MEDIA ENGAGEMENT IN ADVERTISING RESEARCH:

A SYSTEMATIC REVIEW AND META-ANALYSIS

by

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(Under the Direction of Karen W. King)

ABSTRACT

This study examines the influence of the media environment on advertising (a.k.a., the media engagement effect) – a factor that is suggested to be considered in media decisions. Even though it has been the subject of interest for media practitioners and scholars for more than 50 years, there remains a lack of understanding of this research area and an abundance of mixed results. Thus, this study aims to: 1) comprehensively review how media engagement has been studied in the literature, focusing on terms and definitions about the media engagement effect and theories considered to explain the effect; 2) examine the relationship between media context and ad effectiveness and determine when the relationship varies; and 3) identify which media context enhances or harms ad effectiveness.

In this study, 234 manuscripts were identified from 1960 to 2013 and examined using a systematic review and a meta-analysis. The majority of articles were journal publications that investigated the impact of media context on advertising in the TV context. More than half of the studies were conducted using experiment methods, and college students were most frequently recruited as study participants. This study found:

- A number of terms appeared in the literature to refer to media engagement. Earlier definitions of the terms tended to emphasize the values that media classes or vehicles possess, whereas later definitions emphasize the changes in consumers as a result of consumers' engagement with media prior to advertising exposure.
- About 133 theories were considered the foundation to explain why and how media engagement effect occurs, indicating this effect is a complicated phenomenon.
- Approximately 70 different media context variables were used, and about 15 different ad effectiveness measures were examined.
- The overall relationship between media context and ad effectiveness was weak, but the effect differed by specific media contexts and ad effectiveness measures.

The importance of these findings and implications of the results are discussed. Limitations and future research directions are also presented.

INDEX WORDS: Media Engagement, Advertising Placement, Media Planning, Involvement, Congruency, Systematic Review, Meta-Analysis, Random Effects Model

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DEDICATION

To my beloved parents:

Jaeyoong Kwon and Imsoon Kim

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TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Media play an important role for businesses to communicate marketing messages to their target audiences. For this reason, the majority of advertising dollars are spent for buying media time and space; advertising spending for media has continued to increase over the past several decades (e.g., Advertising Age, 2002; Cromwell, 2013; eMarketer, 2014; Galbi, 2008). A recent report from eMarketer (2014) estimated that total paid advertising media expenditures would reach nearly 200 billion dollars for 2016 in the U.S.

The process of making media decisions is known as media planning; as a sub-field of advertising it has existed since the beginning of advertising (Pasadeos, Barban, Yi, & Kim, 1997). The literature identified several factors considered in media decisions (e.g., reach, frequency, cost, CPM, program or editorial environment, the ability to increase sales), and the ability to reach a target audience was considered the most important media decision factor (King & Reid, 1997; Leckenby & Kim, 1994; Nowak, Cameron, & Krigman, 1993; Reid & King, 2005). Information such as ratings of programs, the number of viewers, listeners, and readers of media, and the composition of the audience such as gender and age were often used to estimate reach or audience delivery (Ephron, 2006; Gensch, 1970; Hoffman & Batra, 1991; Lloyd & Clancy, 1991a; Malthouse & Calder, 2010).

Media environments are additional factors that are often considered in media placement decisions. Cheong and Kim (2012) reviewed the scholarly literature in media planning from 1992 to 2007 and compared the study conducted by Pasadeos et al. (1997) which analyzed the literature in the same field from 1962 to 1991. They found that qualitative media selection factors were the third most frequently examined topic in media planning articles (i.e., 10.5%) between 1992 and 2007, which drastically increased from an average of 3.6% during the 30-year period between 1962 and 1991 (Pasadeos et al., 1997).

The reason for growing interest in media environment is that some media contexts are thought to be more appropriate for certain types of advertising (De Pelsmacker, Geuens, & Anckaert, 2002). For example, placing a fuel-efficient car ad in an article or program dealt with environmental issues could be more effective because it helps certain needs more salient and motivate media users to pay attention to ads (Maclnnis & Jaworski, 1989; Petty & Cacioppo, 1986), whereas some other context can do the opposite, influencing media users to pay less attention to ads (e.g., Bushman & Bonacci, 2002; Furnham, Gunter, & Walsh, 1998; Mundorf, Zillmann, & Drew, 1991). For these reasons, a considerable number of studies have investigated the impact of media contexts on advertising since the late 1950s with diverse perspectives ranging from looking at different genres to examining the impact of involvement, humor, or arousal of the media on ad effectiveness (e.g., Aaker & Brown, 1972; Dahlén, 2005; Goldberg & Gorn, 1987; Hoffman & Batra, 1991; Weilbacher, 1960). By the late 1980s, syndicated databases (e.g., MRI+) provided magazine qualitative information (e.g., recent reading with a six-month screen, place of reading, number of reading days, time spent with publication,

percentage of pages open, and interest in advertising [Donato, 1991]). As the Internet has been used as an advertising medium since the late 1990s and even more so in the 2000s, contextual advertising, placing an ad on a website that is relevant and fits target audience, became popular (e.g., Fielding & Bahary, 2005; Ware, Bahary, Calder, & Malthouse, 2007). The impact of media environments on advertising effectiveness is also known as engagement (i.e., media engagement) in advertising in the recent decade (Advertising Research Foundation, 2006).

The term, *engagement,* however, does not only refer to the influence of media environments on advertising. Especially with digital and interactive media, this term became widely used in advertising and marketing with different meanings and applications (e.g., engagement or interaction with brand managers). For this reason, the Association of National Advertisers (ANA), the American Association of Advertising Agencies (AAAA), and the Advertising Research Foundation (ARF) took the initiative and defined engagement, *turning on a prospect to a brand idea enhanced by the surrounding context*, in 2006 and called for more research on this subject. The *Journal of Advertising Research* dedicated an issue to the topic of engagement in 2006. The Marketing Science Institute puts forth customer engagement (i.e., conceptualization, definition, and measurement) as one of the tier 1 research priorities for 2014-2016. In 2012, in collaboration with Radar Research, the Interactive Advertising Bureau (IAB) conducted interviews with a number of companies to address the issues in the online advertising environment.

What is Engagement?

In spite of multiple attempts to define and understand engagement, it is considered as not very well understood (Gluck, 2012). It remains a top research topic of interest in advertising and marketing (Advertising Research Foundation, 2006; Marketing Science Institute, n.d.). One of the reasons for the diverse definitions and measures may be the different applications of the term "engagement." As shown in Figure 1, three types of engagement in advertising are discussed in the literature: media engagement, ad (message) engagement, and brand engagement (e.g., Fielding & Bahary, 2005; Nail, 2006).

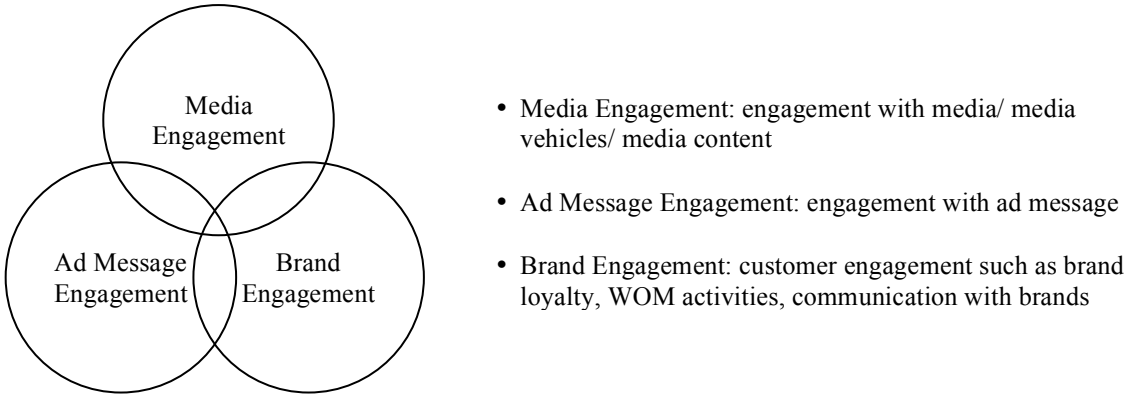


Figure 1. Types of engagement

Media engagement refers to media users' engagement with a media vehicle (e.g., whether media content and vehicles are captivating), which may result in influencing advertising effectiveness. It is the engagement closest to that defined by the Advertising Research Foundation (2006), and the basic premise of this type of engagement is that an audience engaged with medium is not only more likely to be exposed to an ad but is also more likely to be more responsive to advertising (Krugman, 1983; Mattes & Cantor, 1982; Murry Jr., Lastovicka, & Singh, 1992; Singh & Churchill, 1987). Because media

can affect whether the media users get to see and respond to advertising, Ephron (2006) also called them as the "gatekeeper of advertising engagement" or "doormen of engagement," by attracting media users and keeping them attentive and interested.

Ad message engagement refers to the engagement with an ad – whether the ad is compelling and audiences interact with the ad in some way (Gluck, 2012). Compared to other types of engagement, ad message engagement has been examined less by academic scholars. Existing studies attempted to explore ad message engagement on a conceptual level (e.g., Brodie, Hollebeek, Juric´, & Ilic´, 2011) or examined it as one of the dependent measures such as advertising message involvement (Celuch & Slama, 1998) and ad transportation (Wang & Calder, 2009). In the industry, attention to advertising, recall of information in the ad, and other responses to advertising are often measured for advertising engagement (Ephron, 2006; Nail, 2006).

Brand engagement refers to customers' behavioral engagement and participation in the communication process with or about the brand such as customer loyalty, word-of-mouth or brand-following activities, and contributions to the conversation with the brand and other customers. This is the type of engagement that is frequently mentioned to refer to consumer-initiated interaction with the development of digital and social media (e.g., Gluck, 2012; Hollebeek, Glynn, & Brodie, 2014).

Of these three types of engagement, media engagement is the focus of this study. This study considers engagement as *turning on a prospect to a brand idea enhanced by the surrounding context* (i.e., surrounding media context) defined by Advertising Research Foundation (2006). Media engagement is viewed as the effect of the

surrounding media context on audiences' processing and evaluation of ads, thereby influencing their brand-related thoughts and affects and further behavioral changes.

Previous Systematic Review on Media Engagement

Only one study could be found that comprehensively reviews the literature on media engagement. Moorman (2003) systematically reviewed 66 empirical studies (published from 1963 to 2002) on media context effects on advertising effectiveness as a part of her dissertation, examining types of media contexts, ad effect measures, research methods, and research participant samples. As shown in Appendix A, Moorman (2003) found that the largest part of the studies examined the effect of context in a television setting using an experimental method. She identified a number of media contexts and categorized media context variables into two characteristics: objective and subjective. The objective characteristics were vehicle types, specific features of the vehicle, and congruence between context and advertising. Subjective context characteristics were intensity (relative strength of the response) and valence (evaluative direction of the response; positive or negative), which were not perceived uniformly, as these are subjective mental reactions of people after confrontation with media content – for example, attitudes toward the medium, gratifications obtained from the medium, involvement with the medium and mood states (van Reijmersdal, Smit, & Neijens, 2010; Stewart, Pavlou, & Ward, 2002).

Moorman's (2003) analysis provides meaningful insights into which media contexts were examined until 2002, but there are several limitations. First, her search keywords were limited (i.e., "context," "environment," "program," or "article" in combination with the keywords "advertising," "ad(vertisement)" or "commercial"). A

number of terms have been used to refer to the media context effects on advertising effectiveness (e.g., qualitative media value, involvement, vehicle source effects, engagement) and these were not included in the search terms. Also, a manual review of reference sections of retrieved studies was not used to further identify literature not found in the computer databases. Second, as a means to analyze the data, Moorman (2003) used a vote counting analysis, which systematically counted the number of studies that reported a significant positive or a significant negative relationship or did not show a significant relationship. Even though this method yields meaningful implications, counting the number of studies may not provide the most accurate profile of the phenomena. Finally, because her study was conducted in the early 2000s, her study did not discuss online media with the exception of one study examined car banner ads on a car website. Because online media are one of the most important and fastest growing media today, media engagement in online and interactive media should be updated.

Purpose of the Research

The purpose of this study is threefold. First, this study scientifically examines and comprehensively reviews how media engagement has been studied from 1960 to 2013. For several decades, we have observed the development of newer communication technologies. Accordingly, over the past 50 years, a number of different media contexts have been examined to reach target audiences and tested using different research methods, different research participant types, and a variety of definitions and measurements. This study systematically reviews previous studies on the impact of media environments and similar terms on advertising effectiveness. Study characteristics are summarized and

discussed to attain a more comprehensive understanding and to provide insights on the trends in attempting to understand media engagement.

Second, due to the development of communication technology, different media contexts as well as different ad effectiveness measures appeared. Thus, this study quantifies and updates prior research findings on what media context variables and advertising effectiveness measures have been used. In addition, employing an integrative meta-analysis, this study estimates what the relationship is between media engagement and ad effectiveness, and how the relationship varies by study characteristics.

Third, this study attempts which media context enhances or harms ad effectiveness. As discussed above, reliance on such information as ratings and the number of media users in media decisions can fail to take into account the potential for positive or negative "rub-off" effects arising from the inherent characteristics of advertising media and vehicles (Finch & Quackenboss, 2001; Gensch, 1970), because certain media context may not provide a compatible environment for consumers to process the information of the ads and rather inhibit advertising processing even though a program attracts a large audience. Thus, the study identifies which advertising media contexts may yield better results for advertisers.

This study advances the literature by providing a clearer picture of media engagement definitionally, empirically, topically, theoretically, and methodologically. The goal is to help provide a better understanding and resolution of some of the conflicts currently discussed in academia and industry. As the use of advertising media is a paid form of marketing communication, the contribution that specific media make to the success of an advertising campaign in the form of media engagement has gathered

considerable academic and practitioner interest, and is one of the central phenomena of advertising. It is critical to theorize the interface between the ad-carrying media content and ad content with regard to consumer responses to ads; in a sense this bridges two domains – media agency and creative/strategy agency – which are often separated organizationally and theoretically. Thus, in this first meta-analytic effort to assess the relationship between media context and ad effectiveness, this study explains how the media environment works on consumers' advertising processing and evaluation and provides more accurate information and insights for media planners in making effective media decisions.

Dissertation Chapter and Organization

This chapter has provided the current status of media engagement, the types of engagement, a previous systematic review of studies on media engagement, and the purpose of the current study. Chapter 2 reviews the previous literature by moving from print to broadcasting to online media platforms. By doing so, chapter 2 discusses how media engagement has been studied with introducing some frequently-examined terms used to indicate media engagement. In Chapter 3, four main research questions are developed based on the literature review. The research method employed to address the research questions is detailed in Chapter 4, including the data collection method, coding procedures, coding variables, and effect syndication method. Chapter 5 presents the results and findings from the analysis of the collected data. The summary and discussion of key findings as well as the implications of the findings and future research directions are discussed in Chapter 6.

CHAPTER 2

LITERATURE REVIEW

This chapter provides a review of the literature on media engagement in the field of advertising. First, the historical background of advertisers' growing interest in media engagement is presented. Then, this chapter discusses how media engagement has developed and expanded by media type (i.e., broadcast, print, and online) over the years, focusing on when each medium began to be used as advertising media, what the current status is, and which media contexts were examined to explain ad effectiveness.

Burgeoning of Interest in Media Engagement

Before the 1950s, broadcasters' main revenue came from advertisers who bought a block of airtime such as 15, 30, and 60 minutes (Meyers, 2009). Programs were often designed to support advertisers' goals, and advertisers looked for programs to fit their commercial message (Meyers, 2009). For example, companies such as US Steel, Alcoa, and Firestone sponsored culturally uplifting programs which often emphasized social issues or historical figures (Meyers, 2009). By doing so, they tried to associate the prestige of the program with the products of their company.

In the 1950s, many of the early business models of broadcast media (e.g., single sponsorship, advertiser ownership of programming and control of a time franchise, advertising agency's program production) were replaced by new practices such as participating sponsorship, in which no advertiser owned the program but several bought time slots within it for advertising (Meyers, 2009). Ads were separated from programs,

and networks developed programming strategies that would attract the largest possible audiences, which in turn enabled networks to sell commercial minutes at the highest possible prices to advertisers seeking opportunities to reach audiences watching programs (Meyers, 2009). Due to the rising cost especially for TV, 30-second commercial spots became more common than 60-second spots by the end of the 1960s; accordingly, ad clutter became a concern for advertisers (Kim & Zhao, 1993; Meyers, 2009). In addition, in the 1950s, the ad industry was challenged by how TV audience numbers could be compared with radio and print audiences (Harvey, 1997), advertisers demanded to know how much they were getting from their advertising, and advertisers and companies required metrics to measure their ad effectiveness (Harvey, 1997; Meyers, 2009).

Against this backdrop, advertisers' and media practitioners' interests in evaluating advertising media in terms of both quantitative and qualitative (and intangible) values have increased (Weilbacher, 1960). Quantitative information about the audience (e.g., vehicle distribution, vehicle exposure, demographic information about audiences and readers) for the major media became available by the end of the 1950s. Advertising message exposure data became subject to more quantification for print and broadcast media (Weilbacher, 1960). The ARF proposed a six-stage model of the advertising process in 1961 to explain how advertising works and propose how to measure ad effectiveness from vehicle distribution to sales response (Harvey, 1997).

In addition, as the size of the media exposure potential (i.e., impressions) became available, advertisers wanted to know what impact their advertisements had on audiences as a result of the placement of a particular advertising message in one medium versus another (Nielsen, 2009, 2013; Weilbacher, 1960). The term a *medium's qualitative value*

(Weilbacher, 1960) was first used in academic studies to refer to the media engagement effect. Weilbacher (1960) suggested it occurs sequentially in two steps:

> [i]f an audience of certain characteristics is developed by a medium or vehicle because of the editorial specialization, then this specialized audience has a higher level of interest in specific subjects. It then follows that editorial content provides a more compatible environment for certain kinds of advertising messages and compels more attention to this environment from the audience members demonstrated to have unique characteristics. This interaction between the exposed audience members and the medium as the vehicle should lead to greater receptivity to such advertising messages and to greater advertising effect. (p. 13)

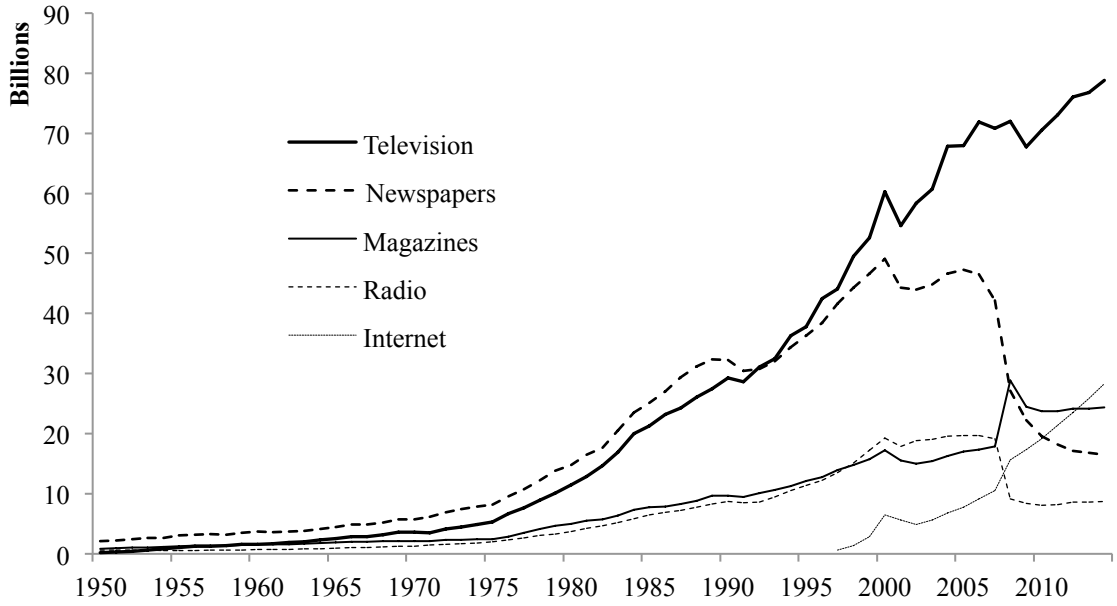
Simply put, media users may become more or less receptive and responsive to advertising as a result of media experiences. The interest in the impact of media engagement on advertising effectiveness continued over time across different media platforms.

Development and Expansion of Media Engagement

The development of newer communication technologies has influenced the ways for businesses to communicate with their audiences. Ascendance of each new medium has raised questions such as what to accomplish with newly available media, how to measure ad effectiveness, and how to compare costs across different media (Harvey, 1997). Print media (i.e., newspaper, magazines) were the earliest major advertising media to reach target audiences, and then broadcast (i.e., TV, radio) enjoyed the leadership position. Today it is online and interactive media (e.g., websites, blogs, social media) that are the fastest growing advertising media. Because each medium differs from one another in terms of how advertising messages are delivered to consumers (Goldsmith & Lafferty, 2002), the following section reviews how media engagement has been studied and developed by media platforms over the years.

Print Media: Newspaper and Magazine

The first U.S. newspaper ad appeared in 1648 and the first magazine ad in 1864 (Scott, 1904). The rise of mass-circulation of newspapers in the 1880s and magazines in the 1890s helped to develop these print media as national advertising outlets (Beniger, 1986; Nyilasy, King, & Reid, 2011). Newspapers and magazines continued their dominance in national advertising planning until the radio broadcasting started in 1922 (Nyilasy et al., 2011). Even though newspapers and magazines came to fall behind broadcasting and interactive media (see Figure 2), print is still an important advertising medium today (Azzaro, 2008; Nyilasy et al., 2011).



Note: The advertising expenditure data in 1945-2007 come from Robert J. Coen at Magna in the McCann Erickson advertising agency. His advertising data were published in the U.S. Census Bureau's *Historical Statistics of the United States, Colonial Times to 1970*; and the Television Advertising Bureau has made available online a recent version of Coen's data covering the years 1948 to 2007 (For more information, see http://purplemotes.net/2008/09/14/us-advertising-expenditure-data). As for data from 2008 to 2014, data are from GroupM, WPP's global media investment management agency, and reported in *Medialife Magazine* for media planners and buyers (see http://www.medialifemagazine.com/a-less-optimistic-outlook-for-u-s-ad-spending/).

Figure 2. Ad expenditure trend from 1950 to 2014

Magazines were used more predominantly in print media engagement research, with a few studies investigating different or multiple types of print media (Nyilasy et al., 2011). Studies examined credibility and prestige as a type of source to predict the impact on advertising (i.e., vehicle-source effects) (e.g., Aaker & Brown, 1972; Assmus, 1978; Finch, 1997; Finch & Quackenboss, 2001; Fuchs, 1964; Wilson & Isaac, 1995), reader involvement with media (e.g., Chang, 2009; Coulter & Sewall, 1995; Norris & Colman, 1992; Tipps et al., 2006), and congruence between types of magazine (e.g., automotive magazine) and ads (e.g., car ads) (e.g., Dahlén, Rosengren, Törn, & Öhman, 2008).

Credibility and prestige were used to differentiate the qualitative values across different media vehicles, examining them under the *vehicle source effects*. Vehicle-source effects indicate that an ad exposure has a different impact on an audience who is exposed to one vehicle as compared to an identical group exposed to another (Aaker & Brown, 1972, p. 11). This term was used more frequently in print media (e.g., Aaker & Brown, 1972; Assmus, 1978; Finch, 1997; Finch & Quackenboss, 2001; Fuchs, 1964; Hovland & Weiss, 1951; Wilson & Isaac, 1995). Scholars examined vehicle-source effects focusing on the dimension of credibility and prestige of media (Cotter, 1993; Finch, 1997). For example, Fuchs (1964) manipulated two source factors, the prestige of the company sponsoring the ad and the magazine's perceived prestige. In his experiment, he found significant main effects for both magazine and sponsors' prestige in research subjects' responses to the advertised products, indicating readers' attitude toward the product is enhanced more positively when it is inserted in prestigious magazines. Wilson and Isaac (1995) argued that if a reader trusts a magazine, the person is more likely to think that the

magazine would not include "questionable advertising" (p. 389) and, therefore, he or she is more likely to believe the advertising in a highly trusted magazine.

Involvement is another frequently used term for media engagement in print, even though it is used more frequently in the broadcast media. *Involvement* has been defined by several scholars, beginning with Krugman (1965). Initially, Krugman (1965, 1966, 1971) referred to it as the number of conscious bridging experiences, connections, or personal references between the stimulus and the media user. He distinguished high vs. low involvement and argued that people process information differently under each condition as well as different media (Krugman, 1965). In his study, he argued that magazines are a medium of high involvement compared with TV because the number of cognitive thoughts in magazines was higher than that in TV, which can lead media audiences' attention to ads (Krugman, 1966). Since this seminal definition and the studies by Krugman, the construct of involvement[1] has been reconceptualized and redefined (see Antil, 1984). The current definition of *involvement* emphasizes the motivational state toward a goal object to accomplish the goal (Mittal, 1989), and media involvement is often measured by how frequently respondents use the media, how they feel when they are exposed to media such as the level of attention, interest, relevancy, and importance, and whether the information is processed cognitively or affectively (e.g., Park & McClung, 1986; Zaichkowsky, 1985, 1994).

[1] Often, *involvement* and several similar terms (e.g., *absorption, engrossment, transportation, flow, presence*) are mentioned. These similar terms can be seen on the continuum of involvement (e.g., Andrews, Durvasula, & Akhter, 1990; O'Brien, 2011). As noted above, involvement can be defined as motivational and goal-directed, whereas *absorption, engrossment, transportation, flow,* and *presence* often describe the experience that is non-volitional and absorbed in the media contexts. More specifically, the term, *transportation*, is used in the narrative context (Green & Brock, 2000), *flow* has been studied in the context of activities such as sports, game, leisure activities in which people engage in certain activities and experience challenges (Nakamura & Csikszentmihalyi, 2002), and *presence* refers to the degree of perceived naturalness toward objects or events in a virtual environment (Jeong, Bohil, & Biocca, 2011), a sense of physical or spatial placement in a virtual environment (Lessiter et al., 2001)

Studies looking at the relationship between media involvement and ad effectiveness in print media reported mixed results in terms of different ad effectiveness measures: the more involved readers are in a magazine or newspaper, the greater the effect on attitudes toward the ad and the brand, but with no improvement in memory measures. For example, Tipps et al. (2006) operationalized involvement as the research participants' response toward a specific issue of the print (e.g., "I found this issue to be very thought-provoking," "many of the articles in this issue touched my feelings," "I became really involved in many of the articles in this issue") and tested the relationship between involvement in a print publication and the ad effectiveness measures (i.e., brand attitude, purchase intentions, attitude toward the ad, and recall). They found that involvement enhanced attitudes toward the ad and the brand and purchase intentions. However, no significant relationship between involvement within programs and the recall was found. Norris and Colman (1992) reported rather negative results. They investigated the relationship between involvement in a (particular) print publication and subsequent recall and recognition of ads. They found that higher levels of reader involvement in a print publication resulted in lesser recall and recognition of ads. Tipps et al. (2006) suggest that the reason could be that readers have control over the medium. Readers, compared to TV viewers or radio listeners, are better able to choose which portions of the newspapers or magazines will be read, and pause and think about what they see in a publication (Tipps et al., 2006). Therefore, readers are more likely to skip over advertisements in the magazines and less likely to process ads in depth.

Congruence between the medium and ads has also been examined in print media. Several studies reported that incongruence is better for advertising in print media. Winick

(1962) suggested that incongruence can attract more attention and lead to more processing because readers may not be able to recognize the ad or separate it from editorial content when ads and media context have high similarity (e.g., visual ads in magazine with considerable visual dynamics blended into the editorial content). Dahlén et al. (2008) also found similar findings. They compared the ad effectiveness when an ad was placed in a thematically incongruent medium (e.g., L'Oréal in *Outdoor Sports* magazine; Gore-Tex in *Cosmopolitan* magazine) vs. a thematically congruent medium (e.g., L'Oréal in *Cosmopolitan* magazine Gore-Tex in *Outdoor Sports* magazine). They found that research participants' ad processing time was longer for the incongruent media placement than for the congruent media placement; brand recall and recognition were higher in the incongruent media context; and ad attitude and brand attitude were also enhanced in the incongruent media context. They suggest that incongruence at a certain level provides new and interesting information, by attracting readers' attention to the ad, and readers can resolve the incongruence successfully and pleasantly (Janssens, De Pelsmacker, & Geuens, 2012). As a result, when there was an incongruent media environment in print enhanced ad effectiveness. However, extreme incongruence can lead to frustration and negative evaluations because it demands greater cognitive effort from consumers (Garbarino & Edell, 1997).

Broadcast Media: Radio and Television

Radio began to be used as an advertising medium in the early 1920s and enjoyed its primetime by late 1940s (Azzaro, 2008; Meyers, 2009), by drawing the attention of advertisers and researchers with its ability to appeal to listeners' imagination (McConnell, 1970). During that era, radio stations affiliated with one of three national networks

(Meyers, 2009). A vertical programming schedule was customary – each station broadcasted roughly the same program types as its competitors throughout the broadcast day, even though program content was often varied (Sullivan, 1990). Its popularity reached its peak in the late 1940s when 97% of stations were affiliated with a network, network radio advertising revenues totaled $210 million, and 94% of U.S. households owned radios (Meyers, 2009, 2013).

With the advent of television, however, the dominance of network radio as a national advertising medium decreased and serious audience erosion occurred (Sullivan, 1990), leading to a search for alternative programming models (Eberly, 1982; Hesbacher, 1978; Peterson & Davis, 1974; Sullivan, 1990). Radio stations turned toward less expensive recorded music and talk formats designed for local advertisers, shifting away from nationally sponsored entertainment programs (Rothenbuhler & McCourt, 2002), and geared to the tastes of a specific, narrowly defined target audience (Eberly, 1982; Peterson & Davis, 1974; Sullivan, 1990).

Accordingly, only a few studies investigated the impact of engagement with radio programs on advertising effectiveness (e.g., Moorman, 2003). Some existing studies examined the effect of humor on recall of a radio commercial (Cantor & Venus, 1980), program context antecedents of attitude toward radio commercials (Lord, Lee, & Sauer, 1994), context effects of radio programming on cognitive processing of embedded ads (Norris & Colman, 1996), and studies investigating the effectiveness of radio compared with other media platforms (Bronner & Neijens, 2006; Furnham, Benson, & Gunter, 1987; Klein, 1981; McConnell, 1970; Treutler, Levine, & Marci, 2010; Warshaw, 1978; Williams, Paul, & Ogilvie, 1957).

Television broadcasts, on the other hand, began in the late 1930s, and fewer than 10% of U.S. households had a TV in the early 1950s (Azzaro, 2008). Television penetration reached 90% by 1960 (Azzaro, 2008), and has become the single most important national advertising medium and a favorite medium of advertisers since 1976 when TV accounted for 20% of all advertising spending (Meyers, 2009; Treutler et al., 2010). Because television has an extra dimension (e.g., visual component compared to radio, audio component compared to print), is considered to be less ad-avoidable than radio and print ads, and has the ability to reach vast numbers of people frequently and over a short period of time, television has long been considered better or richer than other advertising media formats (Abernethy, 1991; Bratic, Greenberg, & Petersen, 1981; Tipps et al., 2006). For this reason, television has been the most frequently studied medium in media engagement studies (e.g., Bello, Pitts, & Etzel, 1983; Clancy & Kweskin, 1971; Crane, 1964; Cunningham, Hall, & Young, 2006; Goldberg & Gorn, 1987; Gunter, Furnham, & Beeson, 1997; Marci, 2006; McGrath & Mahood, 2004; Pavelchak, Antil, & Munch, 1988; Perry & Jenzowsky, 1997; Wang & Lang, 2012). Moorman (2003), in her dissertation (discussed in Chapter 1), also observed that 79% of the literature (published in the period 1963-2002) examined the effect of media context in a television setting.

Early engagement studies, especially on the television medium, tended to focus on differential effects of program genre based on audience composition. Schwerin (1960), for example, suggested food commercials fit well with situation comedies but do poorly in a mystery, adventure, or Western context. Campbell-Ewald (1961) suggested that men's products are best advertised on Westerns with "asertive"commercials, whereas food products called for commercials using emotional appeals and appearing on situation

comedies. Crane (1964) assumed that a Western show would be more involving for men while a quiz show would engage women more.

With the significant study by Krugman on involvement in the mid-1960s and 1970s, media engagement research area expanded further from diverse perspectives. Advertisers and media practitioners became more interested in the impact of program involvement on advertising (Celuch & Slama, 1993, 1998; McClung, Whan, & Sauer, 1985; Park & McClung, 1986; Tavassoli, Schultz, & Fitzsimons, 1995; Krugman, 1966, 1971; Marc 1966; Lloyd & Clancy, 1991; McGrath & Mahood, 2004; Moorman, Willemsen, Neijens, & Smit, 2012), congruency between media context and ad (e.g., Celuch & Slama, 1998; Goldberg & Gorn, 1987; Schumann & Thorson, 1989), sexual content (e.g., Bello et al., 1983; Parker & Furnham, 2007), violent content (Bushman & Bonacci, 2002; Bushman & Phillips, 2001; Bushman, 1998; Shen & Prinsen, 1999), and mood or specific affect induced by programs (Aylesworth & MacKenzie, 1998; Broach et al., 1995; Coulter, 1998; Kamins, Marks, & Deborah, 1991; Wang & Lang, 2012; Newell, Henderson, & Wu, 2001; Pavelchak et al., 1988).

More specifically, involvement with program was frequently examined with varying levels of involvement (low to moderate to high level of involvement) (e.g., Andrews et al., 1990; Tavassoli et al., 1995). The intensity of involvement tends to generate mixed results in the involvement literature. Generally, it is considered that involvement enhances ad effectiveness (e.g., Lloyd & Clancy, 1991a, 1991b; Moorman, Neijens, & Smit, 2007; Norris & Colman, 1996; Park & McClung, 1986; Sullivan, 1990) but, when consumers are overly involved with the program or as they approach the limit of their cognitive capacity (McClung et al., 1985), ad effectiveness decreases because

their motivation and intention to process further information may decrease (Celuch & Slama, 1998; Mundorf et al., 1991; Norris & Colman, 1992; Soldow & Principe, 1981).

For example, Norris and Colman (1996) conducted an experiment testing the hypothesis that the involvement, entertainment, and enjoyment properties of radio programs would be related to memory for the accompanying radio commercials and attitudes towards them. They found that entertaining, involving, and enjoyable programs are more likely to sustain the attention of subjects and to enhance the effectiveness of accompanying advertisements (i.e., ratings of the brands and the purchase intentions). Mundorf et al. (1991), however, found that individuals who are cognitively preoccupied with a program (i.e., a news story) were unable to pay immediate attention to subsequent commercials.

Another important line of research in broadcasting is the congruence between program content and advertising. In general, congruent program-commercial contexts in broadcast media are suggested to enhance ad effectiveness, even though a few studies argued that incongruency between media context and ad stimulates internal processing and improves audiences' memory (Feltham & Arnold, 1994; Houston, Childers, Heckler, 1987; Meyers-Levy & Tybout, 1989). Scholars often operationalized congruence in terms of involvement (cognitively vs. affectively programs and advertising) (e.g., Celuch & Slama, 1998; Coulter & Sewall, 1995; Goldberg & Gorn, 1987; Murry et al., 1992; Janssens et al., 2012; Yi, 1990a, 1990b) and mood or affect (e.g., happy [or positive] vs. sad [or negative] programs and advertising) (Kamins et al., 1991). Theories such as the balance theory, consistency theory, and cognitive dissonance theory were often cited and used to suggest that people are motivated to maintain harmony and consistency in their

thoughts, feelings, and behaviors, and they try to maintain uniformity (Solomon, 1996). In a sense, a congruent media content provides predictability, makes consumers more receptive to the information in the ad by encouraging them to evaluate the information consistently in their thoughts, and helps prompt them to respond to the ad more positively (Fazio, 2001; Herr, 1989; Klauer & Musch, 2003; Yi, 1990b, 1993).

Also, affect or mood induced by programs is also an important line of research, which is frequently explained by carry-over effect and congruency hypothesis. A number of studies suggest that positive mood induced by programs tend to carry over to the ad, and positively induced mood generates positive evaluation toward advertising. However, consumers in a negative mood become critical. For example, Axelrod (1968) suggests that feelings induced by media carried over to beliefs held about products. In his study, subjects felt significantly more depressed after seeing a sad film and associated this depressing feeling with the various products. Goldberg and Gorn (1987), on the other hand, found that ads placed in a more upbeat or positive context are consistently evaluated more favorably than ones placed in a negative context.

