' gender, age, ethnicity and annual family income were recorded at the end of the questionnaire. Gender was measured as a dichotomous variable; age was recorded by an open-ended item. Ethnicity was assessed by asking the participants to self-select from the following categories: 1) Caucasian (non-Hispanic), 2) African American (non-Hispanic), 3) Hispanic, 4) Asian, 5) Pacific Islander, 6) Native American, 7) Two or More Races and 8) Other. An ordinal-level item gauged the annual household income, where the respondent chose from the following options: 1) Below $50,000, 2) Below $60,000, 3) Below $70,000, 4) Below $80,000, 5) Below $90,000, 6) Below $100,000 and 7) $100,000 or more.

All measurement items in the main study can be found in Appendix 3.

CHAPTER 5: RESULTS

5.1 Sample Characteristics

The final sample included 52.1% females and 47.6% males; the average age of the sample was 19.34 years old (*SD* = 1.11). Participants' ethnic/racial composition encompassed 65.1 % Caucasians, 6.5% African Americans, 5.9% Hispanics, 16.3% Asians, and 5.9% other or mixed ethnic/racial groups. The median annual household income was $100,000 or more.

In terms of Facebook use frequency, 54.7% of the participants reported checking Facebook at least once a day, whereas 45.3% self-reported checking Facebook less than once every day on average. The average reported Facebook time length was 67 minutes every day (Median = 30, *SD* = 157.31, Skewness = 9.20, Skewness S.E. = 0.14). These results suggest that although college students from which the current sample was drawn may not frequently check Facebook in an active manner, they still spend a considerable time on this platform, on average.

5.2 Validity and Reliability Results

Fluidity. A principal component factor analysis with varimax rotation was conducted to validate the scale dimensions for the ten fluidity items. The original results generated a two-factor solution, with one item ("share any items as you wish anytime") double-loaded on both factors (with both factor loading coefficients larger than .50). After deleting this item, the final results produced a single-factor solution, with a reliability value of .94 (see Table 2). All items were combined to create a composite variable.

Flow (sense of control and immersion). A principal component factor analysis with varimax rotation was conducted to validate the scale dimensions for the flow items. This analysis generated two factors, as expected by the conceptualization. The first four items loaded on the factor of sense of control (reliability value .84). The last eight four items loaded on the factor of immersion(reliability value .94) (see Table 3). Corresponding items for each

conceptual dimension were combined to create two separate composite variables: sense of control and immersion.

Attitude toward the Brand. A principal component factor analysis was conducted to verify the scale dimensions for the four items. The results generated a single-factor solution, with a reliability value of .83 (see Table 4). All items were averaged to form a composite variable.

Purchase Intention. A principal component factor analysis with varimax rotation was conducted to validate the scale dimensions for the seven items. The original results generated a two-factor solution, with the first two items double-loaded on both factors (with both factor loading coefficients larger than .45). After deleting the two items, the final results produced a single-factor solution, with a reliability value of .90 (see Table 5). The remaining items were combined to construct a composite variable.

A confirmatory factor analysis (CFA) using IBM SPSS Amos 20.0 to test the measurement model that constitutes all the variables and their affiliated measurement items was conducted to identify the goodness-of-fit. The results using the maximum likelihood method demonstrated a good model fit for the data: $\chi 2 = 631.07$, $df = 373$, CMIN/DF = 1.69, $p < .001$, CFI = .96, NFI = .92, IFI = .96, TLI = .96, RMSEA = .05. The model fit indices met the cutoff criteria: CMIN/DF lower than 2 (Marsh & Hocevar, 1985), CFI close to .95 and RMSEA close to .06 (Hu & Bentler, 1999).

The composite reliability (CR) of all measures in the CFA model exceeded .79; all the average variance extracted (AVE) exceeded .50, except for attitude toward the brand, which was slightly lower (.49). The CR of each measure was greater than its AVE. Moreover, the maximum shared variance (MSV) of each measure was less than its AVE, and the square root of

AVE of each measure exceeded its inter-construct correlations with the other measures. These CFA results indicated satisfactory convergent and discriminant validity for the measures, based on Fornell and Larcker's (1981) recommendations (see Table 6 for convergent and discriminant validity metrics).

5.3 Manipulation Check

In terms of manipulation check results, products that were identified by participants as belonging to the "think type" scored significantly lower (M = 2.55, SD = 1.48) on the manipulation check questions (indicating greater functionality) than products identified as the "feel" type (indicating higher emotionality) (M = 5.21, SD = 1.31; t (317) = -16.93, $p < .001$), indicating a successful manipulation of product type.

Products representing a high-involvement level also scored significantly higher (M = 4.71, SD = 1.78) on the corresponding measures (indicating greater importance) than products representing a low product-involvement level (indicating lower importance) (M = 3.13, SD = 1.70; t (317) = 8.03, $p < .001$), reflecting a successful manipulation of involvement level.

The four selected products represented the two conceptual dimensions as anticipated: 1) glue (low involvement: M = 2.62, SD = 1.43; think type: M = 2.49, SD = 1.46); 2) snack (low involvement: M = 3.81, SD = 1.81; feel type: M = 5.00, SD = 1.44); 3) car insurance (high involvement: M = 5.43, SD = 1.50; think type: M = 2.60, SD = 1.50); 4) perfume (high involvement: M = 3.98, SD = 1.74; feel type: M = 5.34, SD = 1.21). A review of participant response to the open-ended question indicates that participants accurately recalled the product in the ad post.

The manipulation of sales promotion also succeeded, with participants correctly recalling the presence or absence of a discount offer in the ad, $\chi 2 = 158.02$, $df = 6$, $p < .001$. (All

participants who did not responded to this manipulation question correctly were removed from the final sample).

5.4 Descriptive Statistics

Table 7 shows means and standard deviations of all continuous variables, in addition to zero-order correlations between all of them. Among all the correlations associated with a hypothesis or a research question, only three were nonsignificant. These nonsignificant correlations were between the following variable pairs: 1) fluidity and immersion, 2) fluidity and attitude toward the brand, and 3) fluidity and purchase intention.

All variables were measured on seven-point scales. While means for fluidity (M = 5.51, SD = 1.23) and attitude toward the brand (M = 5.44, SD = 1.11) were high, those for immersion (M = 2.46, SD = 1.17) and purchase intention (M = 2.47, SD = 1.29) were relatively low. Sense of control (M = 3.67, SD = 1.45) landed around the middle of the 7-point scale.

5.5 Hypotheses Testing

A series of ANCOVAs were conducted to test the hypotheses and research questions. The three main factors – product type, product involvement and sales promotion – were entered in all models. The interaction effects of all possible pairs of the three main factors were also examined in all models. Fluidity was incorporated as a covariate for the model on sense of control (Table 8). Both fluidity and sense of control were entered as covariates for the model on immersion (Table 9). All of the independent variables, mentioned above, were included in the model as covariates on attitude toward the brand (Table 10). Finally, all of the above-mentioned variables, including attitude, were tested in the model on purchase intention (Table 11). Familiarity with the product was included as a covariate for all models. Mediation analyses were

conducted using Hayes's *Process Macro* (Model 6 for serial mediation tests) in SPSS (Hayes, 2017, see Table 12).

5.5.1 Immersion and Sense of Control

H1 postulates that immersion will be positively related to sense of control. The immersion ANCOVA model results showed that sense of control was a positive predictor for immersion ($F(1,295) = 8.64$, $p = .004$, partial $\eta^2 = .03$), supporting H1.

5.5.2 Technology Fluidity

H2a and H2b propose that technology fluidity will be positively related to sense of control and immersion. Results suggest that technology fluidity was a positive predictor for sense of control ($F(1,296) = 8.53$, $p = .004$, partial $\eta^2 = .03$), but not for immersion ($F(1,295) = 2.08$, $p = .15$). H2a was thus supported but not H2b.

H3a and H3b maintain that technology fluidity will be positively related to attitude toward the brand and purchase intention. According to the results, fluidity failed to be a significant predictor for attitude toward the brand ($F(1,293) = 2.01$, $p = .16$) or purchase intention ($F(1,292) = 0.02$, $p = .89$). H3a and H3b were not substantiated by the data.

5.5.3 Product Type

H4a and H4b hypothesize that a feel product will lead to a higher sense of control and higher immersion with the newsfeed ad than a think product. Results show that those who saw a newsfeed ad for a feel product reported higher immersion ($M = 2.69$, $SE = 0.10$) than those who saw a newsfeed ad for a think product ($M = 2.32$, $SE = 0.09$), $F(1,295) = 7.56$, $p = .006$, partial $\eta^2 = .03$. However, there was no significant effect of product type on sense of control ($F(1,296) = .34$, $p = .56$). Hence, H4b was validated with the data but not H4a.

H5a and H5b posit that a feel product will lead to more positive attitude toward the brand and higher purchase intention than a think product. Contrary to expectation, results suggest that those in the feel product condition in fact reported lower attitude toward the brand (M = 2.92, SE = 0.08) than those in the think product condition (M = 3.57, SE = 0.07), $F(1,293) = 33.67$, $p < .001$, partial $\eta^2 = .10$. The feel product did not differ from the think product in purchase intention, $F(1,292) = 1.80$, $p = .18$. Hence, neither H5a nor H5b was validated.

5.5.4 Product Involvement

RQ1 inquires whether a high involvement product will lead to a higher sense of control than will a low involvement product. ANCOVA results indicated no significant difference in sense of control for a low involvement product and a high involvement product, $F(1,296) = .58$, $p = .45$.

H6 states that a high involvement product will lead to higher immersion with the newsfeed ad than will a low involvement product. Product involvement level turned out to be a nonsignificant factor for immersion, $F(1,295) = 2.87$, $p = .09$. Hence, H6 was not supported by the data.

RQ2a-b asks whether a high involvement product will induce a more positive attitude toward the brand and higher purchase intention than will a low involvement product. Results suggest that the low involvement condition generated a more positive attitude toward the brand (M = 3.37, SE = 0.08) than the high involvement condition (M = 3.12, SE = 0.07), $F(1,293) = 5.46$, $p = .02$, partial $\eta^2 = .02$. By contrast, the low involvement condition demonstrated lower purchase intention (M = 2.36, SE = 0.11) than the high involvement condition (M = 2.67, SE = 0.09), $F(1,292) = 4.53$, $p = .03$, partial $\eta^2 = .02$, which was opposite to the predicted direction.

5.5.5 Sales Promotion Offer

In terms of the effects of sales promotion, H7 claims that the inclusion of a sales promotion offer will result in higher immersion. Results did not demonstrate a significant impact on immersion ($F(1,295) = 0.05$, $p = .83$), failing to support H7.

RQ3 speculates whether a sales promotion offer will lead to a higher sense of control. Sales promotion failed to be a significant predictor for sense of control ($F(1,296) = 1.42$, $p = .23$).

H8a and H8b posit the effect of a sales promotion offer on attitude toward the brand and purchase intention. Again, the sales promotion condition did not display a significant result for either attitude toward the brand ($F(1,293) = 0.47$, $p = .49$) or purchase intention ($F(1,292) = 0.05$, $p = .82$). H8a-b were thus not substantiated.

5.5.6 Flow, Attitude and Purchase Intention

RQ4a and RQ4b ask whether sense of control with the newsfeed ad will be positively related to attitude toward the brand and purchase intention. Based on the results, sense of control was not a significant predictor of attitude toward the brand ($F(1,293) = 1.84$, $p = .18$), nor purchase intention ($F(1,292) = 2.25$, $p = .14$).

H9 speculates that immersion with the newsfeed ad will be positively related to attitude toward the brand. Immersion turned out to be a significant predictor of attitude toward the brand ($F(1,293) = 99.59$, $p < .001$, partial $\eta^2 = .25$). H9 was thus validated.

RQ5 queries the influences of immersion with the newsfeed ad on purchase intention. Based on the results, immersion was a significant predictor of purchase intention ($F(1,292) = 18.30$, $p < .001$, partial $\eta^2 = .06$).

H10 states that attitude toward the brand will be positively related to purchase intention. As hypothesized, attitude toward the brand significantly predicted purchase intention ($F(1,292) = 4.02$, $p = .046$, partial $\eta^2 = .01$). H10 was therefore supported by the data.

5.5.7 Mediation Effects

H11 proposes that the effect of fluidity on attitude toward the brand is mediated via sense of control and immersion, sequentially. A mediation test was conducted with the *Process Macro* (Model 6, Hayes, 2017). Product familiarity was included as a control variable. Results show that technology fluidity was positively predictive of sense of control with the ad ($\beta = .22$, $SE = 0.06$, $p = .001$), which was in turn predictive of immersion with the ad ($\beta = .12$, $SE = 0.05$, $p = .007$). Immersion was then positively associated with attitude toward the brand ($\beta = .45$, $SE = 0.05$, $p < .001$). The direct effect of fluidity on attitude toward the brand was nonsignificant (95% C. I. [-.01, .17]). The indirect effect through sense of control and immersion sequentially was significant (95% C. I. [.002, .03]). The other two indirect paths: 1) Fluidity -> Sense of Control -> Attitude toward the Brand, and 2) Fluidity -> Immersion -> Attitude toward the Brand were not significant. These findings indicate support for H11.

The alternative model was also tested, where fluidity was presumed to first lead to immersion and then affects sense of control and attitude toward the brand, in that order. Results of the mediation analysis were not significant for testing this hypothesized indirect effect (for mediation results see Table 12).