Online and Interactive Media

The origin of the internet dates back to research commissioned by the U.S. government in the 1960s (Stewart, 2000), but the web grew fast as the World Wide Web took off in the mid-1990s (McDonald, 1997). Since then, it took the internet less than 5 years to reach a U.S. audience of 50 million households, which is the figure that it took radio 38 years to reach; television, 13 years; and cable television, 10 years (Azzaro, 2008). In addition, the Internet has become a subject of advertisers' interest as another advertising and marketing communication channel, and the importance of having online

presence through websites has been noted (e.g., Bezjian-Avery, Calder, & Iacobucci, 1998; Jennings, 2000).

Online media are described as more interactive. The consumer and the brands can enter into dialogue in a way not previously possible with traditional media (e.g., Bezjian-Avery et al., 1998). Users can request more information and have much control over the contents that they consume (Danaher & Mullarkey, 2003). Their input allowed subsequent information to be customized to pertinent interests and block irrelevant communications, thereby enhancing the user experience as well as the efficiency of the firm's advertising and marketing effort (Bezjian-Avery et al., 1998; Danaher & Mullarkey, 2003). Due to the interactivity on websites and even more in social/digital media, the term *engagement* has become frequently and widely used with different applications ranging from media engagement to brand engagement (i.e., fan engagement) as discussed in Chapter 1.

As noted above, even though the online media has been around less than 20 years, a considerable number of scholars have examined media engagement in an online environment. Studies include conceptual and/or empirical studies defining engagement (Calder & Malthouse, 2005a, 2005b; Calder et al., 2009; Carroll & Gale, 2011; Mersey, Malthouse, & Calder, 2010; Mollen & Wilson, 2010), comparison of effectiveness between traditional media vs. website (e.g., Bezjian-Avery et al., 1998; Gallagher et al., 2001; Goldsmith & Lafferty, 2002; Sundar, Narayan, Obregon, & Uppal, 1998) or cross-channel integration of advertising (e.g., Wang, 2011), aesthetics of the website (e.g., Jennings, 2000), and examination of media context variables used in traditional media such as relevance or congruence between website content and ad (e.g., Dahlén et al.,

2008; Janssens et al., 2012; Jeong & King, 2010; Moore, Stammerjohan, & Coulter, 2005; Shamdasani et al., 2001; Zanjani, Diamond, & Chan, 2011), website reputation (e.g., Shamdasani et al., 2001), cognitive- vs. emotional-based website (e.g., Lee & Thorson, 2009), and user involvement (e.g., Danaher & Mullarkey, 2003).

The important aspect of media engagement studies in online and interactive media is the meaning of engagement. Even though the ultimate and long-term goal for advertisers and marketers would be product selection at the point of purchase, media engagement in traditional media generally refers to cognitive and affective influences of media. However, when it comes to online and interactive media, media engagement in the interactive media emphasizes more behaviors such as click through, number of ad shares (e.g., Bezjian-Avery et al., 1998; Calder et al., 2009; Gluck 2012; Janssens et al., 2012). For this reason, the Internet is viewed as a cost-transparent medium, because advertisers can quantify users' behaviors (Danaher & Mullarkey, 2003) and identify more accurate number of ad exposures and other behavioral changes than traditional media.

Another subject of interest in the web context is "interactivity" or "controllability," especially in the comparison between traditional media vs. website (e.g., Bezjian-Avery et al., 1998; Bronner & Neijens, 2006; Gallagher et al., 2001; Goldsmith & Lafferty, 2002; Sundar, Narayan, Obregon, & Uppal, 1998) or cross-channel integration of advertising (use of traditional media only vs. traditional media with interactive media) (e.g., Wang, 2011). Bezjian-Avery, Calder, and Iacobucci (1998) operationalized media contexts as interactive media (study participants had control over their viewing experience, and they clicked icon buttons) vs. traditional format (simulating a viewing session more like TV viewing and no choices were given), and they measured

ad effectiveness by time spent viewing ads, ad attitude, product attitude, and purchase intentions. This study concluded that the traditional format that media users have no control resulted in better ad effectiveness: respondents spent more time looking at ads presented in the traditional format compared to those in the interactive format, they had more positive attitude toward the ad, and reported higher purchase intentions of products in the ads. However, there was no significant difference in ad effectiveness when the same as was placed in print in comparison to the web (Gallagher et al., 2001). Gallagher et al. (2001) attributed this to the level of control and interactivity between print and the web, which is about the same or similar.

In addition, similar to print and broadcast media, relevance or congruence between website content and ad is also frequently examined (e.g., Dahlén et al., 2008; Janssens et al., 2012; Jeong & King, 2010; Moore et al., 2005; Shamdasani et al., 2001; Zanjani et al., 2011). Especially in online media, relevance can be considered not only advertising and the media environment in which an ad is displayed but also the fit between advertising message and the consumer (Interactive Advertising Bureau, 2014; Wang, 2006), because if the consumer has an interest in the content and is more likely to seek it out, accordingly, he or she will see the ad more relevant (Interactive Advertising Bureau, 2014). Studies in an online environment generally support a congruency effect, suggesting that congruent and relevant media context positively influences ad effectiveness. However, mixed findings are reported in the literature: contextual relevance does not impact ad recall (Jeong & King, 2010; Zanjani et al., 2011), incongruent context improves ad effectiveness when consumers' attention is divided (Janssens et al., 2012), and relevance has no impact on ad effectiveness when a low-

involvement product is examined and a website's reputation is well established (Shamdasani et al., 2001).

CHAPTER 3

RESEARCH QUESTIONS

The research questions that guide this study are presented in this chapter. Four major research questions are developed based on the literature review in Chapter 2 as well as to achieve the goals described in Chapter 1: to generate a comprehensive profile of engagement in advertising research, to examine the relationship between media engagement and ad effectiveness, and to identify which media context enhances or harms ad effectiveness so that media practitioners make better media decisions.

The first research question concerns terms and definitions used to refer to the media engagement effect. As described in Chapters 1 and 2, a number of different media contexts were examined in the literature and scholars have investigated them using different terms for the last 50 years, from qualitative media values to engagement today. The term *engagement* began to be used in the literature only in the recent decade (e.g., Calder & Malthouse, 2005a; Heath, 2009; Kilger & Romer, 2007; Mersey et al., 2010) as the Internet technology has become popular and to emphasize consumers' behavioral activities. Even before the Internet, however, the idea of engagement was discussed and it referred to emotional and cognitive responses (Gluck, 2012; Interactive Advertising Bureau, 2014). Different terms in use were: *vehicle source effects* (e.g., Aaker & Brown, 1972; Fuchs, 1964), *context effects* (e.g., Cannon, 1982; Norris & Colman, 1993), *involvement* (e.g., Krugman, 1966, 1971; Park & McClung, 1986; Tavassoli et al., 1995), and *priming* (e.g., Schmitt, 1994; Yi, 1990b, 1993). To have the overall picture of what

media engagement is, it is necessary to investigate what terms were used to refer the same effect and how they were defined. Thus, the first research question was generated:

RQ1: a) What terms are used to denote the media engagement effect and b) how are they defined?

Second, a number of theories and theoretical frameworks have been considered to explain the relationships between media context and advertising effectiveness and predicted positive or negative ad effectiveness. For example, the basic premise of media engagement is that audiences' engagement with media enhances ad effectiveness. Theories such as carry-over effect and consistency effect expect positive impact on advertising. Krugman (1983) suggested that greater interest in programs "carries over" to produce higher involvement with ads. Also, when execution styles, tones, mood, and topics are similar between media context and ads, the consistency provides predictability to media users by helping them quickly understand what the ad is about and to maintain harmony and consistency in their thoughts, feelings, and behaviors (e.g., Solomon, 1996). Thus, consistency between a program and an ad will positively affect attitude ratings of the commercial and better recall (Coulter & Sewall, 1995; Schumann & Thorson, 1989). However, theories such as elaboration the likelihood model and the limited capacity model suggest that engagement with media may rather harm ad effectiveness depending on media users' level of elaboration and involvement. Because people have limited cognitive space to absorb information, when they are highly involved with media, they have less available space for additional information from advertising (e.g., Norris & Colman, 1993) and accordingly lower recall is expected. Thus, the next research question addresses what theories are used in media engagement studies:

RQ2: What theories are considered the foundation to explain the engagement effect?

Third, a number of constructs are operationalized and used to test the relationships between media contexts and advertising effectiveness. Moorman (2003) identified media-context variables such as vehicle types, specific media contents, congruency between media contexts and ads, and intensity (e.g., arousal, involvement, suspense) and valence (e.g., attitude, emotions, feelings) induced by media contexts; and advertising response measures such as attitude toward the ad/brand/product, recall, and purchase intentions. Since Moorman's (2003) literature synthesis, a number of scholars have continued to explore the relationships between media engagement and ad effectiveness. What was especially significant about these studies was that they were conducted using the online and interactive media (whereas Moorman [2003] included one study conducted on the Internet). Thus, the next research question asks:

RQ3: What a) media context variables and b) advertising effectiveness measures are used to examine the relationships between media contexts and ad effectiveness?

Finally, the last research question addresses the relationship between media context and ad effectiveness. Some studies reported a positive relationship between these two (e.g., Appel, 1987; Braun & Pfleiderer, 2003; Bronner & Neijens, 2006; Calder et al., 2009; Clancy & Kweskin, 1971; Cunningham et al., 2006; Freiden, 1982; Norris & Colman, 1996), whereas others concluded that there is a negative relationship between media context and advertising effectiveness (e.g., Bushman & Bonacci, 2002; Bushman, 1998; Furnham, Gunter, & Walsh, 1998; Grigorovici & Constantin, 2004; Gunter et al.,

1997; Gunter, Furnham, & Pappa, 2005; Mundorf, Zillmann, & Drew, 1991; Norris & Colman, 1992, 1993; Perry & Jenzowsky, 1997). Because the body of literature is abundant with mixed findings regarding the relationships between media contexts and advertising, the overall relationship will be first examined.

Then, the sources of variation in the relationship strengths among studies are explored. In other words, the relationship may be associated with characteristics of the individual studies such as research participant (e.g., Peterson, 2001), research method (Wilson & Lipsey, 2001), and publication type (e.g., Lipsey & Wilson, 2001). For example, Peterson (2001) conducted a second-order meta-analysis to evaluate the implications of employing college student samples in comparison to nonstudent samples. In this study, he found that college students were found to be slightly more homogeneous than participants in the nonstudent sample, and more importantly, the effect sizes derived from college students differed from those from nonstudent samples both directionally and in magnitude. In addition, Moorman et al. (2002) suggested that the impact of media context on ad effectiveness could be different by research method. They found that in naturalistic settings (e.g., when the study was conducted using surveys or observation), the participants' ad recognition was higher than under lab experiment condition. One reason is that there is a limit on inducing the same or similar level of involvement, for example (Moorman et al., 2002; Norris & Colman, 1992). Due to these variations, meta-analysts such as Lipsey and Wilson (2001) and Schmidt and Hunter (2015) suggested coding and conducting moderator analyses using information related to study characteristics and methodological differences such as publication year, research participant types, sampling procedures, and study designs.

Also, effect size is examined by advertising media context types and ad effectiveness measures. It is one of the important goals of this study to identify which media context enhances ad effectiveness beyond ad exposure, because stronger and positive associations between specific media contexts and advertising effectiveness indicate that the specific media contexts are more effective in generating advertising responses, whereas negative associations indicate less desirable media contexts. It is important for media planners to understand the dynamics of the impacts depending on where the ad is placed to make better and effective media decisions. Thus, research question 4 is sequentially broken down into 4 sub-questions:

RQ4: How are media contexts associated with advertising effectiveness?

RQ4-a: What is the overall population mean effect size?

RQ4-b: How are the characteristics of studies such as publication time interval (i.e., 1960s, 1970s, 1980s, 1990s, 2000s, 2010-2013); publication type (i.e., journals vs. conference proceedings and dissertations); research methods (i.e., experiments vs. nonexperiments); research participant type (i.e., children, college students, adults, women only, men only); advertising media type (i.e., TV, radio, newspaper, magazines, film, websites, games, and hand-held devices); brand type (i.e., real vs. fictitious brands); and advertising type (i.e., real vs. fictitious ads) associated with the relationship strength between media contexts and advertising responses?

RQ4-c: How is the effect size different by specific media contexts examined in the media engagement literature?

RQ4-d: How is the effect size different by specific advertising effectiveness measures (i.e., cognitive, affective, and behavioral response measures)?

CHAPTER 4

METHOD

A systematic review and meta-analysis are used to address the research questions developed in Chapter 3. This chapter presents the reason for employing a systematic review and meta-analysis as well as the exact details of both, including research procedures such as the literature search, development of coding scheme, coder training, assessment of intercoder reliability, and data extraction and effect sizes calculating formulas.

Justification of Method: Systematic Review and Meta-analysis

The use of a systematic review is appropriate in this study to achieve the first goal (i.e., to scientifically and comprehensively review how media engagement has been studied until now) described in Chapter 1 and to address research questions (i.e., RQ1-a and -b, RQ2); furthermore, the systematic review is a necessary step for a meta-analysis (for RQ3-a and -b, RQ4-a, -b, -c, and -d). Systematic reviews are literature reviews that aim to limit researchers' bias by attempting to identify, appraise, and synthesize all relevant studies in order to answer particular questions (Petticrew & Roberts, 2006, p. 10). Even though a non-systematic literature review is meaningful in that it provides an overview and an argument over an issue in a certain research area, such review can be biased because it is not comprehensive and exhaustive, and researchers may give more value and weight on supporting information and devalue conflicting information (Hubbard & Armstrong, 1992; Hubbard & Lindsay, 2013; Singh, Ang, & Leong, 2003).

A systematic review, by contrast, adopts a particular methodology to minimize bias and maintain objectivity, thus producing a scientific summary of the evidence in any area (Petticrew & Roberts, 2006). In a sense, a systematic review is another type of research method, similar to a survey that involves a survey of the literature, instead of people (Petticrew & Roberts, 2006), and a content analysis, which analyzes contents of the literature.

A meta-analysis is also appropriate in this study. The purposes of conducting a meta-analysis are to integrate the statistical results of scientific studies to establish true relationships between two variables, and to determine moderators (Hunter & Schmidt, 2004; Rosenthal, 1994; Schmidt & Hunter, 2015). As described in Chapters 1 and 3, this study focuses on establishing the most accurate estimate for relationship between media context and ad effectiveness, and identifying moderators (RQ4-a, -b, -c, and -d).

The term *meta-analysis* was first coined by Glass (1976), and since then this method has evolved into an important and valuable research method in which scholars can review all available quantitative findings on a particular issue to provide the foundation for evidence-based research and practices, resolve conflicting problems, provide a high degree of generalization, as well as identify where the literature gap and uncertainty exists (e.g., Eisend, 2015; Petticrew & Roberts, 2006; Schmidt & Hunter, 2015). There is no specific number of studies required for a meta-analysis, but on average about 40 studies were included in a meta-analysis conducted between 1918 and 2012 in marketing field (Eisend, 2015). In addition, recently, this method has been recommended as a prescription to promote a replication tradition in marketing and advertising (e.g., Easley, Madden, & Dunn, 2000; Peterson, 2001). As a result, studies using a meta-

analysis are published in a number of quality journals today (e.g., Costley, 1988; Eisend, 2009, 2015; Peterson, 2001) and gaining more attention from the relevant fields, and they are valued.

Research Procedure

This systematic review and meta-analysis were completed in a manner in accordance with MARS (Meta-Analysis Reporting Standards) by the APA publications and communications board working group on journal article reporting standards (APA, 2008). These guidelines were developed by reviewing the standards developed and extended by other related groups and professional organizations such as the QUOROM Statement (Quality of Reporting of Meta-analysis; Moher et al., 1999) and its revision, PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses; Moher, Liberati, Tetzlaff, Altman, & the PRISMA Group, 2009), MOOSE (Meta-analysis of Observational Studies in Epidemiology; Stroup et al., 2000), and the Potsdam Consultation on Meta-Analysis (Cook, Sackett, & Spitzer, 1995), as well as by sharing the drafted standards with cognizant others and refining the standards again (APA, 2008). The statement is presented in Appendix B, and this study closely follows these guidelines.

Scope of Research Interests

Media engagement is the primary interest of this study. As reviewed in Chapter 2, different terms were used to refer to engagement effect: *media engagement*, *context effect*, *(vehicle) source effects*, *program involvement*, *media involvement*, and *priming*. They were frequently used to predict the impact of the surrounding media context on ad

effectiveness In other words,

- *Media engagement*, as defined in Chapter 1, refers to turning on a prospect to a brand idea enhanced by the surrounding context (ARF, 2006).
- *Context effect* refers to the impact of the "context" in which an ad appears (e.g., the programing and other material such as competing commercials, station promotions) on a commercial message (Schumann & Thorson, 1989)
- *(Vehicle) source effects* generally refers to the differential effect that an ad exposure will have on an audience exposed in one vehicle as compared to an identical group exposed in another (Aaker & Brown, 1972).
- *(Program or media) involvement* is one of the constructs examined in the relationship between media engagement and ad effectiveness, and it is often defined as an active, motivated state, signifying interest and arousal induced by a television program (or other media) (e.g., Moorman et al., 2012)
- *(Contextual) Priming* generally refers to the activation of knowledge stored in long-term memory following exposure to a stimulus (Althaus & Kim, 2006). In media engagement, programming and editorial context activate media users' store product-related information, which can subsequently influence the perceptions of advertised brands (e.g., Yi, 1993).

As noted in Chapter 1, this study views engagement consistent with ARF's (2006) definition and considers it as the effect of the surrounding media context on audiences' processing and evaluating ads, thereby "turning on" their brand-related thoughts and affects and further behavioral changes, represented by engagement, context effect, (vehicle) source effects, program involvement, involvement, and priming.

Because the purpose of this study is to draw the big picture of media engagement, it does not have restrictions on specific independent or dependent variables, research designs, time period, or geography and culture. However, only manuscripts written in English are included.

Data Sources and Literature Search

Articles published before December 31, 2013, were located using searches of databases such as EBSCOhost, ProQuest, Web of Science, and JSTOR, which provide published journal articles, conference proceedings, and unpublished dissertations in the field of the interest of this study. In addition, articles from the Print & Digital Research Forum (PDRF; formerly known as Worldwide Readership Research Symposium) were also examined because, as a biennial meeting of print media researchers, media and audience researchers and practitioners from around the world share ideas about media and consumers. The key words used in the research included *engagement*, *context effects*, *vehicle effects*, *(vehicle) source effects, program involvement*, *involvement*, and *priming* because these terms were used to indicate the media engagement effect. Some of the key words yielded more than several thousand results (e.g., *engagement*), but most of them were irrelevant to this study. Thus, in order to get more relevant results, the search was refined by adding the key word *media* and limited to academic journals, conference proceedings, and dissertations. Titles and abstracts of the articles were perused to identify media engagement studies, and as a result 194 articles were identified. In addition, reference lists from retrieved articles were manually reviewed to exhaustively identify engagement studies. As shown in Figure 3, a total of 234 articles were retrieved and examined for this study.

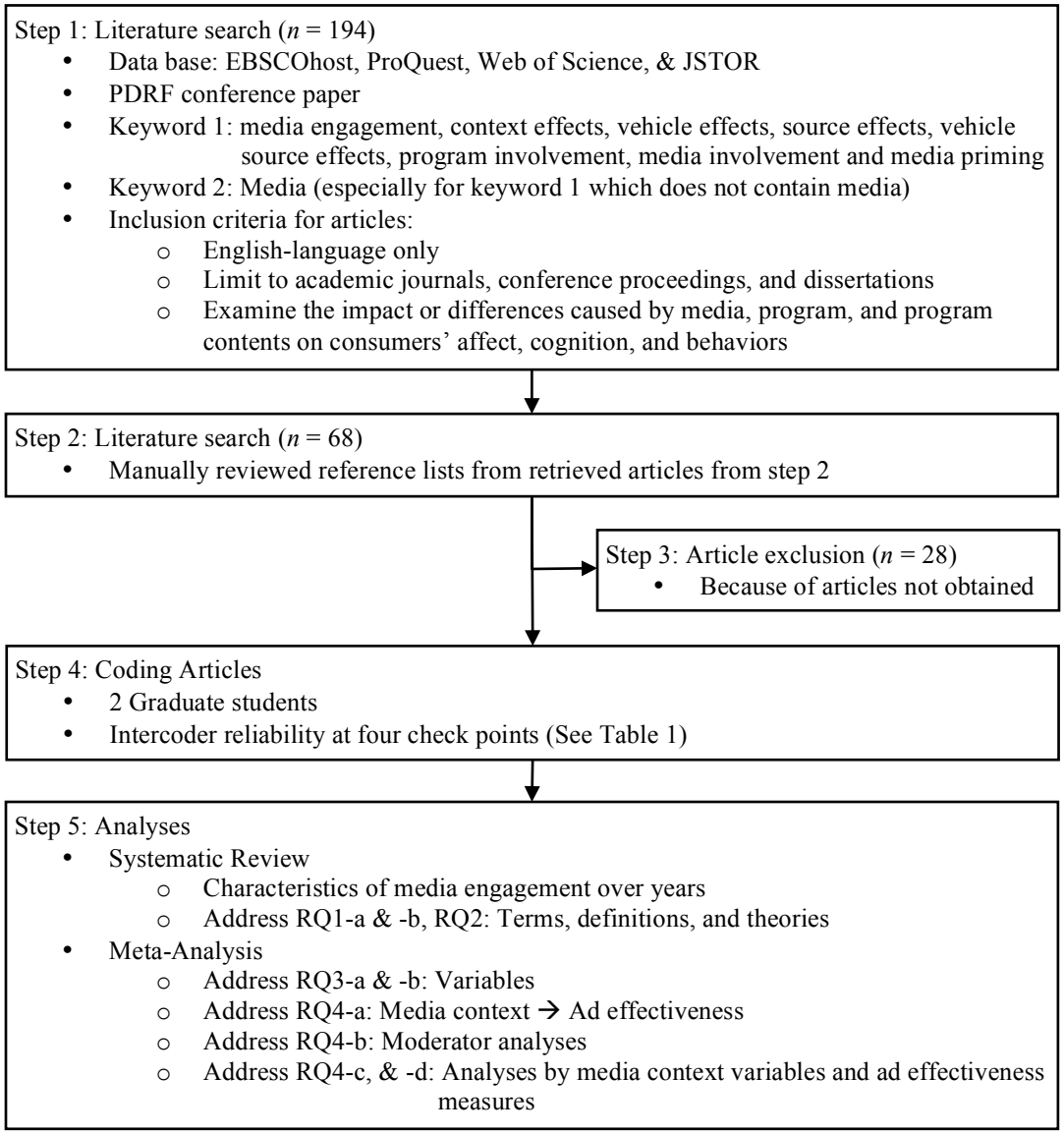


Figure 3. Flow diagram of study selection and research procedure

Coding Procedures

Development of Coding Scheme

Coding variables included (1) publication type, (2) presence and types of terms used to denote the media engagement effect, (3) definitions for engagement effect, (4) presence and types of theories considered as the foundation to explain the media engagement effect, (5) the explicit measure of engagement, (6) presence and types of

empirical data to measure engagement effect, (7) types of research method, (8) types of experiments and designs, (9) random assignment of research participants, (10) presence or outcome of manipulation check, (11) nonexperimental sampling method, (12) location of data collection, (13) sample sizes, (14) types of research participants, (15) types and names of advertising media, (16) product names or category that advertised, (17) types of ads and brands, (18) media contexts variable names and measures, (19) advertising response variables and measure, (20) reported statistics (effect size data), (21) outcomes of hypothesis and research questions, and (22) nature of engagement effects (see Appendix C for coding sheet).

Publication type. This category, revised from the category by Lipsey and Wilson (2001, p. 228), included journal article, full published conference proceedings, abstract form of conference proceedings, and dissertations or master's thesis.

Presence and types of terms used to denote the media engagement effect. Presence of terms to denote the media engagement effect was first coded by (1) Yes or (2) No. Then, the list of terms (*engagement, context effect, vehicle effect, (vehicle) source effect, program involvement, media involvement,* and *priming*) was provided to the coders. Also, they had the option to write-in other terms not listed on the coding sheet. The variable was coded based on the criterion of "explicit" mentions of the variables or the categories. For example, when the manuscript authors mentioned *contextual priming,* the coders marked the *priming* category.

Definitions of engagement effect. The coders were asked to check whether definitions of terms used to denote the media engagement effect were provided in the manuscript. Because they may have different ideas on the definitions, they were asked to

use keywords such as *define* or *refer* to identify whether the definitions were provided and how the terms were defined.

Presence and types of theories. Similar to definitions, this variable was coded based on the criterion of "explicit" mentions. Because coders may have different ideas on what is considered as theories, by referring to Pitt, Berthon, Caruana, and Berthon (2005) and Kim, Hayes, Avant, and Reid (2014), they were asked to code explicit mentions of *theories*, *theoretical frameworks*, *models*, and *effects*.

Explicit measure of engagement. This variable was coded to identify how media engagement was measured and tested, and it was categorized as (1) reactions to ad in various media types, (2) reactions to media only, and (3) reactions to both media and ad in various media types.

Presence and types of empirical data to measure engagement effect. This category was adopted from Yale and Gilly (1988) and included (1) qualitative data, (2) quantitative data, (3) both qualitative and quantitative data, and (4) not reported.

Types of research method. This coding category was adopted from Kim et al. (2014), and included (1) experiment, (2) survey, (3) secondary data analysis, (4) content analysis, (5) meta-analysis, (6) in-depth interview, (7) focus group, (8) critical analysis, (9) ethnography, (10) textual analysis, and (11) other.

Types of experiments and designs. Types of experiments were categorized as (1) field experiment, (2) lab experiment, (3) not specified. Experiment design was categorized as (1) within-subject design, (2) between-subject design, (3) mixed factorial design, and (4) unclear or not defined.

Random assignment of research participants. This variable was adopted from Lipsey and Wilson (2001) and coded either (1) yes or (2) no.

Presence or outcome of manipulation check. Manipulation check was coded by (1) yes or (2) no, followed by the outcome of the manipulation check: (1) all significant, (2) mixed, and (3) not significant.

Nonexperimental sampling method. Sampling method was coded by (1) census, (2) random sampling, (3) stratified sampling, (4) cluster sampling, (5) convenience sampling, (6) purposive sampling, (7) quarter sampling, (8) unclear/not specified, and (9) other.

Location of data collection. This variable was an open-ended question. Coders were asked to write-in the country name where data collection was conducted. When it was not reported, coders left it blank.

Sample sizes. Coders were asked to write-in the total sample size (i.e., final sample size) as well as sample sizes for each sub-group (for experiments).

Types of research participants. Research participants were coded as (1) college students only, (2) children (below 18 years old), (3) adults (above 18 non-college students), (4) women only (above 18), and (5) men only (above 18).

Types and names of advertising media. Adopting Potter and Riddle's (2007) categories, advertising media was categorized as (1) TV, (2) radio, (3) newspaper, (4) magazines, (5) film, (6) websites, (7) video games, (8) hand-held devices, and (9) other. Because several advertising media types can be used, coders were asked to choose all that apply. For online magazines, the coders checked both “magazine” and “websites.”

Product names or categories advertised. This variable was an open-ended question. Coders were asked to write-in product names or categories used in ads.

Types of ads and brands. The following coding categories for types of ads were adopted from Eisend (2009): (1) all real ads, (2) all fictitious ads, (3) both real ads and fictitious ads, and (4) unclear and not specified. As for the types of brands, Eisend's (2009) categories were revised for "brand," and coded as (1) all real (or known by the recipients) brands, (2) all fictitious (or unknown by the recipients) brands, (3) both real brands and fictitious brands, and (4) unclear and not specified. Again, the criterion of "explicit" mention was applied and coders were asked to search for information such as if manuscript authors mentioned that 1) they used real ads or brands known by the recipients for real ads or brands or 2) ads were modified and brand names were created (fictitious brands or ads). When authors did not mention what types of ads or brands, the coders were asked to mark on "unclear and not specified."

Media contexts variable and advertising effectiveness measures. Coders were asked to write-in the variable name first, followed by type of variable (e.g., independent variable, moderator, or dependent variable), the number of items used to measure the variable, and reliability (e.g., Cronbach's alpha) if it was a continuous variable, and levels for dichotomous variable (e.g., TV vs. print).

Reported statistics (effect size data). Statistical results were coded as follows: correlation, chi-square, t-statistic, F-statistic, degree of freedom (*df*1 and *df*2), mean and standard deviation, and other (e.g., frequency, proportions).

Outcomes of hypothesis and research questions. The outcome of hypothesis was coded as (1) supported, (2) partially supported, and (3) not supported, by adopting Reid,

Soley, and Wimmer (1981). As for outcomes of research questions, the coders were asked to write-in.

Nature of engagement effects. This variable was coded as (1) media engagement increases ad effectiveness, (2) media engagement decreases ad effectiveness, (3) media engagement does not affect the ad effectiveness, and (4) the relationship cannot be determined, and (5) other.

Coder Training

Two coders performed the coding. They were graduate students with background knowledge in advertising and quantitative research methods. Prior to the main coding, multiple pilot sessions, using some advertising and marketing journal articles and conference proceedings that are not included in the main study, and discussions were held to train the coders in the coding procedure and coding variables as well as resolve some ambiguities or difficulties with the coding material. After a series of pilot coding, the coding scheme was further refined. In order to ensure that coding practices did not drift over time, periodic reliability checks and retraining were conducted (Orwin, 1994), the articles were divided into three phases, and one-third of the articles in each phase (approximately 26 articles) were coded for inter-coder reliability. After all articles were coded, final inter-coder reliability was assessed with 26 articles that were not coded by both coders. The data collection spanned the fall 2013 – spring 2014.

Intercoder Reliability

Intercoder reliability was assessed by Perreault and Leigh's (1989) index (P/L Index) and percent agreement (see Table 1 for intercoder reliability for each variable).

Table 1. Coding Scheme and Intercoder Reliability

Coding Variables	Categories	Time 1 (n = 26)	Time 1-2	Time 2 (n = 26)	Time 3 (n = 26)	Final (n = 26)
Publication Type (Lipsey & Wilson, 2001)	Journal Full published conference proceedings Abstract form of conference proceedings Dissertation/Master's thesis	1.00		.95	.90	.86
Terms for Engagement Effect	Yes/No	.68**	.76	.88	.78	.88
Types of Terms*	Media engagement	.88	.88	.92	.96	.92
	Context effect	.92	.92	.96	1.00	.96
	Vehicle effect	.78	.92	1.00	1.00	1.00
	(Vehicle) Source effects	.92	.92	1.00	1.00	1.00
	Program involvement	.83	.96	.88	.96	.96
	Media involvement	.96	.96	1.00	1.00	.92
	Priming	.96	.96	.92	1.00	.92
	Other (write-in)	.96	.90	.96	.83	.92
Engagement Definition	Yes/No	.88	.88	.92	.92	.88
Theory Presence (Pitt et al., 2005; Kim et al., 2014)	Yes/No	.68**	.76	.76	.85	.88
Names of Theory	Open-ended question	.65**	.77	.83	.83	.85
Engagement Measured	Yes/No	.88		.91	.96	.92
Measure of Engagement	Reactions to ad in various media types Reactions to media only Reactions to both media and ad in various media types	.88		.84	.91	.91
Empirical Data Reported (Yale & Gilly, 1988)	Qualitative data Quantitative data Both qualitative & quantitative data Not reported	.97		.95	1.00	1.00
Method Type* (Kim et al., 2014)	Experiment	.92		.92	.96	.96
	Survey	.96		.83	.92	.96
	Secondary data analysis	.96		.92	1.00	1.00
	Content analysis	1.00		.98	1.00	1.00
	Meta-analysis	1.00		.92	1.00	1.00
	Interviews	.96		.88	.97	1.00
	Focus group	1.00		.96	1.00	1.00
	Critical analysis	1.00		1.00	1.00	1.00
	Ethnography	1.00		1.00	1.00	1.00
	Textual analysis	1.00		1.00	1.00	1.00
	Other	1.00		1.00	1.00	1.00
Types of Experiments	Field experiment Laboratory experiment Not specified	.88		.91	.94	.91

Coding Variables	Categories	Time 1 (n = 26)	Time 1-2	Time 2 (n = 26)	Time 3 (n = 26)	Final (n = 26)
Types of Experimental Design		.73	.80**	.83	.92	.89
	Within-subject design					
	Between-subject design					
	Mixed factorial design					
	Unclear/not defined					
Subjects Randomly Assigned (Lipsey & Wilson, 2001)	Yes/No	.83		.83	1.00	.96
Manipulation Check	Yes/No	.96		.96	.92	.92
Outcome of Manipulation Check		1.00		.88	1.00	1.00
	All significant					
	Mixed					
	Not significant					
Sampling Method		.89		.91	.93	.91
	Census					
	Random sampling					
	Stratified sampling					
	Cluster sampling					
	Convenience sampling					
	Purposive sampling					
	Quarter sampling					
	Unclear/not specified					
	Other (panel sampling)					
Location of data collection	Open-ended question	.92		.85	.88	.88
Sample Size (Lipsey & Wilson, 2001)	Open-ended question	.85		.81	.88	.92
Research Participants*						
	College students only	.87			1.00	1.00
	Children (below 18)	.92			1.00	1.00
	Adults (18+, non-college students sample)	.87			.96	.92
	Women only (18+)	1.00			1.00	1.00
	Men only (18+)	1.00			1.00	1.00
Advertising Media* (Potter & Riddle, 2007)	Used vs. Not used	.88		.88	1.00	.96
	TV	.96		.88	.92	.96
	Radio	1.00		.91	1.00	1.00
	Newspaper	1.00		.96	1.00	1.00
	Magazines	.96		.96	.96	.96
	Film	1.00		1.00	.92	1.00
	Websites	1.00		1.00	1.00	.96
	Video games	1.00		1.00	1.00	1.00
	Hand-held devices	1.00		1.00	1.00	1.00
	Other	.96		.96	.95	.96
Advertising Media Vehicles	Open-ended question	.84		.85	.85	.92
Product Category/ Names	Open-ended question	.81		.88	.92	.92

Coding Variables	Categories	Time 1 (n = 26)	Time 1-2	Time 2 (n = 26)	Time 3 (n = 26)	Final (n = 26)
Types of Ads (Eisend, 2009)		.77		.86	.95	.95
	All real ads					
	All fictitious ads					
	Both real ads and fictitious ads					
	Unclear/not specified					
Types of Brands (Eisend, 2009)		.77		.77	.95	.95
	All real brands					
	All fictitious brands					
	Some are real and some are fictitious brands					
	No brand used/not specified					
Name Variable	Open-ended question	.88		.85	.92	.92
Types of Variables (e.g., IV, MV, DV)	Open-ended question	.88		.85	.92	.96
Number of Items (used to measure variable)	Open-ended question	.94		.91	.92	.92
Reliability (Eisend, 2009; Schmidt & Hunter, 2015)	Open-ended question	.89		.96	.92	.88
Levels (for nominal variables)	Open-ended question	.89		.92	.96	.92
Statistical Results (Lipsey & Wilson, 2001)		.87		.85	.87	.89
	Correlation coefficient					
	Chi-square					
	t Statistic					
	F Statistic					
	df1					
	df2					
	Means					
	SDs					
	Other					
Hypothesis Outcome (Reid et al., 1981)		.81		.88	.91	.91
	Supported					
	Partially supported					
	Not supported					
Outcome of RQ	Open-ended question	.81		.81	.77	.81
Nature of Engagement Effects						
	Increase effectiveness	.88		.83	.88	.83
	Decrease effectiveness	.78		.78	.83	.88
	Not to affect the effectiveness of advertising	.96		.92	.88	.83
	Cannot determine	.88		.83	.92	.88
	Other	1.00		1.00	1.00	1.00

Note: *Coders were asked to check all that apply. **Because intercoder reliability fell below the cut-off point in Time 1, coders recoded the variables in Time 1 articles. When there were discrepancies, the tie-breaker recoded this variable.

Intercoder reliability is often assessed by having two or more coders to code variables and assess the extent of agreement between or among the coders (Lombard, Snyder-Duch, & Bracken, 2002). Several methods of this assessment are reported in the literature, including percent agreement, Holsti's method, Scott's Pi, Cohen's Kappa, Krippendorff's Alpha, and Perreault and Leigh index (P/L Index). Because P/L Index is known to be relatively more rigorous than other measures and takes chance agreements into account (Kolbe & Burnett, 1991), it was used to assess the reliabilities for the categorical variables. The acceptable level of reliability was set to .75, based on Rust and Cooil's (1994) suggestion that the acceptable level was .75 for 2 categories for 2 coders and .66 for 3 categories, which were comparable to Cronbach's alpha .70. As for open-ended variables, percent agreement was used. When there was an agreement between coders, 1 point was given to the variable but when there was a disagreement, 0 point was given. As for the cut-off value for the overall intercoder reliability, 75% agreement was used.

When intercoder reliability did not exceed the threshold value, coders met with the primary investigator and discussed how to resolve the discrepancies, and they recoded those variables of the articles in that phase to ensure the reliability of the variable. In the first phase (i.e., Time 1 in Table 1), the intercoder reliability of the variables – presence of terms for engagement effect, presence of theory, names of theories, and types of experimental design – were recoded because of the lack of the intercoder reliability.

Data Extraction and Effect Size Calculating Formulas

As discussed in previous chapters, media engagement was operationalized a number of different ways and different outcome measures were used by testing the

relationships with different research methods. It is rare in social science to use identical independent variables, outcome measures, research methods, and research participants to test a phenomenon (Shadish, Cook, & Campbell, 2002). For this reason, a meta-analysis standardizes effect using a common metric over studies (e.g., Pearson product-moment correlation, biserial correlation, tetrachoric correlation, Spearman Rho, Cohen's *d*, Hedge's *d*). By doing so, different studies share the same means and standard deviations and can be averaged across studies (Shadish et al., 2002).

Thus, this study retrieved statistical results from articles that examined the relationship between media context and ad effectiveness and tested using quantitative research methods. The effect size metric selected for the analysis was the correlation coefficient (*r*) because 1) it is a commonly used approach for meta-analytical review in the marketing literature (e.g., Argo & Main, 2004; Brown & Peterson, 1993; de Matos & Rossi, 2008; Eisend & Küster, 2011; Eisend, 2009b, 2015; Janiszewski, Noel, & Sawyer, 2003; Pan & Zinkhan, 2006), 2) familiar to many readers and 3) easier to interpret with bounded values (ranging ±1.0). Thus, correlation coefficient (*r*) was retrieved.

In case correlation coefficients were not reported, other information to compute effect sizes (e.g., means and standard deviations, t/F ratio, frequency, and proportions) was reported separately by the coders. When t/F ratio or means and standard deviations were reported, which is the case when the independent variable is binary but the dependent variable is continuous, point-biserial correlation (pbs r) coefficients were calculated (Rosenthal, 1991, p. 24). Then, they were adjusted to biserial correlation (r_b) coefficients, which provides an estimate of the relationship between the quantitative

independent variable underlying the dichotomy and the continuous dependent variable (MacCallum, Zhang, Preacher, & Rucker, 2002, p. 24).

In case two dichotomous independent and dependent variables, for example, using proportions and frequencies, were reported, tetrachoric correlation coefficients. Similar to a biserial correlation, a tetrachoric correlation is the best approximation of Pearson r and it estimates the relationship between the two continuous variables underlying the dichotomies (MacCallum et al., 2002, p. 24). Effect size calculating formulas are reported in Appendix D.

As a result, retrieved statistical information included correlation, chi-square, t-statistic, F-statistic and degree of freedom (*df*1 and *df*2), mean and standard deviation, frequencies, and proportions along with sample sizes. Research findings that could not readily be meta-analyzed using established effect size statistics, including partial and canonical correlation as well as multivariate analysis such as multi-way ANOVA, ANCOVA, multiple regression, discriminant analysis, factor analysis, and structural equation modeling, were excluded because these results were adjusted by other variables (Lipsey & Wilson, 2001). However, when the zero-order correlation matrix was reported, the bivariate correlations from that matrix were coded for effect sizes (Lipsey & Wilson, 2001). As for 2-way or multi-way ANOVA, F ratios from the main effects or interaction effects were not retrieved because F values were adjusted by another variable (Keppel & Wickens, 2004, p. 218). However, t-ratios from post-hoc tests or results from separate univariate ANOVA were retrieved. When the manuscript did not provide sufficient information for direct calculations (e.g., only means reported, only *p* values reported), effect sizes were not retrieved.

CHAPTER 5

RESULTS

Results of the systematic review and meta-analysis are reported in this chapter. The results are ordered and described in relation to the research questions developed in Chapter 3. The systematic review focuses on the first two research questions (i.e., RQ1 and RQ2) and a meta-analysis addresses the last two research questions (i.e., RQ3 and RQ4). By doing so, this chapter first provides characteristics of the studies examined in the area of media engagement including comprehensive overview of types of terms used to denote the media engagement effect, definitions, and theories. Then, a detailed description of the variables follows as well as analyses describing the overall population mean effect size and effect sizes resulting from moderator analyses described in Chapters 3 and 4.

Characteristics of Studies in Media Engagement

A total of 234 articles authored by 371 scholars were examined in this study. The majority of the studies (78%; 182 articles) were published in journals, such as *Journal of Advertising Research* (*JAR*), *Journal of Advertising* (*JA*), *Journal of Current Issues and Research in Advertising* (*JCIRA*), *International Journal of Advertising* (*IJA*), *Journal of Consumer Research* (*JCR*), and *Psychology & Marketing* (*P&M*). The remaining 22% of the retrieved studies were found in full-published conference proceedings such as *Print and Digital Research Forum* (previously named *Worldwide Readership Research Symposium*), *Advances in Consumer Research*, and *Association for Education in*

Journalism and Mass Communication (39 articles; 17%), the abstract form of conference proceedings such as *American Academy of Advertising* (9 articles; 4%), and unpublished doctoral dissertations (4 articles; 2%).

Eleven percent of the articles (i.e., 26 articles) were conceptual papers addressing what media engagement is, how it can be measured, or what the potential impact could be (e.g., Calder & Malthouse, 2005b; Chook, 1985; Consterdine & Hartley, 2003; Weilbacher, 1960). About 90% (i.e., 208 articles), on the other hand, examined media environments as a variable of the study. Among them, approximately 56% (132 articles) examined consumers' reactions to advertising placed in the various media types. Nearly 17% (i.e., 39 articles) concerned media only rather than specifically measuring the impact of media contexts on advertising. These studies, in other words, were conducted to explore dimensions of media engagement (Carroll & Gale, 2011; Haq & Rahman, 2011; Kline, Powell, Maxwell, & White, 2011; Philport, 1993), or compared media types or media vehicles to examine different reactions among the audience toward media rather than explicitly measuring reactions toward advertising in the media. The main purpose of these studies is to imply the potential impact of media types or media vehicles on advertisements if they were placed in specific media contexts. Finally, the remaining 16% (i.e., 37 articles) not only compared different reactions by consumers toward specific media or media vehicles but also investigated the impact of media contexts on advertising. Characteristics of the studies are reported in Table 2.

About 85% of the articles provided empirical data (199 articles), the majority of which reported quantitative data (96%; 191 articles), 1.5% (3 articles) reported qualitative data, and 2.5% (5 articles) reported both quantitative data and qualitative data.

Table 2. Characteristics of Articles

	Categories	Frequency	%
Publication Type		234	100.0
	Journals	182	77.8
	Full published conference proceedings	39	16.7
	Abstract form of conference proceedings	9	3.8
	Doctoral dissertations	4	1.7
Publications		234	100.0
	Journal of Advertising Research	39	16.7
	Journal of Advertising	34	14.5
	Print and Digital Research Forum (previously named Worldwide Readership Research Symposium)	26	11.1
	Journal of Current Issues and Research in Advertising	10	4.3
	Advances in Consumer Research Proceedings	9	3.8
	International Journal of Advertising	7	3.0
	Psychology & Marketing	7	3.0
	Journal of Consumer Research	7	3.0
	American Academy of Advertising Proceedings	6	2.6
	Applied Cognitive Psychology	5	2.1
	Advertising Research Foundation Key Issue Forum	4	1.7
	Journalism & Mass Communication Quarterly	3	1.3
	Journal of Promotion Management	3	1.3
	Journal of Consumer Psychology	3	1.3
	Journal of Broadcasting (and Electronic Media)	3	1.3
	Other	68	29.1
Authors			
	Bobby J. Calder	11	
	Peter C. Neijens	9	
	Edith G. Smit	8	
	Edward C. Malthouse	7	
	Marjolein Moorman	7	
	Barrie Gunter	7	
	Claire E. Morris	6	
	Adrian Furnham	6	
	Andrew M. Colman	6	
	Brad J. Bushman	5	
	Herbert E. Krugman	4	
	Kenneth R. Lord	4	
	James E. Finch	3	
	Keith S. Coulter	3	
	Kevin J. Clancy	3	
	Maggie Geuens	3	
	Micael Dahlén	3	
	Patrick De Pelsmacker	3	
Measure of Engagement (Yes)		208	88.9
	Reactions to ad in various media types	132	63.5
	Reactions to media only	39	18.8
	Reactions to both media and ad in various media types	37	17.8

	Categories	Frequency	%
Empirical data reported (Yes)		199	85.0
Types of data	Quantitative data	191	96.0
	Qualitative data	3	1.5
	Both qualitative & quantitative data	5	2.5
# of Studies within Article*	1 study	179	90.5
	2 studies	13	6.0
	3 studies	6	3.0
	4 studies	1	0.5
Data Collected Countries*	United States	165	72.7
	United Kingdom	13	5.7
	Canada	9	4.0
	Germany	9	4.0
	Netherlands	8	3.5
	Belgium	4	1.8
	Taiwan	4	1.8
	Sweden	3	1.3
	Australia	2	.9
	Korea	2	.9
	New Zealand	2	.9
	Bangladeshi	1	.4
	Israel	1	.4
	Japan	1	.4
	Pakistan	1	.4
	Singapore	1	.4
	South Africa	1	.4
Method*	Experiment	156	68.7
	Survey	50	22.0
	In-depth interview	25	11.0
	Secondary data analysis	9	4.0
	Focus group	2	.9
	Meta-analysis	1	.4
	Ethnography	1	.4
Research Participants*	College students only	127	55.9
	Adults (18+ non-college students)	71	31.3
	Children (under 18)	12	5.3
	Women only (18+)	12	5.3
	Men only (18+)	1	.4
	Other or not specified	10	4.4
# of Ad Media Used*	1	202	89
	2	17	7.5
	3	5	2.2
	6	2	.9
	7	1	.4

	Categories	Frequency	%
Ad Media Type*	TV	118	52.0
	Magazines	62	27.3
	Websites	30	13.2
	Newspaper	12	5.3
	Radio	11	4.8
	Film	10	4.4
	(Video) Games	10	4.4
	Handheld devices	1	.4
	Other (print, free local papers, mail, creative media)	16	4.8
Product Categories (advertised in the ad)	Specified**	137	68.8
	Beverage	53	
	Alcoholic	24	
	Milk	3	
	Soft drink/sports drink	10	
	Water	3	
	Juice	5	
	Nonalcoholic	2	
	Coffee	3	
	Tea	1	
	General	1	
	Food	46	
	Bread	1	
	Breakfast cereal	5	
	Chicken sandwich	1	
	Cooking oil	2	
	Fruit/vegetables	2	
	Jam/spreads	4	
	Macaroni	1	
	Margarine	1	
	Meat product	3	
	Nachos	1	
	Processing company	1	
	Snack	4	
	Snack (cracker)	2	
	Snack (sweets/dissert)	11	
	Soup	1	
	Sweetener	1	
	General	5	
	Personal care	46	
	Body oil/body cream	3	
	Cleanser	4	
	Contact lenses	1	
	Cosmetic	6	
	Deodorant	3	
	Electric razor	1	
	Fragrance	5	
	Hair product	13	
	Mouth rinse/toothpaste/chewing gum	7	
	Nail	1	

Categories	Frequency	%
Electronics	33	
Camera/photography/camcorder equipment	4	
CD	2	
Computer/printer/internet equipment	8	
Mini stereo system	2	
Pager/mobile phone	7	
Radar detector	1	
TV	3	
Videogame	2	
General	4	
Services	29	
Tax preparation	1	
Auto repair	1	
Bank/credit card/loan	13	
Delivery	1	
Funeral	1	
Life insurance	6	
Telephone/mobile phone	4	
General	2	
Automobile	28	
Cars	27	
Motorcycle	1	
Clothing/Fashion	27	
Engagement rings/silver	2	
Eye glasses	1	
Footwear	4	
Jeans, sportswear, underwear	18	
Watch	2	
Household	29	
Architectural product (window glass, paint/wood)	3	
Cleaning product/laundry detergent	14	
Floor wax	1	
Furniture/bed	1	
Glue	3	
Lawn fertilizer	1	
Light bulbs	1	
Fabric	1	
Housewares (broilers, kettle)	3	
General	1	
Pharmaceuticals	24	
General/medical product	4	
Medicines/pills/drugs	15	
Itch/pain relieving spray	2	
Antibiotic ointment/scar gels/skincare	3	
Retail store	14	
General	3	
Craft stores	1	

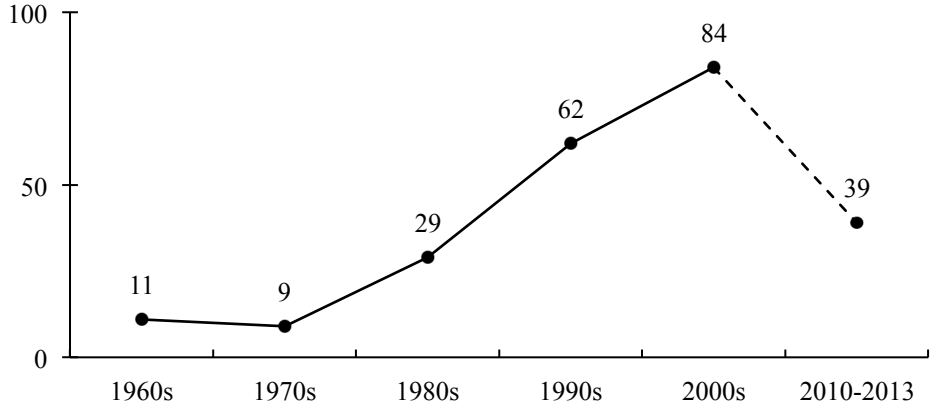
Categories	Frequency	%
Department stores	1	
Drug store	1	
Electronics/computer store/DVD	3	
Grocery store/supermarket	3	
Hardware store	2	
Leisure	10	
Camping tent/sleeping bag	4	
Ice show	1	
Movie	3	
Nightclub	2	
Organizations	10	
Corporate-image campaign	1	
Corporate	1	
Energy/oil	2	
Health/prevention	4	
Pet center	1	
Travel agency	1	
Food chain	8	
Fast-food	7	
Restaurant	1	
Tour/travel	7	
Media	7	
Airlines	5	
Motor oil	5	
Cigarette/Marijuana	3	
PSA (alcohol, anti-drug)	3	
School supply (backpack/pen)	3	
Apartments/housing	2	
Art galleries/museum	2	
Bookstore	2	
Pet food	2	
Sports	2	
Other (e.g., abdominal exerciser, army, book, consumer packaged goods, durable goods, gift certificates, lottery, politics, toys, warehouse)	14	

Note: *The base number of the study is 227 because 20 articles reported more than 1 study within the article. Also, the sum of cases can be greater than 227 because a study may have used several methods, research participants, and advertising media within the article. **When product categories are not specified (or simply stated the number of product categories or ads), the studies were excluded.

Most of these articles conducted one study (90%; 179 articles), 6% (13 articles) conducted 2 studies, and less than 4% (7 articles) conducted 3 or more studies. This resulted in a total number of 227 empirical studies.

More than half of the empirical studies were conducted using experiment methods (156 studies; 69%), whereas surveys were used in 22% of the studies (50 articles), in-depth interviews in 11% (25 articles), and secondary data analysis in less than 4% (9 studies). College students were most frequently recruited as research participants (127 studies; 56%), followed by adults (71 studies; 31%), children (12 studies; 5%), and adult women only (12 studies; 5%). As for the advertising media explored, television was used in 52% of the studies (118 studies), magazines in 27% (62 studies), and online media (e.g., websites) in 13% (30 studies). The majority of the studies examined engagement using one medium (202 studies).

In order to see the trend of engagement studies, the publication year of each article was re-grouped by the decade (i.e., 1960s, 1970s, 1980s, 1990s, 2000s, and 2010-2013). As shown in Figure 4, the number of articles about media engagement has



Note: The last timeframe (2010-2013) included only 4 years. The author used the dotted line to indicate that the number of engagement studies did not decline in the recent decade.

Figure 4. Frequency of the media engagement studies by decade

increased over time: media engagement was examined in 11 articles in the 1960s (1.1 per year), 9 articles in the 1970s (.9 per year), 29 articles in 1980s (2.9 per year), 62 articles in the 1990s (6.2 per year), and 84 articles in 2000 (8.4 per year), and 39 from 2010 to 2013 (9.8 per year).

The media types examined in the media engagement studies were also investigated by the time intervals. As shown in Table 3 and Figure 5, magazines and television had been major advertising media examined in media engagement studies for several decades. Magazine was the most frequently examined in the 1960s (6 studies), followed by television (5 studies). However, after the 1960s, TV became predominant (7 studies in the 1970s; 15 studies in the 1980s; 41 studies in the 1990s; 36 studies in the 2000s). Yet, the number of studies using magazines has increased over time (2 studies in the 1970s, 6 studies in the 1980s, 11 studies in the 1990s, 25 studies in the 2000s, and 12 studies from 2010-2013). Even though online and interactive media platforms appeared in the late 1990s and accordingly were used as advertising media for a relatively shorter span of time, the number of studies on media engagement using online interactive media

Table 3. Media Types by Publication Time Intervals

	Print		Broadcast		Online/Interactive		Film
	Newspaper	Magazines	Television	Radio	Computer/ Websites	(Video) Games	Cinema
1960s	0	6	5	0	0	0	0
1970s	1	2	7	1	0	0	0
1980s	0	6	15	1	0	0	1
1990s	2	11	41	5	2	0	2
2000s	7	25	36	1	14	5	4
2010-2013	2	12	14	3	14	5	3
Total	12	63	118	11	30	10	10

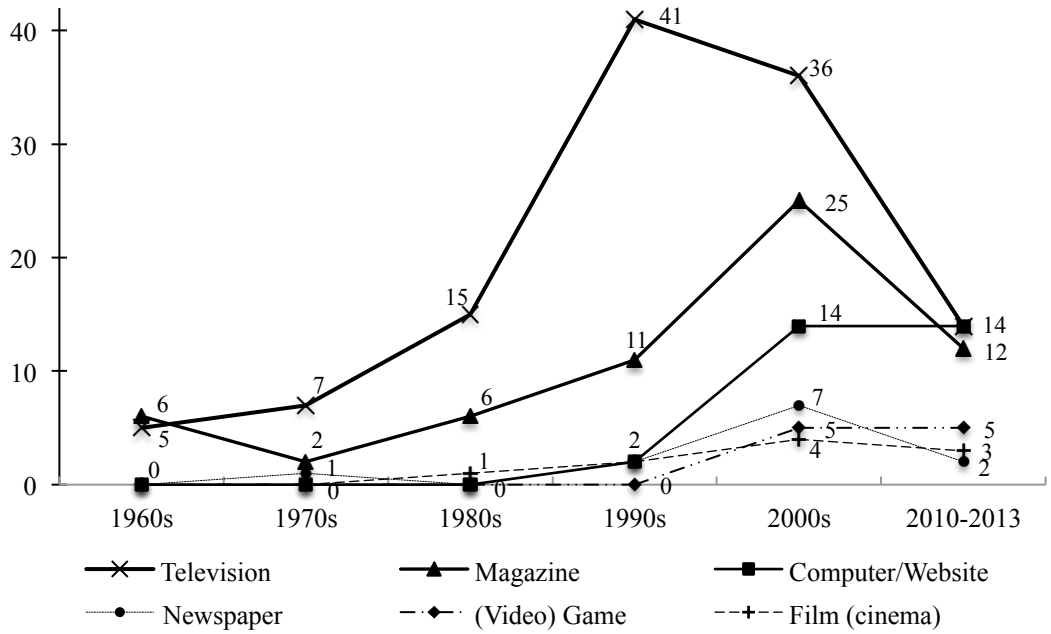


Figure 5. Media types by publication time intervals

has surged (14 studies in the 2000s and 14 studies from 2010-2013), making it the most frequently used advertising media along with TV in the years 2010-2013.

RQ1: Terms of Media Engagement and Definitions

RQ1*: a) What terms are used to denote the media engagement effect and b) how are they defined?*

[RQ1-a] As shown in Table 4, a total of 171 articles (73%) explicitly mentioned terms to refer to media engagement. The remaining articles did not use terms explicitly but tested the relationship between media contexts and ad effectiveness using specific media context variables (e.g., media vehicle formats, arousal induced by programs, violence) on advertising. *Context effect* (including *contextual effects, program-induced contextual effect, website context effects*) was the most frequently used term (72 articles; 42%), followed by *media involvement* (involvement with media or media contents such

as *editorial involvement, program involvement, audience involvement, viewer involvement*; 66 articles, 39%). Thirty-four articles used *engagement*, including *consumer engagement, cognitive engagement, online engagement*, and *experiential engagement* (20%). The term *priming* was used in 26 articles (15%), and *vehicle source effects* in 16 articles (9%). Other terms included *magazine wantedness, qualitative media value, program effect, program environment effect, program closeness*, and *experience*.

Table 4. Terms used to Denote Engagement Effect

Terms used for Engagement	Frequency	%
Total Articles used Terms	171	73.1
Context effect	72	42.1
Media involvement	66	38.6
Engagement	34	19.9
Priming	26	15.2
Vehicle source effect (media vehicle effect)	16	9.4
Other (e.g., *connectedness, magazine wantedness, qualitative media value, real estate value of the context, presenter effects, media transportation program effect, program closeness, program environment effect; experience*)	21	11.7

Note: Because more than 1 term could be used in some articles to refer to the effect, the sum of articles is greater than the total number of articles. The base number for percentages for each term is 171.

These terms are examined by publication time intervals and media types. As shown in Table 5 and 6, in the 1960s, 5 articles used terms such as *involvement, context effects* and *vehicle source effects*. The terms *qualitative media values* and *real estate value of the context* are also mentioned. In the 1970s, 4 articles mentioned terms such as *vehicle source effects, involvement*, *program effects*, and program closeness). In the 1980s, 21 articles used terms such as *context effect* (6 articles) and *media involvement* (8 articles), *vehicle source effects* (2 articles), and *reading quality*. In the 1990s, 66 articles used terms such as *context effects* (25 articles), *media involvement* (21 articles), *priming* (7 articles), and *vehicle source effect* (4 articles). The term *engagement* first appeared in

the late 1990s. It was used to examine interactive media environments (i.e., media engagement, consumer engagement) as well as a component of the multi-dimensions of program impact (i.e., cognitive engagement). In the 2000s, 99 articles explicitly used terms including *context effect* (30 articles), *media involvement* (28 articles), *engagement* (18 articles), and *priming* (10 articles). In 40 articles of the 2010-2013 timeframe, *engagement* was leading (13 articles), followed by *context effect* (10 articles), *priming* (8 articles), and *media involvement* (7 articles). As for media types, various terms were used across different media.

Table 5. Terms by Time Intervals

	Context Effect	Media Involvement	Engagement	Priming	Vehicle Source Effect	Other
1960s	1	1	0	0	1	2
1970s	0	1	0	0	2	1
1980s	6	8	0	1	2	4
1990s	25	21	3	7	4	6
2000s	30	28	18	10	7	6
2010-2013	10	7	13	8	0	2
Total	72	66	34	26	16	21

Table 6. Terms by Media

	Context Effect	Media Involvement	Engagement	Priming	Vehicle Source Effect	Other
TV	39	40	9	9	3	7
Radio	2	2	2	0	0	1
Newspaper	2	3	2	1	2	0
Magazines	12	9	8	5	10	6
Film	2	2	1	1	0	0
Websites	7	2	12	4	3	0
Games	2	2	4	2	0	0

[RQ1-b] Approximately 18% of the articles provided definitions of media engagement (i.e., 42 articles). The earliest definition was from Weilbacher (1960), who

referred to it as qualitative media values, and the idea of media engagement has continued to develop and expand through several decades. As shown in Table 7, the definitions can be categorized in three ways based on the specific focus: 1) characteristics of the medium, media genre, or vehicle itself (i.e., values that medium, media genre, or media vehicles possess), 2) changes in the media audiences' mind as a result of interaction with media or media content (e.g., willingness to pay attention to media), and 3) similarity/relevance of media context and ads.

The definitions in the first category, characteristics of the medium, media genre, or vehicle itself, emphasize the values that are distinctively and uniquely related to media/vehicles. In other words, these definitions suggest that audiences' evaluation of the ad message would be different depending on types of media or media vehicles. For example, studies compared potential ad effectiveness when the ad was placed in TV vs. magazines or when it was inserted in documentary programs in comparison to sitcoms. The focus of these definitions is the media types, genres, and media vehicles, in which ads are placed, rather than looking at specific contents.

The second category, changes in the media audiences' mind as a result of interaction with media or media content, addresses the influences in audiences due to media exposure prior to ad exposure. This is the area that a number of scholars have investigated to a deeper understanding of media engagement over time, and a number of concepts are examined to explain what goes on in the audiences' mind. One of the most frequently used concepts is involvement. Initially, it was defined by Krugman (1965, 1966, 1971) as connections and thoughts related to one's life due to media exposure, but it has been re-defined and re-operationalized over time. Definitions regarding

involvement tend to refer to cognitive aspects such as audiences' commitment of cognitive resources to media and willingness to pay attention to programs, but later involvement related to affect state is also examined. Similar concepts, such as connectedness and media transportation, are also examined because they tend to occur when one is involved with media contents. Engagement in this category generally refers to audiences' experience, such as their media usage experiences and their motivations at the point of interaction with media and ads.

Third, the definitions of the third category, similarity/relevance of media context and ads, emphasize the similarity or relevance of media context and ads. In other words, advertising contents are also considered, and it is suggested that there would be an enhanced effect, when ads are placed in the media contexts relevant and similar to ads.

Table 7. Definitions of Terms to Denote Media Engagement Effect

Authors	Terms	Definitions
Characteristics of the Medium, Media Genre, or Vehicle Itself		
(Weilbacher, 1960)	Qualitative media value	• First, qualitative media value is frequently used to mean the qualitative characteristics of media audience members. • A second meaning frequently given to qualitative media value involves the overt characteristics of the medium or vehicle itself and the way they are perceived by its audience. • The third general usage of the phrase qualitative media value refers to the total positive or negative effect on audience member response to an advertisement because it has appeared in a particular vehicle.
(Aaker & Brown, 1972)	Vehicle source effect	• Vehicle source effect is the differential effect that an ad exposure will have on an audience exposed in one vehicle as compared to an identical group exposed in another.
(Assumus, 1978)	Vehicle source effect	• The increment to the advertising response contributed by one advertising medium rather than another.
(Finch, 1987)	Vehicle source effect	• Differential effect that an ad exposure will have on an audience exposed in one vehicle as compared to an identical group exposed in another and as "a measure of the increment to advertising response contributed by one vehicle rather than another" (Aaker & Brown, 1972, p. 11; Assumus, 1978, p. 4)

Authors	Terms	Definitions
(Bae, 1996)	Vehicle source effect	• A measure of relative value of an advertisement exposure as a function of the exposed vehicle.
(Finch, 1997)	Vehicle source effect	• The differential effect that a message exposure will have on an audience exposed to one vehicle as compared to an identical group exposed to another.
(Feltham & Arnold, 1994)	Media-option source effects	• The response elicited by an ad which may vary by media classes (e.g., television vs. radio), vehicles (e.g., "60 Minutes" vs. "The Cosby Show"), or characteristics (e.g., the ad's position in a commercial cluster).
(Schumann & Thorson, 1989)	Context effect	• The "context" in which an ad appears can be defined simply as the programing and other material (e.g., competing commercials, station promotions) presented before or after the occurrence of a commercial message. The impact will be referred to here as "context effects".
(Cho, 2003)	Contextual effect	• Consumers are exposed to advertisements in the context of editorials or ad vehicles rather than as stand-alone messages; therefore, the effectiveness of ads is surely influenced by the locations in which the ads are embedded (i.e., media vehicles). This is termed contextual effects on advertising – effects of materials that precede or surround advertising messages.
(Callius & Sandström, 2003)	Presenter effects	• The interpretation of a given advertisement can be influenced by the specific publication in which it appears.
Changes in the Media Audiences' Mind as a Result of Interaction with Media or Media Content		
(Krugman, 1966)	Involvement	The number of "connections," conscious bridging experiences or personal references per minute, that the subject makes between the content of the persuasive stimulus and the content of his own life.
(Krugman, 1971)	Involvement	The number of personal connections between the stimulus and the viewer: the number of thoughts which came spontaneously to mind during exposure and which linked something in the content of the stimulus to something in the content of the viewer's own life.
(Rubin & Perse, 1987)	Involvement	• Cognitive Involvement: Thinking about messages is cognitive participant involvement. The cognitive response approach to persuasion has demonstrated that people think more about important than unimportant messages (Greenwald, 1968; Petty & Cacioppo, 1979) • Affective involvement: Parasocial interaction is affective participant involvement. • Behavioral involvement: Talking about messages is behavioral participant involvement
(Watt et al., 1998)	Program context involvement	Program involvement is implicitly defined and operationalized. According to Muehling and Laczniak (1988), involvement has both "attentional" and "personal relevance" components. The attention component of program involvement has been defined as the amount of cognitive processing capacity allocated to decoding and storing an audio-visual message (Kahneman, 1973).
(Levy & Nebenzahl, 2006)	Viewer's involvement	An individual's state of arousal that has intensity, direction, and persistence properties.

Authors	Terms	Definitions
(Ume, 2011)	Involvement	Involvement has been conceptualized in terms of how consumers interact with a given medium or message. Messages and media are conceived of as more or less involving for a particular consumer, and such involvement is posited to influence the amount and type of information processing in which a consumer engages.
(Moorman et al., 2012)	Program involvement	Program involvement is defined as an active, motivated state, signifying interest and arousal induced by a television program.
(Khouaja & Bouslama, 2011)	Context effect	The effect of the immediate environment in which a stimulus is found, on the perception of this stimulus, its efficiency in raising emotional reactions or any other post exposition measure.
(McClung et al., 1985)	Context effect	The degree to which human memory and language understanding are sensitive to the context within which exposure to a message occurs.
(Coulter & Sewall, 1995)	Program context involvement	Program (i.e., broadcast) or editorial (i.e., print) context involvement refers to the degree of commitment of cognitive resources to the contextual material
(Lynch & Stipp, 1999)	Qualitative impact factors	Factors that describe audience behaviors that affect the likelihood that a commercial message is being seen and, hopefully, absorbed. Attention to the commercial and the program, involvement, program liking, and lack of distractions are often mentioned as qualitative factors, which enhance commercial effectiveness. In other words, the same message, scheduled during a program that the target audience watches more attentively and likes more, can produce a greater effect.
(Russell & Puto, 1999)	Connectedness	Audience "connectedness" is defined as an intense relationship between audience and television program that extends beyond the television watching experience into individuals' personal and social lives
(Russell et al., 2004)	Connectedness	We formally define connectedness as the level of intensity of the relationship(s) that a viewer develops with the characters and contextual settings of a program in the para-social television environment. (By definition, highly connected viewers are likely to consider the program content part of their world and to mold characteristics of their own life after the lives of the characters in the show.)
(Patino et al., 2011)	Connectedness	Connectedness is defined as the level of intensity of the relationship(s) that a viewer develops with the characters and contextual settings of a program in the para-social television environment;" the higher the connectedness, the more involved the viewer is with the program and characters
(Calder et al., 2009)	Engagement	The overall experiences of a vehicle and experience are referred to as a specific set of consumer beliefs about a vehicle such as utilitarian or intrinsic enjoyment.
(Cunningham et al., 2006)	Engagement	Turning on a prospect to a brand idea enhanced by the surrounding context (ARF, 2006)
(Fielding & Bahary, 2005)	Engagement	Made up of three key variables; the first two have historically been where the majority of print research has been focused: o Contact, in this case the print title, the medium or environment in which the message is delivered to the consumer o Content, the print ad copy itself, the message directed at the target o And finally Context, defined as consumer motivations at point of contact with the medium and the message; this is the vital missing piece of the puzzle.

Authors	Terms	Definitions
(Heath, 2009)	Engagement	The amount of subconscious 'feeling' going on when an advertisement is being processed. This definition of engagement fits very well with the ARF working definition: "Turning on a prospect to a brand idea enhanced by the surrounding context" (ARF, 2006, p. 10).
(Malthouse & Calder, 2010)	Engagement	Calder and Malthouse conceptualized media engagement as the collective experiences that a reader has with the editorial content
(Mersey et al., 2010)	Engagement	• Media engagement is turning on a prospect to a brand idea enhanced by surrounding context. • The collective experiences that readers or viewer have with a media brand. An experience is a specific set of beliefs that consumers have about how some media brand fits into their lives.
(Marci, 2006)	Engagement	The biological definition of engagement used in this study is the combination of audience synchrony (attention) plus intensity (emotional impact). Synchrony: the degree to which an audience's physiologic state uniformly changes when exposed to a media stimulus. Intensity: the cumulative strength of physiologic response to a media stimulus.
(Mollen & Wilson, 2010)	Engagement	• Turning on a prospect to a brand idea enhanced by the surrounding context • A prospect's interaction with a marketing communication in a way that can be proven to be predictive of sales effects. • Online engagement is a cognitive and affective commitment to an active relationship with the brand as personified by the website or other computer-mediated entities designed to communicate brand value. It is characterized by the dimensions of dynamic and sustained cognitive processing and the satisfying of instrumental value (utility and relevance) and experiential value (emotional congruence with the narrative schema encountered in computer-mediated entities).
(Nicovich, 2005)	Engagement	How we interact with the spatial representation that is before us, to what extent we can move around in, and manipulate elements of the environment. It is the psychological understanding of the way things interact with each other and with the participants. It is what seems natural in terms of movement and manipulation.
(O'Brien & Toms, 2008)	Engagement	A category of user experience characterized by attributes of challenge, positive affect, endurability, aesthetic and sensory appeal, attention, feedback, variety/novelty, inter- activity, and perceived user control.
(Ware et al., 2007)	Engagement	Calder and Malthouse (2007) and Fielding and Bahary (2005) defined viewer engagement as collective qualitative experiences with content. Marc (1966) defines engagement as "how disappointed someone would be if a magazine were no longer published." Syndicated market research often asks whether a publication is "one of my favorites," whether a respondent would "recommend it to a friend" or is "attentive." Many equate engagement with behavioral usage. That is, they define engaged readers as those who spend substantial time reading or who read many issues (frequency). We emphasize that experiences are not concerned with the editorial content itself, but rather the reader's reactions to the content. Media experiences can be described at different levels at the most basic level of course there is the concrete experience of the particular content of a given magazine or other media product.

Authors	Terms	Definitions
(Lloyd & Clancy, 1991a)	Program environment effect	For years advertising researchers have investigated the suspected tendency for viewers attitudes toward different television programs to "carry over" into the embedded advertisements systematically affecting, in some way, ad response and performance. This phenomenon is the so-called "program environment effect."
(Wang & Calder, 2006)	Media transportation	Green and Brock (2000, p. 701) recently have sought to define the concept of transportation theoretically as "a convergent process, where all mental systems and capacities become focused on events occurring in the narrative." Transportation is the extent of absorption into the narrative flow of the story as it unfolds.
Similarity/relevance of media context and ads		
(Celuch & Slama, 1998)	Priming effect	Involvement in and effectiveness of affectively involving ads are enhanced by higher levels of affective involvement in the program.
(Jeong & King, 2010)	Contextual priming effects	Context effects in a particular condition when contexts and ads share high contextual similarity
(Yi, 1990a)	Cognitive vs. affective context	• The advertising context (e.g., a crime story) can prime or activate certain attributes (e.g., safety) to readers, and guide their interpretations of product information in the ad (e.g., car size). These interpretations may result in the formation or change of beliefs about the advertised brand, which will affect consumers' brand evaluations (Mitchell & Olson, 1981). Since this process affects ad effectiveness primarily by increasing the accessibility of attributes, this aspect of the ad environment will be called a "cognitive context." • Second, advertising context is often negatively or positively valenced (e.g., a depressing story), and can trigger overall affective reactions (e.g., negative feelings). This overall affect generated by the context can be transferred to one's attitude toward the ad, which can subsequently influence brand evaluations (e.g., MacKenzie, Lutz, & Belch, 1986). This aspect of the ad environment is termed an "affective context," since it operates primarily through inducing affective reactions. In this paper affective reactions are used to refer to overall affect or feelings, rather than values or evaluative components.
(Yi, 1993)	Contextual priming effect	The product attributes primed by the ad context may result in the formation or change of beliefs about the advertised brand, thereby affecting consumers' evaluations of the brand. Such effects of the ad context are called "contextual priming effects" (Schmitt, 1991; Yi, 1990b).
(Wang, 2006)	Engagement	• Engagement is turning on a prospect to a brand idea enhanced by the surrounding context (ARF 2006). • A measure of the contextual relevance in which a brand's messages are framed and presented based on its surrounding context.