H12 postulates that the effect of fluidity on purchase intention is mediated via sense of control and immersion, sequentially. Again, the mediation test was conducted with the *Process Macro* (Model 6, Hayes, 2017). Product familiarity was included as a control variable. Results show that technology fluidity was positively predictive of sense of control with the ad ($\beta = .22$,

SE= 0.06, p = .001), which was predictive of immersion with the ad (β = .12, *SE*= 0.05, p = .007). Immersion was then positively associated with purchase intention (β= .38, *SE*= 0.06, p < .001). The direct effect of fluidity on purchase intention was nonsignificant (95% C. I. [-.06, .15]). The indirect effect through sense of control and immersion sequentially was significant (95% C. I. [.002, .02]). The other two indirect paths: 1) Fluidity -> Sense of Control -> Purchase Intention, and 2) Fluidity -> Immersion -> Purchase Intention were not significant. H12 was thus supported.

The alternative model was also tested, where fluidity was presumed to first lead to immersion, which further influences sense of control and purchase intention, in that order. Mediation test results indicate that the indirect effect was not significant (for mediation results see Table 13).

5.5.8 Exploratory Analyses: Interaction Effects

Data analysis also explored possible interaction effects between each pair of main factors on all dependent variables, and two significant interaction effects emerged. First, the interaction effect between product type and sales promotion was significant on attitude toward the product (F(1,293) = 4.34, p = .038, partial η^2 = .02). For a "feel" product, the inclusion of a sales promotion offer led to more positive attitude toward the product than when no offer was provided. By contrast, for a think product, the inclusion of a sales promotion offer dampened attitude toward the product, compared to when no offer was presented (Figure 1).

The interaction effect between product involvement and sales promotion offer was also significant on purchase intention, (F(1,292) = 6.84, p = .009, partial η^2 = .02). For a high involvement product, the inclusion of a sales promotion offer led to higher purchase intention than when such an offer was absent. By comparison, for a low involvement product, the

inclusion of a sales promotion offer resulted in a lower purchase intention than when such an offer was not made available (Figure 2).

CHAPTER 6: DISCUSSION

This study is among the first to consider the effects of users' technology interaction and content interface experience with a social media platform on their response toward newsfeed advertising. Findings highlight the importance of investigating the interrelationships between technology factors, product characteristics and promotional tactics to gain a better understanding of consumers' psychological responses to their interaction with newsfeed advertising in the context of social media use.

6.1 Theoretical & Industry Implications

Since its inception in 2011, Facebook newsfeed ads have become an increasingly popular format for advertisers and marketers, along with similar native-formatted advertising on other social media platforms. Implemented as part of the "organic' or native content, newsfeed ads take advantage of users' newsfeed browsing activity on social media, without the pitfall of exclusion from ad blocking tools (Fulgoni & Lipsman, 2014). Leveraging user data and promotional tools available from social media companies, advertisers can detect consumers' affiliation and interactions with the brand including the brand's own social media account; they can also send tailored messages to the target audience (Fulgoni & Lipsman, 2014).

Moreover, coupled with the platform's affordances, newsfeed advertising has the potential to further disseminate beyond the ad receiver's immediate network via word-of-mouth (Wojdynski, 2016; Lee et al., 2016). On one hand, consumers' acceptance of newsfeed ads is not all satisfactory according to industry reports, albeit their abovementioned strengths as a marketing venue. For instance, over 80% of Facebook users never or seldom clicked on Facebook ads or sponsored content (eMarketer, 2012). On the other hand, empirical studies focusing on this innovative ad form has only been explored with limited theoretical frameworks.

Hence, it is critical to further examine key factors that underscore theoretical explanations for the processing and effectiveness of this ad type.

The current study provides a new perspective in delineating the construct of flow and the underlying dimensions that indicate this psychological state, against a backdrop of a long-lasting debate on the conceptualization and operationalization of this construct. Results support the three sub-dimensions of flow: concentration, enjoyment and sense of control, with the first two loaded on a single factor of immersion. In contrast with some scholar's conceptualization of flow as comprising a dozen indicators in typologies (Chen, Wigand & Nilan, 2000; Luna et al., 2002), others argued that concentration and enjoyment sufficiently form a framework to represent the flow state (Ghani et al., 1991; Ghani & Deshpande, 1994; Lu et al., 2009; Sanchez-Franco, 2006). Even though it may be premature to determine whether these two dimensions (concentration and enjoyment) could fully explain the flow concept, the current study has demonstrated that these two dimensions can be integrated to represent a desired flow experience in the context of native advertising processing.

By linking the Technology Fluidity Theory to the Flow concept, this study establishes a relationship between user-technology interaction and user-content interface by discovering a potential impact of fluidity on flow. While this finding is consistent with past literature about technology features and user experience (Finneran & Zhang, 2005; Hoffman & Novak, 1996, 2000; Martins et al., 2019; Skadberg & Kimmel, 2004), it makes a contribution to the literature by theorizing and validating the relationship between the technology fluidity construct (focusing on user interaction with a technology platform) and the flow construct (focusing on user control on and immersion with the technology content) central in the context of newsfeed advertising.

This study has further extended the application of both the Technology Fluidity Theory and Flow Theory. In particular, technology fluidity emerges as a significant predictor of sense of control, but not immersion, while interfacing with the newsfeed ad. Hence technology fluidity – which gauges the smoothness in transitioning between various content modalities on a social media platform – is significantly associated with the control that consumers desire when interacting with their newsfeeds content and newsfeed ads (that are non-disruptive nor "form" breaking). However, a technology platform's technical characteristics may not directly influence how users attend to or enjoy the newsfeed ad, as evidenced by the lack of a direct effect from technology fluidity on immersion. These findings then pinpoint the importance for advertising practitioners to consider the contextual factors (e.g., technical functions and affordances) of a technology platform (Bartosz, Wojdynski & Evans, 2020), in order to sustain a constantly "flowing" user experience when interacting with newsfeed advertising.

As stated above, no significant relationship is found between technology fluidity and attitude toward the brand or purchase intention, which contradicts findings from past literature on the effects of technology features (Huang, 2012; Jiang et al., 2010; Luna et al., 2002; Van Noort et al., 2012). This inconsistency is likely due to the fact that past relevant studies examined consumer response to a brand website or a general e-shopping website instead of newsfeed ads on a social media platform. The current results, however, are consistent with that of another study that also studied newsfeed advertising on Facebook (Xu & Lin, 2020). Hence, advertisers and marketers need to differentiate their strategies and take notice of the unique advertising platform factors, when promoting products on a brand or general e-shopping site versus on a specific social media platform. In particular, technology factors may have a more salient effect

on a brand's website or online shopping site, when compared to a social media platform where the ads are integrated as native content via a newsfeed advertising strategy.

This is especially true, due to the significant mediation effects identified from the technology fluidity construct – through sense of control and immersion (flow constructs) – to both attitude toward the brand and purchase intention. These mediation paths are proposed based on past conceptual works (e.g., Chang & Wang, 2008; Van Noort et al., 2012). By contrasting two alternative mediation models, this study suggests that technology fluidity may first lead to enhanced sense of control of user interaction with the newsfeeds and then user immersion with the newsfeed ad, which in turn leads to favorable impacts on brand attitude and purchase intention. It is worth noting that the current study findings cannot affirmatively evidence which of the two aspects of flow –sense of control and immersion – occurs first, due to user interaction with their newsfeeds on the social media platform. As debate associated with the flow construct remains unresolved (Chen, 2000; Ghani, 1995; Novak et al., 2000; Hoffman & Novak, 2009), the results reported here do validate the crucial role of flow in understanding the processing of newsfeed ads that are important to the success of social media advertising strategies among researchers and practitioners.

The study is the first to test the FCB Grid (Ratchford, 1987) in the newsfeed ad context. In terms of the effect of product type, "feel" and "think" products did not differ significantly in the level of sense of control. Study participants who saw a newsfeed ad for a feel product had higher immersion with the ad than those who saw a newsfeed ad for a think product. These results align with previous literature, which indicates that enjoyment and concentration positively predicted hedonic shopping value/products, but not utilitarian shopping value/products (Argyris et al., 2020; Senecal et al., 2002). Past research has suggested that a desired affective state of

flow should facilitate the processing of a "feel" product; this is because a "feel" product is anticipated to bring emotional value – and in coordination with the aura of the entertainment platform – more so than a think product (Argyris et al., 2020). This finding, therefore, provides some preliminary evidence that concentration and enjoyment would be more likely to emerge for a feel product than for a think product. However, neither a "think' or "feel" product type is relevant to how much consumers perceived whether their interaction with the newsfeed ad was under their control. By implication, newsfeed ads, with their native content style, may indeed be readily accepted and recognized as part of a user's newsfeed stream – without making the user feel that the ad is either incongruent with their newsfeed-interface experience – or disruptive of that experience.

Surprisingly, those in the "feel" product condition reported less positive attitude toward the brand, compared to those in the think product condition; and there was no significant difference between the two conditions in explaining purchase intention. Considering that the "feel" product condition produced a higher level of immersion, this less positive attitudes toward the feel product appears to be counterintuitive and contradicts the findings from prior literature (Dahlén & Bergendahl, 2001; Mittal, 1989). It is possible that users experienced immersion in the newsfeed ad, but did not develop an overall positive evaluation of the product. According to the hierarchy of effects models in advertising such as the AIDA model (Attention, Interest, Desire, and Action) (Wijaya, 2012), purchase decision is developed across multiple stages starting with accepting the ad message. Users might be drawn to the newsfeed ad for a "feel" product and enjoyed the aesthetic design of the ad (attention or interest stage) more than that of a "think" product, without necessarily developing a desire for purchasing that product (Lin & Kim, 2016). It is also possible that purchase decision for a "feel" product is harder to make than a

think product, since the former is more associated with self-identity and personally held value (Kim et al., 2017; Zaichkowsky, 1994). For practitioners, this may imply that "feel" products promoted via newsfeed ads may require additional tailored persuasion strategies to make them stand out above and beyond eliciting an affective response without furthering that response to facilitate a purchase intention.

Product involvement level was not found to have affected consumers' immersion or sense of control with the ad. This result contradicts some findings suggesting that high involvement products generate higher concentration and enjoyment than low involvement products (e.g., Cowley & Barron, 2008; Koufaris, 2002; Yoo et al., 2004), while staying consistent with other findings. For instance, an ad with limited information--such as a newsfeed post--- may be insufficient to elicit more engagement with a high involvement than a low involvement product (e.g., Drossos et al., 2013, 2014). By implication, how the newsfeed ad is processed and received may not be a function of the perception of how relevant the products are to consumers' inherent needs, values, and interests. This is because ad evaluations may depend on the copy, design or implementation, which could be independent from how the advertised product is evaluated.

Low involvement products did display a more positive attitude toward the brand than high-involvement products. Nevertheless, this effect did not sustain for purchase intention, as low-involvement products still led to a lower purchase intention than high-involvement products. This inconsistency actually highlights a current incongruity in the literature. Some studies maintained that with high-involvement products, the ad will be processed for the purpose of brand evaluation and will have a strong impact on such evaluation; but with low involvement products, the opposite is true (e.g., Andrews et al., 1990; Cole & Greer, 2013; Mitchell, 1981;

Mou, Zhu, & Benyoucef, 2019). Other research suggested that an ad with limited information may not be sufficient to produce positive attitude toward a high-involvement product, even though it may benefit a low-involvement product sufficiently to increase positive attitude (e.g., Drossos et al., 2013, 2014). For example, the current study found that a newsfeed ad (with limited product information) failed to induce positive attitudes for a high involvement product but it did so for a low involvement product. Hence, advertisers should carefully examine the utilitarian or affective values of the product in conjunction with their advertising objectives (e.g., brand awareness, brand liking, or conversion) if they wish to efficiently segment and select the ideal target group for their advertising messages.

When it comes to purchase intention, other factors such as price, available alternatives, timing of need, loyalty to a competing brand, and more, may play a role. For example, a consumer may consider a product as an essential purchase, even though s/he does not feel *involved* or *interested* in a specific brand promoted in an ad. This may explain why the high involvement product still gained higher purchase intention than the low involvement product, even though the former scored a less positive attitude value than the latter.

Turning to promotional tactics, no main effect was detected from the inclusion of a sales promotion offer on the dependent variables. This finding confirms the non-significant findings from van Doorn and Hoekstra's (2013) and Kim and Han (2014), but contradicts other studies which identified a significant effect of a sales promotion offer on consumer attitude toward the brand and purchase intent (Aydin, 2018; Santini et al., 2015; Ünal et al., 2011). Even so, a sales promotion offer was found to be a moderator between product type and attitude toward the brand. Specifically, a discount offer appearing in the newsfeed ad was found to induce a more

positive attitude toward a "feel" product – and a less positive attitude toward a "think" product – than when the ad did not include the offer.

Similarly, the presence of a sales promotion offer in the newsfeed ad resulted in a higher purchase intention for a high-involvement product – and a lower purchase intention for a low-involvement product – than when such offer was absent. Thus, the presence of a sales promotion offer significantly enhanced consumer intention to purchase a high-involvement product, but the opposite is true for a low-involvement product. The low involvement products of choice included in the study (i.e., glue and salty snacks) had relatively low prices, so the discount offer would make the final prices even lower for these products, compared to high involvement products with originally more expensive prices. With a rather low price, consumers may start to have concerns with product quality (Rao & Monroe, 1989), which may also explain the negative impact for low involvement with a sales promotion offer on purchase intention. These findings suggest meaningful implications for digital advertisers and marketers when considering incorporation of a sales promotion offer for their distinct products.