RQ2: Theories to Explain the Media Engagement Effect

***RQ2**: What theories are considered the foundation to explain the engagement effect?*

[RQ2] About 56% of the articles (i.e., 130 articles) considered theories as the foundation to explain the media engagement effect. From these studies, 133 theories were identified (total 311 cases including duplication were generated). The elaboration likelihood model (20 cases) was the most frequently mentioned (20 cases), followed by excitation transfer theory (18 cases), consistency effect (13 cases), congruency effects (12 cases), and mood congruence theory (12 cases), limited capacity model (9 cases), and cognitive interference theory (8 cases). Table 8 shows the list of theories cited 3 times or more in the media engagement effect as well as the basic assumptions/arguments (See Appendix E for the theories cited less than 3 times). Generally, these theories are used related to: 1) memory storage, 2) affects, and 3) similarities of media context and ads.

Theories related to memory storage

Regarding memory storage, two theories are most frequently mentioned in the literature: *Elaboration Likelihood Model* (ELM) and *limited capacity model.* According to the ELM, audiences watch TV programs and read editorial content, and centrally process the message presented in the media context. Advertisements, on the other hand, are peripherally processed because audiences' main reasons to use media are for watching TV programs and reading editorial content, and not for ad exposure. For this reason, when audiences are highly engaged with media content, they are less likely to use a central route to process information in ad messages. Instead, they are more likely to limit their attention to ads or use peripheral cues. The limited capacity model addresses a

process similar to the ELM but is limited to cognitive processing. This model assumes that the audiences have a limited capacity for cognitive processing of information. When the audience highly attends to a program, they have less cognitive space available to process the ad and, as a result, the audience is less likely to recall or recognize information presented in the ads.

Affect-specific theories

Several affect-related theories applied in the media engagement literature include excitation transfer theory, affect transfer effect, mood transfer paradigm, mood congruence effect, feeling-as-information theory (and how-do-I-feel-about-it-heuristic effect), network theories of memory, and the affect accessibility mechanism.

Three theories – excitation transfer theory, affect transfer effect, and mood transfer paradigm – are similar in that they suggest that affective states "transfer" to audiences' ad processing and evaluations. The affect transfer effect emphasizes the positive affect induced by media vehicles or program likings. In other words, a liked program creates positive feelings, which influence audiences when they evaluate and process an ad (Cho, 2003). More specifically, the effectiveness of an ad in a program that elicits positive feeling is enhanced because of the automatic transfer of positive affect generated from the program (at an unconscious level without cognitive involvement), whereas the effectiveness of an ad in a negative program is diminished since the negative program-generated affect is transferred to the advertisement (France & Park, 1997). Excitation transfer theory focuses on the excitation or arousal level, which is one of the dimensions of affective states, as a core concept (Prasad & Smith, 1994). The basic argument is that the arousal or excitation induced from media context can be transferred

onto an ad, which influences the audience's ad processing and evaluations. The mood transfer paradigm, unlike excitation transfer theory, emphasizes the importance and the role of mood states induced by a program and the hedonic aspects of the program content. Often considered subtle, transient, and generalized affect states with no specific target, mood has shown to influence one's learning, judgments, and behavior (Prasad & Smith, 1994; Shen & Prinsen, 1999).

Network theories of memory are generally related to memory-retrieval but are used in media engagement studies, focusing on affect. According to network theories, concepts and events can be represented as nodes in a network with linkages, varying in strength, tying these concepts and events together (Lord, Burnkrant, & Unnava, 2001). Memory consists of a set of nodes containing information, some of which are interconnected on the same connecting pathways. When a node is activated, the interconnected set of nodes is simultaneously activated, and the likelihood of such activation depends on the strength of the connections (Mathur & Chattopadhyay, 1991). This theory is also extended in cases when affect is involved. In other words, each mood can be represented in memory as a node linked to related concepts such as mood-relevant feelings, behaviors learned in that mood state, and situations that have produced or been associated with the mood in the past (Forgas & Moylan, 1987; Kamins et al., 1991; Lord et al., 2001; Mathur & Chattopadhyay, 1991). The affect accessibility mechanism is also in line with network theories in that information stored in memory that is congruent with that feeling state is more likely to be more accessible, and consequently more likely to come to mind than it would at another time.

Mood congruence effect is in line with network theories of memory in that happy and upbeat programs activate pleasant memories that enhance commercial evaluations. In general, mood is found to influence evaluations, judgments, and behaviors in congruent mood. People in positive moods likely have positive evaluations, expectations, and action (e.g., Berkowitz, 1987; Forgas & Moylan, 1987; Isen, Shalker, Clark, & Karp, 1978), whereas those in a negative mood are likely to evaluate commercials in negative ways. Likewise, media engagement studies suggest that the happy program would lead to more positive cognition about the ads, evaluations as more effective and higher purchase intentions compared to the sad program (e.g., Goldberg & Gorn, 1987; Kamins et al., 1991).

Feeling-as-information theory (and how-do-I-feel-about-it-heuristic effect) assumes that people attend to their feelings as a source of information, with different feelings providing different types of information (Schwarz & Clore, 1983; Schwarz, 2012). According to this theory, people often ask "how do I feel about it?" and instead of integrating detailed information to reach a judgment, when positive affect signals that the object of judgment is valuable, they make a positive evaluation, but when negative affect signals that it lacks value, they make a negative evaluation (Clore & Huntsinger, 2007). Also, a person in a positive mood tends to avoid all stimuli that are likely to change his or her mood (Khouaja & Bouslama, 2011). In fact, exposure to a media context that generates positive emotions could cause an audience who is feeling good to no longer pay attention to the ads embedded in this positive context and, instead, to treat ads more superficially, leading to a weaker attitude toward the ads and ad recall (Khouaja & Bouslama, 2011).

Theories related to similarities of media context and ads

The consistency effect and the congruity principle were often used to predict a positive effect. These two theories are similar in that when media contexts and ads are similar or become congruent in the audience's minds, the audience would positively evaluate the ads. In other words, the audience will see the ad more positively and favorably when the ad matches the program content (consistency effect) and when the media and the advertised brand converge and become more similar in the consumers' minds (congruity principle).

The assimilation effect also concerns the similarity of media context and ads, but it does not necessarily predict a positive effect. It assumes that people assimilate an ad with a program or vehicle by assigning a similar value between these two, and the perception of the ads shifts in the direction of their perceptions of the media programs. Yi (1990a) suggests that when a print ad promoting a large car is placed next to an editorial article about safety, this ad may be interpreted such that the car is perceived as safe, whereas the same ad can be interpreted as fuel-thirsty, when the context is an editorial article about oil.

Cognitive interference theory, on the other hand, explains negative impact of similar media contexts and ad. The phenomenon of 'meltdown' occurs when an ad is placed within a program of similar content (i.e., elements of the program and ad merge) (Furnham, Gunter, & Richardson, 2002; Gunter, Baluch, Duffy, & Furnham, 2002). The stored memory related to ads is unable to be retrieved due to competition created by acquired information from programs. As a result, recall is impaired. The audience

remembers less information presented in the ad, especially when common features and similarities are found between the media context and ads.

Table 8. Theories Named in Media Engagement Studies

Theories	Basic Assumption & Application to Engagement Effect	Frequency
Elaboration Likelihood Model	Information in certain media can be processed "centrally" with considerable elaboration, whereas it can be processed "peripherally," with little or no cognitive effort (Petty, Cacioppo, & Goldman, 1981). This framework suggests that a consumer's level of motivation or involvement with regard to the focal topic and ability to process information (i.e., be familiar with the topic) in the ad affects his or her recall, recognition, and attitude formation or attitude change. In media engagement effect studies, it is suggested that audiences centrally process media such as programs and editorial contents whereas they process ads peripherally. Thus, when audiences are highly involved with a media topic, they will limit their attention to and elaboration of ads. (Perry et al., 1997)	20
Excitation Transfer Theory	The residual levels of physiological arousal persist in an individual after the source of the arousal ceases (Zillmann, 1971). In other words, excitation induced from media context can be "transferred" onto an ad, influencing consumers' ad processing and evaluations. (Wang & Lang, 2012)	18
Consistency Effect/Theory	Ad/brand evaluation, and purchase likelihood will be more favorable when the ad matches program. (Coulter & Sewall, 1995)	13
Congruity Principle	The medium and the advertised brand converge and become more similar in consumers' minds. (Ware et al., 2007)	12
Mood Congruence Effect/Theory	Happy programs activate pleasant memories that enhance commercial evaluation, whether the commercial itself is happy or sad. (Kamins et al., 1991)	12
Limited Capacity Model	Assumes the individual has a limited capacity for cognitive processing of information. With less 'cognitive space' available due to high involvement or high attention to a program, recall will be reduced as less processing of the ad occurs. (Norris & Colman, 1993)	9
Cognitive Interference Theory (Meltdown Theory)	Assumes that the stored memory is unable to be retrieved due to competition created by newly acquired information. In other words, the phenomenon of 'meltdown' occurs when an ad is placed within a program of similar content (i.e., elements of the program and advert merge). This results in impaired recall and is particularly likely to affect items with several common features or items of similar meaning. (Furnham et al., 2002)	8
Carry-over Effect	Assumes that mental reactions toward program material do not immediately cease when the program is suddenly interrupted by a commercial break. These reactions "carry over" to the ads.	7
Contrast Effect	Refers to a negative relation between the value people assign to target stimuli and the value they assign to the preceding contextual stimulus. The perception of the target stimuli shifts in the direction opposite that of the preceding stimulus.	7

Theories	Basic Assumption & Application to Engagement Effect	Frequency
Spill-over Effect	Psychological responses induced by the context spillover to advertising.	6
Theory of Flow	People are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it. The theory describes the state of playfulness as individual's subjective experiences that are 'characterized by perceptions of pleasure and involvement (Webster, Trevino, & Ryan, 1993)	6
Uses & Gratification Theory	Individuals define their needs and control of the media-seeking process to gratify their needs.	6
Affect Transfer Effect	The temporal association between the positive program and the ad precipitates the transfer of affect from the program to the ad much as in a classical conditioning paradigm (France & Bone, 1998). A liked program or vehicle creates positive feelings or affects, and this affect is then transferred to an ad (Cho, 2003).	5
Assimilation Effect	People assimilate a target stimulus (i.e., an ad) with preceding contextual stimulus (program or vehicle) by assigning similar value to the target and the preceding stimulus and thus the perception of the target stimulus shifts in the direction of the preceding contextual stimulus.	5
Feeling-as-Information Theory (how-do-I-feel-about-it-heuristic effect)	Mood may be mistaken for a reaction to a target stimulus and serve as an input for judgments. Instead of integrating detailed information to reach a judgment, the individual base their judgments on the how-do-I-feel-about-it heuristic. To the extent that they feel happy, they generate more favorable judgments, perhaps in an unconscious process. (Chang, 2011) -A person who experiences a positive mood tends to avoid all stimuli (such as an advertisement) that are likely to alter her mood. According to these two theories, after having been exposed to a media context which was able to generate positive emotions, a viewer who is in good spirits no longer pays attention to advertising inserted in this context. He would treat it more superficially and thus, would show weaker ad attitude and memorization scores. (Khouaja & Bouslama, 2011)	5
Network Theories of Memory	Basic assumption is that concepts and events can be represented as nodes in a network with linkages, varying in strength, tying these concepts and events together. An activation of a node leads to activations of interconnected set of nodes on the connecting pathways. Activation path depends on the strength of the ties. Each mood may also be represented in memory as a node linked to cognitive information or concepts or mood it self such as mood-relevant feelings, behaviors learned in that mood state, and situations that have produced or been associated with the mood in the past (Lord et al., 2001). In media engagement context, media contents may activate audiences' mood likewise, and when they are exposed to the ad, they may attend to ads and learn more about events that match their mood state.	4
Selection Processing Model	The participants' selection to watch television and processing activity (pre-attention, focal attention, comprehension, and elaboration) influence ad processing and evaluation (Norris, Colman, & Aleixo, 2001; Schumann & Thorson, 1989).	4

Theories	Basic Assumption & Application to Engagement Effect	Frequency
Aesthetic framework/Theory	Visual aspects, often related to the principles of design (balance, emphasis, harmony, proportion, rhythm and unity) can be used to create engaging and immersive environments or online theater (Jennings, 2000).	3
Affect accessibility mechanism	Feeling state may influence one's judgments and behavior because material stored in memory that is congruent with that feeling state will be more accessible, and consequently more likely to come to mind than it would at another time. (France & Bone, 1998)	3
Cognitive Capacity Theory	Humans' capacity to process information is limited in nature (Bryant & Comisky, 1978). Thus, low involvement level should be the most advantageous media contexts for maximum recall (Moorman et al., 2012).	3
Distraction Effect (Thought disruption hypothesis)	• Distraction is thought to influence the favorableness of message evaluations by disrupting the activation of support arguments and counterarguments. When a message prompts the generation of counterarguments, distraction reduces counter-argumentation, and thus agreement with the message is enhanced. In contrast, when a message primarily generates supporting arguments, distraction reduces supporting arguments and thereby causes agreement to decline (Anand & Sternthal, 1992). • Some elements contained in programs and editorials (e.g., humor) may distract attention from information being presented concurrently. For example, an intense laugh or even a moderate mirthful reaction induced by programming may cause immediately subsequent material to be entirely missed. As a result, it is less effective to acquire the information being communicated (Cantor & Venus, 1980).	3
Gestalt Principle/Theory	The context in which a stimulus appears influences the attention, comprehension, and learning of that stimulus (Rapoport, 1961; Sahakian, 1982). Thus, certain programs are more effective vehicles for advertising than are others (Furnham et al., 2002).	3
Hedonic Contingency Theory	Compared to individuals who are in a negative state of mind, individuals who are in a positive state of mind will analyze persuasive messages more closely for their hedonic consequences, resulting in a more elaborate processing of information (Wegener et al., 1995). As a result, they recognize more brand (Herrewijn & Poels, 2013).	3
Matchup effect	There is positive effect when the ad matches the medium. For example, Wang & Calder (2009) found that if the ad matches (thematically compatible) with the programs, transportation can act as a message frame that increases processing.	3
Mere Exposure Effect	Repeated exposures to the ads might lead to the development of preferences and enhanced liking merely because people are (subconsciously) familiar with them (Janiszewski, 1993; Zajonc, 1980).	3

Theories	Basic Assumption & Application to Engagement Effect	Frequency
Mood Transfer Paradigm	Emphasizes the hedonic aspects of the program content and the importance and role of mood states induced by a program. As often considered subtle, transient, and generalized affect states with no specific target, mood has shown to influence on one's learning, judgments, and behavior (Prasad & Smith, 1994; Shen & Prinsen, 1999). Generally, positive mood increases efficiency of information processing whereas a negative mood significantly impairs information processing (Shen & Prinsen, 1999).	3
Schema Theory	Schemas organize perception by organizing expectation based on prior knowledge (Speck et al., 1988, p. 70). One of the key features of a schema is its ability to cue affective and behavioral response to stimuli, such as advertising (Fiske & Linville, 1980; Stoltman, 1990). Repeated exposure creates consumer expectations of advertising in relation to the various executional elements, such as product category, brand, format, and media vehicle (Stoltman, 1990). Especially, there is the potential influence of the advertising media vehicle on perceived schema congruence (i.e., matching), as well possible differences in ad schemas and related responses across various consumer segments (e.g., male or female audiences). (McDaniel, 1999)	3

RQ3-RQ4: Relationship between Media Context and Ad Effectiveness

To address RQ3 through RQ4, only articles reporting quantitative data were only examined. Of the 196 articles that reported quantitative data, not all of the studies qualified for meta-analysis because, as noted in the Chapter 3 Method section, the studies that only examined reactions to media not the responses to ads, used multivariate analysis, or did not provide enough information for a meta-analysis were excluded. As a result, 117 articles (136 independent studies in total) that investigated the impact of the media contexts on advertising effectiveness were included. A total of 1,248 relationships (ranging from 1 effect size to 210 effect sizes for a study) were retrieved.

The ratio of test relationships to the number of studies was about 9:1. In social science research, multiple test relationships and effect sizes can be retrieved from a study for a meta-analysis because many single studies have 1) replication of observation of a relationship within the study, 2) multiple indicators and measures of the independent or

the dependent variable, and 3) analysis of subgroups contingent on moderators (e.g., Hunter, Schmidt, & Jackson, 1983; Lipsey & Wilson, 2001; Schmidt & Hunter, 2015). Three potential ways to handle multiple test relationships within a study are to 1) enter the non-independent correlations individually into the meta-analysis (even though there is the lack of independence), 2) average effect sizes, and 3) compute composite correlations (Lipsey & Wilson 2001; Schmidt & Hunter, 2015).

This study employed the first way and entered the non-independent correlations individually into the meta-analysis. There were four reasons for this decision. First, it is not uncommon in meta-analyses to retrieve more than 1 test relationship from a study when various independent and dependent variables are used (e.g., Assmus, Farley, & Lehmann, 1984; Brown & Peterson, 1993; Eisend & Küster, 2011; Eisend, 2009, 2015; Schmidt & Eisend, 2015; Sethuraman, Tellis, & Briesch, 2011; Sultan, Farley, & Lehmann, 1990). For example, Eisend (2009) combined 369 correlations on the effects of humor in advertising, retrieved from 38 manuscripts covering 43 independent studies (approximately 8.6:1 ratio). Sethuraman et al. (2011) retrieved 751 short-term direct-to-consumer brand advertising elasticities from 56 studies (approximately 13.4:1 ratio).

Second, when effect sizes are averaged, unique information associated with an effect size can be lost (see Lipsey & Wilson, 2001; Schmidt & Hunter, 2015); even though retrieval of multiple effect sizes may generate overestimation of the standard deviations of population parameters, recent research indicates that this distortion is probably negligible (Schmidt & Hunter, 2015).

Third, the studies do not provide enough information to compute composite correlations (e.g., correlations among items of independent variables). Finally, as the

purpose of the study is to examine the overall picture of the media engagement effect on advertising effectiveness as well as the differences in media engagement effect by specific media contexts and by dependent measures, multiple effect sizes within a study were retrieved. As with RQ4-c and -d, several data files were created by specific media contexts and dependent measures.

RQ3: Media Context Variables and Advertising Effectiveness Measures

RQ3*: What a) media context variables and b) advertising effectiveness measures are used to examine the relationships between media contexts and ad effectiveness?*

[RQ3-a] Media contexts have been defined and operationalized a number of different ways. Some scholars compared the impact of specific media types (e.g., Print vs. TV, linear vs. interactive media). Some employed formats of media vehicles to compare advertising effectiveness. In recent decades, studies have tended to examine diverse contents even within a specific media vehicle format by using a number of different questionnaire items, for example, on involvement, liking, and the level of positive and negative affect.

As shown in Table 9, involvement is the most frequently examined media context in the media engagement literature. A total of 39 studies examined the impact of involvement on ad effectiveness (224 cases). Congruency is the next most frequently examined variable (24 studies; 139 cases), followed by experience of transportation in media context (18 studies; 84 cases), entertainment and enjoyment (8 studies; 77 cases), attention (8 studies; 72 cases), arousal (15 studies; 75 cases), negative vs. positive affect (12 studies; 58 cases), humor (7 studies; 58 cases), suspense (5 studies; 45 cases), program interest (4 studies; 39 cases), violence (8 studies; 32 cases), successfulness,

prestige, and established media (4 studies; 28 cases), media liking (7 studies; 27 cases), and cognitive vs. affective media contents (5 studies; 22 cases).

Table 9. Types of Independent Variables Examined in Media Engagement Studies

Independent Variable	Cases	# Studies
Media Types		
Press vs. TV	3	1
Print/press vs. web	15	2
Press vs. radio	3	1
TV vs. radio	3	1
Linear vs. interactive (TV vs. web)	2	1
Cross-channel integration: 1 media (e.g., TV) vs. 2 or more (e.g., TV + web)	5	2
Incongruent media vs. traditional media	6	1
Specific Media Vehicle Formats		
Sitcom (low effect) vs. drama (high affective)	2	1
Sitcom (low effect) vs. news (high cognitive)	2	1
General interest vs. specialty magazine	10	2
Prestige vs. expert magazine	15	1
Facts- vs. narrative-based editorial	15	1
Serial vs. sitcom	2	1
Sitcom vs. quiz/audience participation	2	1
Quiz/audience participation vs. Serial	2	1
Documentary vs. action/adventure	4	1
Sitcom vs. action/adventure	4	1
Documentary vs. sitcom**	5	2
Games vs. drama	1	1
Noncartoon vs. cartoon program	6	1
Congruency (Incongruent vs. Congruent context)*	**139***	**24**
Congruency between ad (in general) and context	35	7
Consistency/congruency between advertised product and media vehicle/context (e.g., car ad in a car-related magazine)	14	5
Similarity between context type and ad type (e.g., humorous ad in a humorous media context)	45	8
Congruency between ad and medium (& compatibility between media, such as newspaper, and ad)	12	1
Self-character similarity (dissimilar vs. similar)	6	2
Relevancy between media and ad & not complementary context vs. complementary context	27	4
Rating of Media/Media Content		
Program Rating: Liking	**27***	**7**
Program rating – liking	4	2
Program/editorial liking (like, favorable, good)	8	2
Program attitude (fair/poor – very good – favorite; dislike – like)	7	2
Positive attitude vs. editorial liking	8	1

Independent Variable	Cases	# Studies
Credibility & Believability	**20***	**7**
Program rating – credibility	4	2
Magazine trust & vehicle credibility (low vs. high)	11	3
Strong attitude vs. weak attitude toward issues raised by program & message strengths (convincing, strong, and powerful)	5	2
Involvement with Media	**224***	**39**
Program rating – affective involvement	4	2
Program rating – involving	29	5
Involvement	76	20
Neutral vs. team supporter (high involvement)	4	2
Disappointment if magazine no longer available (single item)	4	1
Engagement (least engaged vs. most engaged & not engaged vs. engaged & attachment with media)	31	7
Times an issue read	5	2
# of issues bought	5	2
Reader commitment	4	1
Experience of using media	42	2
Not read vs. read some vs. read most	12	1
Nonreader vs. reader	7	1
Least recent issue vs. recent magazine	1	1
Transportation, Presence, Flow, & Immersion Experience	**84***	**18**
Program rating – absorbing	20	3
Program rating – immersed	17	2
Connectedness (e.g., an escape for me, help me forget about the day's problem)	5	1
Transportation	24	6
Presence & spatial presence & flow & immersion	18	7
Humor ("humorous" and "funny" are grouped; synonyms in M-W dictionary)	**58***	**7**
Program rating – humorous	15	2
Program rating – funny	15	2
Low humor vs. humor program	8	3
Program rating – amusing	15	2
Documentary vs. sitcom **	5	2
Entertainment & Enjoyment	**77***	**8**
Program rating – fun	15	2
Program rating – enjoyable	27	5
Program rating – entertaining	27	5
Program rating – pleasant & pleasure	8	3
Suspense: Low vs. High	**45***	**5**
Contemporary	**4**	**2**
Appealing	**2**	**1**
Program Interest	**39***	**4**
Program rating – boring (opposite of interesting; Zaichkowsky, 1985)****	17	2
Program rating – interest & interesting	22	4

Independent Variable	Cases	# Studies
Thought-Provoking	**17**	**2**
Worth-Remembering	**22**	**2**
Impact & Personal Impact	**19***	**3**
Program rating – impact	17	2
Program rating – personal impact	2	1
Attention-Related	**72***	**8**
Program rating – attention-grabbing	17	2
Program rating – attended	23	4
Program rating – concentrated	20	3
Attention-engaging mechanism: absent vs. present	6	2
Program observation & eyes on screen time & attention to program	5	2
Selective exposure (selectively attend to programs)	1	1
Challenging	**21**	**3**
Arousal	**75***	**15**
Program rating – exciting	15	2
Program rating – stimulating	17	2
Program involvement – relaxed (= not worried or tense; antonym in M-W dictionary)****	2	1
Program involvement – tense	7	2
Arousal (secondary task response time, reaction time are included here)	14	7
Program intensity	14	2
24 hours later vs. immediately	6	1
Learned a Great Deal	**2**	**1**
General Quality very High	**2**	**1**
Successfulness, Prestige, Established Media	**28***	**4**
Reputation (& image) of media vehicle	2	2
No context vs. context of a successful TV show	2	1
Prestige: low vs. high	9	1
Establishment of website	15	1
Dominance & Competence	**8**	**1**
Sensation: Low vs. High	**2**	**1**
Other Program-Related Context		
Negative vs. Positive	**58***	**12**
Negative vs. positive affect	29	6
Negative vs. positive context appreciation	10	1
Positive affect	4	2
Sad vs. happy program	15	3
Program Thoughts		
Program thoughts – positive	2	1
Program thoughts – negative	2	1

Independent Variable	Cases	# Studies
Nonviolent vs. violent program	32	8
Nonsexual vs. sexual program	9	2
Neutral vs. violent or sexual	4	1
Sexual vs. violent	3	1
Innocuous vs. disturbing news & neutral vs. death-related news	10	5
Cognitive vs. affective	22	5
2 cognitive conditions: safety attribute vs. fuel economy condition	3	1
Dayparts		
Daytime program vs. nighttime programs	2	1
Ad Position/Placement (within the program vs. spot)		
Between programs (shoulder block) vs. within the program (interrupting block)	2	1
First half game vs. ¾ half of the game & first half of the book vs. ¾ of the book	21	6
Right side vs. left side vs. spread	3	1
Sequential vs. simultaneous	6	1
Task-Related		
Types of task: watch vs. play	4	1
Types of task: surfers vs. seekers	2	1
Task difficulty: hard vs. medium vs. easy	12	1
Other Measures		
Perceived program interactivity	1	1
Car vs. broadcast listening	1	1

Note: *This number is the sum of all cases of sub-categories with bullet points. **It is also re-categorized under "Program Rating: Humor." ***35 effect sizes were also collapsed under congruency because these effect sizes used a moderator (similar vs. dissimilar advertisements to media context). ****These items are reverse-coded.

[RQ3-b] Table 10 shows dependent variables used to measure advertising effectiveness in the media engagement literature. Recall has been the most frequently used (61 studies; 326 cases), measuring ad-related contents, brand names and product category in advertisements. Attitude toward the advertising (Aad) was the next most frequently used variable (50 studies; 193 cases). Aad tended to be measured using more of affective attitude (e.g., liking, positive, favorable) than cognitive aspects. Attitude toward the brand (Ab) was also frequently examined (38 studies; 170 cases), followed by

recognition (28 studies; 177 cases), purchase intentions (PI; 25 studies; 122 cases), and ad engagement experiences (23 studies; 83 cases).

Table 10. Types of Dependent Variables Examined in Media Engagement Studies

Dependent Variable	Cases	# Studies
Memory-Related Measures		
Recall	**326***	**61**
Overall recall (ad + brand, brand + product, or ad + brand + product	54	11
Recall – ad related (ad copy claim, seeing ad, etc.)	182	36
Recall – brand name recall	74	27
Recall – product category	16	5
Recognition	**177***	**28**
Overall recognition	70	6
Recognition – ad related	28	10
Recognition – brand name	52	15
Recognition – product category	27	4
Global Memory	**4**	**3**
Global memory (recall + recognition)		
Ad Thoughts/ Other Cognitive Responses	**28***	**9**
Overall ad thoughts/cognitive responses	13	5
Ad thoughts – positive (positive affective tone of cognitive response)	11	5
Ad thoughts – negative	4	3
Attitude-Related Measures		
Attitude toward Advertising (Aad)	**193***	**50**
Ad liking/likeability	18	8
Ad interest	2	1
Affinity with advertising (ad recall, impact on purchase, loyalty to the advertising	4	1
Affective attitude toward ad		
Attitude toward ad (items are not specified)	73	7
Attitude toward ad (semantic: good, pleasant, favorable)	10	3
Attitude toward ad (semantic: satisfactory, pleasant, good)	2	1
Attitude toward ad (semantic: favorable, appealing, likeable)	4	1
Attitude toward ad (good, positive, favorable, like)	31	9
Attitude toward ad (good, like, not irritating, interesting)	3	2
Attitude toward ad (good, likable, favorable, pleasant, interesting)	8	3
Attitude toward ad (other affective Aad)	8	5
Cognitive attitude toward an ad		
Attitude toward ad (learned something, received new information, understood the message, found the ad very clear)	8	1
Attitude toward an ad (other cognitive Aad)	8	4
Affective Aad + cognitive Aad	14	8

Dependent Variable	Cases	# Studies
Ad Credibility & Believability	**30***	**9**
Ad believability	16	5
Credibility	14	4
Attitude toward Brand	**170***	**38**
Attitude toward brand (general, not specific item or affective + cognitive)	108	20
Attitude toward brand (affective)	24	9
Attitude toward the company & source	18	3
Brand likeability (positive toward the brand; dislike – like)	14	3
Brand preference	3	2
Brand community (sense of belonging to brand community)	1	1
Brand imagination (listing brand names that respondents' favorite character in the show might use)	2	2
Attitude toward Advertised product	**30**	**11**
Attitude toward the product (product evaluation or opinions; perceived price)		
Ad Affect/Emotion	**16**	**4**
Ad Engagement Experience	**83***	**23**
Ad attention/ad observation/ad exposure	14	9
Ad response time	1	1
Ad experience (give me useful information, made me curious)	38	1
Ad relevance (find helpful, useful information)	5	1
Ad engagement/Involvement/Transportation (how engaging, relevant the ad message was)	14	6
Perceived ad intrusiveness/ interference & Ad annoyance	11	6
Behavior-related Measures		
Purchase intentions (purchase interest/trial interest/intention to visit stores)	122	25
Click intentions	15	5
Ad zapping intentions (ad avoidance behavior)	2	1
Other behavioral related	9	6
Other Measures		
Brand association	24	1
Commercial effectiveness	4	3
Performance of ad (expected price, quality of product, reliability of product, informativeness)	15	2

Note: *This number is the sum of all cases of sub-categories with bullet points.

RQ4: A Meta-Analysis between Media Contexts and Advertising Effectiveness including Moderator Analyses

RQ4*: How are media contexts associated with advertising effectiveness?*

RQ4-a: What is the overall population mean effect size?

RQ4-b: How are the characteristics of studies such as publication time interval (i.e., 1960s, 1970s, 1980s, 1990s, 2000s, 2010-2013); publication type (i.e., journals vs. conference proceedings and dissertations); research methods (i.e., experiments vs. nonexperiments); research participant type (i.e., children, college students, adults, women only, men only); advertising media type (i.e., TV, radio, newspaper, magazines, film, websites, games, and hand-held devices); brand type (i.e., real vs. fictitious brands); and advertising type (i.e., real vs. fictitious ads) associated with the relationship strength between media contexts and advertising responses?

RQ4-c: How is the effect size different by specific media contexts examined in the media engagement literature?

RQ4-d: How is the effect size different by specific advertising effectiveness measures (i.e., cognitive, affective, and behavioral response measures)?

To address RQ4, 1,248 effect sizes retrieved for the meta-analysis are used. Sample characteristics of total effect sizes are reported in Appendix F. For integrating effect sizes, a random effects model was used. Generally, two models are considered in combining effects sizes: the fixed effect and the random effects model. The fixed effect model assumes that there is no variability across different studies, and accordingly the population mean effect size is the same for all studies included in the analysis (Borenstein, Hedges, Higgins, & Rothstein, 2009). The random effects model, on the other hand, does not make the same assumption. Rather, it assumes that studies included in the analysis are drawn from a much larger population themselves (Hedges, 1992, p. 285), and the effect size might be different by the variability of the study (Borenstein et al., 2009). In other words, the underlying effect sizes may vary randomly from study to

study, depending on the study characteristics such as the age and education level of the subjects, the research method, and reliability and validity of variables measured (Borenstein et al., 2009; Lipsey & Wilson, 2001, p. 107). Because this meta-analysis integrates findings from 136 studies and there is the possibility that effect sizes vary across studies (there is no reason to assume that population mean effect sizes is identical across studies), the random effects model was deemed appropriate for this study.

In addition, following Hunter and Schmidt's (2004) suggestions, the attenuation of the effect sizes (attenuating effects of measurement error on estimates of effect size were initially noted by Spearman [1904]) was corrected by dividing effects by the square root of the reliability (see Appendix D). Measurement error in independent or dependent variables can reduce the magnitude of the effect sizes compared with the magnitude that would have been observed if the variables had been measured without error (Borenstein, Hedges, Higgins, & Rothstein, 2010).

This study did not consider the impact of range restriction, following suggestions by Schmidt and Hunter (2015, p. 157). Generally, range restriction occurs when a researcher wants to estimate the correlation between two variables (i.e., x and y) in a population, but samples were selected on an x variable and data for a y variable were only available for a selected sample (Raju & Brand, 2003). Because no range restriction was noted and specified in the studies included in this meta-analysis, the impact of range restriction was not considered.

[RQ4-a: Overall Population Mean Effect Size]

To analyze the dataset, the population mean effect size and moderator analyses were conducted with SPSS macros provided by Lipsey and Wilson (2013). For all

analyses addressing RQ4-a, each effect size (i.e., correlation) was transformed to Fisher's Zr (as for transformation formula, see Appendix D) before applying the variance weight[2] and reliability adjustment. The Fisher transformation is recommended by many meta-analysis experts such as Hedges and Olkin (1985) and Rosenthal (1991) because the sampling distribution of Pearson's correlation is skewed and not normally distributed (p. 226-228). Thus, Fisher's Zr was used to compute confidence intervals on Pearson's correlation (see Appendix D for calculating confidence intervals). Confidence intervals indicate the range within which the population mean effect size is likely to be, given the observed data (Schmidt & Hunter, 2015), and *p* values less than .05 were considered significant (when the 95% confidence interval does not include zero). Effect sizes were evaluated following Cohen's (1988) guidelines (large $r \geq |.37|$, medium $r \geq |.24|$, small $r \geq |.10|$; Becker, 2000). The results were reported in a random effects model using Hedges and Olkin's (1985) method.

Prior to the analyses, three articles were re-examined because the number of effect sizes was considerably higher than found in other studies. From a survey study by Norris, Colman, and Aleixo (2001), 210 effect sizes were retrieved, because the study reported correlations between five dependent variables, *recall, recognition, attitude toward the ad, attitude toward the brand,* and *intention to buy,* and each item of two constructs, *involvement* (i.e., 14 items) and *entertainment and enjoyment* (i.e., 7 items), instead of creating a composite score for independent variables. In addition, two

[2] Correspondence with Dr. David B. Wilson about their macros on June 8, 2015: Under the random effects model, the weights include both sampling error and between-study level variability. Different weights, different means. Using my macros, you should use n-3 as the weights, as that is what these models assume (they also assume they are being given Zr and not r and there is an option in the macro to convert final results back into r). Under most situations, using r or Zr just isn't going to matter much. The reason is that outside of reliability and validity coefficients, most correlations in the social sciences are less than about .4, in which case the conversion to Zr is rather small. The conversion really starts to matter as the correlations approach 1 or -1.

advertisement conditions (high-rated ads vs. low-rated ads) were used. For the RQ4-a analysis, items were collapsed into *involvement* and *entertainment and enjoyment* indices and average correlations were computed by dependent variables and advertising condition. As a result, this reduced the number of 24 effect sizes (i.e., 2 independent variables × 6 dependent variables × 2 ad conditions). In two other studies (i.e., Colman & Norris, 1994; Norris & Colman, 1993), 105 effect sizes and 40 effect sizes, respectively, were retrieved because the authors reported results by composite *involvement* index and *entertainment and enjoyment* index as well as by each item of the independent variable. For the RQ4-a analysis, effect sizes for indices (but not by items) were included. The inclusion of effect sizes by items does not add much information for RQ4-a but inflates sample sizes. As a result, 1,248 effect sizes were reduced to 925 cases. Prior to the major analysis, an outlier test was conducted using the interquartile range. Schmidt and Hunter (2015) noted that the identification and elimination of outliers is a complicated and problematic process in meta-analyses, and they suggested not to remove any but the most extreme outliers (p. 236 & p. 275). From the examination of the fence points and the data, 17 effect sizes exceeded the upper inner fence and stood out a mild outlier (lower inner fence < -.70; upper inner fence > .90). There were no extreme outliers (lower outer fence < -1.31; upper outer fence > 1.5).

RQ4-a. As shown in Figure 6, effects between media engagement and ad effectiveness varied in size, 33% of effect sizes (307 out of 925 effect sizes) were lower than zero. The distribution was positively skewed, and the mean effect size for the impact of media context on advertising effectiveness was weak with a correlation coefficient of .11 (95% CI_{LOW} = .10; 95% CI_{HIGH} = .13, $p < .01$).