The final set of hypotheses and research questions pertain to factors influencing attitude and purchase intention. Only immersion emerged as a significant predictor for attitude toward the brand and purchase intention, but not sense of control. These patterns largely replicate past literature of flow in digital marketing contexts; that is, attention to and enjoyment of interacting with an advertisement could enhance attitude toward the brand (Korzaan, 2003; Obadă, 2013) and purchase intention (Siekpe, 2005). By contrast, sense of control fails to make a difference in the assessment of purchase intention toward the product. This lack of significance of sense of control as a predictor of consumer decision-making is consistent with past findings (Bridges & Florsheim, 2008; Koufaris, 2002). This suggests that the feeling of "in control" while interacting

with a newsfeed advertisement may not directly enhance consumer attitude toward the brand. Lastly, attitude toward the brand turned out to be a positive predictor of purchase intention, which is not surprising based on the large amount of empirical evidences indicating the same direction (Baek & Morimoto, 2012; Huang, 2012; Koufaris, 2002; van Noort et al., 2012).

In conclusion, the integrated model that contains the components of technology attributes (technology fluidity/affordances), product attributes (think vs feel and high vs. low involvement) and promotional tactics (presence/absence of a sales promotion offer) made a significant contribution to influence consumer attitude and purchase intention toward the product in the context of newsfeed advertising on a social media platform. Specifically, technology-related factors exert a bigger impact on the experience of sense of control over user-technology interaction. Product attributes matter more in user immersion with the newsfeed ad content, which led to a direct effect on a favorable consumer attitude and purchase intention. A sales promotion offer may interact with product attributes – including product type and product involvement – to generate an effect on attitude and purchase intention, respectively. Study findings have helped shed light on the flow variable as a multi-dimensional construct that could function differently depending on what the advertising content in question embodies and how consumers interact with the technology platform where this content appears. The findings reported here have also validated and extended the theoretical understanding of Technology Fluidity Theory in terms of how it may influence the process of user interface with the digital advertising content to result in a "flow" state. Lastly, the FCB Grid was tested in the current study and proved to be a useful framework for studying user-platform interaction and the effectiveness of native advertising on social media.

6.2 Limitation

Several study limitations should be noted here. First of all, in the experimental design, participants were exposed to a static newsfeed ad independent from other Facebook newsfeeds (that would normally appear on a use's Facebook page) in a research lab setting. This procedure thus put a limit on the external generalizability of the research findings. Ideally, the study could be implemented with participants naturally interacting with the mock newsfeed ads embedded in the newsfeeds via their own Facebook account, similar to the way that native ads are presented and accessed on a commercially operated website (e.g., huffpost.com, cnn.com, buzzfeed.com and mashable.com). An experiment that combines consumer interaction with a social media platform and interface with newsfeed ads on the platform in real time could be a good way to collect the data with high external generalizability.

Secondly, the college student sample offered the benefit of sample homogeneity at the expense of limiting representation of the general young adult population. Even though young adults still form a large part of the Facebook user population, research shows that older adults are fueling the platform's new growth (Schaffel, 2018). The results generated from the current study may not replicate to other demographic groups. For example, Taylor et al. (2011) found that the 18-24 years age group considered social media advertisements more informative than the 15-18 years group and 25 and older age group.

Thirdly, even though the products selected for the study followed the theoretical reasoning and empirical procedure adopted in previous research, participant evaluation of the product type (think vs. feel) and involvement (high vs. low) may depend on whether a given product meets their needs and/or wants at the time of study. Results generated from this study could be partially explain by artifact of the specific products chosen for the experiment. For this reason, future study could consider testing more products or having participants identify the products they would consider purchasing within the study time frame to gauge product type (feel

vs. think) and involvement (high vs. low). Research could also try measuring individual-level involvement with the product—rather than the product-level involvement— to allow room for more variance in the key variable. At any rate, the potential impact associated with consumer product involvement via interacting with newsfeed ads presented on a social media platform should be further examined across more different types of products.

6.3 Summary

This study is among the first to investigate Facebook users' processing of newsfeed ads as a function of product attributes, sales promotions, and interaction with technology affordances. Study findings have advanced our theoretical understanding of the roles of technology fluidity and flow in the context of newsfeed advertising placed in a social media platform. Specifically, findings suggest that both product type (think vs. feel) and product involvement level (high vs. low) directly influence social media users' immersion with the ad and attitude toward the brand, whereas higher product involvement directly and positively impact purchase intention. The sales promotion strategy implemented via a discount offer, however, has no direct effect on consumer attitude and purchase intention. Instead, it demonstrates an interaction effect with product type and product involvement level on attitude and purchase intention. Similarly, the influence of technology fluidity on consumer attitude toward the brand and purchase intention is mediated through sense of control and then user immersion during user interface with the newsfeed ad content, in that order. Study results have important theoretical and practical implications, as they contribute to new knowledge related to newsfeed ad research. More research with various methodologies is needed to testify these theoretical relations with a diverse sample and collection of products.

6.4 Future Research Implications

This exploratory study is one of the first to manipulate product type (think vs. feel product), product involvement (high- vs. low-involvement decision) and sales promotion tactics to examine consumer processing of and engagement with newsfeed ads placed in a social media platform. It would be useful for additional research to improve the study design and stimuli to increase internal measurement validity. More research is also needed to consider the potential moderators and covariates that could interfere with consumer assessment of product type and product involvement on influencing how consumer may experience flow and evaluate newsfeed ads through interacting with them via social media platform. Such moderators could include privacy concern (Jung et al., 2016; Lin & Kim, 2016), ad appeal (Lee & Hong, 2016) and the like, which affected responses toward newsfeed advertising as suggested in prior literature. Pre-existing attitudes for advertising or newsfeed advertising (eMarketer, 2012; Kodjamanis & Angelopoulos, 2013) may also make a difference in consumer responses and could be included in future investigations. Additional studies should consider measuring consumers' general attitudes and perceptions toward social media ads—as well as their specific reactions and evaluations toward the study stimuli—to identify their unique influences on the dependent variables.

In the current study, technology fluidity is treated as a covariate that accompanies other factors. Some preliminary results are generated regarding its relationship with other ad processing and effectiveness variables such as flow. Future research should manipulate perceived fluidity in conjunction with other technology factors as a main factor in the experiment design. Manipulating technology fluidity will not only advance theory development, but also help clarify the potential dimensions of the flow concept. As discussed earlier in this work, the mediation analyses conducted in the current study were unable to conclude whether sense of

control was an antecedent or outcome variable of immersion of flow, without including a dedicated manipulation of technology fluidity level in the experimental design. Separating the mental state from the antecedents of flow with the task or activity (that is anticipated to generate the flow experience) will help address the theoretical and measurement challenges in flow research (Hooker, 2010).

The current study adopts a common implementation of newsfeed ad that is an image-based ad. However, newsfeed advertising is also presented in different modalities on Facebook (e.g., videos) and other social platforms (e.g., Instagram stories, Snapchat filters). Future research could further delve into these diverse forms of advertising presentations to distinguish their possible ramifications in fostering success in reaching advertisers' branding objectives and sales goals. Furthermore, additional dependent variables such as ad avoidance, click-through rates, "likes," sharing and word-of-mouth (intention) could also be investigated, to better investigate the full range of consumer reactions and engagement with these ads (Baek & Morimoto, 2012; Lee et al., 2018; Wojdynski, 2016).

As newsfeed ads remain under researched and little understood for their impact on social media users and advertisers alike, more theoretical development and empirical research are needed. So far, studies on newsfeed advertising or digital native advertising are largely lacking the application of a coherent theoretical framework. As a first step toward theorizing native advertising research, Wojdynski and Evans (2020) proposed The Covert Advertising Recognition and Effects (CARE) model for studying all forms of native advertising, by focusing on the disclosure, consumer persuasion knowledge and recognition of these ads.

It is important to develop a more comprehensive theoretical framework that could clearly explain the processing, acceptance and avoidance of newsfeed ads specifically. Such a

conceptual framework should account for such factors as the characteristics of newsfeed ads (including its format and content), technology affordances of the digital media platform, user-technology interaction fluidity, user-content interface flow and other contextual factors (e.g., product liking, brand preference). The effectiveness of a newsfeed advertising strategy relies on its congruity with the primary user activity on the social media platform – and an appealing presentation to break through the "scrolling" (via scanning and skimming) – to attract and engage consumer attention to process the advertising content (Bang & Lee, 2016; Duff & Faber, 2011). For these reasons, an ideal conceptual framework should address these content-driven challenges to aid empirical research.

Table 1. Means and Standard Deviations of Selected Products on Product Type and Involvement

	Product Involvement (Low-High)				Product Type (Think-Feel)			
	Choosing a brand for this product category is: a very unimportant decision (1) – a very important decision (7)		When making decision of buying such a product category, you have: little to lose (1) – a lot to lose (7) if you choose the wrong brand		The decision to buy a brand in this product category is: mainly logical or objective (1) -- mainly emotional or subjective (7)		The decision to buy a brand in this product category is: based mainly on functional facts (1) -- based mainly on feeling (7)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Glue	2.47	1.58	2.36	1.49	2.66	1.71	2.71	1.78
Salty Snacks	3.02	1.75	2.79	1.60	5.18	1.70	5.42	1.68
Car Insurance	5.83	1.48	5.63	1.48	2.10	1.45	2.17	1.50
Perfume	4.85	1.65	4.42	1.68	5.49	1.42	5.57	1.49

Table 2. Factor Loadings for Fluidity

Item	Factor Loading	Eigenvalue	Variance	α
move across text, photo, graphic, audio, and video content formats on newsfeed	.84			
surf across news, information, advertising and entertainment content on newsfeed	.86			
communicate with other people	.82			
check Friends' updates and posts	.86			
interact with news, information and entertainment content on newsfeed	.89	6.24	69.37%	.95
freely flow from one subject to the next on newsfeed	.82			
"like" any items as you wish anytime	.82			
post any items as you wish anytime (e.g., status update, photos)	.78			
leave a comment on any items as you wish anytime	.81			

Table 3. Factor Loadings for Sense of Control and Immersion

Item	Factor Loading	Eigenvalue	Variance	α
Factor 1:		5.74	47.85%	.84
Frustrated – Not frustrated	.83			
Agitated – Calm	.87			
Not in control – In control	.74			
Burdened – At ease	.85			
Factor 2:		2.62	21.87%	.94
Uninteresting	.77			
Not eye-catching – Eye-catching	.80			
Dull – Interesting	.82			
Not enjoyable – Enjoyable	.84			
Not drawn to it – Drawn to it	.88			
Not absorbed – Absorbed	.89			
Not focused – Focused	.83			
Not stimulated – Stimulated	.86			

Table 4. Factor Loadings for Attitude toward the Brand

Item	Factor Loading	Eigenvalue	Variance	α
The brand in this ad is well made	.68	2.65	66.31%	.83
The brand in this ad is what I would enjoy	.85			
The brand in this ad is what I would like to purchase	.90			
The brand in this ad is the one that I should purchase	.81			

Table 5. Factor Loadings for Purchase Intention

Item	Factor Loading	Eigenvalue	Variance	α
Placing an order in a few days	.71	3.60	72.05%	.90
Placing an order in a week	.85			
Placing an order in a couple of weeks	.93			
Placing an order in a month	.91			
Placing an order in a few months	.82			

Table 6. Convergent and Discriminant Validity Results

	CR	AVE	MSV	MaxR(H)	1	2	3	4	5
1. Intention	0.89	0.63	0.11	0.99	**0.79**				
2. Fluidity	0.94	0.64	0.04	0.95	0.01	**0.80**			
3. Sense of Control	0.85	0.58	0.04	0.87	0.15	0.21	**0.76**		
4. Immersion	0.93	0.63	0.34	0.94	0.33	-0.05	0.17	**0.80**	
5. Ab*	0.79	0.49	0.34	0.81	0.33	0.07	0.20	0.58	**0.70**

*Ab = Attitude toward the Brand

Note. The square root of AVE of each measure are shown on the diagonal line; inter-construct correlations are shown in the lower-left part.

Table 7. Bivariate Correlations, Means and Standard Deviations

	1	2	3	4	5
1. Fluidity					
2. Immersion	-.04				
3. Sense of Control	.20**	.15**			
4. Attitude toward Brand	.08	.48**	.17**		
5. Purchase Intent	.04	.34**	.16**	.30**	
M[1]	5.51	2.46	3.67	5.44	2.47
SD	1.23	1.17	1.45	1.11	1.29

Note. [1.] Scale = 1-7
*$p < 0.05$ level (2-tailed), **$p < 0.01$ level (2-tailed)

Table 8. ANCOVA on Sense of Control

	df	*F*	*p*	η^2
Product Type	1,296	.34	.56	.001
Product Involvement	1,296	.58	.45	.002
Sales Promotion	1,296	1.42	.23	.005
Product Type x Product Involvement	1,296	.57	.45	.002
Product Type x Sales Promotion	1,296	.18	.67	.001
Product Involvement x Sales Promotion	1,296	.02	.90	< .001
Covariates				
Fluidity	1,296	8.53	.004**	.03
Product Familiarity	1,296	1.16	.28	.004

*p < .05 level (2-tailed), **p < .01 level (2-tailed), ***p < .001 (2-tailed).