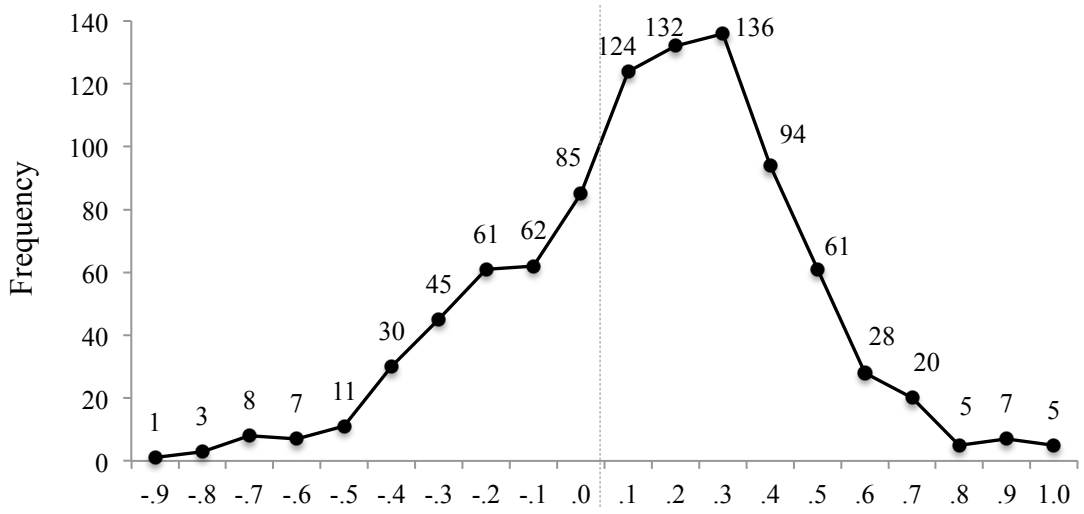


Figure 6. Frequency distribution of reliability-corrected correlation

Homogeneity Test. Homogeneity test followed to determine whether the effect sizes vary more than expected from sampling variability. Differences by the study such as methodological differences or other unknown factors may cause statistical heterogeneity, and all studies may not have the same effect (Martin & Bland, 2006). Thus, heterogeneity in effect sizes was assessed using Cochran's (1954) Q statistic and the index I^2 (see Appendix D for formula). Cochran's (1954) Q has been the usual test statistic (e.g., de Matos & Rossi, 2008) and the hypothesis of effect homogeneity is rejected when Q exceeds the critical value of chi-square for k-1 degrees of freedom, where k is the number of studies of the relationship. However, this test is known to be poor at detecting true heterogeneity among studies because meta-analyses often include small numbers of studies and the power of the test in such circumstances is low (Higgins, Thompson, Deeks, & Altman, 2003). Thus, following the recommendation of Higgins et al. (2003), I^2 test – the percentage of total variation across studies that is due to heterogeneity rather than chance – was also conducted to quantify inconsistency across studies. The mean

effect of media engagement on advertising effectiveness was highly heterogeneous (Q = 28,627, $p < .01$; $I^2 = 96.78\%$).

Publication Bias. It is a well-known problem related to the selection of articles in meta-analyses because publication bias – selection of studies which show certain types of results (i.e., significant findings) over those showing other types of results (i.e., nonsignificant results) – may result in an overestimation of the number of certain types of results on a given topic (Rosenberg, 2005). In other words, because journals tend to publish only studies with statistically significant results (so-called "file-drawer problem," Rosenthal, 1979), there is a higher possibility of an overestimation of effect sizes (Lipsey & Wilson, 1993). Rosenthal's (1979) fail-safe number, the number of nonsignificant studies that would be necessary to reduce the effect size to an nonsignificant value, is commonly used to detect publication bias by considering robust if it is greater than 5n+10, where n is the original number of studies. However, Rosenberg (2005) argues that Rosenthal's method does not represent how we combine studies in a meta-analysis today and suggests a new method – weighing each study (i.e., size of the study). Thus, for the RQ4-a analysis, both Rosenthal's (1979) and Rosenberg (2005)'s fail safe numbers were considered. Rosenthal's fail-safe N was 1,851,868, and Rosenberg's fail-safe number (a random model estimate of N+) was 5,328,983, both of which are greater than 4,635 (= 5 × 925 + 10). Thus, publication biases seem to have had little impact on this study.

[RQ4-b: Moderator Analysis]

As shown above, the heterogeneity test was significant (Q = 28,627, $p < .01$; $I^2 = 96.78\%$). As the percentage of total variation across studies due to heterogeneity rather than chance, the index I^2 value detects heterogeneity. A value of 0% indicates no

observed heterogeneity, and larger values (e.g., 75%) show increasing heterogeneity, indicating the mean effect size could vary by some other factors. Because the I^2 value in the RQ4-a analysis was extremely high, several moderators related to the study characteristics were examined: publication time frame (i.e., 1960s, 1970s, 1980s, 1990s, 2000s, 2010-2013); publication type (i.e., journals vs. conference proceedings and dissertations); research method (i.e., experiments vs. nonexperiments); research participant (i.e., children, college students, adults, women only, men only); advertising media (i.e., TV, radio, newspaper, magazines, film, websites, games, and hand-held devices); brand type (i.e., real brands vs. fictitious brands); and ad type (i.e., real ads vs. fictitious ads). The results of the univariate moderator analyses are presented in Table 11.

Table 11. Summary of Univariate Moderator Analyses

Variable	$K_{EFFECTS}$	*N*	r^*(±95%*CI*)	*p*	*Q (df)*	I^2
Media Contexts → Ad Effectiveness	925	474,343	.11 (.10, .13)	< .001	28627.06 (924)	96.78
Publication Time Frame				< .001	Model: 20.79 Residual: 950.24	
1960s	10	10,520	.09 (-.13, .31)	.40	.48 (9)	0
1970s	43	16,224	.09 (-.02, .20)	.11	20.48 (42)	0
1980s	48	8,527	.17 (.07, .28)	< .01	37.28 (47)	0
1990s	229	31,212	.02 (-.03, .07)	.45	185.40 (228)	0
2000s	433	338,959	.14 (.11, .17)	< .001	510.95 (432)	15.65
2010-2013	162	68,901	.15 (.10, .21)	< .001	195.65 (161)	18.22
Publication Type				.08	Model: 2.97 Residual: 949.12	
Journals	808	347,325	.10 (.08, .13)	< .001	855.43 (807)	5.78
Conference/dissertations	117	127,018	.17 (.10, .23)	< .001	93.69 (116)	0
Research Method				< .001	Model: 23.78 Residual: 950.83	
Experiments	746	153,971	.08 (.06, .11)	< .001	830.42 (745)	10.41
Non-experiments	179	320,372	.23 (.17, .28)	< .001	120.40 (178)	0
Research Participant				< .001	Model: 39.83 Residual: 950.05	
College students only	511	65,268	.06 (.03, .09)	< .001	677.26 (510)	24.84
Children (below 18 or adolescents)	38	2,475	-.04 (-.15, .08)	.55	42.93 (37)	16.13
Adults (18+ non-college students)	312	382,262	.20 (.16, .24)	< .001	217.28 (311)	0
Women only	62	24,284	.13 (.04, .22)	< .01	11.41 (61)	0
Men only	2	54	.65 (.09, 1.21)	.02	1.17 (1)	**

Variable	$K_{EFFECTS}$	*N*	*r**(±95%*CI*)	*p*	*Q (df)*	I^2
Advertising Media				< .01	Model: 6.77 Residual: 949.79	
TV	488	219,793	.08 (.05, .11)	< .001	484.71 (487)	0
Not TV	437	254,550	.15 (.11, .18)	< .001	465.08 (436)	6.47
				< .001	Model: 10.84 Residual: 949.38	
Radio	64	80,134	.25 (.16, .34)	< .001	33.01 (63)	0
Not radio	861	394,209	.10 (.08, .12)	< .001	916.37 (860)	6.26
				< .01	Model: 8.25 Residual: 957.98	
Newspaper	108	180,659	.20 (.14, .27)	< .001	37.93 (107)	0
Not newspaper	817	293,684	.10 (.07, .12)	< .001	911.80 (816)	10.62
				.72	Model: .13 Residual: 949.05	
Magazines	241	176,976	.10 (.06, .15)	< .001	188.25 (240)	0
Not magazines	684	297,367	.11 (.09, .14)	< .001	760.81 (683)	10.36
				.81	Model: .06 Residual: 9489.16	
Film	60	79,496	.12 (.03, .21)	< .01	38.39 (59)	0
Not film	865	394,847	.11 (.09, .14)	< .001	910.77 (864)	5.25
				< .001	Model: 33.36 Residual: 953.31	
Websites	147	137,912	.27 (.21, .33)	< .001	191.01 (146)	24.09
Not websites	778	336,431	.08 (.06, .11)	< .001	762.31 (777)	0
				.12	Model: 2.47 Residual: 949.06	
Games	75	48,378	.18 (.09, .26)	< .001	53.423 (74)	0
Not games	850	425,965	.11 (.08, .13)	< .001	895.83 (849)	5.34
				.11	Model: 2.50 Residual: 949.23	
Hand-held devices	5	845	.37 (.05, .69)	.02	.25 (4)	0
Not hand-held devices	920	473,498	.11 (.09, .13)	< .001	948.98 (919)	3.26
				.13	Model: 2.24 Residual: 935.57	
Other print media	22	1,276	-.02 (-.19, .15)	.82	13.30 (21)	0
Not print	903	473,067	.11 (.09, .14)	< .001	935.57 (902)	3.70
Brand Type				< .01	Model: 11.89 Residual: 949.13	
Real brands	610	347,831	.11 (.08, .14)	< .001	681.93 (609)	10.84
Fictitious brands	156	28,775	.15 (.09, .21)	< .001	82.02 (155)	0
Both real & fictitious brands	8	422	-.31 (-.57, -.05)	.02	26.80 (7)	77.61
Not specific	151	97,315	.09 (.04, .15)	< .01	158.38 (150)	5.92
Ad Type				< .01	Model: 14.47 Residual: 949.68	
Real ads	521	337,703	.08 (.05, .11)	< .001	475.91 (520)	0
Fictitious ads	249	36,764	.19 (.14, .23)	< .001	260.67 (248)	5.24
Both real & fictitious ads	6	446	-.05 (-.36, .25)	.74	4.58 (5)	12.65
Not specific	149	99,430	.10 (.04, .16)	< .01	208.52 (148)	29.50

Note: Results from a series of ANOVA tests are reported in the first row of each analysis along with significance of model (*p,* Q statistics of the model and residual). Significant Q statistics indicate that there are differences across subgroups. $K_{EFFECTS}$ refers to the number of effect sizes, *N* refers to the cumulative sample size, sd refers to standard deviations, ±95% CI refers to ±95% Confidence Intervals. *r is back-transformed from Fisher's zr. **Because *df* was 1, I^2 could not be calculated. When I^2 was negative, it was set to zero.

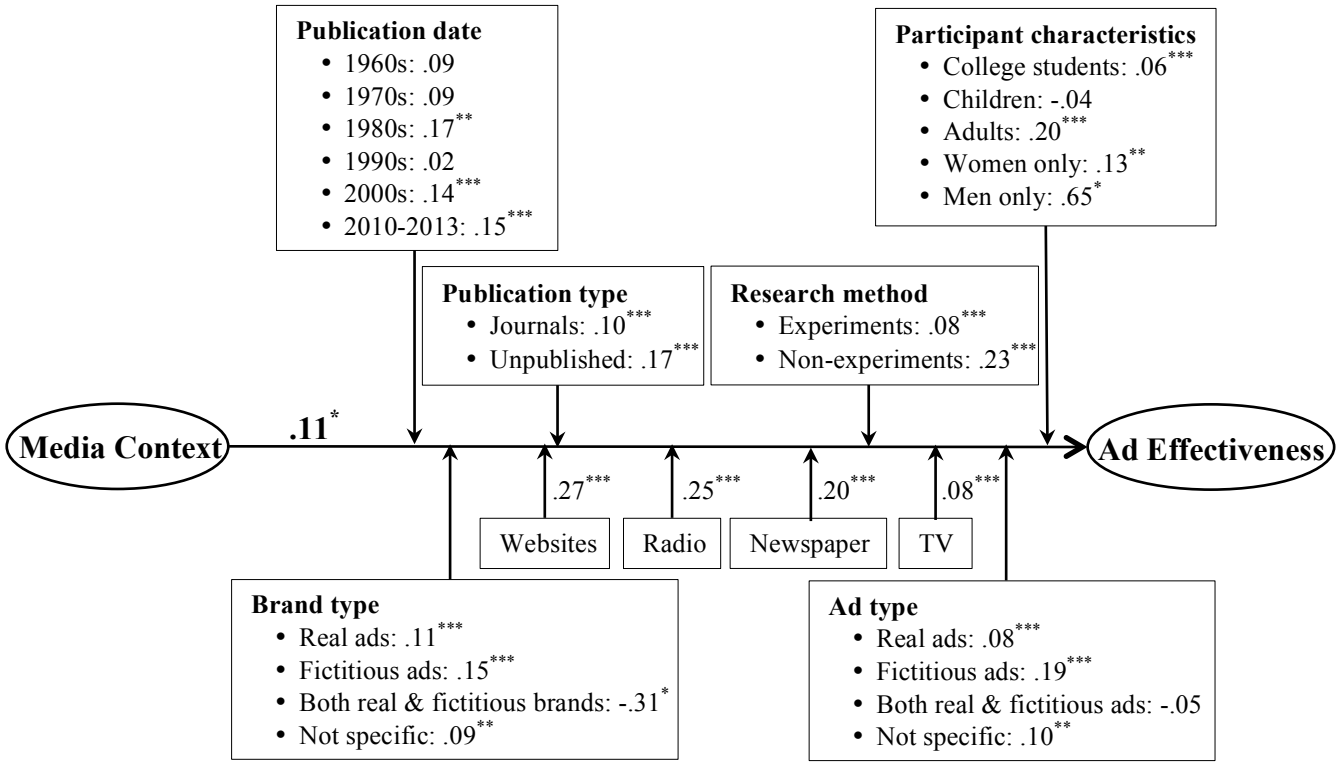
Effect sizes were significantly different by publication time frame ($p < .001$). For studies in the 1980s, the context effect on advertising effectiveness was significant with a correlation of .17 (95% CI_{LOW} = .07; 95% CI_{HIGH} = .28). However, the correlation decreased: studies in the 2000s were .14 (95% CI_{LOW} = .11; 95% CI_{HIGH} = .17) and .15 for 2010-2013 (95% CI_{LOW} = .10; 95% CI_{HIGH} = .21). As for the studies in the 1960s, 1970s, and 1990s, the context effects were not significant.

Regarding the research method, experiments generated a weak effect size (r = .08, 95% CI_{LOW} = .06, 95% CI_{HIGH} = .11) compared to nonexperimental studies (r = .23, 95% CI_{LOW} = .17, 95% CI_{HIGH} = .28).

The type of research participant was also significant. Media context was highly correlated with advertising effectiveness for male respondents (r = .65, 95% CI_{LOW} = .09, 95% CI_{HIGH} = 1.21), even though only two cases were examined. When adults above 18 years of age (not specifically college students) were sampled, the relationship was weakly correlated (r = .20, 95% CI_{LOW} = .16, 95% CI_{HIGH} = .24). For the women only sample, it was .13 (95% CI_{LOW} = .04, 95% CI_{HIGH} = .22). As for the college student sample, the relationship was very weakly correlated (r = .06, 95% CI_{LOW} = .03, 95% CI_{HIGH} = .09). For the children sample, it was not significant (r = -.04).

As for advertising media, significant moderators were: websites with correlation coefficient of .27 (95% CI_{LOW} = .21, 95% CI_{HIGH} = .33), radio with .25 (95% CI_{LOW} = .16, 95% CI_{HIGH} = .34), newspaper with .20 (95% CI_{LOW} = .14, 95% CI_{HIGH} = .27), and TV with .08 (95% CI_{LOW} = .04, 95% CI_{HIGH} = .11). However, it was not significant for hand-held devices (p = .11), game (p = .12), film (p = .81), and magazines (p = .72).

Effect sizes varied by brand as well ad. Correlation for real brands was .11 (95% CI_{LOW} = .08, 95% CI_{HIGH} = .14), and .15 for fictitious brands (95% CI_{LOW} = .09, 95% CI_{HIGH} = .21). However, when both real and fictitious brands are used, the effect size drastically dropped to -.31 (95% CI_{LOW} = -.57, 95% CI_{HIGH} = -.05). For the case when brands were not specific, the correlation was .09 (95% CI_{LOW} = .04, 95% CI_{HIGH} = .15). Similar trend was found in effect sizes by ad. For fictitious ads (r = .19; 95% CI_{LOW} = .14, 95% CI_{HIGH} = .23), the correlation was higher than that for real ads (r = .08; 95% CI_{LOW} = .05, 95% CI_{HIGH} = .11) (see Figure 7 for moderators that are significant).



Note: *significant at .05; **significant at .01; ***significant at .001

Figure 7. Moderator analysis of effect sizes between media context and ad effectiveness

Upon completing the univariate moderator analyses, multiple regression analysis was conducted to identify potential interactions among moderators. As shown in Table 12, the overall multiple regression model was significantly related to effect size (R^2 = .11; $Q_{R(15)}$ = 115.62; $p < .001$; $Q_{E(909)}$ = 955.30; $p < .001$). Publication type (β = .12; z = 3.56; $p < .001$), research methods (β = .11; z =2.70; $p < .01$), research participant (β = .09; z =2.24; p = .03), TV (β = .11; z = 2.48; p = .01), radio (β = -.16; z = -3.47; $p < .001$), magazines (β = .11; z = 2.74; $p < .01$), film (β = .18; z = 3.92; $p < .001$), websites (β = -.15; z = -3.66; $p < .001$), and other print media (β = .09; z = 2.60; $p < .01$) were significantly related to effect size.

Table 12. Multiple Regression Analysis of Study Characteristics on Effect Sizes

	B	*β*	*z*	*p*	R^2	Q_R*	Q_E
					.11**	115.62	955.30
Publication Time Frame	.02	.06	1.69	.09			
Publication Type	.13	.12	3.56	< .001			
Research Method	.10	.11	2.70	< .01			
Research Participant	.03	.09	2.24	.03			
Advertising Media							
TV	.08	.11	2.48	.01			
Radio	-.24	-.16	-3.47	< .001			
Newspaper	-.04	-.03	-.77	.44			
Magazines	.10	.11	2.74	< .01			
Film	.26	.18	3.92	< .001			
Websites	-.15	-.15	-3.66	< .001			
Games	.01	.01	-.20	.85			
Hand-held Devices	-.13	-.03	-.84	.40			
Other Print Media	.24	.09	2.60	< .01			
Brand Type	-.02	-.07	-1.29	.20			
Ad Type	.03	.10	1.83	.07			

Note: *Q_R refers to Q value from the regression model and Q_E the residual. **significant at .01.

However, publication time frame (β = .06; p = .09), newspaper (β = -.03; p = .44), games (β = .01; p = .85), and hand-held device (β = -.03; p = .40), brand type (β = -.07; p = .20), and ad type (β = .10; p = .07) were not related to the overall effect size.

Follow-up regression analyses were conducted with moderators significant in the Table 12 (i.e., publication type, research method, research participant, and advertising media (TV, radio, magazines, websites, and other print media) to identify potential interactions among moderators. The following 2-way interactions among moderators were significant: 1) publication type and advertising media (radio vs. not radio) ($Q_{R(2)}$ = 14.90, p < .001, R^2 =.02, $Q_{E(922)}$ = 949.47, p = .26; publication type: β = .06, p = .04; radio vs. not radio: β = -.11, p < .001), 2) publication type and advertising media (websites vs. not websites) ($Q_{R(2)}$ = 40.64, p < .001, R^2 =.04, $Q_{E(922)}$ = 953.74, p = .23; publication type: β = .08, p < .01; websites vs. not websites: β = -.20, p < .001), 3) research method and research participant ($Q_{R(2)}$ = 31.57, p < .001, R^2 =.03, $Q_{E(922)}$ = 950.13, p = .25; research method: β = .10, p < .01; research participant: β = .10, p < .01), 4) research method and advertising media (TV vs. not TV) ($Q_{R(2)}$ = 33.96, p < .001, R^2 =.03, $Q_{E(922)}$ = 951.97, p = .25; research method: β = .17, p < .001; TV vs. not TV: β = .10, p < .01), 5) research method and advertising media (websites vs. not websites) ($Q_{R(2)}$ = 46.75, p < .001, R^2 =.05, $Q_{E(922)}$ = 953.55, p = .23; research method: β = .12, p < .001; websites vs. not websites: β = -.15, p < .001), 6) research participant and advertising media (TV vs. not TV) ($Q_{R(2)}$ = 33.08, p < .001, R^2 =.03, $Q_{E(922)}$ = 949.99, p = .25; research participant: β = .16, p < .001; TV vs. not TV: β = .09, p < .01), 7) research participant and advertising media (radio vs. not radio) ($Q_{R(2)}$ = 32.17, p < .001, R^2 =.03, $Q_{E(922)}$ = 949.28, p = .26; research participant: β = .15, p < .001; radio vs. not radio:

β = -.09, p < .01), and 8) research participant and advertising media (websites vs. not websites) ($Q_{R(2)}$ = 50.28, p < .001, R^2 =.05, $Q_{E(922)}$ = 952.39, p = .24; research participant: β = .13, p < .001; websites vs. not websites: β = -.16, p < .001).

However, the following interactions were not significant: 1) publication type and research method (publication type: β = .04, p = .20; research method: β = .15, p < .001), 2) publication type and research participant (publication type: β = .05, p = .12; research participant: β = .16, p < .001), 3) publication type and advertising media (TV vs. not TV) (publication type: β = .06, p = .08; TV vs. not TV: β = .08, p < .01), 4) publication type and advertising media (magazines vs. not magazines) (publication type: β = .06, p = .07; magazines vs. not magazines: β = .02, p = .49), 5) between publication type and advertising media (film vs. not film) (publication type: β = .06, p = .09; film vs. not film: β = -.01, p = .84), 6) between publication type and advertising media (other print media vs. not print) (publication type: β = .06, p = .09; other print media vs. not print: β = .04, p = .14), 7) research method and advertising media (radio vs. not radio) (research method: β = .14, p < .001; radio vs. not radio: β = -.06, p = .06), 8) research method and advertising media (magazines vs. not magazines) (research method: β = .17, p < .001; magazine vs. not magazine: β = .06, p = .06), 9) research method and advertising media (film vs. not film) (research method: β = .17, p < .001; film vs. not film: β = .05, p = .15), 10) research method and advertising media (other print media vs. not print) ($Q_{R(2)}$ = 25.18, p < .001, R^2 =.05, $Q_{E(922)}$ = 950.68, p = .25; research method: β = .15, p < .001; other print media vs. not print: β = .04, p = .24), 11) research participant and advertising media (magazines vs. not magazines) (research participant: β = .17, p < .001; magazines vs. not magazines: β = .04, p =.22), 12) research participant and advertising media (film

vs. not film) (research participant: $\beta = .16$, $p < .001$; film vs. not film: $\beta = .01$, $p = .75$), 13) research participant and advertising media (print vs. not print)) (research participant: $\beta = .16$, $p < .001$; other print media vs. not print: $\beta = .03$, $p = .36$), From the results above, subgroup analyses were further conducted; the results are reported in Table 13.

Table 13. Additional Univariate Moderator Analysis among Correlated Moderators

	$K_{EFFECTS}$	*r (95% CI)*	*p*		K_{EFFECT}	*r (95% CI)*	*p*
Journal				**Conference/Dissertations**			
Radio	62	.26 (.17, .35)	***	Radio****	2	.17 (-.26, .60)	.44
Not Radio	746	.09 (.06, .12)	***	Not Radio	115	.17 (.11, .23)	***
Websites	145	.27 (.21, .33)	***	Websites****	2	.17 (-.26, .60)	.44
Not Websites	663	.06 (.04, .09)	***	Not Websites	115	.17 (.11, .23)	***
Experiments				**Non-experiments**			
College students	502	.06 (.03, .10)	***	College students	9	-.26 (-.43, -.08)	**
Children	38	-.03 (-.16, .09)	.58	Children			
Adults	180	.13 (.08, .19)	***	Adults	132	.29 (.25, .34)	***
Women only	24	.16 (.01, .31)	*	Women only	38	.11 (.02, .19)	*
Men only	2	.65 (.07, 1.23)	*	Men only			
TV	376	.04 (-.00, .08)	.06	TV****	112	.22 (.17, .27)	***
Not TV	370	.13 (.09, .17)	***	Not TV	67	.24 (.17, .31)	***
Websites	87	.26 (.18, .35)	***	Websites	60	.28 (.20, .35)	***
Not Websites	659	.06 (.03, .09)	***	Not Websites	119	.20 (.15, .25)	***
TV				**Not TV**			
College students	250	.02 (-.03, .06)	.48	College students	261	.10 (.06, 15)	***
Children	38	-.04 (-.15, .08)	.54	Children			
Adults	164	.18 (.13, .23)	***	Adults	148	.22 (.16, 28)	***
Women only	34	.14 (.03, .26)	*	Women only	28	.11 (-.03, .24)	.12
Men only	2	.65 (.11, 1.19)	*	Men only			
Radio**				**Not Radio**			
College students	19	.23 (.11, .34)	***	College students	492	.05 (.02, .09)	**
Children				Children	38	-.04 (-.16, .09)	.57
Adults	45	.26 (.19, .33)	***	Adults	267	.19 (.15, .23)	***
Women only				Women only	62	.13 (.04, .22)	**
Men only				Men only	2	.65 (.09, 1.22)	*

	K_{EFFECT}	*r (95% CI)*	*p*		K_{EFFECT}	*r (95% CI)*	*p*
Websites[****]				**Not Websites**			
College students	49	.26 (.14, .38)	***	College students	462	.04 (.01, .07)	*
Children				Children	38	-.04 (-.15, .08)	.53
Adults	98	.27 (.19, .35)	***	Adults	214	.17 (.12, .21)	***
Women only				Women only	62	.13 (.04, .21)	**
Men only				Men only	2	.65 (.12, 1.19)	*

Note: *significant at .05; **significant at .01; ***significant at .001; ****The overall model was not significant.

[RQ4-c: Effect Sizes by Specific Media Contexts]

In preparation for the analyses for RQ4-c, effect sizes were re-examined and 40 effect sizes were duplicated and included in the analysis. Thirty-five cases did not specifically examine the congruency effect, but these studies used congruent vs. incongruent media context and advertisement. Thus, these relationships were recoded under "Congruency." The other 5 effect sizes look at the impact on ad effectiveness by documentary vs. sitcom. Thus, these cases were recoded under "Humor," because documentary vs. sitcom represented non-humorous program vs. humorous program. In addition, as for three studies noted in the analysis of RQ4-a (i.e., Colman & Norris, 1994; Norris & Colman, 1993; Norris, Colman, & Aleixo, 2001) on pages 87-88, when both composite/average correlations and statistical results by each item were used, the composite or average correlations were excluded, because the purpose of the analysis for RQ4-c is to look at the effect sizes by specific media contexts. As a result, the total effect sizes were 1,276 (1,248 total effects + 35 congruency effect sizes + 5 sitcom vs. documentary effect sizes – 18 composite correlations).

Each media context was split into separate files and analyses were conducted following the Hunter-Schmidt's approach using their recent 2015 meta-analysis program package. Hunter and Schmidt's approach, more sophisticated than other meta-analytic

approaches (Johnson, Mullen, & Salas, 1995), is frequently used in marketing and psychology (e.g., Argo & Main, 2004; Peloza & Steel, 2005), because it corrects study artifacts (e.g., measurement error, sampling error, range restriction) in survey methods (not experimental design). Following their approach, Fisher transformation was not applied to the effect sizes (Hunter & Schmidt, 2004, p. 55-56; Schmidt & Hunter, 2015), and 95% confidence intervals are used to determine whether a correlation is significant. Hunter and Schmidt's approach is against significance testing due to low statistical power in meta-analyses (Schmidt & Hunter, 2015, p. 375-376), and accordingly this meta-analysis program does not provide significance levels (i.e., *p* values). Thus, when correlations include zero in the 95% confidence intervals, it deemed to be not significant. Also, as noted in the RQ4-a analysis, effect sizes were evaluated following Cohen's (1988) guidelines (large $r \geq |.37|$, medium $r \geq |.24|$, small $r \geq |.10|$; Becker, 2000). In order to detect the presence of moderator effects, percent variance in corrected correlations attributable to all artifacts was examined and the 75% variance rule of thumb was used. In general, a percent variance above 75% indicates that moderators, if they exist, are not important. However, as percent variance goes below 75%, a moderator analysis is recommended (Schmidt & Hunter, 2015, p. 375).

Table 14 shows the mean effect sizes for each media context examined in media engagement studies. Only a few studies simply compared media types to look at the impact on advertising effectiveness. The analyses indicate that radio has a positive impact on advertising effectiveness compared to TV (r = .27, 95% CI_{LOW} = .01, 95% CI_{HIGH} = .53), and cross-channel integration (2 or more media platforms) also generated a positive impact on advertising (r = .44, 95% CI_{LOW} = .23, 95% CI_{HIGH} = .65). However,

interactive media compared to linear traditional media (i.e., TV vs. web) generated a negative impact (r = -.28, 95% CI_{LOW} = -.30, 95% CI_{HIGH} = -.27).

In the comparison of specific media vehicle formats, specialty magazines generated a higher impact on advertising effectiveness than general interest magazines with a correlation coefficient of .44 (95% CI_{LOW} = .33, 95% CI_{HIGH} = .55). Cartoon programs had a greater influence than noncartoon programs (r = .36; 95% CI_{LOW} = .04, 95% CI_{HIGH} = .68); and the action and adventure genre had a greater impact than documentary programs (r = .25; 95% CI_{LOW} = .01, 95% CI_{HIGH} = .50). Sitcoms in comparison with dramas were negatively correlated with ad effectiveness (r = -.31; 95% CI_{LOW} = -.55, 95% CI_{HIGH} = -.07), suggesting that sitcoms are more effective than dramas for ad placement. However, context comparisons such as fact-based editorial vs. narrative-based editorial, sitcom vs. action/adventure, documentary vs. sitcom, and games vs. drama were not significant.

Congruency between media contexts and advertisements was positively correlated with ad effectiveness *(*r = .16, 95% CI_{LOW} = .14, 95% CI_{HIGH} = .18), meaning when an ad is placed in a congruent, similar, and relevant media context, there is a more positive effect. As shown in Table 14, the mean effect size was heterogeneous (i.e., %variance = 12%). Because the sample size and the number of effect sizes were high enough to conduct moderator analyses, additional analyses were separately conducted (see Table 17).

A number of items were used to measure audience ratings on media and media content, represented in terms of low to high. The contemporary rating and learned a great deal rating were highly correlated with ad effectiveness (r = .54; 95% CI_{LOW} = .54, 95%

CI_{HIGH} = .54). Audiences' transportation experience was moderately correlated with a correlation of .30 (95% CI_{LOW} = .24, 95% CI_{HIGH} = .36). The dominance & competence rating was also correlated (r = .26; 95% CI_{LOW} = .19, 95% CI_{HIGH} = .34). Media involvement was also significant (r = .23; 95% CI_{LOW} = .20, 95% CI_{HIGH} = .25). Successfulness of media resulted in the correlation of .19 (95% CI_{LOW} = .10, 95% CI_{HIGH} = .73), and credibility of media was also positively correlated (r = .18; 95% CI_{LOW} = .07, 95% CI_{HIGH} = .28). Liking of media was positively correlated with ad effectiveness (r = .15; 95% CI_{LOW} = .10, 95% CI_{HIGH} = .19). Entertainment and enjoyment was also positively correlated (r = .15; 95% CI_{LOW} = .11, 95% CI_{HIGH} = .20). These positive correlations indicate that people are more likely to evaluate and process ad positively when ads are placed in these media contexts. Other rating measures (e.g., humor, suspense, appealing, program interest, thought-provoking, worth-remembering) were not significant.

Positive programs were positively correlated with ad effectiveness (r = .16; 95% CI_{LOW} = .10, 95% CI_{HIGH} = .21). In comparison of neutral context to violent or sexual program contexts, violent (r = -.24; 95% CI_{LOW} = -.29, 95% CI_{HIGH} = -.19) or sexual contexts (r = -.45; 95% CI_{LOW} = -.54, 95% CI_{HIGH} = -.37) were negatively correlated with ad effectiveness. Affective programs (e.g., dram series, soap operas) in comparison with cognitive programs (e.g., news, talk shows) had a greater positive influence on ad effectiveness (r = .27; 95% CI_{LOW} = .11, 95% CI_{HIGH} = .44).

Regarding ad placement, placing ads later in the program generated lower evaluations of advertisements compared to placing ads earlier in the program or in the first part of the media platforms (r = -.41; 95% CI_{LOW} = -.56, 95% CI_{HIGH} = -.26).

Table 14. Effect Size by Media Contexts on Ad Effectiveness

Variable	$K_{EFFECTS}$	N	r	sd	±80% CV	±95%CI	*%variance*	r*	sd*
Media Types									
Press vs. TV	3	270	.14	.2315	(-.16, .44)	(-.15, .43)	16.76	.14	.2537
Print/press vs. web	15	272	-.10	.1093	(-.24, .04)	(-.23, .04)	82.81	-.10	.2635
Press vs. radio	3	270	-.08	.4350	(-.64, .47)	(-.59, .42)	5.53	-.09	.4475
TV vs. radio	3	270	.27	.2101	(.00, .54)	(.01, .53)	17.89	.27	.2319
Linear vs. interactive (TV vs. web)	2	192	-.28	.0000	(-.28, -.28)	(-.30, -.27)	7046.53	-.28	.0116
Cross-channel integration: 1 media (e.g., TV) vs. 2 or more (e.g., TV + web)	5	747	.44	.2299	(.15, .74)	(.23, .65)	8.50	.43	.2328
Incongruent media vs. traditional media	6	1,116	.06	.1500	(-.13, .26)	(-.07, .20)	21.63	.06	.1557
Specific Media Vehicle Formats (Genre)									
Sitcom vs. drama	2	88	-.31	.1044	(-.44, -.17)	(-.55, -.07)	63.36	-.32	.1726
Sitcom vs. news	2	88	-.15	.0000	(-.15, -.15)	(-.20, -.10)	1825.85	-.16	.0000
General interest vs. specialty magazines	10	2,806	.44	.1726	(.22, .66)	(.33, .55)	8.06	.42	.1804
Prestige vs. expert magazines	15	1,881	.05	.0000	(.05, .05)	(.01, .09)	126.75	.05	.0794
Fact- vs. narrative-based editorial	15	1,455	-.02	.1693	(-.24, .20)	(-.12, .08)	28.45	-.02	.1913
Serial vs. sitcom	2	512	.14	.0000	(.14, .14)	(.13, .15)	5495.40	.14	.0083
Sitcom vs. quiz/audience participation	2	670	.09	.0000	(.09, .09)	(.07, .11)	2279.91	.09	.0114
Quiz/audience participation vs. serial	2	822	.05	.0000	(.05, .05)	(.02, .08)	615.61	.05	.0199
Documentary vs. action/adventure	4	133	.25	.1849	(.02, .49)	(.01, .50)	44.14	.26	.0343
Sitcom vs. action/adventure	4	150	.00	.2587	(-.33, .33)	(-.30, .30)	29.08	.00	.3072
Documentary vs. sitcom	5	456	.10	.1488	(-.09, .29)	(-.06, .26)	33.37	.10	.1823
Games vs. drama	1	130	.01	.0000				.01	.0000
Noncartoon vs. cartoon program	6	168	.36	.3646	(-.10, .83)	(.04, .68)	16.96	.38	.4006
Congruency (Incongruent vs. Congruent)	139	70,911	.16	.1178	(.01, .31)	(.14, .18)	12.23	.16	.1252
Rating of Media or Media Content									
Liking	27	15,983	.15	.1160	(.00, .29)	(.10, .19)	10.96	.14	.1233
Credibility & believability	20	3,723	.18	.2226	(-.11, .46)	(.07, .28)	9.68	.18	.2245
Media involvement	212	273,690	.23	.1594	(.02, .43)	(.20, .25)	2.75	.22	.0245
Program transportation (including presence, flow, immersion experience)	84	41,745	.30	.2709	(-.04, .65)	(.24, .36)	2.33	.30	.2700
Humor ("humorous" & "funny")	58	5,354	-.01	.1515	(-.20, .18)	(-.06, .04)	32.48	-.01	.1837
Entertainment and enjoyment	77	7,025	.15	.1513	(-.04, .35)	(.11, .20)	31.68	.16	.1822
Suspense	45	4,654	.01	.1445	(-.17, .20)	(-.04, .06)	32.50	.01	.1733
Contemporary	12	816	.54	.0000	(.54, .54)	(.43, .65)	108.58	.28	.1286
Appealing	2	132	-.10	.0689	(.00, .00)	(.00, .00)		-.10	.0689
Program interest	39	3,677	.11	.1478	(-.08, .30)	(.05, .16)	32.77	.11	.1780
Thought-provoking	17	1,530	.02	.0848	(-.09, .13)	(-.04, .09)	60.95	.02	.1357
Worth-remembering	17	1,530	.06	.1277	(-.11, .22)	(-.02, .14)	40.63	.06	.1658
Impact & personal impact	19	1,662	.09	.1613	(-.12, .29)	(.00, .17)	30.45	.09	.1934
Attention to media	72	10,205	.06	.1727	(-.16, .28)	(.02, .11)	19.18	.06	.1922
Challenging	21	1,926	.03	.1459	(-.15, .22)	(-.05, .11)	35.48	.03	.1764
Arousal	75	10,855	.01	.1645	(-.20, .22)	(-.03, .05)	20.87	.01	.1828
Learned a great deal	12	816	.54	.0000	(.54, .54)	(.43, .65)	108.58	.28	.1286
General quality very high	2	146	-.05	.0000	(-.05, -.05)	(-.10, -.01)	1158.91	-.06	.0345
Successfulness, prestige, established media	28	2,159	.19	.2324	(-.11, .49)	(.10, .29)	19.73	.19	.2476
Dominance & competence	8	792	.26	.0557	(.19, .33)	(.19, .34)	75.75	.25	.1248
Sensation	2	318	.03	.1028	(-.11, .16)	(-.16, .21)	43.40	.02	.1207
Other Program-Related Context									
Negative vs. positive media context	58	11,214	.16	.2174	(-.12, .43)	(.10, .21)	11.15	.15	.2097
Program thoughts – positive	2	492	.24	.0895	(.12, .35)	(.09, .39)	32.64	.23	.1125
Program thoughts – negative	2	492	.03	.2302	(-.27, .32)	(-.30, .36)	7.52	.02	.2335
Nonviolent vs. violent program	32	3,808	-.24	.1118	(-.39, -.10)	(-.29, -.19)	38.20	-.24	.1389
Nonsexual vs. sexual program	9	881	-.45	.1063	(-.59, -.32)	(-.54, -.37)	36.55	-.46	.1336
Neutral vs. violent or sexual	4	1,344	-.29	.0574	(-.36, -.21)	(-.36, -.21)	43.32	-.29	.0762
Sexual vs. violent	3	639	.11	.0000	(.11, .11)	(.08, .14)	706.87	.11	.0255

Variable	$K_{EFFECTS}$	N	r	sd	±80% CI	±95%CI	*%variance*	r*	sd*
Innocuous news vs. disturbing news (including neutral vs. death-related news)	10	445	.11	.3434	(-.32, .55)	(-.12, .35)	15.96	.12	.3746
Cognitive vs. affective media context	22	1,882	.27	.3910	(-.23, .78)	(.11, .44)	7.14	.26	.3753
2 cognitive conditions: safety attribute vs. fuel economy condition	3	108	.34	.0826	(.24, .45)	(.14, .55)	78.98	.33	.0078
Dayparts									
Daytime vs. nighttime program	2	4,258	-.02	.0000	(-.02, -.02)	(-.03, .00)	248.65	-.02	.0137
Ad Position/Placement (within program vs. spot)									
Between programs vs. within program	2	4,258	.20	.0000	(.20, .20)	(.20, .21)	2044.29	.20	.0046
First half game vs. ¾ of the game (first half of the book vs. ¾ of the book)	21	1,602	-.41	.3463	(-.85, .03)	(-.56, -.26)	7.26	-.41	.3613
Right side vs. left side	1	326	.13	.0000				.13	.0000
Right side vs. spread	1	326	.47	.0000				.47	.0000
Left side vs. spread	1	326	.37	.0000				.37	.0000
Sequential vs. simultaneous	6	408	-.20	.1596	(-.40, .01)	(-.35, -.04)	35.70	-.20	.1976
Task related									
Watch vs. play	4	216	-.43	.3823	(-.92, .06)	(-.82, -.04)	7.72	-.44	.3981
Surfers vs. seekers	2	280	-.50	.0145	(-.52, -.48)	(-.59, -.41)	95.03	-.50	.0654
Task difficulty									
Hard vs. medium	4	264	.33	.0000	(.33, .33)	(.29, .36)	1031.38	.33	.0347
Hard vs. easy	4	264	.55	.1080	(.41, .68)	(.41, .68)	38.76	.55	.1383
Medium vs. easy	4	264	.27	.0000	(.26, .26)	(.18, .35)	188.47	.27	.0839
Other Measures									
· Perceived program interactivity	1	246	.17	.0000				.14	.0000
· Car vs. broadcast listening	1	50	.84	.0000				.84	.0000

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. *Reliability not corrected mean r and sd.