Table 9. ANCOVA on Immersion

	df	*F*	*p*	η^2
Product Type	1,295	7.56	.006**	.03
Product Involvement	1,295	2.87	.09	.01
Sales Promotion	1,295	.05	.83	< .001
Product Type x Product Involvement	1,295	.05	.83	< .001
Product Type x Sales Promotion	1,295	.30	.58	.001
Product Involvement x Sales Promotion	1,295	1.06	.30	.004
Covariates				
Fluidity	1,295	2.08	.15	.007
Sense of Control	1,295	8.64	.004**	.03
Product Familiarity	1,295	20.04	***	.06

*p < .05 level (2-tailed), **p < .01 level (2-tailed), ***p < .001 (2-tailed).

Table 10. ANCOVA on Attitude toward the Brand

	df	*F*	*p*	η^2
Product Type	1,293	33.67	***	.10
Product Involvement	1,293	5.46	.02*	.02
Sales Promotion	1,293	.47	.49	.002
Product Type x Product Involvement	1,293	.01	.93	< .001
Product Type x Sales Promotion	1,293	4.34	.038*	.02
Product Involvement x Sales Promotion	1,293	.16	.69	.001
Covariates				
Fluidity	1,293	2.01	.16	.007
Sense of Control	1,293	1.84	.18	.006
Immersion	1,293	99.59	***	.25
Product Familiarity	1,293	.44	.51	.001

*p < .05 level (2-tailed), **p < .01 level (2-tailed), ***p < .001 (2-tailed).

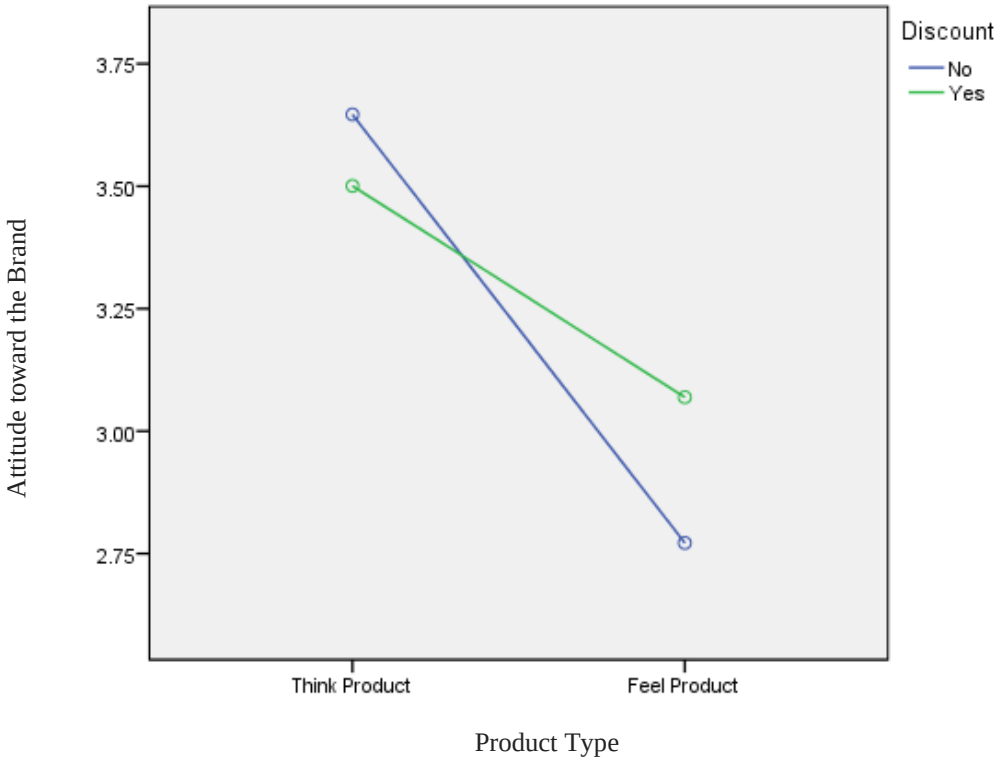

Figure 1. Interaction Effect between Product Type and Sales Promotion Condition on Attitude toward the Brand

Table 11. ANCOVA on Purchase Intention

	df	*F*	*p*	η^2
Product Type	1,292	1.80	.18	.006
Product Involvement	1,292	4.53	.03*	.015
Sales Promotion	1,292	.05	.82	< .001
Product Type x Product Involvement	1,292	< .001	.99	< .001
Product Type x Sales Promotion	1,292	2.84	.09	.01
Product Involvement x Sales Promotion	1,292	6.84	.009**	.02
Covariates				
Fluidity	1,292	.02	.89	.000
Sense of Control	1,292	2.25	.14	.008
Immersion	1,292	18.30	***	.06
Product Familiarity	1,292	.34	.56	.001
Attitude toward the Brand	1,292	4.02	.046*	.01

*p < .05 level (2-tailed), **p < .01 level (2-tailed), ***p < .001 (2-tailed).

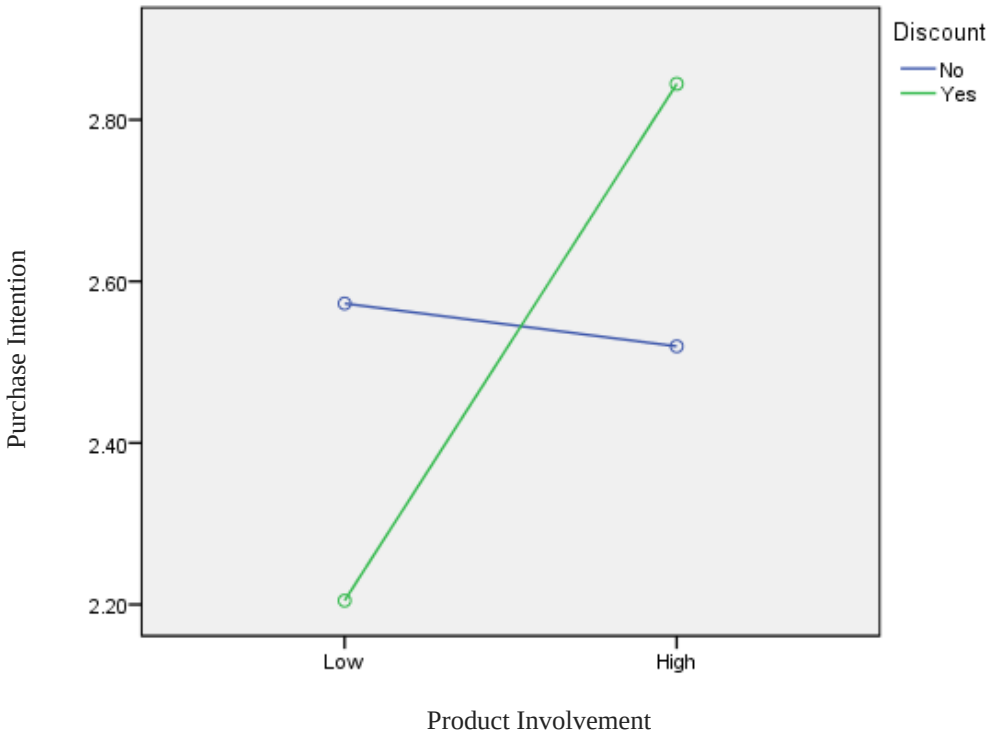

Figure 2. Interaction Effect between Product Involvement and Sales Promotion Condition on Purchase Intention

Table 12. Mediation Analyses Results on Attitude toward the Brand

Mediation Model	Effect	BootSE	95% C.I.	
			Lower	Upper
Fluidity -> Sense of Control -> Immersion -> Attitude toward the Brand	.01	.01	.002	.03
Fluidity -> Sense of Control -> Attitude toward the Brand	.01	.01	-.006	.04
Fluidity -> Immersion -> Attitude toward the Brand	-.04	.02	-.09	.002
Alternative Model:				
Fluidity -> Immersion -> Sense of Control -> Attitude toward the Brand	-.001	.001	-.003	.001

Table 13. Mediation Analyses Results on Purchase Intention

Mediation Model	Effect	BootSE	95% C.I.	
			Low	High
Fluidity -> Sense of Control -> Immersion -> Purchase Intention	.01	.01	.002	.02
Fluidity -> Sense of Control -> Purchase Intention	.02	.01	-.004	.04
Fluidity -> Immersion -> Purchase Intention	-.04	.02	-.08	.0002
Alternative Model:				
Fluidity -> Immersion -> Sense of Control -> Purchase Intention	-.001	.001	-.005	.001

REFERENCES

Aboulhosn, S. (2020, May 4). *18 Facebook statistics every marketer should know in 2020*. Sprout Social. https://sproutsocial.com/insights/facebook-stats-for-marketers/

Agarwal, A., Lee, S.-Y., & Whinston, A. B. (2019). *Word-of-mouth in social media advertising: "likes" on facebook ads* (SSRN Scholarly Paper ID 3065564). Social Science Research Network. https://papers.ssrn.com/abstract=3065564

Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *MIS Quarterly, 24*(4), 665–694. JSTOR. https://doi.org/10.2307/3250951

Alexander E. Voiskounsky. (2008). Flow experience in cyberspace: Current studies and perspectives. In Azy Barak (Ed.), *Psychological aspects of cyberspace: Theory, research, applications* (pp. 70–101). Cambridge University Press.

An, S., Kerr, G., & Jin, H. S. (2019). Recognizing native ads as advertising: Attitudinal and behavioral consequences. *Journal of Consumer Affairs, 53*(4), 1421–1442. https://doi.org/10.1111/joca.12235

Anderson, R. E., & Jolson, M. A. (1980). Technical wording in advertising: Implications for market segmentation. *Journal of Marketing*, *44*(1), 57–66. https://doi.org/10.1177/002224298004400108

Andrews, J. C., Durvasula, S., & Akhter, S. H. (1990). A framework for conceptualizing and measuring the involvement construct in advertising research. *Journal of Advertising*, *19*(4), 27–40. https://doi.org/10.1080/00913367.1990.10673198

Argyris, Y. A., Muqaddam, A., & Liang, Y. (2020). The role of flow in dissemination of recommendations for hedonic products in user-generated review websites. *International Journal of Human–Computer Interaction*, *36*(3), 271–284. https://doi.org/10.1080/10447318.2019.1631543

Arora, T., & Agarwal, B. (2019). Empirical study on perceived value and attitude of millennials towards social media advertising: A structural equation modelling approach. *Vision: The Journal of Business Perspective*, *23*(1), 56–69. https://doi.org/10.1177/0972262918821248

Aydin, G. (2018). Role of personalization in shaping attitudes towards social media ads. *International Journal of E-Business Research*, *14*(3), 54–76. https://doi.org/10.4018/IJEBR.2018070104

Baek, T. H., & Morimoto, M. (2012). Stay Away From Me. *Journal of Advertising*, *41*(1), 59–76. https://doi.org/10.2753/JOA0091-3367410105

Bang, H. J., & Lee, W.-N. (2016). Consumer response to ads in social network sites: An exploration into the role of Aad location and path. *Journal of Current Issues & Research in Advertising*, *37*(1), 1–14. https://doi.org/10.1080/10641734.2015.1119765

Bannister, A., Kiefer, J., & Nellums, J. (2013). College students' perceptions of and behaviors regarding Facebook advertising: An exploratory study. *The Catalyst: A Multidisciplinary Review of Undergraduate Scholarship at The University of Southern Mississippi*, *3*(1). https://doi.org/10.18785/cat.0301.02

Becker-Olsen, K. L. (2003). And now, a word from our sponsor–A look at the effects of sponsored content and banner advertising. *Journal of Advertising*, *32*(2), 17–32. https://doi.org/10.1080/00913367.2003.10639130

Bennett, R., Härtel, C. E. J., & McColl-Kennedy, J. R. (2005). Experience as a moderator of involvement and satisfaction on brand loyalty in a business-to-business setting 02-314R. *Industrial Marketing Management*, *34*(1), 97–107. https://doi.org/10.1016/j.indmarman.2004.08.003

Bloch, P. H., Sherrell, D. L., & Ridgway, N. M. (1986). Consumer search: An extended framework. *Journal of Consumer Research*, *13*(1), 119–126. https://doi.org/10.1086/209052

Boerman, S. C., Willemsen, L. M., & Van Der Aa, E. P. (2017). "This post is sponsored." *Journal of Interactive Marketing*, *38*, 82–92. https://doi.org/10.1016/j.intmar.2016.12.002

Brackett, L. K., & Carr, B. N. (2001). Cyberspace Advertising vs. Other Media: Consumer vs. Mature Student Attitudes. *Journal of Advertising Research*, *41*(5), 23–32. https://doi.org/10.2501/JAR-41-5-23-32

Bridges, E., & Florsheim, R. (2008). Hedonic and utilitarian shopping goals: The online experience. *Journal of Business Research*, *61*(4), 309–314. https://doi.org/10.1016/j.jbusres.2007.06.017

Buck, R., Chaudhuri, A., Georgson, M., & Kowta, S. (1995). Conceptualizing and operationalizing affect, reason, and involvement in persuasion: The ARI Model and the Case Scale. In Frank R. Kardes & Mita Sujan (Eds.), *NA - Advances in Consumer Research* (Vol. 22, pp. 440–447). Association for Consumer Research. http://acrwebsite.org/volumes/7785/volumes/v22/NA-22

Calvo-Porral, C., Faíña-Medín, A., & Nieto-Mengotti, M. (2017). Exploring technology satisfaction: An approach through the flow experience. *Computers in Human Behavior*, *66*, 400–408. https://doi.org/10.1016/j.chb.2016.10.008

Celebi, S. I. (2015). How do motives affect attitudes and behaviors toward internet advertising and Facebook advertising? *Computers in Human Behavior*, *51*, 312–324. https://doi.org/10.1016/j.chb.2015.05.011

Celsi, R. L., & Olson, J. C. (1988). The role of involvement in attention and comprehension processes. *Journal of Consumer Research*, *15*(2), 210. https://doi.org/10.1086/209158

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, *39*(5), 752–766. https://doi.org/10.1037/0022-3514.39.5.752

Chamorro-Mera, A., Miranda, F. J., & Rubio, S. (2014). Facebook as a marketing tool: An analysis of the 100 top-ranked global brands. *International Journal of Virtual Communities and Social Networking (IJVCSN)*, *6*(4), 14–28. https://doi.org/10.4018/IJVCSN.2014100102

Chang, C. (2004). Country of origin as a heuristic cue: The effects of message ambiguity and product involvement. *Media Psychology*, *6*(2), 169–192. https://doi.org/10.1207/s1532785xmep0602_3

Chang, H. H., & Wang, I. C. (2008). An investigation of user communication behavior in computer mediated environments. *Computers in Human Behavior*, *24*(5), 2336–2356. https://doi.org/10.1016/j.chb.2008.01.001

Chang, Klarissa T. T., Chen, W., & Tan, Bernard C. Y. (2012). Advertising Effectiveness in Social Networking Sites: Social Ties, Expertise, and Product Type. *IEEE Transactions on Engineering Management*, *59*(4), 634–643. https://doi.org/10.1109/TEM.2011.2177665

Chaudhuri, A. (1993). Advertising implications of the pleasure principle in the classification of products. *ACR European Advances*, *E-01*. http://acrwebsite.org/volumes/11621/volumes/e01/E-01

Chen, H. (2006). Flow on the net–detecting Web users' positive affects and their flow states. *Computers in Human Behavior*, *22*(2), 221–233. https://doi.org/10.1016/j.chb.2004.07.001

Chen, H. L., Wigand, R. T., & Nilan, M. S. (2000). Exploring Web users' optimal flow experiences. *Information Technology People*, *13*(4), 263–281. https://doi.org/10.1108/09593840010359473

Chen, J. (2020, May 5). *Social media demographics to inform your brand's strategy in 2020*. Sprout Social. https://sproutsocial.com/insights/new-social-media-demographics/

Chi, H.-H. (2011). Interactive digital advertising vs. virtual brand community: Exploratory study of user motivation and social media marketing responses in Taiwan. *Journal of Interactive Advertising*, *12*(1), 44–61. https://doi.org/10.1080/15252019.2011.10722190

Cilingir, Z., & Basfirinci, C. (2014). The impact of consumer ethnocentrism, product involvement, and product knowledge on country of origin effects: An empirical analysis on Turkish consumers' product evaluation. *Journal of International Consumer Marketing*, *26*(4), 284–310. https://doi.org/10.1080/08961530.2014.916189

Claeys, C., Swinnen, A., & Van den Abeele, P. (1995). Consumer's means-end chains for "think" and "feel" products. *International Journal of Research in Marketing*, *12*(3), 193–208. https://doi.org/10.1016/0167-8116(95)00021-S

Clarke, S. G., & Haworth, J. T. (1994). 'Flow' experience in the daily lives of sixth-form college students. *British Journal of Psychology*, *85*(4), 511–523. https://doi.org/10.1111/j.2044-8295.1994.tb02538.x

Clement, J. (2020, April 3). *Number of Facebook users worldwide 2008-2020*. Statista. https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/

Cole, J. T., & Greer, J. D. (2013). Audience response to brand journalism: The effect of frame, source, and involvement. *Journalism & Mass Communication Quarterly*, *90*(4), 673–690. https://doi.org/10.1177/1077699013503160

Compeau, L. D., & Grewal, D. (1998). Comparative price advertising: An integrative review. *Journal of Public Policy & Marketing*, *17*(2), 257–273. https://doi.org/10.1177/074391569801700209

Cowley, E., & Barron, C. (2008). When product placement goes wrong: The effects of program liking and placement prominence. *Journal of Advertising*, *37*(1), 89–98. https://doi.org/10.2753/JOA0091-3367370107

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. Jossey-Bass Publishers.

Csikszentmihalyi, M. (1977). *Beyond boredom and anxiety* (2nd ed.). Jossey-Bass Publishers.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper & Row.

Csikszentmihalyi, M. (1998). *Finding flow: The psychology of engagement with everyday life*. Basic Books.

Dahlén, M., & Bergendahl, J. (2001). Informing and transforming on the web: An empirical study of response to banner ads for functional and expressive products. *International Journal of Advertising*, *20*(2), 189–205. https://doi.org/10.1080/02650487.2001.11104886

Danaher, P. J., & Mullarkey, G. W. (2003). Factors affecting online advertising recall: A study of students. *Journal of Advertising Research*, *43*(03), 252–267. https://doi.org/10.1017/S0021849903030319

Darke, P. R., & Dahl, D. W. (2003). Fairness and discounts: The subjective value of a bargain. *Journal of Consumer Psychology*, *13*(3), 328–338. https://doi.org/10.1207/S15327663JCP1303_13

Dastidar, S. G. (2016). *Evaluation of consumers' deal-specific response to sales promotions based on their product involvement*. Social Science Research Network. https://papers.ssrn.com/abstract=3077893

Day, E., Stafford, M. R., & Camacho, A. (1995). Opportunities for involvement research: A scale-development approach. *Journal of Advertising*, *24*(3), 69–75. https://doi.org/10.1080/00913367.1995.10673484

Dhar, R., & Wertenbroch, K. (2000). Consumer choice between hedonic and utilitarian goods. *Journal of Marketing Research*, *37*(1), 60–71. https://doi.org/10.1509/jmkr.37.1.60.18718

Domina, T., Lee, S.-E., & MacGillivray, M. (2012). Understanding factors affecting consumer intention to shop in a virtual world. *Journal of Retailing and Consumer Services*, *19*(6), 613–620. https://doi.org/10.1016/j.jretconser.2012.08.001

Drolet, A., Williams, P., & Lau-Gesk, L. (2007). Age-related differences in responses to affective vs. rational ads for hedonic vs. utilitarian products. *Marketing Letters*, *18*(4), 211–221. https://doi.org/10.1007/s11002-007-9016-z

Drossos, D. A., Giaglis, G. M., Vlachos, P. A., Zamani, E. D., & Lekakos, G. (2013). Consumer responses to SMS advertising: Antecedents and consequences. *International Journal of Electronic Commerce*, *18*(1), 105–136. https://doi.org/10.2753/JEC1086-4415180104

Drossos, D. A., Kokkinaki, F., Giaglis, G. M., & Fouskas, K. G. (2014). The effects of product involvement and impulse buying on purchase intentions in mobile text advertising. *Electronic Commerce Research and Applications*, *13*(6), 423–430. https://doi.org/10.1016/j.elerap.2014.08.003

Ducoffe, R. H. (1995). How consumers assess the value of advertising. *Journal of Current Issues & Research in Advertising*, *17*(1), 1–18. https://doi.org/10.1080/10641734.1995.10505022

Ducoffe, R. H. (1996). Advertising value and advertising on the web. *Slidelegend.Com*, *36*(5), 21–32.

Duff, B. R. L., & Faber, R. J. (2011). Missing the mark. *Journal of Advertising*, *40*(2), 51–62. https://doi.org/10.2753/JOA0091-3367400204

Duffett, R. G. (2015). Facebook advertising's influence on intention-to-purchase and purchase amongst millennials. *Internet Research*, *25*(4), 498–526. https://doi.org/10.1108/IntR-01-2014-0020

eMarketer. (2012, May 22). *Is there a problem with Facebook advertising?* https://www.emarketer.com/Article/Problem-with-Facebook-Advertising/1009065

Esteban-Millat, I., Martínez-López, F. J., Luna, D., & Rodríguez-Ardura, I. (2014). The concept of flow in online consumer behavior. In F. J. Martínez-López (Ed.), *Handbook of strategic e-*

business management (pp. 371–402). Springer. https://doi.org/10.1007/978-3-642-39747-9_17

Ettis, S. A. (2017). Examining the relationships between online store atmospheric color, flow experience and consumer behavior. *Journal of Retailing and Consumer Services*, *37*, 43–55. https://doi.org/10.1016/j.jretconser.2017.03.007

Evans, N. J., Phua, J., Lim, J., & Jun, H. (2017). Disclosing Instagram influencer advertising: The effects of disclosure language on advertising recognition, attitudes, and behavioral intent. *Journal of Interactive Advertising*, *17*(2), 138–149. https://doi.org/10.1080/15252019.2017.1366885

Facebook. (n.d.). *Facebook ads guide: Ad format specs & recommendations*. Facebook Ads Guide. Retrieved August 16, 2019, from https://www.facebook.com/business/ads-guide

Fan, S., Lu, Y., & Gupta, S. (2017). Social media in-feed advertising: The impacts of consistency and sociability on ad avoidance. *Pacific Asia Conference on Information Systems (PACIS) 2017 Proceedings*, 190–203.

Faryabi, M. R., Sadeghzadeh, K., & Saed, M. (2012). The effect of price discounts and store image on consumer's purchase intention in online shopping context case study: Nokia and HTC. *Journal of Business Studies Quarterly*, *4*(1), 197.

Fennell, G. (1978). Consumers' perceptions of the product—use situation: A conceptual framework for identifying consumer wants and formulating positioning options. *Journal of Marketing*, *42*(2), 38–47. https://doi.org/10.1177/002224297804200207

Finneran, C. M., & Zhang, P. (2003). A person–artefact–task (PAT) model of flow antecedents in computer-mediated environments. *International Journal of Human-Computer Studies*, *59*(4), 475–496.

Finneran, C. M., & Zhang, P. (2005). Flow in computer-mediated environments: Promises and challenges. *Communications of the Association for Information Systems*, *15*. https://doi.org/10.17705/1CAIS.01504

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50. JSTOR. https://doi.org/10.2307/3151312

Fotis, J. N. (2015). *The use of social media and its impacts on consumer behaviour: The context of holiday travel.* [PhD Dissertation, Bournemouth University]. http://eprints.bournemouth.ac.uk/22506/

Fulgoni, G., & Lipsman, A. (2014). Digital game changers: How social media will help usher in the era of mobile and multi-platform campaign-effectiveness measurement. *Journal of Advertising Research*, *54*(1), 11–16. https://doi.org/10.2501/JAR-54-1-011-016

Gao, L., Waechter, K. A., & Bai, X. (2015). Understanding consumers' continuance intention towards mobile purchase: A theoretical framework and empirical study – A case of China. *Computers in Human Behavior*, *53*, 249–262. https://doi.org/10.1016/j.chb.2015.07.014

Ghani, J. A. (1995). Flow in human-computer interactions: Test of a model. In Jane M. Carey (Ed.), *Human factors in information systems: Emerging theoretical bases* (pp. 291–311). Ablex Publishing Corp.

Ghani, J. A., & Deshpande, S. P. (1994). Task characteristics and the experience of optimal flow in human—Computer interaction. *The Journal of Psychology*, *128*(4), 381–391. https://doi.org/10.1080/00223980.1994.9712742

Ghani, J. A., Supnick, R., & Rooney, P. (1991). The experience of flow in computer-mediated and in face-to-face groups. *ICIS 1991 Proceedings*. https://aisel.aisnet.org/icis1991/9

Gordon, M. E., McKeage, K., & Fox, M. A. (1998). Relationship marketing effectiveness: The role of involvement. *Psychology & Marketing*, *15*(5), 443–459. https://doi.org/10.1002/(SICI)1520-6793(199808)15:5<443::AID-MAR3>3.0.CO;2-7

Guo, Y. M., & Poole, M. S. (2009). Antecedents of flow in online shopping: A test of alternative models. *Information Systems Journal*, *19*(4), 369–390. https://doi.org/10.1111/j.1365-2575.2007.00292.x

Gupta, S. (1988). Impact of sales promotions on when, what, and how much to buy. *Journal of Marketing Research*, *25*(4), 342–355. https://doi.org/10.1177/002224378802500402

Guru, A., & Nah, F. H. (Fiona). (2001). *Effect of hypertext and animation on learning* [Chapter], IGI Global. https://doi.org/10.4018/978-1-878289-95-7.ch004

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis, second edition: A regression-based approach*. Guilford Publications.