[RQ4-d: Effect Sizes by Specific Advertising Effectiveness Measures]

To address RQ4-d, files were separately split by specific advertising effectiveness measures, and analyses were conducted using the Hunter-Schmidt meta-analysis program. As shown in Table 15, engagement with media was positively correlated with recall (r = .16; 95% CI_{LOW} = .14, 95% CI_{HIGH} = .18), recognition (r = .12; 95% CI_{LOW} = .10, 95% CI_{HIGH} = .15), and global memory (r = .14; 95% CI_{LOW} = .10, 95% CI_{HIGH} = .18).

The correlational relationship tends to be higher for attitudinal measures than memory measures. Correlation coefficients were .32 for attitude toward the brand (95% CI_{LOW} = .28, 95% CI_{HIGH} = .36), .27 for attitude toward the ad (95% CI_{LOW} = .23, 95%

CI_{HIGH} = .30), .25 for ad believability (95% CI_{LOW} = .19, 95% CI_{HIGH} = .31). Ad affect/emotion was .16 (95% CI_{LOW} = .07, 95% CI_{HIGH} = .25), and ad engagement experience was .22 (95% CI_{LOW} = .18, 95% CI_{HIGH} = .26). Purchase intentions were positively correlated (*r* = .22; 95% CI_{LOW} = .18, 95% CI_{HIGH} = .26). The correlation of click intentions was .26 (95% CI_{LOW} = .24, 95% CI_{HIGH} = .29), and ad avoidance behavior was -.25 (95% CI_{LOW} = -.27, 95% CI_{HIGH} = -.22).

Table 15. Effect Sizes by Advertising Effectiveness Measures

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r*	sd*
Memory-related Measures									
Recall	344	162,529	.16	.2041	(-.10, .42)	(.14, .18)	4.72	.16	.2083
Recognition	178	60,144	.12	.1661	(-.09, .34)	(.10, .15)	9.59	.12	.1745
Global memory	4	11,137	.14	.0365	(.09, .19)	(.10, .18)	20.72	.14	.0410
Ad thoughts/cognitive responses	33	4,635	.09	.2562	(-.24, .41)	(-.01, .18)	9.90	.09	.2672
Attitude-related Measures									
Attitude toward advertising	193	62,406	.27	.2215	(-.02, .55)	(.23, .30)	6.12	.25	.2107
Ad credibility & believability	30	7,354	.25	.1494	(.06, .44)	(.19, .31)	14.90	.24	.1541
Attitude toward brand	172	38,718	.32	.2695	(-.03, .66)	(.28, .36)	5.00	.31	.2740
Attitude toward advertised product	30	2,628	.09	.2775	(-.27, .44)	(-.02, .19)	14.22	.08	.2857
Ad affect/emotion	20	2,298	.16	.1877	(-.08, .40)	(.07, .25)	21.54	.15	.1934
Ad engagement experience	83	47,721	.22	.1763	(-.01, .45)	(.18, .26)	4.96	.22	.1802
Behavior-related Measures									
Purchase intentions (e.g., purchase interest, trial interest, intention to visit stores)	120	17,468	.22	.2043	(-.04, .48)	(.18, .26)	13.43	.22	.2157
Click intentions	15	24,241	.26	.0418	(.21, .32)	(.24, .29)	23.63	.26	.0481
Ad zapping intention (ad avoidance)	2	204	-.25	.0000	(-.25, -.25)	(-.27, -.22)	2571.89	-.25	.0186
Other behaviors (e.g., selecting coupons, participating in communication)	9	46,830	.15	.0469	(.09, .21)	(.12, .18)	7.74	.15	.0490
Other Measures									
Brand association	24	14,136	.16	.1076	(.02, .30)	(.11, .20)	12.25	.16	.1149
Commercial effectiveness	4	576	.00	.1671	(-.22, .21)	(-.19, .18)	20.78	.00	.1840
Performance of ad (expected price, product quality or reliability, informativeness)	15	2,417	.02	.0384	(-.03, .07)	(-.02, .07)	80.88	.02	.0879

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. *Reliability not corrected mean r and sd.

Additional Moderator Analyses on Media Contexts

To generate deeper insights, additional moderator analyses on media contexts were conducted because the heterogeneity test was significant for most of the media contexts (see Table 14): the %variance was below 75%. This indicates mean effect sizes could vary by some other factors and high heterogeneity could be reduced by moderators.

The same variables used in RQ4-b were considered here: publication time frame (i.e., 1960s, 1970s, 1980s, 1990s, 2000s, 2010-2013), publication type (i.e., journals vs. conference proceedings and dissertations), research method (i.e., experiments vs. nonexperiments), research participant (i.e., children, college students, adults, women only, men only), advertising media (i.e., TV, radio, newspaper, magazines, film, games, websites, and hand-held devices), brand type (i.e., real vs. fictitious brands), and ad type (i.e., real vs. fictitious ads). In addition, the type of ad effectiveness measures was examined.

Again, Hunter and Schmidt's meta-analysis was used, and 95% confidence intervals were used to determine whether a correlation is significant. To detect moderator effects, ANOVA tests or t-tests were conducted using mean and standard error provided for each subgroup in the program, and if 95% confidence intervals do not overlap, that signals the presence of a statically significant moderator (Schmidt & Hunter, 2015, p. 388-389). In addition, ±80% credibility intervals (±80% CV)[3] were examined. As the distribution of parameter values, credibility interval is conceptually linked to random

[3] Correspondence with Dr. Huy Le (H-S meta-analysis program developer; Dr. Schmidt's former student) on October 9, 2015: You first should look at the %variance to determine if there exists any moderator. Then, if there is, you next conduct separate analysis for each value of the moderator and examine the extent that the 80%CV for these results overlap. The less overlapping of the CVs, the more likely that there is moderator. For example, consider a hypothetical situation where the %variance is 30% which indicates that there is probably a moderator. Further assume that you expect that study design (experiment vs. field studies) is a moderator, then you next should conduct meta-analysis separately for experiment and field studies. Suppose that you found the 80%CV for experiment to be .10 – .30 and the 80%CV for field studies to be -.05 – .15. These two CVs' slight overlapping suggest that study design could be the moderator. This approach can be subjective (and qualitative), but it can be used as an alternative to significance test, especially when power for significance test to detect moderator effect is very low and accordingly significance test is not significant.

effects models that allow for possible variation in parameters across studies (in fixed effects models, credibility intervals, by definition, have a width of 0) (Schmidt & Hunter, 2015, p. 228). Credibility intervals provide information such as the likely range of population correlations (e.g., whether any of the population correlations are likely to be positive, zero, or negative), and accordingly it can be used for moderator analyses (Schmidt & Hunter, 2015). In other words, as credibility intervals of subgroups of a variable least overlap, that variable is more likely to be the moderator.

In this section, the following media context variables were examined: 1) media involvement, 2) congruency, 3) program transportation, 4) entertainment and enjoyment, 5) arousal, 6) attention to media, 7) negative vs. positive affect, 8) humor, 9) suspense, 10) program interest, 11) nonviolent vs. violent programs, 12) media liking, and 13) cognitive vs. affective media. The number of effect sizes of these variables was more than 20 in at least 5 studies.

Additional Moderator Analysis 1: Media Involvement

Media involvement was examined for 212 times (from 39 studies). In Table 16, ANOVA tests by each moderator were conducted, and univariate analyses were reported. Effect sizes were significantly different by publication time frame ($p < .05$). For studies in the 1980s, the impact of media involvement on advertising responses was significant with a correlation of .24 (95% CI_{LOW} = .12; 95% CI_{HIGH} = .35). As for the studies in the 1990s, the correlation was .12 (95% CI_{LOW} = .08; 95% CI_{HIGH} = .16), .24 for the 2000s (95% CI_{LOW} = .21; 95% CI_{HIGH} = .26), and .09 for the 2010-2013 timeframe (95% CI_{LOW} = .03; 95% CI_{HIGH} = .15).

Effect size of context effects on advertising effectiveness was also significant by publication type ($p < .01$). The correlation for published journal articles was .25 (95% CI_{LOW} = .22; 95% CI_{HIGH} = .27) whereas the correlation for unpublished works (i.e., conference papers and dissertations) was .18 (95% CI_{LOW} = .13; 95% CI_{HIGH} = .22). As for types of research participants, ANOVA test was not significant, but media involvement was correlated with advertising effectiveness more for adult respondents (r = .23, 95% CI_{LOW} = .20, 95% CI_{HIGH} = .26), children (r = .23, 95% CI_{LOW} = .20, 95% CI_{HIGH} = .27; even though there were only two studies examined), and women (r = .19, 95% CI_{LOW} = .14, 95% CI_{HIGH} = .24) than for the college student sample (r = .09, 95% CI_{LOW} = .01, 95% CI_{HIGH} = .16).

Table 16. Moderator Analyses of Media Involvement

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Media Involvement → Ad Effectiveness	212	273,690	.23	.1594	(.02, .43)	(.20, .25)	2.75	.22	.0245		
Publication Time Frame										2.40	*
1980s	8	3,441	.24	.1586	(.03, .44)	(.12, .35)	7.63	.24	.1651		
1990s	64	15,372	.12	.1477	(-.07, .31)	(.08, .16)	15.78	.12	.1613		
2000s	129	246,191	.24	.1572	(.04, .44)	(.21, .26)	1.90	.24	.1552		
2010-2013	11	8,686	.09	.1022	(-.04, .22)	(.03, .15)	11.98	.09	.0092		
Publication Type										2.85	**
Journals	168	199,230	.25	.1602	(.04, .45)	(.22, .27)	2.89	.24	.1614		
Conference/dissertations	44	74,460	.18	.1466	(-.01, .36)	(.13, .22)	2.69	.18	.1392		
Research Method										1.01	.31
Experiment	99	64,917	.25	.1164	(.10, .40)	(.23, .28)	9.34	.25	.1186		
Non-experiment	113	208,773	.22	.1697	(.00, .44)	(.19, .25)	1.72	.22	.1684		
Research Participant										.78	.50
College students	42	4,811	.09	.2288	(-.21, .38)	(.01, .16)	15.42	.09	.0471		
Children	2	132	.23	.0000	(.23, .23)	(.20, .27)	2266.37	.24	.0249		
Adults	138	258,520	.23	.1578	(.03, .43)	(.20, .26)	1.94	.23	.1562		
Women only	30	10,227	.19	.1279	(.03, .35)	(.14, .24)	14.51	.19	.1388		
Advertising Media										1.33	.18
TV	133	71,742	.20	.1708	(-.02, .41)	(.17, .23)	5.74	.19	.1752		
Not TV	79	201,948	.24	.1537	(.04, .43)	(.20, .27)	1.50	.24	.1505		

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
										.31	.76
Radio	45	38,599	.24	.1685	(.02, .45)	(.19, .29)	3.54	.24	.1716		
Not radio	167	235,091	.23	.1578	(.02, .43)	(.20, .25)	2.60	.22	.1563		
										.78	.43
Newspaper	53	122,217	.24	.1782	(.01, .47)	(.19, .29)	1.20	.24	.1793		
Not newspaper	159	151,473	.22	.1409	(.04, .40)	(.19, .24)	4.82	.21	.1387		
										1.33	.19
Magazines	78	107,342	.21	.1535	(.01, .40)	(.17, .24)	2.82	.21	.1500		
Not magazines	134	166,348	.24	.1617	(.03, .45)	(.21, .27)	2.75	.24	.1628		
										.00	1.00
Film	38	38,000	.23	.1693	(.02, .45)	(.18, .29)	3.02	.23	.1720		
Not film	174	235,690	.23	.1577	(.02, .43)	(.20, .25)	2.70	.22	.1563		
										3.05	***
Websites	65	91,255	.27	.1304	(.11, .44)	(.24, .31)	3.53	.27	.1305		
Not websites	147	182,435	.20	.1672	(-.01, .42)	(.18, .23)	2.67	.20	.1659		
										.37	.71
Games	10	1,366	.29	.0000	(.29, .29)	(.24, .33)	168.79	.25	.0662		
Not games	202	272,324	.23	.1597	(.02, .43)	(.20, .25)	2.62	.22	.1589		
Brand Type										.37	.71
Real brands	168	218,876	.21	.1697	(.00, .43)	(.19, .24)	2.43	.21	.1691		
Fictitious brands	10	1,446	.15	.2944	(-.23, .52)	(-.04, .34)	9.19	.13	.2702		
Not specific	34	53,368	.28	.0756	(.19, .38)	(.26, .31)	8.93	.28	.0752		
Ad Type										2.45	.06
Real ads	166	218,845	.21	.1696	(.00, .43)	(.19, .24)	2.41	.21	.1689		
Fictitious ads	14	1,557	.27	.0699	(.18, .36)	(.21, .33)	67.10	.24	.1095		
Both real & fictitious ads	3	344	-.10	.2183	(-.38, .18)	(-.37, .17)	15.77	-.10	.2325		
Not specific	29	52,944	.28	.0835	(.18, .39)	(.25, .32)	6.47	.28	.0831		
Ad Effectiveness Measure										2.44	**
Recall	53	85032	.23	.1884	(-.01, .47)	(.18, .28)	1.58	.23	.1897		
Recognition	16	42249	.16	.0678	(.07, .25)	(.12, .19)	7.32	.16	.0708		
Attitude toward ad	25	36902	.33	.1988	(.08, .59)	(.25, .41)	1.59	.31	.1834		
Attitude toward brand	22	3205	.24	.0861	(.13, .35)	(.19, .28)	47.22	.23	.1132		
Attitude toward product	1	80	.22					.22			
Ad affect/emotion	2	304	.36	.0000	(.36, .36)	(.33, .38)	2160.81	.32	.0150		
Purchase intentions	24	7190	.26	.1993	(.01, .52)	(.18, .35)	6.81	.26	.2065		
Click intentions	2	23082	.26	.0000	(.26, .26)	(.26, .27)	299.70	.27	.0050		
Other behaviors	7	26494	.16	.0486	(.10, .22)	(.12, .20)	9.66	.16	.0514		
Ad engagement experience	47	44257	.22	.1640	(.01, .43)	(.18, .27)	3.49	.22	.1666		
Ad credibility & believability	13	4895	.23	.1395	(.05, .41)	(.15, .31)	11.09	.23	.1469		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). Because this ANOVA test site allows you to calculate it up to 10 cells, only 10 cells based on the number of effect sizes were selected. *significant at .05; **significant at .01; ***significant at .001.

The effect size between media involvement and ad effectiveness was higher (r = .27, 95% CI_{LOW} = .18, 95% CI_{HIGH} = .23) when it was examined in websites and online

media than when it was not (r = .20; 95% CI_{LOW} = .18, 95% CI_{HIGH} = .23). The t-tests for other media were not significant.

When types of dependent variables were examined, media involvement was moderately correlated with ad affect/emotion (r = .36, 95% CI_{LOW} = .33, 95% CI_{HIGH} = .38) and attitude toward the ad (r = .33, 95% CI_{LOW} = .25, 95% CI_{HIGH} = .41), purchase intentions and website click intentions with a correlation of .26 (95% CI_{LOW} for PI = .18, 95% CI_{HIGH} for PI= .35; 95% CI_{LOW} for click intentions = .26, 95% CI_{HIGH} for click intentions = .27), and attitude toward the brand *(*r = .24; 95% CI_{LOW} = .19, 95% CI_{HIGH} = .28), but it was weakly correlated with Recall (r = .23, 95% CI_{LOW} = .18, 95% CI_{HIGH} = .28), ad credibility/believability (r = .23, 95% CI_{LOW} = .15, 95% CI_{HIGH} = .31), ad message engagement experience (r = .22, 95% CI_{LOW} = 18, 95% CI_{HIGH} = .27), and recognition (r = .16, 95% CI_{LOW} = .12, 95% CI_{HIGH} = .20).

Additional Moderator Analysis 2: Congruency

Congruency between media contexts and ads was used 139 times (from 24 studies). Univariate analyses from ANOVA tests are presented in Table 17. All ANOVA tests and t-tests were not significant except for types of dependent variables. Media congruency was highly correlated with recognition (r = .38, 95% CI_{LOW} = .26, 95% CI_{HIGH} = .50), and moderately with attitude toward the product (r = .33, 95% CI_{LOW} = .18, 95% CI_{HIGH} = .49), and ad credibility/believability (r = .32, 95% CI_{LOW} = .22, 95% CI_{HIGH} = .41), and click intentions (r = .26, 95% CI_{LOW} = .12, 95% CI_{HIGH} = .40). It was weakly correlated with attitude toward the brand was (r = .20, 95% CI_{LOW} = .07, 95% CI_{HIGH} = .32), recall (r = .18, 95% CI_{LOW} = .15, 95% CI_{HIGH} = .22), global memory (r = .17, 95% CI_{LOW} = .06, 95% CI_{HIGH} = .20), and brand association (r = .16, 95% CI_{LOW} =

.11, 95% CI_{HIGH} = .20). However, media congruency was rather negatively correlated with ad thought/cognitive responses (r =-.20; 95% CI_{LOW} = -.27, 95% CI_{HIGH} = -.13), and it was not significantly correlated with attitude toward the ad, ad affect/emotion, and ad engagement experience.

Table 17. Moderator Analyses of Congruency between Media and Ads

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Congruency → Ad Effectiveness	139	70,911	.16	.1178	(.01, .31)	(.14, .18)	12.23	.16	.1252		
Publication Time Frame										.48	.70
1970s	4	243	.06	.0000	(.06, .06)	(-.05, .17)	132.70	.06	.1120		
1980s	4	406	.22	.1315	(.05, .39)	(.06, .39)	36.96	.21	.0155		
2000s	106	28,620	.15	.1724	(-.07, .37)	(.11, .18)	11.27	.14	.1793		
2010-2013	25	41,642	.17	.0574	(.09, .24)	(.14, .19)	14.94	.17	.0632		
Publication Type										.78	.44
Journals	135	30,385	.15	.1770	(-.08, .37)	(.12, .18)	12.74	.14	.1850		
Conference/dissertations	4	40,526	.17	.0360	(.12, .22)	(.13, .21)	6.72	.17	.0377		
Research Method										1.11	.27
Experiments	133	29,357	.14	.1735	(-.08, .37)	(.11, .18)	13.43	.14	.1820		
Non-experiments	6	41,554	.17	.0521	(.10, .24)	(.13, .21)	4.79	.17	.0543		
Research Participants										1.64	.18
College students only	101	22,453	.17	.1625	(-.04, .37)	(.13, .20)	14.48	.16	.1728		
Children	6	168	-.32	.4018	(-.83, .19)	(-.67, .03)	15.35	-.33	.4368		
Adults	30	47,262	.16	.0750	(.06, .25)	(.13, .19)	9.93	.16	.0801		
Women only	2	1,028	.23	.2438	(-.08, .55)	(-.11, .58)	3.14	.22	.0593		
Advertising Media											
										1.18	.24
TV	28	45,761	.15	.0837	(.04, .26)	(.12, .18)	7.95	.15	.0885		
Not TV	111	25,150	.18	.1621	(-.03, .39)	(.15, .21)	14.29	.17	.1717		
										.81	.42
Radio	2	40,000	.17	.0239	(.14, .20)	(.13, .20)	7.64	.17	.0249		
Not radio	137	30,911	.15	.1785	(-.08, .38)	(.12, .18)	12.51	.14	.1865		
										2.00	.05
Newspaper	38	56,368	.17	.0631	(.09, .25)	(.15, .19)	13.86	.17	.0669		
Not newspaper	101	14,543	.12	.2317	(-.18, .41)	(.07, .16)	12.48	.11	.2362		
										1.48	.14
Magazines	34	48,142	.15	.0947	(.03, .27)	(.11, .18)	7.22	.14	.0999		
Not magazines	105	22,769	.19	.1524	(-.01, .38)	(.16, .22)	16.23	.19	.1625		
										1.03	.30
Film	8	40,480	.17	.0287	(.13, .21)	(.15, .19)	18.64	.17	.0311		
Not film	131	30,431	.15	.1785	(-.08, .37)	(.11, .18)	12.21	.14	.1863		
										1.50	.13
Websites	34	42,994	.17	.0592	(.10, .25)	(.15, .19)	17.80	.17	.0651		
Not websites	105	27,917	.14	.1729	(-.08, .36)	(.11, .18)	11.42	.14	.1803		
										1.59	.11
Games	8	41,434	.17	.0266	(.14, .21)	(.15, .19)	20.53	.17	.0296		
Not games	131	29,477	.14	.1817	(-.09, .38)	(.11, .18)	12.21	.14	.1893		
										.42	.67
Print	4	406	.22	.1315	(.05, .39)	(.06, .39)	36.96	.21	.1569		
Not print	135	70505	.16	.1176	(.01, .31)	(.14, .18)	12.01	.16	.1249		

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Brand Type										1.68	.17
Real brands	46	49,746	.16	.0907	(.04, .27)	(.13, .18)	9.95	.15	.0965		
Fictitious brands	74	20,070	.16	.1475	(-.03, .35)	(.13, .20)	14.35	.16	.1563		
Both real & fictitious brands	4	206	.63	.0000	(.63, .63)	(.57, .68)	199.93	.64	.0601		
Not specific	15	889	.16	.3550	(-.30, .61)	(-.04, .35)	13.72	.14	.3507		
Ad Type										.37	.69
Real ads	31	47,771	.16	.0830	(.05, .26)	(.12, .19)	8.47	.15	.0882		
Fictitious ads	74	20,070	.16	.1475	(-.03, .35)	(.13, .20)	14.35	.16	.1563		
Not specific	34	3,070	.22	.2684	(-.12, .56)	(.12, .32)	13.47	.21	.2797		
Ad Effectiveness Measure										3.70	***
Recall	29	22836	.18	.0935	(.06, .30)	(.15, .22)	12.20	.18	.0996		
Recognition	9	1442	.38	.1704	(.16, .59)	(.26, .50)	14.05	.37	.1838		
Global memory	2	390	.17	.0462	(.11, .23)	(.06, .29)	69.48	.17	.0836		
Ad thoughts/cognitive response	4	388	-.20	.0000	(-.20, -.20)	(-.27, -.13)	201.05	-.20	.0691		
Attitude toward ad	27	6872	.06	.1625	(-.15, .27)	(-.01, .13)	15.13	.05	.1618		
Attitude toward brand	10	1229	.20	.1713	(-.02, .41)	(.07, .32)	22.86	.18	.1868		
Attitude toward product	6	512	.33	.1662	(.12, .54)	(.18, .49)	26.49	.33	.1896		
Ad affect/emotion	4	397	.04	.2079	(-.22, .31)	(-.19, .27)	20.95	.04	.2208		
Purchase intentions	6	534	.22	.2749	(-.13, .57)	(-.02, .46)	13.72	.21	.2718		
Click intentions	9	759	.26	.1872	(.02, .50)	(.12, .40)	23.99	.26	.2109		
Other behaviors	1	20000	.14					0.14			
Brand association	24	14136	.16	.1076	(.02, .30)	(.11, .20)	12.25	.16	.1149		
Ad engagement experience	3	433	.03	.3033	(-.35, .42)	(-.32, .39)	8.00	.02	.2965		
Ad credibility/believability	5	983	.32	.0852	(.21, .43)	(.22, .41)	41.82	.29	.0948		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). Because this ANOVA test site allows you to calculate it up to 10 cells, only 10 cells based on the number of effect sizes were selected. *** significant at .001.

Additional Moderator Analysis 3: Media Transportation

Media transportation was measured 84 times in 18 studies. As shown in Table 18, all ANOVA tests and t-tests were not significant, and ±80% credibility intervals of subgroups were considerably overlapping. Based on the moderator analyses, it is more likely that the moderators used in the analyses do not play as moderators.

However, it would be noteworthy that the correlations of some of subgroups were different. The correlation coefficient was only significant for studies in the 2000s (r = .32; 95% CI_{LOW} = .25; 95% CI_{HIGH} = .39), but it was not significant for the studies in the

Table 18. Moderator Analysis of Media Transportation

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Media Transportation → Ad Effectiveness	84	41,745	.30	.2709	(-.04, .65)	(.24, .36)	2.33	.30	.2700		
Publication Time Frame										2.50	.08
1990s	17	1,479	-.06	.2217	(-.35, .22)	(-.18, .05)	19.00	-.07	.2464		
2000s	55	39,024	.32	.2602	(-.01, .65)	(.25, .39)	1.72	.32	.2592		
2010-2013	12	1,242	.16	.3067	(-.23, .55)	(-.02, .35)	12.10	.14	.2753		
Research Method										1.01	.31
Experiments	79	7,265	.09	.2590	(-.24, .42)	(.03, .15)	15.81	.09	.2597		
Non-experiments	5	34,480	.34	.2542	(.02, .67)	(.12, .56)	.18	.34	.2513		
Research Participants										1.35	.18
College students	61	5,609	.14	.2677	(-.21, .48)	(.06, .21)	15.19	.13	.2620		
Adults	23	36,136	.33	.2633	(-.01, .66)	(.22, .43)	.75	.32	.2617		
Advertising Media											
										.10	.92
TV	55	36,873	.30	.2639	(-.03, .64)	(.23, .37)	1.77	.30	.2662		
Not TV	29	4,872	.29	.3307	(-.13, .72)	(.17, .42)	5.78	.27	.2946		
										.17	.86
Magazines	15	3,110	.32	.3569	(-.14, .78)	(.13, .50)	3.74	.30	.3223		
Not magazines	69	38,635	.30	.2641	(-.04, .64)	(.24, .37)	2.15	.30	.2653		
										.45	.66
Games	14	1,762	.24	.2595	(-.09, .57)	(.09, .39)	13.53	.21	.2268		
Not games	70	39,983	.31	.2710	(-.04, .65)	(.24, .37)	2.00	.30	.2710		
Brand Type										.47	.62
Real brands	63	7,600	.16	.2836	(-.20, .52)	(.09, .23)	10.04	.16	.2778		
Fictitious brands	12	1,602	.25	.2388	(-.05, .56)	(.11, .40)	15.05	.22	.2059		
Not specific	9	32,543	.33	.2586	(.00, .67)	(.17, .50)	.33	.33	.2591		
Ad Type										.44	.64
Real ads	55	7,180	.17	.2628	(-.17, .50)	(.09, .24)	10.53	.17	.2584		
Fictitious ads	20	2,022	.20	.3458	(-.24, .65)	(.04, .36)	10.33	.18	.2980		
Not specific	9	32,543	.33	.2586	(.00, .67)	(.17, .50)	.33	.33	.2591		
Ad Effectiveness Measure										1.08	.37
Recall	10	892	-.03	.2125	(-.30, .24)	(-.18, .12)	20.05	-.03	.2376		
Recognition	14	2042	.07	.2191	(-.21, .35)	(-.06, .19)	12.94	.06	.2315		
Global memory	1	10699	.14		(.00, .00)	(.00, .00)					
Attitude toward ad	9	2151	.43	.2335	(.13, .73)	(.28, .59)	6.45	.40	.1970		
Attitude toward brand	17	22902	.42	.2666	(.08, .76)	(.30, .55)	.72	.42	.2673		
Attitude toward product	11	1006	-.05	.3218	(-.46, .36)	(-.25, .15)	11.65	-.05	.3074		
Ad affect/emotion	2	304	.42	.0000	(.42, .42)	(.40, .43)	6412.43	.34	.0165		
Purchase intentions	6	540	.20	.0000	(.20, .20)	(.13, .28)	118.04	.21	.0934		
Ad engagement experience	12	905	.12	.2913	(-.25, .49)	(-.06, .30)	16.48	.11	.2800		
Ad credibility & believability	2	304	.36	.0000	(.36, .36)	(.33, .39)	1911.93	.29	.0234		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html).

1990s (r = -.06) and 2010-2013 (r = .16). The correlation of the experiment method was .09 (95% CI_{LOW} = .03; 95% CI_{HIGH} = .15) whereas it was .34 for the non-experiment method (95% CI_{LOW} = .12; 95% CI_{HIGH} = .56). As for types of research participants, media transportation was moderately correlated with advertising effectiveness for adults (r = .33, 95% CI_{LOW} = .22, 95% CI_{HIGH} = .43), but it was weakly correlated for the college student sample (r = .14, 95% CI_{LOW} = .06, 95% CI_{HIGH} = .21).

Finally, media transportation is highly correlated with attitude toward the ad (r = .43, 95% CI_{LOW} = .13, 95% CI_{HIGH} = .73), attitude toward the brand (r = .42; 95% CI_{LOW} = .30, 95% CI_{HIGH} = .55), and ad affect/emotion (r = .42, 95% CI_{LOW} = .40, 95% CI_{HIGH} = .43), moderately correlated with ad credibility/believability (r = .36, 95% CI_{LOW} = .33, 95% CI_{HIGH} = .39), and weakly correlated with purchase intentions (r = .20; 95% CI_{LOW} = .13, 95% CI_{HIGH} = .28). However, media transportation was not correlated with memory-related measures (e.g., global memory, recall, recognition), attitude toward the product, and ad message engagement experiences.

Additional Moderator Analysis 4: Entertainment and Enjoyment

Entertainment and enjoyment was examined 77 times in 8 studies. In Table 19, the univariate analyses are reported. The effect sizes were significantly different by publication time frame (p < .001), and the effect size increased over time. For studies in the 1990s, the correlation was not significant, r = .06. However, for the studies in the 2000s it was .21 (95% CI_{LOW} = .17; 95% CI_{HIGH} = .25) and .29 for 2010-2013 (95% CI_{LOW} = .26; 95% CI_{HIGH} = .32).

Table 19. Moderator Analysis of Entertainment and Enjoyment

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Entertainment & Enjoyment → Ad Effectiveness	77	7,025	.15	.1513	(-.04, .35)	(.11, .20)	31.68	.16	.1822		
Publication Time Frame										8.72	***
1990s	29	2,725	.06	.1808	(-.17, .29)	(-.02, .14)	24.63	.06	.2083		
2000s	44	3,904	.21	.0902	(.09, .32)	(.17, .25)	56.10	.21	.1362		
2010-2013	4	396	.29	.0000	(.29, .29)	(.26, .32)	1038.24	.28	.0309		
Research Participants										1.18	.31
College students	42	3,808	.18	.1661	(-.04, .39)	(.12, .23)	27.50	.18	.1951		
Children	2	132	.03	.0000	(.03, .03)	(.02, .04)	15840.59	.03	.0001		
Adults	33	3,085	.13	.1303	(-.03, .30)	(.08, .19)	38.32	.14	.1642		
Advertising Media											
										.37	.71
TV	63	5,779	.15	.1115	(.01, .30)	(.12, .19)	45.82	.15	.1514		
Not TV	14	1,246	.17	.2683	(-.18, .51)	(.01, .32)	13.25	.17	.2840		
										2.72	**
Radio	6	558	.34	.0725	(.25, .43)	(.25, .43)	61.65	.34	.1172		
Not radio	71	6,467	.14	.1458	(-.05, .33)	(.10, .18)	33.56	.14	.1780		
										5.80	***
Magazines	4	292	-.33	.0000	(-.33, -.33)	(-.33, -.32)	22682.91	-.33	.0083		
Not magazines	73	6,733	.18	.1188	(.02, .33)	(.14, .21)	42.29	.18	.1556		
										1.58	.11
Games	4	396	.29	.0000	(.29, .29)	(.26, .32)	1038.24	.28	.0309		
Not games	73	6,629	.15	.1532	(-.05, .34)	(.10, .19)	31.21	.15	.1847		
Brand Type										1.58	.11
Real brands	73	6,629	.15	.1532	(-.05, .34)	(.10, .19)	31.21	.15	.1847		
Fictitious brands	4	396	.29	.0000	(.29, .29)	(.26, .32)	1038.24	.28	.0309		
Ad Type										1.58	.11
Real ads	73	6,629	.15	.1532	(-.05, .34)	(.10, .19)	31.21	.15	.1847		
Fictitious ads	4	396	.29	.0000	(.29, .29)	(.26, .32)	1038.24	.28	.0309		
Ad Effectiveness Measure										10.01	***
Recall	19	1,717	.05	.1086	(-.09, .19)	(-.02, .12)	48.55	.05	.1514		
Recognition	18	1,624	.05	.1385	(-.13, .23)	(-.03, .13)	36.76	.05	.1742		
Attitude toward ad	13	1,195	.19	.0982	(.06, .31)	(.11, .26)	51.49	.19	.1410		
Attitude toward brand	14	1,294	.26	.0883	(.14, .37)	(.19, .33)	56.40	.25	.1288		
Purchase intentions	13	1,195	.31	.0927	(.19, .43)	(.24, .38)	50.99	.31	.1324		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). *significant at .05; **significant at .01; ***significant at .001.