Heslin, R., & Johnson, B. T. (1992). Prior involvement and incentives to pay attention to information. *Psychology and Marketing*, *9*(3), 209–219. https://doi.org/10.1002/mar.4220090304

Hirschman, E. C., & Holbrook, M. B. (1982). Hedonic consumption: Emerging concepts, methods and propositions. *Journal of Marketing*, *46*(3), 92–101. https://doi.org/10.1177/002224298204600314

Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, *60*(3), 50–68. JSTOR. https://doi.org/10.2307/1251841

Hoffman, D. L., & Novak, T. P. (2009). Flow online: Lessons learned and future prospects. *Journal of Interactive Marketing*, *23*(1), 23–34. https://doi.org/10.1016/j.intmar.2008.10.003

Hsu, Chia-Lin, Chang, K.-C., & Chen, M.-C. (2012). Flow experience and internet shopping behavior: Investigating the moderating effect of consumer characteristics, flow experience and internet shopping behavior. *Systems Research and Behavioral Science*, *29*(3), 317–332. https://doi.org/10.1002/sres.1101

Hsu, Chin-Lung, & Lu, H.-P. (2004). Why do people play on-line games? An extended TAM with social influences and flow experience. *Information & Management*, *41*(7), 853–868. https://doi.org/10.1016/j.im.2003.08.014

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Huang, E. (2012). Online experiences and virtual goods purchase intention. *Internet Research*, *22*(3), 252–274. https://doi.org/10.1108/10662241211235644

Huang, G. (2019). Variation matters: How to curb ad intrusiveness for native advertising on Facebook, Twitter, and Instagram. *Internet Research*, *29*(6), 1469–1484. https://doi.org/10.1108/INTR-12-2017-0524

Huang, M.-H. (2003). Designing website attributes to induce experiential encounters. *Computers in Human Behavior*, *19*(4), 425–442. https://doi.org/10.1016/S0747-5632(02)00080-8

Huang, M.-H. (2006). Flow, enduring, and situational involvement in the Web environment: A tripartite second-order examination. *Psychology & Marketing*, *23*(5), 383–411. https://doi.org/10.1002/mar.20118

Interactive Advertising Bureau [IAB]. (2015, July). *IAB deep dive on in-feed ad units a supplement to the IAB native advertising playbook*. Interactive Advertising Bureau [IAB]. https://www.iab.com/wp-content/uploads/2015/07/IAB_Deep_Dive_on_InFeed_Ad_Units.pdf

Irvine, M. (2020, February 25). *Facebook ad benchmarks for your industry [data]*. https://www.wordstream.com/blog/ws/2017/02/28/facebook-advertising-benchmarks

Jain, K., & Srinivasan, N. (1990). An empirical assessment of multiple operationalizations of involvement. *ACR North American Advances*, *NA-17*. http://acrwebsite.org/volumes/7071/volumes/v17/NA-17

Jiang, Z., Chan, J., Tan, B., & Chua, W. S. (2010). Effects of interactivity on website involvement and purchase intention. *Journal of the Association for Information Systems*, *11*(1). https://aisel.aisnet.org/jais/vol11/iss1/1

Jung, A.-R., & Heo, J. (2019a). Ad disclosure vs. ad recognition: How persuasion knowledge influences native advertising evaluation. *Journal of Interactive Advertising*, *19*(1), 1–14. https://doi.org/10.1080/15252019.2018.1520661

Jung, A.-R., & Heo, J. (2019b). Ad disclosure vs. ad recognition: How persuasion knowledge influences native advertising evaluation. *Journal of Interactive Advertising*, *19*(1), 1–14. https://doi.org/10.1080/15252019.2018.1520661

Jung, J., Shim, S. W., Jin, H. S., & Khang, H. (2016). Factors affecting attitudes and behavioural intention towards social networking advertising: A case of Facebook users in South Korea. *International Journal of Advertising*, *35*(2), 248–265. https://doi.org/10.1080/02650487.2015.1014777

Kahneman, D. (1973). *Attention and effort*. Prentice-Hall.

Kapferer, Jean-Noel, & Laurent, G. (1985). Consumers' involvement profile: New empirical results. *ACR North American Advances*, *NA-12*. http://acrwebsite.org/volumes/6402/volumes/v12/NA-12

Kapferer, Jean-Noël, & Laurent, G. (1993). Further evidence on the consumer involvement profile: Five antecedents of involvement. *Psychology & Marketing*, *10*(4), 347–355. https://doi.org/10.1002/mar.4220100408

Kelly, L., Kerr, G., & Drennan, J. (2010). Avoidance of advertising in social networking sites. *Journal of Interactive Advertising*, *10*(2), 16–27. https://doi.org/10.1080/15252019.2010.10722167

Kim, Jihye, Lee, J., & Chung, Y. J. (2017). Product type and spokespersons in native advertising – the role of congruency and acceptance. *Journal of Interactive Advertising*, *17*(2), 109–123. https://doi.org/10.1080/15252019.2017.1399838

Kim, Jooyoung, & Sung, Y. (2009). Dimensions of purchase-decision involvement: Affective and cognitive involvement in product and brand. *Journal of Brand Management*, *16*(8), 504–519. https://doi.org/10.1057/bm.2008.39

Kim, Y. J., & Han, J. (2014). Why smartphone advertising attracts customers: A model of Web advertising, flow, and personalization. *Computers in Human Behavior*, *33*, 256–269. https://doi.org/10.1016/j.chb.2014.01.015

Klaus, P. 'Phil.' (2013). New insights from practice: Exploring online channel management strategies and the use of social media as a market research tool. *International Journal of Market Research*, *55*(6), 829–850. https://doi.org/10.2501/IJMR-2013-069

Knoll, J. (2016). Advertising in social media: A review of empirical evidence. *International Journal of Advertising*, *35*(2), 266–300. https://doi.org/10.1080/02650487.2015.1021898

Kodjamanis, A., & Angelopoulos, S. (2013). *Consumer perception and attitude towards advertising on social networking sites: The case of Facebook*. 53–58. https://www.academia.edu/11331993/CONSUMER_PERCEPTION_AND_ATTITUDE_TOWARDS_ADVERTISING_ON_SOCIAL_NETWORKING_SITES_THE_CASE_OF

Korzaan, M. L. (2003). Going with the flow: Predicting online purchase intentions. *Journal of Computer Information Systems*, *43*(4), 25–31. https://doi.org/10.1080/08874417.2003.11647530

Koufaris, M. (2002). Applying the Technology Acceptance Model and flow theory to online consumer behavior. *Information Systems Research*, *13*(2), 205–223. https://doi.org/10.1287/isre.13.2.205.83

Krouwer, S., Poels, K., & Paulussen, S. (2019). Exploring readers' evaluations of native advertisements in a mobile news app. *Journal of Media Business Studies*, *16*(2), 77–94. https://doi.org/10.1080/16522354.2019.1573396

Kumar, A., Bezawada, R., Rishika, R., Janakiraman, R., & Kannan, P. K. (2016). From social to sale: The effects of firm-generated content in social media on customer behavior. *Journal of Marketing*, *80*(1), 7–25. https://doi.org/10.1509/jm.14.0249

Laczniak, R. N., Muehling, D. D., & Grossbart, S. (1989). Manipulating message involvement in advertising research. *Journal of Advertising*, *18*(2), 28–38. https://doi.org/10.1080/00913367.1989.10673149

Laroche, M., Pons, F., Zgolli, N., Cervellon, M.-C., & Kim, C. (2003). A model of consumer response to two retail sales promotion techniques. *Journal of Business Research*, *56*(7), 513–522. https://doi.org/10.1016/S0148-2963(01)00249-1

Larson, R., & Csikszentmihalyi, M. (2014). The experience sampling method. In M. Csikszentmihalyi (Ed.), *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi* (pp. 21–34). Springer Netherlands. https://doi.org/10.1007/978-94-017-9088-8_2

Lastovicka, J. L. & Gardner, D. M. (1979). Components of involvement. In John C. Maloney & Bernard Silverman (Eds.), *Attitude research plays for high stakes* (pp. 53–73). American Marketing Association.

Laurent, G., & Kapferer, J.-N. (1985). Measuring consumer involvement profiles. *Journal of Marketing Research*, *22*(1), 41–53. https://doi.org/10.1177/002224378502200104

Lazoc, A., & Caraivan, L. (2012). The flow experience of online search: A literature review and future research agenda. *International Journal of Communication Research*, *2*(1).

Lee, D., Hosanagar, K., & Nair, H. S. (2018). Advertising content and consumer engagement on social media: Evidence from Facebook. *Management Science*, *64*(11), 5105–5131. https://doi.org/10.1287/mnsc.2017.2902

Lee, Jieun, & Hong, I. B. (2016). Predicting positive user responses to social media advertising: The roles of emotional appeal, informativeness, and creativity. *International Journal of Information Management*, *36*(3), 360–373. https://doi.org/10.1016/j.ijinfomgt.2016.01.001

Lee, Joonghwa, Kim, S., & Ham, C.-D. (2016). A double-edged sword? Predicting consumers' attitudes toward and sharing intention of native advertising on social media. *American Behavioral Scientist*, *60*(12), 1425–1441. https://doi.org/10.1177/0002764216660137

Lee, S., Kim, K. J., & Sundar, S. S. (2015). Customization in location-based advertising: Effects of tailoring source, locational congruity, and product involvement on ad attitudes. *Computers in Human Behavior*, *51*, 336–343. https://doi.org/10.1016/j.chb.2015.04.049

Lee, S. M., & Chen, L. (2010). The impact of flow on online consumer behavior. *Journal of Computer Information Systems*, *50*(4), 1–10. https://doi.org/10.1080/08874417.2010.11645425

Leroi-Werelds, S., Streukens, S., Brady, M. K., & Swinnen, G. (2014). Assessing the value of commonly used methods for measuring customer value: A multi-setting empirical study. *Journal of the Academy of Marketing Science*, *42*(4), 430–451. https://doi.org/10.1007/s11747-013-0363-4

Li, Y.-W., Yang, S.-M., & Liang, T.-P. (2015). Website interactivity and promotional framing on consumer attitudes toward online advertising: Functional versus symbolic brands. *Pacific Asia Journal of the Association for Information Systems*, *7*(2). https://doi.org/10.17705/1pais.07203

Lim, E. A. C., & Ang, S. H. (2008). Hedonic vs. utilitarian consumption: A cross-cultural perspective based on cultural conditioning. *Journal of Business Research*, *61*(3), 225–232. https://doi.org/10.1016/j.jbusres.2007.06.004

Lin, C. A. (2000). *Programming localism via online broadcasting*. National Association of Broadcasters, Washington, DC.

Lin, C. A. (2003). An interactive communication technology adoption model. *Communication Theory*, *13*(4), 345–365. https://doi.org/10.1111/j.1468-2885.2003.tb00296.x

Lin, C. A. (2004). Webcasting adoption: Technology fluidity,-user 'innovativeness, and media substitution. *Journal of Broadcasting & Electronic Media*, *48*(3), 157–178. https://doi.org/10.1207/s15506878jobem4803_6

Lin, C. A. (2008). Technology fluidity and on-demand webcasting adoption. *Telematics and Informatics*, *25*(2), 84–98. https://doi.org/10.1016/j.tele.2006.06.002

Lin, C. A. (2009). Exploring the online radio adoption decision-making process: Cognition, attitude, and technology fluidity: *Journalism & Mass Communication Quarterly*. https://doi.org/10.1177/107769900908600410

Lin, C. A., & Kim, T. (2016). Predicting user response to sponsored advertising on social media via the technology acceptance model. *Computers in Human Behavior*, *64*, 710–718. https://doi.org/10.1016/j.chb.2016.07.027

Lin, Y.-T., Chen, S.-C., & Hung, C.-S. (2011). *The impacts of brand equity, brand attachment, product involvement and repurchase intention on bicycle users*. https://doi.org/10.5897/AJBM10.862

Love, K. (2015). Social media and the evolution of social advertising through Facebook, Twitter and Instagram. *Research Papers*. https://opensiuc.lib.siu.edu/gs_rp/687

Lu, K., & Holcomb, J. (2016). Digital news – revenue: Fact sheet. In A. Mitchell, J. Holcomb, & R. Weisel (Eds.), *State of the news media 2016* (pp. 51–60). https://assets.pewresearch.org/wp-content/uploads/sites/13/2016/06/30143308/state-of-the-news-media-report-2016-final.pdf

Lu, Y., Zhou, T., & Wang, B. (2009). Exploring Chinese users' acceptance of instant messaging using the theory of planned behavior, the technology acceptance model, and the flow theory. *Computers in Human Behavior*, *25*(1), 29–39. https://doi.org/10.1016/j.chb.2008.06.002

Luna, D., Peracchio, L. A., & de Juan, M. D. (2002). Cross-cultural and cognitive aspects of web site Nnavigation. *Journal of the Academy of Marketing Science*, *30*(4), 397–410. https://doi.org/10.1177/009207002236913

Luna, D., Peracchio, L. A., & Juan, M. D. de. (2003). Flow in individual web sites: Model estimation and cross-cultural validation. In P. A. Keller & Dennis W. Rook Valdosta (Eds.), *NA - Advances in consumer research* (Vol. 30, pp. 280–281). GA : Association for Consumer Research.