The effect size also varied by advertising media (i.e., radio and magazines). Ratings of entertainment and enjoyment were more positively correlated with ad effectiveness especially when studies were examined on radio contexts (r = .34, 95%

CI_{LOW} = .25, 95% CI_{HIGH} = .43) than when it was not (*r* = .14, 95% CI_{LOW} = .10, 95% CI_{HIGH} = .18). However, entertainment and enjoyment of magazine reading was negatively correlated with ad effectiveness (*r* = -.33, 95% CI_{LOW} = -.33, 95% CI_{HIGH} = -.32), whereas the correlation was .18 (*r* = .18, 95% CI_{LOW} = .02, 95% CI_{HIGH} = .33) when other media were used.

When types of dependent variables were examined, the rating of entertainment and enjoyment in media was moderately correlated with purchase intentions (*r* = .31, 95% CI_{LOW} = .24, 95% CI_{HIGH} = .38) and attitude toward the brand (*r* = .26, 95% CI_{LOW} = .19, 95% CI_{HIGH} = .33) but weakly with attitude toward the ad (*r* = .19, 95% CI_{LOW} = .11, 95% CI_{HIGH} = .26). None of the memory-related measures (i.e., recall, recognition) were significant.

Additional Moderator Analysis 5: Arousal Induced by Media Content

Arousal was measured 75 times, and the overall correlation between arousal and ad effectiveness was .01 (not significant). As presented in Table 20, however, the impact of arousal induced by media content varied by publication time frame. The correlation was significant only for the years 2010-2013 (*r* = -.07, 95% CI_{LOW} = -.13; 95% CI_{HIGH} = -.01).

Among the advertising media, the correlation between arousal and ad effectiveness was significant when gaming contexts, *r* = -.11 (95% CI_{LOW} = -.15, 95% CI_{HIGH} = -.06). However, it was not significant for other media contexts. The effect sizes varied by ad type.

The ANOVA tests for brand type and ad type were not statistically significant. However, the relationships between arousal and ad effectiveness were negatively

significant when fictitious brands and fictitious ads were used (r = -.11, 95% CI_{LOW} = -.17, 95% CI_{HIGH} = -.04). The arousal induced by media content did not impact on ad effectiveness when real brands and real ads were used.

Table 20. Moderator Analysis of Arousal Induced by Media Content

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Arousal Induced By Media → Ad Effectiveness	75	10,855	.01	.1645	(-.20, .22)	(-.03, .05)	20.87	.01	.1828		
Publication Time Frame										3.47	*
1980s	4	229	.12	.3967	(-.39, .62)	(-.29, .53)	9.94	.12	.4181		
1990s	25	2630	.13	.1656	(-.09, .34)	(.05, .20)	25.75	.13	.1895		
2000s	25	2,382	.05	.1162	(-.10, .19)	(-.02, .11)	44.47	.05	.1538		
2010-2013	21	5,614	-.07	.1176	(-.22, .08)	(-.13, -.01)	21.64	-.07	.1319		
Research Participants										.35	.73
College students	55	8938	.01	.1685	(-.20, .23)	(-.04, .06)	18.16	.01	.1848		
Adults	20	1,917	-.01	.1415	(-.19, .17)	(-.09, .06)	35.90	-.01	.1712		
Advertising Media										1.08	.28
TV	57	8868	.02	.1723	(-.20, .24)	(-.03, .07)	18.04	.02	.1895		
Not TV	18	1,987	-.04	.1098	(-.18, .10)	(-.10, .03)	45.48	-.03	.1422		
										1.84	.07
Magazines	5	365	-.05	.0966	(-.17, .08)	(-.18, .09)	59.70	-.05	.1522		
Not magazines	70	10490	.17	.1518	(-.20, .22)	(-.03, .05)	20.00	.01	.1835		
										1.94	.05
Games	11	1,224	-.11	.0000	(-.11, -.11)	(-.15, -.06)	178.82	-.10	.0714		
Not games	64	9631	.02	.1705	(-.20, .24)	(-.03, .07)	18.94	.02	.1880		
Brand Type										1.12	.33
Real Brands	61	9491	.01	.1487	(-.20, .22)	(-.03, .06)	19.57	.02	.1819		
Fictitious Brands	8	792	-.11	.0000	(-.11, -.11)	(-.17, -.04)	138.79	-.10	.0861		
Not Specific	6	572	.03	.2173	(-.25, .31)	(-.16, .22)	18.41	.03	.2406		
Ad Type										1.99	.14
Real ads	59	9093	.01	.1636	(-.20, .22)	(-.04, .05)	19.76	.01	.1820		
Fictitious ads	8	792	-.11	.0000	(-.11, -.11)	(-.17, -.04)	138.79	-.10	.0861		
Not specific	8	970	.10	.1873	(-.14, .34)	(-.05, .24)	19.97	.10	.2013		
Ad Effectiveness Measure										3.72	***
Recall	23	4445	.15	.0816	(-.24, .16)	(-.11, .03)	18.10	-.04	.1694		
Recognition	17	1667	-.07	.0415	(-.13, -.02)	(-.13, -.02)	86.04	-.07	.1075		
Attitude toward ad	12	1233	.22	.2348	(-.08, .52)	(.08, .37)	15.64	.22	.2358		
Attitude toward brand	9	1143	.07	.0569	(.00, .14)	(.00, .14)	72.21	.07	.1049		
Purchase intentions	8	1026	.09	.1132	(-.05, .24)	(-.01, .19)	37.63	.09	.1434		
Commercial effectiveness	2	456	.04	.1336	(-.14, .21)	(-.17, .24)	19.83	.04	.1493		
Performance of ad	2	792	-.06	.0000	(-.06, -.06)	(-.10, -.03)	342.34	-.06	.0271		
Ad engagement experience	2	93	-.10	.3463	(-.54, .34)	(-.62, .42)	15.40	-.09	.3765		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). *significant at .05; **significant at .01; ***significant at .001.

When types of ad effectiveness measures were examined, the analysis showed that arousal induced by media context had a negative impact on memory measures, but a positive impact on attitudes. For example, the correlation was .22 for attitude toward the ad (95% CI_{LOW} = .08, 95% CI_{HIGH} = .37), and .07 for attitude toward the brand (95% CI_{LOW} = .00, 95% CI_{HIGH} = .14). On the other hand, recognition was -.07 (95% CI_{LOW} = -.13, 95% CI_{HIGH} = -.02), and performance of the ad was -.06 (95% CI_{LOW} = -.10, 95% CI_{HIGH} = -.03). The correlation between arousal and recall was not significant.

Additional Moderator Analysis 6: Attention to media content

Attention to media content was tested 72 times. The univariate analyses are reported Table 21. Only a few moderators were found. The overall correlation between attention to media content and ad effectiveness was .06; but this correlation decreased and went negative when magazine was used (r = -.36, 95% CI_{LOW} = -.43, 95% CI_{HIGH} = -.28). When magazine was not testing media, the correlation was .08 (95% CI_{LOW} = .04, 95% CI_{HIGH} = .12)

As for the types of dependent variables, attention to media context influenced purchase intentions (r = .24, 95% CI_{LOW} = .15, 95% CI_{HIGH} = .32), attitude toward the ad (r = .23, 95% CI_{LOW} = .03, 95% CI_{HIGH} = .43), and attitude toward the brand (r = .19, 95% CI_{LOW} = .07, 95% CI_{HIGH} = .30). However, cognitive and memory-related measures (recall, recognition, ad thoughts/cognitive response, ad engagement experience) were not significant, indicating that attention to media context did not significantly impact cognitive responses in advertising processing.

Table 21. Moderator Analysis of Attention to Media Content

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Attention To Media Content											
→ Ad Effectiveness	72	10,205	.06	.1727	(-.16, .28)	(.02, .11)	19.18	.06	.1922		
Publication Time Frame										.65	.52
1990s	38	3,044	.03	.2548	(-.29, .36)	(-.06, .12)	16.28	.03	.2784		
2000s	33	7,041	.06	.0509	(.00, .13)	(.03, .09)	64.49	.06	.0854		
2010-2013	1	120	.92	.0000				.92	.0000		
Research Method										.53	.60
Experiments	63	5,424	.05	.1891	(-.20, .29)	(-.01, .10)	24.66	.05	.2179		
Non-experiments	9	4,781	.08	.1496	(-.11, .27)	(-.02, .18)	7.73	.08	.1558		
Research Participants										.98	.33
College students	42	3,534	.03	.1763	(-.20, .25)	(-.04, .09)	27.88	.03	.2076		
Adults	30	6,671	.08	.1676	(-.13, .30)	(.02, .15)	13.77	.08	.1805		
Advertising Media										1.78	.07
TV	65	9,647	.07	.1217	(-.08, .23)	(.04, .11)	31.28	.07	.1469		
Not TV	7	558	-.09	.5165	(-.75, .58)	(-.48, .31)	4.48	-.09	.5285		
										4.36	***
Magazines	6	438	-.36	.0000	(-.36, -.36)	(-.43, -.28)	120.61	-.36	.0933		
Not magazines	66	9,767	.08	.1521	(-.11, .28)	(.04, .12)	22.56	.08	.1729		
Brand Type										1.45	.15
Real brands	65	9,689	.06	.1423	(-.13, .24)	(.02, .10)	24.97	.06	.1643		
Not specific	7	516	.20	.4359	(-.36, .76)	(-.13, .54)	6.24	.20	.4502		
Ad Type										2.83	.06
Real ads	65	9,689	.06	.1423	(-.13, .24)	(.02, .10)	24.97	.06	.1643		
Fictitious ads	4	264	.03	.2116	(-.24, .30)	(-.21, .27)	25.54	.03	.2452		
Not specific	3	252	.38	.5270	(-.29, 1.06)	(-.22, .99)	3.04	.39	.5352		
Ad Effectiveness Measure										4.64	***
Recall	20	5759	.03	.0753	(-.07, .12)	(-.02, .07)	38.19	.03	.0958		
Recognition	14	1226	-.07	.1318	(-.24, .10)	(-.16, .02)	39.70	-.07	.1697		
Ad thoughts/cognitive response	6	396	-.01	.2223	(-.30, .27)	(-.22, .19)	23.74	-.01	.2545		
Attitude toward ad	10	930	.23	.3007	(-.16, .61)	(.03, .43)	9.72	.23	.3165		
Attitude toward brand	9	810	.19	.1465	(.00, .37)	(.07, .30)	32.75	.19	.1787		
Purchase intentions	9	810	.24	.0883	(.12, .35)	(.15, .32)	56.18	.24	.1334		
Ad engagement experience	4	274	.09	.3337	(-.34, .51)	(-.26, .44)	11.58	.09	.3549		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). *significant at .05; **significant at .01; ***significant at .001.

Additional Moderator Analysis 7: Negative vs. positive affect

Valence of affect was measured 58 times. The overall correlation between valence of affect and ad effectiveness was .16, but the univariate analyses presented in Table 22 indicated that effect sizes are only different by ad effectiveness measures. Interestingly, positive affect improved only ad-related attitudes. In other words, positive affect generated a better attitude toward the ad (r = .26, 95% CI_{LOW} = .19, 95% CI_{HIGH} = .33) and attitude toward the brand (r = .17, 95% CI_{LOW} = .08, 95% CI_{HIGH} = .26). The relationship between positive affect and ad effectiveness did not exist for other measures, including recall, recognition, and purchase intentions.

Table 22. Moderator Analysis of Negative vs. Positive Affect

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Negative Vs. Positive Affect → Ad Effectiveness	58	11,214	.16	.2174	(-.12, .43)	(.10, .21)	11.15	.15	.2097		
Publication Time Frame										.09	.96
1980s	8	1,132	.16	.3770	(-.32, .64)	(-.11, .43)	4.87	.15	.3731		
1990s	18	1,140	.11	.3086	(-.29, .50)	(-.05, .26)	16.36	.09	.3148		
2000s	26	8,292	.16	.1651	(-.05, .38)	(.10, .23)	11.75	.16	.1543		
2010-2013	6	650	.13	.1576	(-.07, .33)	(-.02, .28)	29.29	.13	.1742		
Publication Type										.96	.34
Journals	44	9,728	.17	.2295	(-.13, .46)	(.10, .24)	8.97	.16	.2182		
Conference/dissertations	14	1,486	.08	.0826	(-.03, .18)	(.01, .15)	60.90	.08	.1219		
Research Method										.59	.56
Experiments	54	10,162	.16	.2271	(-.13, .45)	(.10, .23)	10.51	.15	.2186		
Non-experiments	4	1,052	.10	.0189	(.07, .12)	(.03, .17)	92.79	.09	.0598		
Research Participants										.38	.68
College students	44	3,882	.12	.2780	(-.24, .47)	(.03, .21)	13.93	.11	.2847		
Adults	12	6,806	.18	.1730	(-.04, .41)	(.08, .29)	6.38	.17	.1555		
Women only	2	526	.10	.0189	(.07, .12)	(.00, .19)	92.79	.09	.0598		
Advertising Media										.41	.69
TV	39	8,492	.16	.2438	(-.15, .48)	(.08, .24)	8.18	.15	.2301		
Not TV	19	2,722	.13	.0990	(.00, .26)	(.07, .19)	44.59	.12	.1234		
										.88	.38
Magazines	23	8,190	.17	.1625	(-.03, .38)	(.10, .24)	10.97	.16	.1511		
Not magazines	35	3,024	.11	.3100	(-.29, .51)	(-.29, .51)	11.74	.10	.3138		
										.08	.93
Print	6	812	.16	.1357	(-.01, .34)	(.03, .29)	29.84	.16	.1541		
Not print	52	10,402	.15	.2229	(-.13, .44)	(.09, .22)	10.40	.15	.2134		

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Brand Type										.17	.87
Real brands	49	10,356	.16	.2248	(-.13, .44)	(.09, .22)	9.73	.15	.2145		
Fictitious brands	9	858	.14	.0994	(.01, .27)	(.04, .23)	53.82	.13	.1380		
Ad Type										.52	.61
Real ads	43	9,544	.16	.2312	(-.14, .45)	(.08, .23)	8.90	.15	.2189		
Fictitious ads	5	348	.26	.0000	(.26, .26)	(.17, .35)	136.11	.25	.0939		
Not specific	10	1,322	.12	.1234	(-.04, .28)	(.03, .22)	35.33	.12	.1449		
Ad Effectiveness Measure										2.30	*
Recall	8	2816	.03	.1320	(-.14, .20)	(-.07, .13)	15.15	.03	.1374		
Recognition	6	836	.07	.0448	(.01, .13)	(-.01, .15)	79.37	.07	.0961		
Ad thoughts/cognitive response	6	568	.16	.5410	(-.53, .85)	(-.28, .60)	3.51	.15	.5415		
Attitude toward ad	20	5338	.26	.1567	(.06, .46)	(.19, .33)	15.30	.23	.1480		
Attitude toward brand	7	817	.17	.0677	(.08, .26)	(.08, .26)	67.14	.16	.1121		
Ad affect/emotion	2	203	.15	.2111	(-.12, .42)	(-.17, .48)	18.83	.15	.2247		
Purchase intentions	7	516	.13	.2233	(-.16, .41)	(-.06, .32)	23.10	.12	.2412		
Commercial effectiveness	2	120	-.17	.2006	(-.43, .08)	(-.51, .17)	32.97	-.16	.2211		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. *significant at .05; **significant at .01; ***significant at .001.

Additional Moderator Analysis 8: Humor in media content

Humor in media was examined in 58 test relationships, and the overall correlation between humor and ad effectiveness was not statistically significant. However, the univariate analyses from each ANOVA test reported in Table 23 showed that mean effect sizes were significantly different by publication time frame, research participant, brand type, ad type, and ad effectiveness measures.

The relationships between humor and ad effectiveness were not significant for the 1970s and 1980s. However, the studies for the 1990s suggested that humor was rather harmful for ad effectiveness (r = -.11, 95% CI_{LOW} = -.20; 95% CI_{HIGH} = -.02). Studies published in the 2000s, the correlation was weak but positive, r = .06, 95% CI_{LOW} = .02, 95% CI_{HIGH} = .09. As for types of research participants, humorous media contexts were moderately but negatively correlated with advertising effectiveness for children (r = -.40, 95% CI_{LOW} = -.48, 95% CI_{HIGH} = -.32). Other participant types (e.g., college students and

adults) were not significant. For both brand and ad types, the correlations were not significant except for the cases when brand or ad types were not specified in the articles.

Table 23. Moderator Analysis of Humor in Media Content

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Humor In Media Content → Ad Effectiveness	58	5,354	-.01	.1515	(-.20, .18)	(-.06, .04)	32.48	-.01	.1837		
Publication Time Frame										4.61	**
70s	4	134	-.03	.2431	(-.34, .28)	(-.32, .27)	34.39	-.03	.3002		
80s	2	439	.06	.1334	(-.11, .23)	(-.14, .27)	20.35	.06	.1495		
90s	22	2,081	-.11	.1885	(-.36, .13)	(-.20, -.02)	22.77	-.12	.2125		
2000s	30	2,700	.06	.0000	(.06, .06)	(.02, .09)	111.46	.06	.1001		
Research Participant										21.89	***
College students	38	3,409	.04	.1053	(-.10, .17)	(-.01, .09)	50.82	.04	.1494		
Children	5	460	-.40	.0338	(-.44, -.36)	(-.48, -.32)	87.05	-.40	.0942		
Adults	15	1,485	-.01	.0737	(-.10, .09)	(-.07, .06)	65.26	-.01	.1250		
Brand Type										5.78	***
Real brands	48	4,643	.03	.0866	(-.08, .14)	(-.01, .07)	58.38	.03	.1340		
Fictitious brands	1	117	-.19	.0000				-.19	.0000		
Not specific	9	594	-.32	.1967	(-.57, -.06)	(-.46, -.17)	24.45	-.32	.2263		
Ad Type										19.46	***
Real ads	51	4,455	.02	.0937	(-.10, .14)	(-.02, .06)	57.10	.02	.1427		
Fictitious ads	2	439	.06	.1334	(-.11, .23)	(-.14, .27)	20.35	.06	.1495		
Not specific	5	460	-.40	.0338	(-.44, -.36)	(-.48, -.32)	87.05	-.40	.0942		
Ad Effectiveness Measure										4.08	***
Recall	17	1370	-.06	.1661	(-.27, .15)	(-.15, .04)	31.24	-.06	.2003		
Recognition	12	1113	-.14	.1647	(-.36, .07)	(-.25, -.03)	27.79	-.15	.1937		
Ad thoughts/cognitive response	1	322	.15	.0000				.15	.0000		
Attitude toward ad	9	837	.05	.0000	(.05, .05)	(.00, .11)	138.35	.05	.0885		
Attitude toward brand	9	837	.05	.0380	(.00, .10)	(-.02, .12)	88.22	.05	.1107		
Attitude toward product	1	38	-.63	.0000				-.63	.0000		
Purchase intentions	9	837	.08	.0000	(.08, .08)	(.02, .15)	108.20	.08	.0996		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). *significant at .05; **significant at .01; ***significant at .001.

When types of ad effectiveness measures were examined, humorous media context was found to be weakly but negative correlated with recognition (r = -.14, 95% CI_{LOW} = -.25, 95% CI_{HIGH} = -.03). Purchase intentions, on the other hand, were weakly

but positively correlated (r = .08, 95% CI_{LOW} = .02, 95% CI_{HIGH} = .15). The correlation for attitude toward the ad, attitude toward the brand, and recall were not significant.

Additional Moderator Analysis 9: Suspense

Suspense, a feeling or state of nervousness or excitement caused by wondering what will happen ("suspense" in Merriam-Webster, 2016), was examined 45 times. As shown in Table 24, mean effect sizes were only significantly different by ad effectiveness measures. Suspense was negatively correlated with recognition (r = -.14, 95% CI_{LOW} = -.27, 95% CI_{HIGH} = -.01) but positively correlated with ad engagement experiences (r = .22, 95% CI_{LOW} = .18, 95% CI_{HIGH} = .25).

Table 24. Moderator Analysis of Suspense

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Suspense→ Ad Effectiveness	45	4,654	.01	.1445	(-.17, .20)	(-.04, .06)	32.50	.01	.1733		
Publication Time Frame										.69	.50
1990s	11	1,066	-.04	.1916	(-.28, .21)	(-.16, .09)	22.08	-.04	.2170		
2000s	10	900	.05	.0000	(.05, .05)	(-.01, .10)	126.84	.05	.0939		
2010-2013	24	2,688	.02	.1446	(-.16, .21)	(-.05, .09)	31.08	.02	.1701		
Research Participants										1.76	.08
College students	38	4,024	.03	.1333	(-.14, .20)	(-.02, .08)	35.67	.03	.1633		
Adults	7	630	-.10	.1565	(-.30, .10)	(-.24, .03)	30.97	-.11	.1883		
Ad Effectiveness Measure										3.93	***
Recall	5	433	-.12	.1188	(-.27, .03)	(-.26, .02)	44.54	-.12	.1596		
Recognition	5	433	-.14	.1045	(-.27, -.01)	(-.27, -.01)	50.66	-.14	.1488		
Attitude toward ad	11	1166	.06	-.0281	(-.03, .14)	(-.01, .13)	68.93	.06	.1172		
Attitude toward brand	11	1166	-.06	.1283	(-.23, .10)	(-.16, .03)	37.13	-.06	.1595		
Ad affect/emotion	8	896	.12	.1352	(-.06, .29)	(.00, .23)	33.58	.11	.1616		
Purchase intentions	3	270	.05	.0000	(.05, .05)	(-.05, .16)	132.54	.05	.0918		
Ad engagement experience	2	290	.22	.0000	(.22, .22)	(.18, .25)	1235.75	.22	.0226		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. *significant at .05; **significant at .01; ***significant at .001.

In other words, as media audiences experience a feeling of suspense, they are less likely to recognize the information presented in the ad but more likely to fall in absorbing

experience into the ad. However, the mean effect sizes of other measures such as recall, attitude toward the ad, attitude toward the brand, and purchase intentions were not statistically significant.

Additional Moderator Analysis 10: Program Interest

Program interest was tested 39 times. As noted earlier in this chapter, the overall media audiences' interest in media vehicles and content improved ad effectiveness (r = .11). A series of ANOVA tests by each moderator are reported in Table 25. The impact of program interest on advertising effectiveness was significant by types of research participants ($p < .05$). The correlation was .28 for children (95% CI_{LOW} = .24, 95% CI_{HIGH} = .32) and .12 for college students (r = .12, 95% CI_{LOW} = .05, 95% CI_{HIGH} = .19). In studies using adults, however, the correlation was not significant.

Studies examined program interest used either TV or magazine media. When the relationship between program interest and ad effectiveness was examined in TV media context, the correlation was .13 (95% CI_{LOW} = .07, 95% CI_{HIGH} = .18). However, when it was examined in magazine contexts, it was -.35 (95% CI_{LOW} = -.36, 95% CI_{HIGH} = -.34).

As for ad effectiveness measures, program interest was positively correlated with ad thoughts and cognitive responses (r = .28, 95% CI_{LOW} = .24, 95% CI_{HIGH} = .32), purchase intentions (r = .20, 95% CI_{LOW} = .11, 95% CI_{HIGH} = .28), attitude toward the ad (r = .17, 95% CI_{LOW} = .10, 95% CI_{HIGH} = .24), and attitude toward the brand (r = .16, 95% CI_{LOW} = .04, 95% CI_{HIGH} = .27). However, program interest did not impact recall and recognition.

Table 25. Moderator Analysis of Program Interest

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Program Interest											
→ Ad Effectiveness	39	3,677	.11	.1478	(-.08, .30)	(.05, .16)	32.77	.11	.1780		
Publication Time Frame										1.76	.08
1990s	19	1877	.06	.2000	(-.20, .31)	(-.04, .16)	20.79	.06	.2202		
2000s	20	1800	.16	.0000	(.16, .16)	(.11, .20)	115.13	.16	.0964		
Research Participants										4.60	*
College students	22	1946	.12	.1237	(-.04, .28)	(.05, .19)	42.06	.12	.1625		
Children	3	471	.28	.0000	(.28, .28)	(.24, .32)	437.28	.26	.0384		
Adults	14	1260	.03	.1578	(-.17, .23)	(-.07, .13)	31.06	.03	.1900		
Advertising Media										3.77	***
TV	37	3531	.13	.1196	(-.03, .28)	(.07, .18)	42.17	.13	.1550		
Magazines	2	146	-.35	.0000	(-.35, -.35)	(-.36, -.34)	43638.90	-.36	.0070		
										4.96	***
Ad Effectiveness Measure											
Recall	9	793	.02	.1366	(-.15, .20)	(-.09, .14)	38.05	.02	.1736		
Recognition	9	793	-.04	.1590	(-.24, .17)	(-.16, .09)	31.17	-.04	.1916		
Ad thoughts/cognitive response	3	471	.28	.0000	(.28, .28)	(.24, .32)	437.28	.26	.0384		
Attitude toward ad	6	540	.16	.1028	(.03, .29)	(.04, .27)	50.28	.16	.1459		
Attitude toward brand	6	540	.17	.0000	(.17, .17)	(.10, .24)	138.27	.17	.0876		
Purchase intentions	6	540	.20	.0367	(.15, .24)	(.11, .28)	88.53	.20	.1082		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). *significant at .05; **significant at .01; ***significant at .001.

Additional Moderator Analysis 11: Program Violence

Thirty-two effect sizes investigated the influence of violence presented in the program on advertising effectiveness, and the overall violent programs were harmful for ad effectiveness. ANOVA tests by each moderator were conducted (see Table 26 for univariate analyses). The negative effects of violent programs on ad effectiveness were found regardless of publication type, types of research participants, advertising medium, and ad effectiveness measures. Publication time frame and research participant types were only moderators, even thought there were slight differences in terms of relationship strength. The correlation for studies in the 1990s was -.21 (95% CI_{LOW} = -.26; 95% CI_{HIGH} = -.16), and it was -.31 for the 2000s (95% CI_{LOW} = -.41; 95% CI_{HIGH} = -.22).

Table 26. Moderator Analysis of Program Violence

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Program Violence											
→Ad Effectiveness	32	3,808	-.24	.1118	(-.39, -.10)	(-.29, -.19)	38.20	-.24	.1389		
Publication Time Frame										2.01	*
1990s	20	2,572	-.21	.0744	(-.31, -.11)	(-.26, -.16)	56.84	-.21	.0052		
2000s	12	1,236	-.31	.1425	(-.50, -.13)	(-.41, -.22)	29.34	-.31	.1645		
Publication Type										1.24	.22
Journals	24	3,384	-.25	.1086	(-.39, -.12)	(-.31, -.20)	35.20	-.25	.1312		
Conference/dissertations	8	424	-.15	.0927	(-.27, -.04)	(-.27, -.04)	69.23	-.15	.1631		
Research Participants										2.41	.09
College students	25	2,984	-.22	.1015	(-.35, -.09)	(-.27, -.16)	43.48	-.22	.1318		
Children	4	188	-.38	.1566	(-.58, -.18)	(-.58, -.18)	40.89	-.38	.1860		
Adults	3	636	-.33	.0575	(-.40, -.26)	(-.43, -.24)	53.17	-.33	.0840		
Advertising Media											
										1.06	.29
TV	23	3,208	-.23	.0863	(-.34, -.12)	(-.28, -.19)	46.81	-.24	.1171		
Not TV	9	600	-.30	.1983	(-.55, -.04)	(-.45, -.14)	26.54	-.29	.2170		
										.18	.86
Film	17	1,024	-.24	.1764	(-.46, -.01)	(-.34, -.13)	34.53	-.23	.2072		
Not film	15	2,784	-.25	.0780	(-.35, -.15)	(-.30, -.19)	44.17	-.25	.1025		
Brand Type										.39	.70
Real brands	26	2,212	-.25	.1303	(-.42, -.09)	(-.09, -.19)	39.15	-.25	.1614		
Not specific	6	1,596	-.23	.0795	(-.33, -.13)	(-.31, -.15)	34.91	-.23	.0985		
Ad Type										.39	.70
Real ads	26	2,212	-.25	.1303	(-.42, -.09)	(-.09, -.19)	39.15	-.25	.1614		
Not specific	6	1,596	-.23	.0795	(-.33, -.13)	(-.31, -.15)	34.91	-.23	.0985		
Ad Effectiveness Measure										.60	.61
Recall	17	2413	-.26	.0840	(-.37, -.15)	(-.32, -.21)	47.12	-.26	.1127		
Recognition	9	1089	-.20	.1218	(-.35, -.04)	(-.30, -.10)	34.66	-.20	.1483		
Attitude toward ad	1	47	-.50	.0000				-.50	.0000		
Attitude toward brand	3	153	-.17	.2487	(-.48, .15)	(-.49, .16)	25.61	-.16	.2710		
Purchase intentions	2	106	-.31	.0000	(-.31, -.31)	(-.42, -.20)	269.47	-.30	.0772		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html).
*significant at .05.

Even though an ANOVA test was not significant by type of research participants, program violence was moderately and negatively correlated with advertising effectiveness for children (r = -.38, 95% CI_{LOW} = -.58, 95% CI_{HIGH} = -.18) and adults (r

= -.33, 95% CI_{LOW} = -.43, 95% CI_{HIGH} = -.24). Weak impacts were observed in the college student sample (r = -.22, 95% CI_{LOW} = -.27, 95% CI_{HIGH} = -.16).

Again, the ANOVA test was not significantly different by ad effectiveness measures. However, it is noteworthy: program violence was moderately but negatively correlated with purchase intentions (r = -.31, 95% CI_{LOW} = -.42, 95% CI_{HIGH} = -.20) and recall (r = -.26, 95% CI_{LOW} = -.32, 95% CI_{HIGH} = -.21), and it was weakly correlated with recognition (r = -.20, 95% CI_{LOW} = -.30, 95% CI_{HIGH} = -.10). However, it did not impact attitude toward the brand. Because attitude toward the ad was not examined enough, it is hard to conclude that program violence impacts attitude toward the ad.

Additional Moderator Analysis 12: Media Liking

Twenty-seven effect sizes examined the impact of Media Liking on advertising effectiveness. As noted in Table 27, ANOVA tests conducted by each moderator found that generally the relationship between media liking and ad effectiveness was weak but positive. However, for studies in the 1970s, the correlation was .18 (95% CI_{LOW} = .11; 95% CI_{HIGH} = .25) and for studies in the 1990s, -.18 (95% CI_{LOW} = -.24; 95% CI_{HIGH} = -.11). As for the studies conducted in the 1980s and 2010-2013, the correlations between media liking and ad effectiveness was not significant. The effect sizes were significantly different by research method ($p < .05$). Nonexperimental studies generated a weak effect size (r = .18, 95% CI_{LOW} = .11, 95% CI_{HIGH} = .25). The experimental method was not significant.

As for types of research participants, media context was positively correlated with advertising effectiveness only for the adult non-college student sample (r = .18, 95% CI_{LOW} = .11, 95% CI_{HIGH} = .25), but as for children, program liking was rather harmful

Table 27. Moderator Analysis of Media Liking

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Media Liking → Ad Effectiveness	27	15,983	.15	.1160	(.00, .29)	(.10, .19)	10.96	.14	.1233		
Publication Time Frame										2.42	.06
1970s	3	12776	.18	.0590	(.10, .26)	(.11, .25)	5.94	.18	.0608		
1980s	8	1771	.06	.1264	(-.10, .22)	(-.04, .16)	22.01	.06	.1432		
1990s	4	390	-.18	.0000	(-.18, -.18)	(-.24, -.11)	220.75	-.18	.0664		
2010-2013	12	1046	-.02	.2342	(-.32, .28)	(-.17, .13)	19.94	-.02	.2415		
Publication Type										1.30	.19
Journals	19	14212	.16	.1094	(.02, .30)	(.11, .21)	9.83	.16	.1161		
Conference/dissertations	8	1771	.06	.1264	(-.10, .22)	(-.04, .16)	22.01	.06	.1432		
Research Method										2.33	*
Experiments	24	3207	.01	.1757	(-.22, .23)	(-.07, .08)	20.70	.00	.1912		
Non-experiments	3	12776	.18	.0590	(.10, .26)	(.11, .25)	5.94	.18	.0608		
Research Participant										2.96	.05
College students	22	3075	.01	.1790	(-.22, .24)	(-.07, .09)	19.40	.01	.1930		
Children	2	132	-.12	.0000	(-.12, -.12)	(-.20, -.05)	508.33	-.13	.0542		
Adults	3	12776	.18	.0590	(.10, .26)	(.11, .25)	5.94	.18	.0608		
Advertising Media										1.79	.07
TV	15	14937	.16	.0962	(.03, .10)	(.03, .28)	9.41	.16	.1011		
Magazines	12	1046	-.02	.2342	(-.32, .28)	(-.17, .13)	19.94	-.02	.2415		
Brand Type										1.79	.07
Real brands	15	14937	.16	.0962	(.03, .10)	(.03, .28)	9.41	.16	.1011		
Fictitious brands	12	1046	-.02	.2342	(-.32, .28)	(-.17, .13)	19.94	-.02	.2415		
Ad Type										1.86	.16
Real Ads	7	13166	.17	.0828	(.06, .27)	(.11, .23)	6.86	.17	.0858		
Fictitious Ads	16	2307	.04	.1775	(-.19, .27)	(-.06, .14)	18.91	.04	.1924		
Not Specific	4	510	-.01	.1546	(-.21, .18)	(-.19, .17)	27.87	-.01	.1683		
Ad Effectiveness Measure										1.37	.25
Recall	7	13166	.17	.0828	(.06, .27)	(.11, .23)	6.86	.17	.0858		
Ad thoughts/cognitive response	6	1288	.03	.1438	(-.15, .21)	(-.10, .16)	18.44	.03	.1592		
Attitude toward ad	7	684	.05	.1955	(-.20, .30)	(-.12, .21)	23.45	.05	.2100		
Attitude toward brand	6	523	-.05	.2485	(-.37, .27)	(-.27, .17)	18.43	-.04	.2510		
Attitude toward product	1	322	.11	.0000				.11	.0000		

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). *significant at .05; **significant at .01; ***significant at .001.

for ad effectiveness (r = -.12, 95% CI_{LOW} = -.20, 95% CI_{HIGH} = -.05). The correlation was not significant for the college student sample. As for advertising media, TV was

compared by magazine. The effect size for TV was .16 (95% CI_{LOW} = .03, 95% CI_{HIGH} = .28), but was not significant for magazine.

The ANOVA test by ad effectiveness measures was not significant. However, it should be noted that program liking improved recall (*r* = .17, 95% CI_{LOW} = .11, 95% CI_{HIGH} = .23), and it did not impact on other ad effectiveness measures (e.g., attitude toward the ad, attitude toward the brand, ad thoughts and cognitive responses).

Additional Moderator Analysis 13: Cognitive vs. Affective

Media contexts comparing cognitive with affective contexts were measured 22 times. Univariate analyses from ANOVA tests by each moderator are reported in Table 28. Affective media contexts generated more positive impact on ad effectiveness than cognitive contexts when they were examined in website, *r* = .64, 95% CI_{LOW} = .30, 95% CI_{HIGH} = .99. However this relationship was not significant for TV (*r* = .15, 95% CI_{LOW} = .00, 95% CI_{HIGH} = .31).

Table 28. Moderator Analysis of Cognitive vs. Affective Context

Variable	$K_{EFFECTS}$	N	r	sd	(±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Cognitive vs. Affective Context → Ad Effectiveness	22	1,882	.27	.3910	(-.23, .78)	(.11, .44)	7.14	.26	.3753		
Publication Time Frame										.95	.39
1980s	3	102	.01	.3142	(-.39, .42)	(-.39, .42)	23.48	.01	.3592		
1990s	10	1,024	.21	.1275	(.05, .37)	(.11, .31)	37.97	.21	.1519		
2000s	9	756	.41	.5763	(-.33, 1.15)	(.03, .79)	3.17	.38	.5255		
Advertising Media										2.93	**
TV	17	1,332	.15	.3068	(-.24, .54)	(.00, .31)	12.44	.15	.0863		
Websites	5	550	.64	.3841	(.15, 1.14)	(.30, .99)	3.99	.54	.1318		
Brand Type										1.58	.21
Real brands	15	1,574	.34	.3097	(-.05, .74)	(.18, .51)	8.63	.32	.0802		
Both real & fictitious brands	4	206	-.06	.6117	(-.84, .73)	(-.67, .56)	4.99	-.06	.6276		
Not specific	3	102	.01	.3142	(-.31, .42)	(-.39, .42)	23.48	.01	.3592		

Variable	$K_{EFFECTS}$	N	r	sd (±80% CV)	(±95%CI)	*%variance*	r	sd	F/t	*p*
Ad Type									4.03	**
Real ads	10	1,024	.21	.1275	(.05, .37)	(.11, .31)	37.97	.21	.0140	
Fictitious ads	5	550	.64	.3841	(.15, 1.14)	(.30, .99)	3.99	.54	.3693	
Both real & fictitious ads	3	102	.01	.3142	(-.31, .42)	(-.39, .42)	23.48	.01	.3592	
Not specific	4	206	-.06	.6117	(-.84, .73)	(-.67, .56)	4.99	-.06	.6276	
Ad Effectiveness Measure									.41	.75
Recall	8	514	.36	.6965	(-.53, 1.25)	(-.13, .85)	2.53	.37	.6710	
Attitude toward ad	7	812	.27	.0000	(.27, .27)	(.21, .34)	113.37	.25	.0864	
Attitude toward brand	3	344	.21	.0000	(.21, .21)	(.14, .27)	292.00	.20	.0385	
Purchase intentions	1	110	.31	.0000				.31	.0000	
Ad engagement experience	3	102	.01	.3142	(-.39, .42)	(-.39, .42)	23.48	.01	.3592	

Note: $K_{EFFECTS}$ refers to the number of effect sizes, N refers to the cumulative sample size, r refers to reliability-corrected correlation and sd refers to standard deviations, ±80% CV refers to ±80% Credibility Intervals, 95% CI refers to ±95% Confidence Intervals. The second r and sd are not reliability corrected. T-test was conducted at http://www.graphpad.com/quickcalcs/ttest2/ and ANOVA tests were conducted using an online ANOVA test site (http://statpages.org/anova1sm.html). *significant at .05; **significant at .01; ***significant at .001.