Macinnis, D. J., Moorman, C., & Jaworski, B. J. (1991). Enhancing and measuring consumers' motivation, opportunity, and ability to process brand information from ads. *Journal of Marketing*, *55*(4), 32–53. https://doi.org/10.1177/002224299105500403

MacKenzie, S. B., Lutz, R. J., & Belch, G. E. (1986). The role of attitude toward the ad as a mediator of advertising effectiveness: A test of competing explanations. *Journal of Marketing Research*, *23*(2), 130–143. https://doi.org/10.1177/002224378602300205

Maheshwari, S. (2017, September 6). Facebook tells advertisers it can reach many young people. Too many. *The New York Times*. https://www.nytimes.com/2017/09/06/business/media/facebook-advertisers.html

Mahnke, R., Benlian, A., & Hess, T. (2014). Flow experience in information systems research: Revisiting its conceptualization, conditions, and effects. *ICIS 2014 Proceedings*. https://aisel.aisnet.org/icis2014/proceedings/HumanBehavior/40

Marks, L. J., & Olson, J. C. (1981). Toward a cognitive structure conceptualization of product familiarity. *ACR North American Advances*, *8*. https:///www.acrwebsite.org/volumes/9800/volumes/v08/NA-08

Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First- and higher order factor models and their invariance across groups. *Psychological Bulletin*, *97*(3), 562–582. https://doi.org/10.1037/0033-2909.97.3.562

Martins, J., Costa, C., Oliveira, T., Gonçalves, R., & Branco, F. (2019). How smartphone advertising influences consumers' purchase intention. *Journal of Business Research*, *94*, 378–387. https://doi.org/10.1016/j.jbusres.2017.12.047

Marvin, G. (2016, April 5). *Native ads to make up 63 percent of mobile display ad spend by 2020, Facebook & IHS study finds*. Marketing Land. https://marketingland.com/native-in-stream-ads-63-percent-mobile-display-2020-facebook-171765

Mathwick, C., & Rigdon, E. (2004). Play, flow, and the online search experience. *Journal of Consumer Research*, *31*(2), 324–332. https://doi.org/10.1086/422111

Mir, I. (2015). Effects of beliefs and concerns on user attitudes toward online social network advertising and their ad clicking behavior. *The Journal of Internet Banking and Commerce*, *20*(2). http://www.icommercecentral.com/peer-reviewed/effects-of-beliefs-and-concerns-on-user-attitudes-toward-online-social-network-advertising-and-their-ad-clicking-behavior-59277.html

Mitchell, A. A. (1979). Involvement: A potentially important mediator of consumer behavior. *ACR North American Advances*, *NA-06*. https:///www.acrwebsite.org/volumes/5703/volumes/v06/NA-06

Mitchell, A. A. (1981). The dimensions of advertising involvement. *ACR North American Advances*, *NA-08*. https:///www.acrwebsite.org/volumes/9253/volumes/v08/NA-08/full

Mittal, B. (1989). Must consumer involvement always imply more information search? *ACR North American Advances*, *NA-16*. https://www.acrwebsite.org/volumes/6898/volumes/v16/NA-16/full

Morimoto, M., & Macias, W. (2009). A conceptual framework for unsolicited commercial e-mail: Perceived intrusiveness and privacy concerns. *Journal of Internet Commerce*, *8*(3–4), 137–160. https://doi.org/10.1080/15332860903467342

Mou, J., Zhu, W., & Benyoucef, M. (2019). Predicting the effects of product description on purchase intentions in cross-border e-commerce: An integration of involvement theory and commitment-involvement theory. *PACIS 2019 Proceedings*. https://aisel.aisnet.org/pacis2019/25

Mou, Y., Wu, K., & Atkin, D. (2014). Understanding the use of circumvention tools to bypass online censorship: *New Media & Society*. https://doi.org/10.1177/1461444814548994

Ndubisi, N. O., & Tung Moi, C. (2006). Awareness and usage of promotional tools by Malaysian consumers: The case of low involvement products. *Management Research News*, *29*(1/2), 28–40. https://doi.org/10.1108/01409170610645420

Nel, D., Niekerk, R. van, Berthon, J.-P., & Davies, T. (1999). Going with the flow: Web sites and customer involvement. *Internet Research*. https://doi.org/10.1108/10662249910264873

Novak, T. P., Hoffman, D. L., & Yung, Y.-F. (2000). Measuring the customer experience in online environments: A structural modeling approach. *Marketing Science*, *19*(1), 22–42. https://doi.org/10.1287/mksc.19.1.22.15184

Obadă, D. R. (2013). Flow theory and online marketing outcomes: A critical literature review. *Procedia Economics and Finance*, *6*, 550–561. https://doi.org/10.1016/S2212-5671(13)00173-1

Oliver, R. L., & Shor, M. (2003). Digital redemption of coupons: Satisfying and dissatisfying effects of promotion codes. *Journal of Product & Brand Management*. https://doi.org/10.1108/10610420310469805

Ozkara, B. Y., Ozmen, M., & Kim, J. W. (2017). Examining the effect of flow experience on online purchase: A novel approach to the flow theory based on hedonic and utilitarian value. *Journal of Retailing and Consumer Services*, *37*, 119–131. https://doi.org/10.1016/j.jretconser.2017.04.001

Pace, S. (2004). A grounded theory of the flow experiences of web users. *International Journal of Human-Computer Studies*, *60*(3), 327–363. https://doi.org/10.1016/j.ijhcs.2003.08.005

Park, C. Whan, & Young, S. M. (1983). Types and levels of involvement and brand attitude formation. *ACR North American Advances*, *NA-10*. http://acrwebsite.org/volumes/6133/volumes/v10/NA-10

Park, C. Whan, & Young, S. M. (1986). Consumer response to television commercials: The impact of involvement and background music on brand attitude formation. *Journal of Marketing Research*, *23*(1), 11–24. https://doi.org/10.1177/002224378602300102

Park, Choong Whan, & Mittal, B. (1985). A theory of involvement in consumer behavior: Problems and issues. *Research in Consumer Behavior*, *23*, 201–232.

Park, M., & Lennon, S. J. (2009). Brand name and promotion in online shopping contexts. *Journal of Fashion Marketing and Management*. https://doi.org/10.1108/13612020910957680

Pelet, J.-É., Ettis, S., & Cowart, K. (2017). Optimal experience of flow enhanced by telepresence: Evidence from social media use. *Information & Management*, *54*(1), 115–128. https://doi.org/10.1016/j.im.2016.05.001

Perrin, A., & Anderson, M. (2019, April 10). *Social media usage in the U.S. in 2019 | Pew Research Center*. https://www.pewresearch.org/fact-tank/2019/04/10/share-of-u-s-adults-using-social-media-including-facebook-is-mostly-unchanged-since-2018/

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 19, pp. 123–205). Academic Press. https://doi.org/10.1016/S0065-2601(08)60214-2

Petty, R. E., Cacioppo, J. T., & Heesacker, M. (1981). Effects of rhetorical questions on persuasion: A cognitive response analysis. *Journal of Personality and Social Psychology*, *40*(3), 432–440. https://doi.org/10.1037/0022-3514.40.3.432

Petty, R. E., Cacioppo, J. T., & Schumann, D. (1983). Central and peripheral routes to advertising effectiveness: The moderating role of involvement. *Journal of Consumer Research*, *10*(2), 135–146. https://doi.org/10.1086/208954

Pew Research Center: Internet, Science & Tech. (2019, June 12). *Social media fact sheet*. https://www.pewresearch.org/internet/fact-sheet/social-media/

Phrasee. (2018, October 22). *The history of Facebook advertising: A timeline*. Phrasee. https://phrasee.co/the-history-of-facebook-advertising-a-timeline/

Prendergast, G. P., Tsang, A. S. L., & Chan, C. N. W. (2010). The interactive influence of country of origin of brand and product involvement on purchase intention. *Journal of Consumer Marketing*, *27*(2), 180–188. https://doi.org/10.1108/07363761011027277

Rao, A. R., & Monroe, K. B. (1989). The effect of price, brand name, and store name on buyers' perceptions of product quality: An integrative review. *Journal of Marketing Research*, *26*(3), 351–357. https://doi.org/10.1177/002224378902600309

Ratchford, B. T. (1987). New insights about the FCB grid. *Journal of Advertising Research*, *27*(4), 24–38.

Rettie, R. (2001). An exploration of flow during Internet use. *Internet Research*, *11*(2), 103–113.

Rettie, R., & Brum, M. (2001, July). *M-commerce: The role of SMS text messages*. Conference on Telecommunications and Information Markets (COTIM) 2001: From E-Commerce to M-Commerce, Karlsruhe, Germany. https://eprints.kingston.ac.uk/6848/

Rossiter, J. R., Percy, L., & Donovan, R. J. (1991). A better advertising planning grid. *Journal of Advertising Research, 31*(5), 11–21.

Sánchez-Franco, M. J. (2006). Exploring the influence of gender on the web usage via partial least squares. *Behaviour & Information Technology, 25*(1), 19–36. https://doi.org/10.1080/01449290500124536

Santini, F. de O., Sampaio, C. H., Perin, M. G., & Vieira, V. A. (2015). An analysis of the influence of discount sales promotion in consumer buying intent and the moderating effects of attractiveness. *Revista de Administração, 50*(4), 416–431. https://doi.org/10.5700/rausp1210

Schaffel, G. (2018, February 20). *Facebook most popular with older users*. AARP. http://www.aarp.org/home-family/personal-technology/info-2018/facebook-users-age-fd.html

Schultz, D. E., & Block, M. P. (2014). Sales promotion influencing consumer brand preferences/purchases. *Journal of Consumer Marketing*. https://doi.org/10.1108/JCM-01-2014-0822

Senecal, S., Gharbi, J.-E., & Nantel, J. (2002). The influence of flow on hedonic and utilitarian shopping values. *ACR North American Advances, NA-29*. http://acrwebsite.org/volumes/8609/volumes/v29/NA-29

Sharethrough. (2012, November). *Forbes insights: Going native: How marketers are reinventing the online video advertising experience*. Forbes Insights. https://www.forbes.com/forbesinsights/going_native/

Sherif, M., & Cantril, H. (1947). *The psychology of ego-involvements: Social attitudes & identifications*. J. Wiley & Sons, Incorporated.

Shi, Y.-Z., Cheung, K.-M., & Prendergast, G. (2005). Behavioural response to sales promotion tools: A Hong Kong study. *International Journal of Advertising, 24*(4), 469–489. https://doi.org/10.1080/02650487.2005.11072939

Shimp, T. A. (2003). *Advertising, promotion & supplemental aspects of integrated marketing communications* (6th ed). Thomson South-Western.

Siekpe, J. S. (2005). An examination of the multidimensionality of flow construct in a computer-mediated environment. *Journal of Electronic Commerce Research, 6*(1), 31-43.

Skadberg, Y. X., & Kimmel, J. R. (2004). Visitors' flow experience while browsing a Web site: Its measurement, contributing factors and consequences. *Computers in Human Behavior, 20*(3), 403–422. https://doi.org/10.1016/S0747-5632(03)00050-5

Stone, B. (2010, March 3). Advertising on Facebook strikes some as off-Key. *The New York Times*. https://www.nytimes.com/2010/03/04/technology/04facebook.html

Strahilevitz, M., & Myers, J. G. (1998). Donations to charity as purchase incentives: How well they work may depend on what you are trying to sell. *Journal of Consumer Research, 24*(4), 434–446. https://doi.org/10.1086/209519

Sundar, S. S. (2009). Social psychology of interactivity in human-website interaction. In A. N. Joinson, K. Y. A. McKenna, T. Postmes, & Reips (Eds.), *Oxford Handbook of Internet Psychology*. https://doi.org/10.1093/oxfordhb/9780199561803.013.0007

Sundar, S. S., Jia, H., Waddell, T. F., & Huang, Y. (2015). Toward a theory of interactive media effects (TIME): Four models for explaining how interface features affect user psychology. In S. S. Sundar (Ed.), *The handbook of the psychology of communication technology* (pp. 47–86). Wiley Blackwell. https://doi.org/10.1002/9781118426456.ch3

Takatalo, J., Nyman, G., & Laaksonen, L. (2008). Components of human experience in virtual environments. *Computers in Human Behavior*, *24*(1), 1–15. https://doi.org/10.1016/j.chb.2006.11.003

Taylor, D. G., Lewin, J. E., & Strutton, D. (2011). Friends, fans, and followers: Do ads work on social networks?: how gender and age shape receptivity. *Journal of Advertising Research*, *51*(1), 258–275. https://doi.org/10.2501/JAR-51-1-258-275

Te'eni-Harari, T., Lehman-Wilzig, S. N., & Lampert, S. I. (2009). The importance of product involvement for predicting advertising effectiveness among young people. *International Journal of Advertising*, *28*(2), 203–229. https://doi.org/10.2501/S0265048709200540

Trel, M. (2017). *The effect of product familiarity on consumers' attention to online advertisements: An eye-tracking experiment*. http://urn.kb.se/resolve?urn=urn:nbn:se:hb:diva-12644

Trevino, L. K., & Webster, J. (1992). Flow in computer-mediated communication: Electronic mail and voice mail evaluation and impacts. *Communication Research*, *19*(5), 539–573. https://doi.org/10.1177/009365092019005001

Tucker, C. E. (2014). Social networks, personalized advertising, and privacy controls. *Journal of Marketing Research*, *51*(5), 546–562. https://doi.org/10.1509/jmr.10.0355

Ünal, S., Ercis, A., & Keser, E. (2011). Attitudes towards mobile advertising – A research to determine the differences between the attitudes of youth and adults. *Procedia - Social and Behavioral Sciences*, *24*, 361–377. https://doi.org/10.1016/j.sbspro.2011.09.067

Van den Broeck, E., Poels, K., & Walrave, M. (2017). A factorial survey study on the influence of advertising place and the use of personal data on user acceptance of Facebook ads. *American Behavioral Scientist*, *61*(7), 653–671. https://doi.org/10.1177/0002764217717560

Van den Broeck, E., Poels, K., & Walrave, M. (2018). An experimental study on the effect of ad placement, product involvement and motives on Facebook ad avoidance. *Telematics and Informatics*, *35*(2), 470–479. https://doi.org/10.1016/j.tele.2018.01.006

van Doorn, J., & Hoekstra, J. C. (2013). Customization of online advertising: The role of intrusiveness. *Marketing Letters*, *24*(4), 339–351. https://doi.org/10.1007/s11002-012-9222-1

van Noort, G., Voorveld, H. A. M., & van Reijmersdal, E. A. (2012). Interactivity in brand web sites: Cognitive, affective, and behavioral responses explained by consumers' online flow experience. *Journal of Interactive Marketing*, *26*(4), 223–234. https://doi.org/10.1016/j.intmar.2011.11.002

Van-Tien Dao, W., Nhat Hanh Le, A., Ming-Sung Cheng, J., & Chao Chen, D. (2014). Social media advertising value: The case of transitional economies in Southeast Asia. *International Journal of Advertising*, *33*(2), 271–294. https://doi.org/10.2501/IJA-33-2-271-294

Vaughn, R. (1986). How advertising works: A planning model revisited. *Journal of Advertising Research, 26*(1), 57–66.

Webster, J., Trevino, L. K., & Ryan, L. (1993). The dimensionality and correlates of flow in human-computer interactions. *Computers in Human Behavior, 9*(4), 411–426. https://doi.org/10.1016/0747-5632(93)90032-N

Wijaya, B. S. (2012). The development of hierarchy of effects model in advertising. *International Research Journal Of Business Studies, 5*(1), 73–85.

Williams, R. (2020, January 30). *Facebook's ad revenue rises 25% to record $20.7B*. Mobile Marketer. https://www.mobilemarketer.com/news/facebooks-ad-revenue-rises-25-to-record-207b/571362/

Wojdynski, Bartosz W., & Evans, N. J. (2020). The Covert Advertising Recognition and Effects (CARE) model: Processes of persuasion in native advertising and other masked formats. *International Journal of Advertising, 39*(1), 4–31. https://doi.org/10.1080/02650487.2019.1658438

Wojdynski, B.W. (2016). Native advertising: Engagement, deception, and implications for theory. In R. Brown, V. K. Jones, & B. M. Wang (Eds.), *The New Advertising: Branding, Content and Consumer Relationships in a Data-Driven Social Media Era* (pp. 203–236). Praeger/ABC Clio.

Xia, L., & Sudharshan, D. (2002). Effects of interruptions on consumer online decision processes. *Journal of Consumer Psychology, 12*(3), 265–280. https://doi.org/10.1207/S15327663JCP1203_08

Xu, Q., & Sundar, S. S. (2014). Lights, camera, music, interaction! Interactive persuasion in e-commerce. *Communication Research, 41*(2), 282–308. https://doi.org/10.1177/0093650212439062

Xu, X., & Lin, C. A. (2019). *Exploring the effects of facebook-use fluidity, flow and motivations on user interaction with newsfeed advertising*. the 102nd Annual Conference of the Association for Education in Journalism and Mass Communication, Toronto, Canada.

Xu, X., & Lin, C. A. (2020). *Exploring the effects of technology fluidity and flow of newsfeed advertising*. the 70th Annual Conference of the International Communication Association, Gold Coast, Australia (Virtual conference due to COVID-19 pandemic).

Yang, T. (2012). The decision behavior of Facebook users. *Journal of Computer Information Systems, 52*(3), 50–59. https://doi.org/10.1080/08874417.2012.11645558

Yoo, C. Y., Kim, K., & Stout, P. A. (2004). Assessing the effects of animation in online banner advertising: Hierarchy of Effects Model. *Journal of Interactive Advertising, 4*(2), 49–60. https://doi.org/10.1080/15252019.2004.10722087

Youn, S., & Kim, S. (2019a). Newsfeed native advertising on Facebook: Young millennials' knowledge, pet peeves, reactance and ad avoidance. *International Journal of Advertising, 38*(5), 651–683. https://doi.org/10.1080/02650487.2019.1575109

Youn, S., & Kim, S. (2019b). Understanding ad avoidance on Facebook: Antecedents and outcomes of psychological reactance. *Computers in Human Behavior, 98*, 232–244. https://doi.org/10.1016/j.chb.2019.04.025

Youn, S., & Shin, W. (2019). Teens' responses to Facebook newsfeed advertising: The effects of cognitive appraisal and social influence on privacy concerns and coping strategies. *Telematics and Informatics, 38,* 30–45. https://doi.org/10.1016/j.tele.2019.02.001

Youn, S., & Shin, W. (2020). Adolescents' responses to social media newsfeed advertising: The interplay of persuasion knowledge, benefit-risk assessment, and ad scepticism in explaining information disclosure. *International Journal of Advertising*, *39*(2), 213–231. https://doi.org/10.1080/02650487.2019.1585650

Zaichkowsky, J. L. (1994). The personal involvement inventory: Reduction, revision, and application to advertising. *Journal of Advertising*, *23*(4), 59–70. https://doi.org/10.1080/00913367.1943.10673459

Zhang, J., & Mao, E. (2016). From online motivations to ad clicks and to behavioral intentions: An empirical study of consumer response to social media advertising. *Psychology & Marketing*, *33*(3), 155–164. https://doi.org/10.1002/mar.20862

APPENDIX 1. Information Sheets

Pre-test:

Principle Investigator: Carolyn A. Lin
Title of Study: College Students' Facebook Use and Attitudes toward Newsfeeds

You are invited to participate in this study, which investigates college students' Facebook use and attitude toward newsfeeds. We are interested in finding out how college students interact with Facebook newsfeeds.
To participate in the study, you must be at least 18 years old. You will be asked to answer an online survey. Completing the research task should take approximately 15 minutes. Your participation will be anonymous and you will not be contacted again in the future. When you're responding to the questionnaire, you may refuse to answer any questions. You may also end your research participation at any time.
Extra credit may be given to you by your course instructor. We believe this study does not involve any risk to you. We will protect the security of the information we gather from you but we cannot guarantee 100% protection. As an anonymous study, we do not record any personal identification information. Hence a breach of data security will not affect you. Although you may find it interesting to participate in this study, you may not derive any direct benefit from your participation.
You do not have to be in this study if you do not want to be. We will be happy to answer any questions you have about this study. If you have further questions about this project or if you have a research-related problem, you may contact the faculty Principle Investigator, Dr. Carolyn Lin at (860) 486-3984. If you have any questions about your rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802. The IRB is a group of people that reviews research studies to make sure they are safe for participants.
Your participation in the study will be considered as your expressed consent to participate in the study. Thank you.

Main Study:

Principle Investigator: Carolyn A. Lin
Title of Study: College Students' Facebook Use and Attitudes toward Newsfeeds

You are invited to participate in this study, which investigates college students' Facebook use and attitude toward newsfeeds. We are interested in finding out how college students interact with Facebook newsfeeds.
To participate in the study, you must be at least 18 years old. You will be asked to come to the research lab and respond to a questionnaire about your perceptions and opinions. Completing the research task should take approximately 20-30 minutes. Your participation will be anonymous and you will not be contacted again in the future. When you're responding to the questionnaire, you may refuse to answer any questions. You may also end your research participation at any time.
Extra credit may be given to you by your course instructor. We believe this study does not involve any risk to you. We will protect the security of the information we gather from you but

we cannot guarantee 100% protection. As an anonymous study, we do not record any personal identification information. Hence a breach of data security will not affect you. Although you may find it interesting to participate in this study, you may not derive any direct benefit from your participation.

You do not have to be in this study if you do not want to be. We will be happy to answer any questions you have about this study. If you have further questions about this project or if you have a research-related problem, you may contact the faculty Principle Investigator, Dr. Carolyn Lin at (860) 486-3984. If you have any questions about your rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802. The IRB is a group of people that reviews research studies to make sure they are safe for participants.

Your participation in the study will be considered as your expressed consent to participate in the study. Thank you.

APPENDIX 2. Pretest List of Products

Please indicate how you feel about **each** of the following products using the scales below.

[Product List]:
Auto insurance
Automobiles
Big screen TV
Furniture
Mobile phone
Laptop computer
Streaming Blue-Ray Player
Mini fridge
Bluetooth headset/headphone
A vacation flight ticket
Dish detergent
Insecticide
Non-prescription cold remedy
Pain reliever
Paper towels
Toothpaste
Glue
Batteries
Perfume/cologne
Designer watch
Fitness and GPS watches
Wine for party
Day cream
Deodorant soap
Body wash
Shampoo
Greeting/Birthday card
Salty snacks
Beer
Soft drinks
Candy
Pharmaceuticals
Dry/liquid fabric bleach

1. Choosing a brand for this product category (product from the Product List) is _____
Very unimportant decision (1) …… A very important decision (7)

2. When making decision of buying such a product category (product from the Product List), you have _____

little to lose if you choose the wrong brand (1) …… A lot to lose if you choose the wrong brand (7)

3. The decision to buy a brand in this product category (product from the Product List) is: mainly logical or objective (1) …… mainly emotional or subjective (7)

4. The decision to buy a brand in this product category (product from the Product List) is: based on mainly functional facts (1) …… based a lot on feeling (7)

APPENDIX 3. Main Study Questionnaire

On average, approximately how much time do you spend on Facebook each day?
_____ hours _____ minutes

On average, in a typical week, approximately how often do you check Facebook?

_____ Throughout the day (8)
_____ Several times a day (7)
_____ A couple of times a day (6)
_____ About once a day (5)
_____ About once every other day (4)
_____ About once every three days (3)
_____ About once per week (2)
_____ Less than once per week (1)

---------- Message Induction----------

Please write down what kind of product is being advertised in the post you saw:
_____

Please indicate how you feel about this product category, using the following scales.
Choosing a brand for this product category is _____
Very unimportant decision (1) …… A very important decision (7)

The decision to buy a brand in this product category is:
mainly logical or objective (1) …… mainly emotional or subjective (7)

The decision to buy a brand in this product category is:
mainly based on functional facts (1) …… mainly based feelings it brings (7)

Please indicate your familiarity with this product category, using the scale below:
Not at all familiar (1) …… Extremely familiar (7)

The post you just saw _____

1) does not contain a discount offer
2) contains an instant 10% discount offer
3) contains a 20% discount offer
4) requires consumers to complete a survey

5) contains a barcode for in-store purchase
6) contains a six-digit coupon code

Please indicate how often you can easily perform the following tasks **if you see this ad in your Facebook newsfeeds**, using a 7-point scale (1 = Never Easy to 7 =Always Easy)

When you interface with this ad on your Facebook page, you feel that you can easily _____

	Not Easy						Very Easy
1. move across text, photo, graphic, audio, and video content formats on newsfeed	1	2	3	4	5	6	7
2. surf across news, information and entertainment content on newsfeed	1	2	3	4	5	6	7
3. communicate with other people	1	2	3	4	5	6	7
4. check Friends' updates and posts	1	2	3	4	5	6	7
5. interact with news, information and entertainment content on newsfeed	1	2	3	4	5	6	7
6. freely flow from one subject to the next on newsfeed	1	2	3	4	5	6	7
7. "like" any items as you wish anytime	1	2	3	4	5	6	7
8. post any items as you wish anytime (e.g., status update, photos)	1	2	3	4	5	6	7
9. share any items as you wish anytime	1	2	3	4	5	6	7
10. leave a comment on any items as you wish anytime	1	2	3	4	5	6	7

Please indicate how you usually react to such an ad if you see it in your Facebook newsfeeds, using the scale below.

When I am browsing my Facebook newsfeeds and spotting such an ad, I feel _____

Frustrated by having to differentiate the ad from other Facebook posts	1	2	3	4	5	6	7	Not frustrated by having to differentiate the ad from other Facebook posts
Agitated by seeing the ad posted in newsfeeds	1	2	3	4	5	6	7	Calm about seeing the ad posted in newsfeeds
Not in control of my Facebook browsing flow	1	2	3	4	5	6	7	In control of my Facebook browsing flow
Burdened by seeing the ad in my Facebook use	1	2	3	4	5	6	7	At ease with seeing the ad in my Facebook use

When I look at the ad posted in my Facebook newsfeeds, I feel that it is _____

Uninteresting	1	2	3	4	5	6	7	Interesting
Not eye-catching	1	2	3	4	5	6	7	Eye-catching
Dull	1	2	3	4	5	6	7	Exciting
Not enjoyable	1	2	3	4	5	6	7	Enjoyable

When I check out the ad, I feel that I am _____

Not drawn to it	1	2	3	4	5	6	7	Drawn to it
Not absorbed	1	2	3	4	5	6	7	Highly absorbed
Not focused	1	2	3	4	5	6	7	Intensely focused
Not stimulated	1	2	3	4	5	6	7	Very stimulated

Please indicate how you feel about the brand in the ad, using a 7-point scale (1=Strongly disagree to 7=Strongly agree)

The **brand** in this ad _____

	Strongly Disagree						Strongly Agree
is well made	1	2	3	4	5	6	7
is what I would enjoy	1	2	3	4	5	6	7
is what I would like to purchase	1	2	3	4	5	6	7
is the one that I should purchase	1	2	3	4	5	6	7

Please indicate whether you intend to purchase the product in the ad in the near future, using a 7-point scale (1=Strongly Disagree…7=Strongly Agree).

If I am browsing this ad in my Facebook newsfeed, I intend to purchase one or more such product by _____

	Strongly Disagree						Strongly Agree
placing an order after clicking on the ad	1	2	3	4	5	6	7
placing an order on the same day	1	2	3	4	5	6	7
placing an order in a few days	1	2	3	4	5	6	7
placing an order in a week	1	2	3	4	5	6	7
placing an order in a couple of weeks	1	2	3	4	5	6	7
placing an order in a month	1	2	3	4	5	6	7
placing an order in a few months	1	2	3	4	5	6	7

You gender is

Male (1)
Female (2)

How old are you?

What is your ethnicity?

Caucasian (non-Hispanic) (1)
African American (non-Hispanic) (2)
Hispanic (3)
Asian (4)
Pacific Islander (5)
Native American (6)
Two or More Races (7)
Other (8)

What is your total annual family income?

Below $50,000 (1)
Below $60,000 (2)
Below $70,000 (3)
Below $80,000 (4)
Below $90,000 (5)
Below $100,000 (6)
$100,000 or more (7)