The effect sizes varied by ad type. The effect size was larger when fictitious ads were used (r = .64, 95% CI_{LOW} = .30, 95% CI_{HIGH} = .99) than when the real ads were used (r = .21, 95% CI_{LOW} = .11, 95% CI_{HIGH} = .31). An ANOVA test was not statistically significant by ad effectiveness measures, but affective media contexts enhanced attitude toward the ad (r = .27, 95% CI_{LOW} = .21, 95% CI_{HIGH} = .34) and the brand (r = .21, 95% CI_{LOW} = .14, 95% CI_{HIGH} = .27). However, it was not significantly correlated with recall and ad engagement experiences.

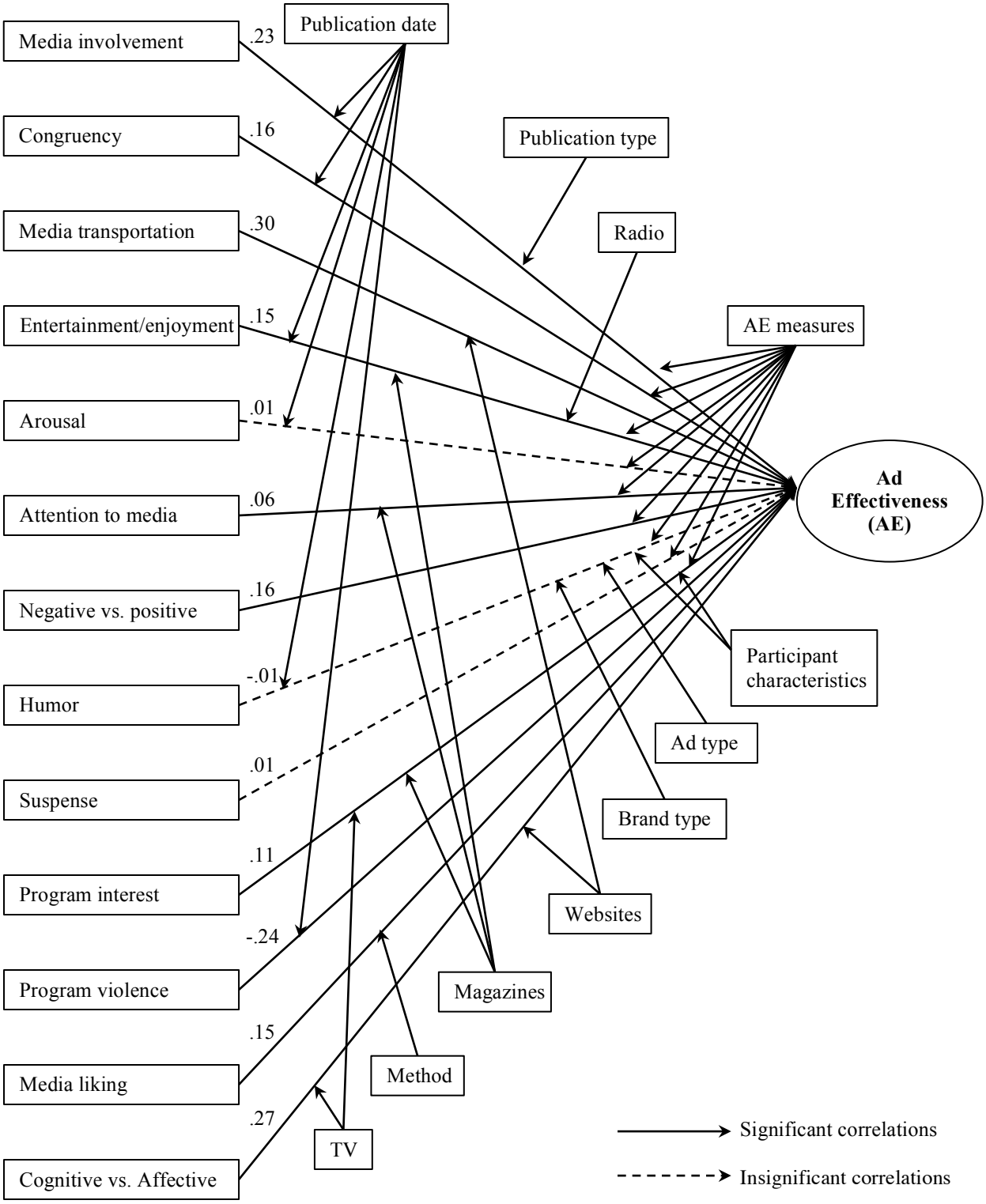


Figure 8. Moderator analysis between specific media contexts and ad effectiveness

CHAPTER 6

DISCUSSION

The major findings of this study are summarized in this chapter. Subsequent sections discuss the importance and implications of the results in the body of knowledge of media planning. Then, limitations of the research design are presented, followed by suggestions for future research.

Summary of Findings

Media engagement emphasizes the importance of media contexts in capturing an audience's attention, processing advertising messages, and potentially leading to a purchase decision. As discussed in Chapter 2, however, the media landscape has been evolving with the development of newer communication technologies; accordingly, a number of different media contexts have been examined and tested over the past 50 years. As a result, previous literature has provided mixed results, leading to questions about whether or how much media contexts really matter in media decisions. If so, how?

This study is designed to provide a comprehensive picture of the media engagement literature as well as to reconcile the discrepancies in findings across studies. To this end, four main research questions were generated and examined using a systematic review and a meta-analysis. As discussed in Chapter 3, the research questions focused on what terms are used to denote the media engagement effect and how they are defined (RQ1-a & -b), what theories are considered the foundation to examine the media engagement effect (RQ2), what media context and advertising effectiveness variables are

investigated (RQ3-a & -b), and how media contexts are associated with advertising effectiveness (RQ4-a, -b, -c, & -d).

Characteristics of Studies in Media Engagement

This study synthesized 52 years (1960-2013) of studies on the impact of the media environment on advertising, examining 234 articles, the majority of which were journal publications providing empirical data, specifically quantitative data. More than half of the empirical studies were conducted using an experiment method, and students were most frequently recruited as research participants. Television, magazines, and online media were the most frequently examined advertising media. Not surprisingly, interest in media engagement by scholars and media practitioners has increased over the years.

RQ1-a & -b: Terms and Definitions for Media Engagement Effect

As presented in Chapter 5, a number of terms appeared in the literature to refer to media engagement and several definitions were provided. In the era when print media made up a larger percentage of advertising budgets (i.e., in the 1960s and 1970s; see Figure 2 on page 13), terms such as *qualitative media values* and *vehicle source effects* were mentioned. *Context effect* and *media involvement* became prevalent in the 1980s, but even more so in the 1990s across different media, predominantly in the television context. The use of terms such as *priming* and *engagement* were relatively recent. *Priming* has been used since the 1980s, but more frequently in the 2000s. *Engagement* first appeared in the late 1990s, but has been primarily used since the 2000s. Unlike other terms, *engagement* was more frequently used in website contexts than TV or magazine

contexts. In terms of definitions, earlier studies tended to emphasize the values that media classes or vehicles possess, suggesting advertising effectiveness would vary depending on the media types. However, later studies tended to emphasize the changes in consumers as a result of consumers' engagement with media prior to advertising exposure.

RQ2: Theories as the Foundation to Explain Media Engagement Effect

A number of theories were considered as the foundation to explain why and how media engagement occurs. As the number of theories noted in Chapter 5 (i.e., 133 theories) indicates, media engagement is not a simple effect that can be explained with a few theories. Rather, it is a complicated phenomenon. Theories such as the elaboration likelihood model, excitation transfer theory, and consistency effect were frequently mentioned to explain the media engagement effect and they were used related to memory storage, affects, and similarities of media context and ads.

RQ3-a & -b: Variables Used in Media Engagement Effect

RQ3-a. Approximately 70 different media context variables were examined. As noted in Chapter 5, media involvement was the most frequently used, followed by congruency between media contexts and ads, media transportation, entertainment and enjoyment, attention to media, and humor, to name a few.

RQ3-b. The testing of dependent variables was relatively simpler than media context variables (about 15 different variables). Recall was predominantly used in media engagement studies, followed by attitude toward the ad, attitude toward the brand, recognition, purchase intentions, and ad engagement experiences.

RQ4: Meta-Analyses

RQ4-a. A total 925 effect sizes were entered into the meta-analysis. The overall mean effect size was .11, indicating that the impact of media context on advertising effectiveness was weak. Heterogeneity tests showed that the overall mean effect size was highly heterogeneous (i.e., $I^2 = 96.82\%$).

RQ4-b. Moderator analyses using study characteristics showed that the effect size for published articles was less than that for unpublished works (.09 vs. .18), experiments were weaker than nonexperimental studies (.06 vs. .22), and college student samples explained less of the variance than non-student samples (e.g., .05 for college students vs. .17 for adults). Websites ($r = .26$), radio ($r = .25$), and newspaper ($r = .20$) generated a higher magnitude of effect size than the other media types (film $r = .12$; magazine $r = .10$; TV $r = .08$).

RQ4-c. Analyses by specific media contexts are summarized here based on a greater number of effect sizes. The mean correlation for media transportation was .30; for media involvement, .23; for congruency, .16; for positive program context, .16; for entertainment and enjoyment, .15; for program interest, .11; and for attention, .06. Violent ($r = -.24$) and sexual ($r = -.45$) programs generated significant, negative impacts on ad effectiveness. Humor ($r = -.01$), arousal ($r = -.01$), and suspense ($r = .01$), however, did not significantly impact ad processing and evaluation.

RQ4-d. Of all the ad effectiveness measures, when attitudinal measures were used, correlations were higher than when memory (cognitive) measures were used (r for attitude toward the ad = .28, attitude toward the brand = .26, ad believability = .25, and ad affect/emotion = .16 vs. r for recall = .15, recognition = .11). As for behavioral measures,

purchase intentions and click intentions were examined and the correlations were .22 and .26, respectively.

Additional Analyses

Media involvement. In the analysis of 212 effect sizes, overall mean effect size specifically for media involvement was .23. Correlation of published journal articles was higher than unpublished works (.24 vs. 18); college students explained less variance than other sample types (e.g., .09 for college students vs. .23 for adults, .23 for children, and .19 for women). Media types did not moderate the impact of media context on advertising effectiveness, but correlations were higher for websites (.27) and gaming contexts (.29) than other media types. The correlation for real brands was higher than for fictitious brands (.21 vs. .15); however, in terms of ad types, fictitious ads explained more variance than real ads (.27 vs. .21).

Congruency. As for congruency between media context and ad, the mean correlation was .16. The effect sizes were different mainly by ad effectiveness measures. Congruency was correlated highly with recognition (r = .38), moderately with attitude toward the product (r = .33), ad credibility/believability (r = .32), and click intentions (r = .26), and weakly with attitude toward the brand (r = .20), ad thought/cognitive responses (r = -.20), recall (r = .18), global memory (r = .17), and brand association (r = .16).

Media transportation. Overall mean correlation of media transportation and ad effectiveness was .30. Again, college student samples explained less variance than adult samples (.14 vs. .33). In the examination of ad effectiveness measures, attitudinal measures generated higher correlation than other measures (i.e., r for attitude toward the

ad = .43; *r* for attitude toward the brand = .42; *r* for ad affect/emotion = .42; *r* for ad credibility/believability = .36; and *r* for purchase intentions = .20; and global memory, recall, recognition were not significant).

Entertainment and enjoyment. The impact of entertainment and enjoyment on ad effectiveness increased over time (i.e., *r* for the 1990s = .06; *r* for the 2000s = .21; *r* for 2010-2013 = .29). The effect only differed when radio and magazines were used (*r* for radio = .34; *r* for magazines = -.33). As for types of ad effectiveness measures, entertainment and enjoyment was moderately correlated with purchase intentions (*r* = .31) and attitude toward the brand (*r* = .26), and weakly with attitude toward the ad (*r* = .19). It was not significant for the memory-related measures (i.e., recall, recognition).

Attention to media content. The mean effect size for attention was .06. The effect size was negative when magazines were used (*r* = -.36), but it was not significant for other media types. As for the types of ad effectiveness measures, attention to media context moderately influenced purchase intentions (*r* = .24) and weakly influenced attitudes (*r* for attitude toward the ad = .23; *r* for attitude toward the brand = .19). Cognitive and memory-related measures (recall, recognition, ad thoughts/cognitive response, ad engagement experience) were not significant.

Arousal induced by media content. The overall mean effect size for arousal induced by media context was -.01. With the gaming context partialed out, however, it was negatively correlated (*r* = -.11). It was also negative for fictitious ads (*r* = -.11). When types of dependent variables were examined, arousal induced by media context had a negative impact on memory measures (*r* for recall = -.09, *r* for recognition = -.07)

but a positive impact on attitudes (*r* for attitude toward the ad = .22, *r* for attitude toward the brand = .07).

Humor in media content. The overall mean effect size for humor was -.01. The impact on ad effectiveness was negative in the 1990s (*r* = -.11), but positive in the 2000s (*r* = .06). Also, the impact was not significant for college students or adults, but was negatively correlated when children were sampled (*r* = -.40). When types of ad effectiveness measures were examined, humorous media contexts were weakly, but negatively correlated with recognition (*r* = -.14). They were positively correlated with purchase intentions (*r* = .08). The correlations for attitude toward the ad, attitude toward the brand, and recall were not significant.

Negative vs. positive affect. The correlation for the valence of affect in media was .16. None of the study characteristics moderated the impact of valence of media contexts on advertising effectiveness, except for ad effectiveness measures. Only attitudinal measures were statistically significant (*r* for attitude toward the ad = .26; *r* for attitude toward the brand = .17). Other measures, including recall, recognition, and purchase intentions, were not significant.

Suspense in media. The overall effect size for suspense was .01. Suspense was negatively correlated with recognition (*r* = -.14), but positively correlated with ad engagement experience (*r* = .22). The mean effect sizes of other ad effectiveness measures such as recall, attitude toward the ad, attitude toward the brand, and purchase intentions were not significant.

Program interest. The impact of program interest on advertising effectiveness was higher for children than for college students (*r* for children = .28 vs. *r* for college

students = .12). As for advertising media, the effect was positive for TV (r = .13) and negative for magazines (r = -.35). As for types of ad effectiveness, program interest was moderately correlated with ad thoughts and cognitive responses (r = .28) and weakly correlated with purchase intentions (r = .20), attitude toward the ad (r = .17), and attitude toward the brand (r = .16). Recall and recognition were not significant.

Violence in media. The overall effect size for violent media content was .30. Interestingly, the mean difference test was significant for publication time frame only and the impact increased negatively over time (r for studies in the 1990s = -.21 vs. r for studies in the 2000s = -.31).

Media Liking. Media Liking was positively correlated with ad effectiveness (r = .15). Only research method moderated the effect; nonexperimental studies generated an effect size of .18, whereas experimental studies were not significant. Other study characteristics and ad effectiveness measures did not moderate the effect.

Cognitive vs. affective. Affective media context in comparison with cognitive context was correlated with ad effectiveness (r = .27). Advertising media type moderated the impact of affective media context on ad effectiveness, and the correlation was only significant for websites (r = .64).

Implications of Research Findings for Marketers and Media Practitioners

The findings of the current study provide several implications for industry practitioners. As is supported in the results chapter, media context seems to matter in advertising effectiveness by affecting media users' advertising processing and evaluations. The overall effect size was weak, but the moderator analyses provided deeper insights on when the influence of media context might be stronger or weaker, or

when no influence is expected. This suggests that when media planners make media decisions, they should consider the potential impact of different media contexts on advertising effectiveness.

What are the promising media contexts? Several media contexts generated positive outcomes overall: media transportation, media involvement, congruent media context, positive program context, entertainment and enjoyment, program interest, and media context capturing audiences' attention. This suggests that when ads are placed in a media context which captures, involves, or absorbs audiences in the media content, audiences are likely to see the ads more positively and evaluate them accordingly. Further moderator analyses on each specific media context, however, showed that the strength of the relationship varied depending on outcome measures; and in some cases there were no significant relationships. For example, correlation of media transportation on ad effectiveness was .30, but when memory-related outcome measures (i.e., recall, recognition) were singled out, the significant relationship disappeared (*r* for recall = -.03; *r* for recognition = .07). Thus, media practitioners should also factor in what specific outcomes they are targeting.

What are the less promising media contexts? Violent and sexual media contexts were negatively correlated with ad effectiveness (*r* for violent media context = -.24; *r* for sexual media context = -.45). Further analysis showed that regardless of types of dependent variables the correlation was negative (*r* for recall = -.26; *r* for recognition = -.20; *r* for attitude toward the ad = -.50; *r* for attitude toward the brand = -.17; *r* for purchase intentions = -.31). The findings suggest that violent and sexual content may have a negative impact on the ad placed in that context. However, because there were

only a few studies examining the impact of violent media content on attitudinal measures and purchase intentions, the negative impact on attitudes cannot be generalized; and because violence, especially, was tested in the context of TV and films, the negative impact cannot be generalized to the print media context.

Humor (r = -.01), arousal (r = -.01), and suspense (r = .01) did not significantly impact ad processing and evaluation. However, a closer look at the correlations by ad effectiveness measures suggests that humor (r = -.14), arousal (r = -.07), and suspense (r = -.14) could harm recognition of information presented in the ad. However, arousal was positively correlated with attitude toward the ad (r = .22), humor was positively correlated with purchase intentions (r = .08), and suspense was positively correlated with ad engagement (r = .22). These findings also support the need for media planners to carefully consider the media vehicles they choose when placing ads in such contexts as humorous and suspenseful media, and programs inducing arousal.

Congruency of media and embedded ads provide supporting evidence of contextual advertising. As a recent online advertising format, contextual advertising is placing an ad on a website that is relevant to the ad. Google AdSense uses this contextual advertising, and relevance is the important factor for selecting ads for a website. Also, MSN AdCenter and Yahoo! Publisher Network also provide similar contextual advertising services. Contextual relevance is one component of native advertising, which Interactive Advertising Bureau (2013) describes as “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 that they belong” (Native Advertising Playbook, p. 3). Likewise, the relevant and congruent context has become essential for online advertising. The

findings of this study suggest that congruent media context with ads is positively correlated with ad effectiveness (r = .16). A closer look at the correlations by ad effectiveness measures also shows a rosy picture. Congruent context has shown to enhance recall (*r* = .18), recognition (*r* = .38), attitude toward the brand (*r* = .20) and product (*r* = .33), click intentions (*r* = .26), and ad credibility and believability (*r* = .32), even though some of the outcome measures (i.e., ad thoughts, attitude toward the ad, ad affect/emotion, purchase intentions, ad engagement experience) were either negatively correlated or not significant.

Theoretical and Methodological Implications of Research Findings

The body of research on media engagement has grown over time. This area of research attracted more researchers from different fields and varying geographic areas, diverse aspects of media context have been examined, and a number of theories and frameworks have been put forward to explain why and how media context influences advertising processing and evaluations. In addition, the effect sizes by time intervals supported that the effect sizes have increased over time leading to an increase in variance explained.

The overall mean correlation was .11 which provides low explanatory power from a practical point of view. However, this is not unexpected. Cohen (1988) stated that many effect sizes in social science will yield a weak correlation coefficient of .10. In addition, weak correlation was found in several meta-analyses (e.g., Eisend, 2015; Richard, Bond, & Stokes-Zoota, 2003). For example, in Eisend's (2015) second-order meta-analysis from 1918 and 2012 on whether marketing knowledge progress over time, he discovered the mean correlation of .24. When the advertising field is singled out, the correlation

was .22. Also, Richard et al. (2003) compiled results from a century of social psychological research, and their analysis found that the average correlation was .21. In this study, a series of moderator analyses demonstrated which media contexts explained more variance than this overall mean effect size suggested. This can also provide a benchmark of the explanatory power that can be expected for future studies.

One of the noticeable findings of this study is the effect size of student research participants vs. non-student participants. This study found that correlation for college students (r = .05) was weaker than that for nonstudent participants (r = .17), which was consistent with Peterson, Albaum, and Beltramini (1985). Types of samples (e.g., college students vs. nonstudents) are often examined as a moderator in meta-analyses because many academic studies employed student samples and some scholars questioned the validity of using college student samples (e.g., de Matos & Rossi, 2008; Fern & Monroe, 1996; Peterson, 2001; Peterson et al., 1985). Fern and Monroe (1996) and de Matos and Rossi (2008) suggested that, because non-student samples are usually more heterogeneous than student samples, nonstudent samples could increase error variance and accordingly yield weaker effect sizes. However, Peterson (2001) suggested that greater homogeneity (attributed by student samples) does not necessarily translate into more powerful hypothesis tests or larger effect sizes than would be observed for nonstudent samples. It is because homogeneity also may reduce the magnitude of differences or minimize relationships that do exist among variables. The findings of this study indicate that when college students are used, less variance is explained in ad effectiveness than with other types of participants. As a few studies suggested, student samples may be acceptable especially for theory testing purposes, but nonstudent samples

may be desirable for generalizing purposes (Calder, Phillips, & Tybout, 1981; Peterson, 2001).

Another significant finding is that the effect size was found to be higher when non-experiments were used compared to experiments. Moorman et al. (2002) discussed that the impact of media context on ad effectiveness could be greater in naturalistic settings than under lab experiment conditions. It is because leaving media and ad exposure up to the participants could result in testing a more genuine sample of actual readers that have read the magazine in their own natural environment, rather than giving instructions to an occasional audience such as students in a lab setting (Moorman et al., 2002). As a result, research participants' level of involvement and attitude toward media may be lower in lab setting than natural setting (e.g., Moorman et al., 2002; Norris & Colman, 1992). This result supports their observation and suggests more studies conducted in real-world situation or real behavioral data may be necessary.

In addition, even though the fail-safe number indicates this study lacks publication bias, the significant mean correlations observed in the 2000s and 2010-2013 may reflect the existence of confirmation bias or publication bias (also known as the "file-drawer problem," Rosenthal, 1979). As noted previously, publication bias is one type of the bias reflecting scholars' seeking consistent results and preferences of journal editors and reviewers on significant findings, while devaluing conflicting information or nonsignificant results (Hubbard & Lindsay, 2013) or modifying research procedures or collecting data until expected results are obtained (so-called *p*-hacking [(Simonsohn, Nelson, & Simmons, 2014]) (e.g., Dunbar, 2001; Greenwald, Pratkanis, Leippe, & Baumgardner, 1986). Some longitudinal studies examining study outcomes of replicative

research in leading marketing journals found that significant results were published more frequently since 2000s (e.g., Kwon, Shan, Lee, & Reid, unpublished). Significant mean correlations in the 2000s and 2010-2013 may be due to publication bias.

Strengths and Limitations of Research Method

The meta-analysis is the best up-to-date approach to evaluate the scientific evidence of a specific research area (Schmidt & Hunter, 2015; Mayorga-Vega, Merino-Marban, & Viciana, 2014). However, an understanding of the strengths and limitations is needed for the most appropriate use of this method (Flather, Farkouh, Pogue, & Yusuf, 1997).

Strengths

The major strength of meta-analysis is that population estimates are more accurate, and generalizability of the findings is more reliable compared with the constituent studies (Eisend, 2009). Accordingly, a meta-analysis can provide generalizable results and test hypotheses that may have never been tested in primary studies such as differences by different research methods (Mayorga-Vega et al., 2014).

To minimize publication bias, an extensive literature search was conducted. A number of research studies fail to be published when hypotheses are not supported because studies with favorable results are far more likely to be published than those with inconclusive results (Mayorga-Vega et al., 2014). For this reason, this study included findings published in conference proceedings and doctoral dissertations. The inclusion of these unpublished studies in the literature search is an important strength of this current meta-analysis.

In addition, this study tried to best estimate the population correlation coefficients by employing the Hunter-Schmidt's psychometric meta-analysis approach. Because sample sizes are never infinite and measures are never perfectly reliable, sampling errors and measurement errors are always present in almost all datasets (Mayorga-Vega et al., 2014; Schmidt & Hunter, 2015). Thus, by using this psychometric meta-analysis approach, this study corrected the observed correlations due to sampling error and measurement error.

Limitations

Several limitations should be considered when examining the results of the current study. First, media practitioners should be cautious with findings on media contexts less frequently employed and examined with limited focus (e.g., violence was only examined in TV and film contexts). It is because estimation of the population mean effect size based on small samples can be less accurate. In addition, due to the small number of cases, full hierarchical breakdown (i.e., subgroup analysis) cannot be used and is not recommended even though many effect sizes are heterogeneous (Schmidt & Hunter, 2015). Thus, more complex relationships remain unexplored. For these reasons, readers of this meta-analysis should be careful about drawing unwarranted conclusions especially from results of studies from which only a few studies were retrieved. However, as additional studies become available, findings can be more reliable and generalizable, and further moderator analyses can be applicable.

Second, due to the characteristics of meta-analyses, some of effect sizes were not retrieved in this study (e.g., full information needed for a meta-analysis is not provided, multivariate analyses were used without univariate analysis reported). In a meta-analysis,

only univariate analyses are recommended to avoid the confounding effect when multiple variables are included. For this reason, 34 studies were excluded from the meta-analysis. For meta-analysts, this can be a disappointing reality. However, this will be better, as reporting practices improve over time and journals use online web space (e.g., *Journal of Marketing Research, Journal of Advertising*) to provide further information including univariate analyses.

A third concern is the large amount of unexplained variance after controlling for artifacts and predefined moderators. Studies included in this meta-analysis are expected to vary in a number of ways, and differences between studies (e.g., sample types, design of the study, measurements) affect the results. Identification of other moderators such as ad execution styles would be necessary. In addition, the statistical heterogeneity can be quantified through moderator analyses, but there is uncertainty about how important the differences really are. Thus, quantifying and accounting for differences between component studies in a meta-analysis remains a substantial methodological problem and a continuing source of debate (Flather et al., 1997; Mayorga-Vega et al., 2014).

Another limitation is that many of the moderator analyses for specific media contexts were not significant. Schmidt and Hunter (2015) are against using significance testing because, generally, power for significance testing is low and accordingly many moderator analyses are not significant. Following their recommendation, 80% credibility intervals were examined to try to generate the best interpretation because a clear-cut interpretation is not applied in these statistics. In the communication with Huy Le, he noted that this approach can be subjective and qualitative, but it can be used as an alternative to significance testing, especially when the power of the significance test to

detect moderator effect is very low (see footnote 3 on page 106).

Finally, there could be lack of independence among effect sizes. Study characteristics and information related to ads that were used as moderators were retrieved from the study level. In addition, as previously noted, more than 1 effect size was retrieved from a study. This indicates the potential correlations on effect sizes retrieved from the same study or from the same authors.

Future Research

This meta-analysis identifies gaps in the previous research, ensuring that future research is guided in a promising direction. First, the studies examined mostly used television, magazines, and websites. Media practitioners have experienced decreases in traditional media forms such as newspapers, magazines, and radio usage among media audiences, leading to less advertising spending in these media. However, the size of audiences of online media formats are increasing. There is a need for further research on audiences' ad processing and evaluations when ads are presented in online newspaper and magazine sites. Also, the number of online radio users is on the rise. Thus, research is needed in this area as well.

In addition, the majority of media engagement studies examined in this meta-analysis were conducted in the U.S. (i.e., 73% of the studies). The reason may be that only articles in English were considered. It may be that the media industries in the U.S. and other western countries are more interested in this effect than others, which intrigued academic scholars' interest in this topic. Thus, future research should examine whether the media context effects vary across different cultures or how it could be different by countries.

Also, product placement should be meta-analytically examined. Known as brand placement, brand integration, or in-program sponsoring, product placement is placing branded products or identifiers in media programming (Marchand, Hennig-Thurau, & Best, 2015). Because the goal of product placement is to influence media audiences to have positive attitudes toward the brand and purchase the product (Balasubramanian, 1994) without an explicit promotion (D'Astous & Chartier, 2000), understanding programming contexts for product placement could be important. In addition, future study could compare effect sizes of media context on advertising in comparison with product placement, generating the empirical generalization as to whether advertising inserted in programs and editorial content is more effective or product placement is more effective. If so, how impactful is it?

Conclusions

This study represents the most extensive analysis on media engagement effect to date. This systematic review and meta-analysis revealed evidence of the impact of media context on advertising effectiveness. Generally, there was a positive effect, but a negative effect of media context was also found. Media planners and media-related practitioners should carefully consider their selection of media contexts, avoiding the potential negative impact on brands.

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Appendix A. Systematic Review of Media Engagement by Moorman (2003)

Medium	Media context	Ad effect measure	Effect direction	Case	Methods	Sample Compositions
Vehicle Type						
TV	3 program type (higher for sitcom), highest for action movies and lowest for detective movies	Recall	Sign.	2	Experiment	Heterogeneous, students, adolescents
TV, Print	2 magazine types, 4 different comedies; 3 different program types		n.s.	3	Experiment	Housewives, students, civic group members
Print	4 magazine titles (lower in *National Enquirer*)	Aad	Sign.	1	Survey	Heterogeneous
Print	2 magazine types		n.s.	1	Experiment	Housewives
TV	2 magazine types (higher for expert magazines)	Ab/p	Sign.	1	Experiment	Housewives
TV	3 program types		n.s.	1	Experiment	Adolescents, civic group members
TV	3 program types	PI	n.s.	1	Experiment	Students, civic group members
Vehicle Features (contents)						
TV	Violence, humor	Recall	Negative	6	Experiment	Students, adolescents, 7-9 yr-old boys
	Cartoon		Positive	2	Experiment	Children
TV	Sexual content, violence	Ab/p	Negative	2	Experiment	Students, 7-9 yr-old boys
Print	Prestige level of title		n.s.	2	Experiment	Students
TV	Sexual content	Aad	Negative	1	Experiment	Students
TV	Violence		n.s.	1	Experiment	7-9 year-old boys
TV	Sexual content	PI	Negative	1	Experiment	Students
Congruence of Context and Ads						
Print, TV	General stylistic congruence, thematic congruence (content)	Recall	Positive	3	Experiment, sec. analyses	Students, civic group members, heterogeneous
TV	Specific stylistic congruence (humor), Thematic Congruence (product), specific stylistic congruence (cartoon)		Negative	5	Experiment	Adolescents, heterogeneous, children
Prints, TV	General stylistic congruence, thematic congruence (product), specific stylistic congruence (humorous, warm, rational)		n.s.	8	Experiment, field experiment	Housewives, heterogeneous, students
TV, print, websites	Specific stylistic congruence (sexual content), thematic congruence (product, content)	Aad	Positive	2	Experiment	Students, online users
Print, TV	General stylistic congruence, thematic congruence (product, content), specific stylistic congruence (humorous, warm, rational)		n.s.	8	Experiment	Housewives, students, heterogeneous
Print, TV, websites	General stylistic congruence, Specific stylistic congruence (sexual content), thematic congruence (product)	Ab/p	Positive	4	Experiment	Housewives, students, civic group members, online users
Print	Thematic congruence (content)		P/N	3	Experiment	Students
TV, websites	Specific stylistic congruence (sexual content), general stylistic congruence, thematic congruence (product)	PI	Positive	3	Experiment	Students, online users, civic group members
Print	Thematic congruence (content)		P/N	3	Experiment	Students

Medium	Media context	Ad effect measure	Direction of effect	Case	Methods	Sample Compositions
Intensity						
TV	Involvement, sensation, attention	Attention	Positive	3	Experiment	Students, heterogeneous
TV	Negative emotion		Negative	1	Experiment	Students
TV	Positive emotion		n.s.	1	Experiment	Students
TV	Involvement, attention	Recall	Positive	6	Survey, experiment	Heterogeneous, children, adolescents, female heads of households
TV, print	Involvement, suspense, arousal, activity		Negative	11	Experiment, field study	Heterogeneous, students, employees, middle-class adults
TV	Involvement		U-curve	1	Experiment	Students
TV, radio	Involvement, positive emotion, negative emotion, arousal		n.s.	10	Experiment, field study	Heterogeneous, students, children
TV, radio	Involvement, arousal	Aad	Positive	5	Experiment	Heterogeneous, students, female heads of households
TV	Involvement, cognitive involvement		Negative	4	Experiment	Students, females, employees
TV	Involvement, affective involvement		U-curve	2	Experiment	Students, females
TV	Arousal, positive emotion, negative emotion, suspense, involvement		n.s.	7	Experiment	Students, heterogeneous
TV	Involvement, interest	Ab/p	Positive	4	Experiment, sec. analyses	Heterogeneous, students
Radio, TV	Involvement, positive emotion, negative emotion, suspense		n.s.	7	Experiment	Students, heterogeneous
TV	Involvement	PI	Positive	4	Experiment	Heterogeneous, students, female heads of households
TV	Involvement		Negative	2	Experiment	Students, employees
Valence						
TV	Emotion, mood	Attention	Positive	2	Experiment	Students
TV	Attitude, feeling, mood, liking, appreciation	Recall	Positive	5	Sec. analyses, experiment	Data from 25 on-air tests, students, middle-class adults
TV	Enjoyment		Negative	1	Experiment	Students
TV, radio, print	Emotion, feelings, pleasure, entertainment/enjoyment, mood, appreciation		n.s.	7	Experiment	Students
TV, print	Mood, liking, emotion, feeling, appreciation	Aad	Positive	9	Experiment	Students, heterogeneous
TV, radio	Pleasure, feeling, feeling/liking, entertainment/enjoyment		n.s.	6	Experiment	Students, heterogeneous
TV, radio	Entertainment/enjoyment, liking, Emotion	Ab/p	Positive	3	Experiment	Students
TV, radio, print	Feelings, feelings/liking, entertainment/enjoyment		n.s.	5	Experiment	Female students, students
Radio, print	Entertainment/enjoyment, feelings	PI	Positive	2	Experiment	Students
TV	Feelings, entertainment/enjoyment		n.s.	3	Experiment	Students, heterogeneous

Note: Cases refer to frequency of relationship studied; Aad refers to attitude toward the ad, Ab/p refers to attitude toward the brand or product; PI refers to purchase intentions; P/N: positive or negative dependent on cognitive prime; n.s.: not significant.

Appendix B. The Meta-Analysis Reporting Standards (MARS) Statement

Paper Section and Topic	Description
Title	• Make it clear that the report describes a research synthesis and include "meta-analysis," if applicable • Footnote funding source(s)
Abstract	• The problem or relation(s) under investigation • Study eligibility criteria • Type(s) of participants included in primary studies • Meta-analysis methods (indicating whether a fixed or random model was used) • Main results (including the more important effect sizes and any important moderators of these effect sizes) • Conclusions (including limitations) • Implications for theory, policy, and/or practice
Introduction	• Clear statement of the question or relation(s) under investigation: - Historical background - Theoretical, policy, and/or practical issues related to the question or relation(s) of interest - Rationale for the selection and coding of potential moderators and mediators of results* - Types of study designs used in the primary research, their strengths and weaknesses** - Types of predictor and outcome measures used, their psychometric characteristics** - Populations to which the question or relation is relevant** - Hypotheses, if any
Method	
Inclusion and Exclusion	• Operational characteristics of independent and dependent variable(s) • Eligible participant populations • Eligible research design features (e.g., random assignment only, minimal sample size) • Time period in which studies needed to be conducted • Geographical and/or cultural restrictions
Moderator/Mediator Analyses	• Definition of all coding categories used to test moderators or mediators of the relation(s) of interest
Search Strategies	• Reference and citation databases searched; Registries (including prospective registries) searched: - Keywords used to enter databases and registries - Search software used and version • Time period in which studies needed to be conducted, if applicable • Other efforts to retrieve all available studies: - Listservs queried - Contacts made with authors (and how authors were chosen) - Reference lists of reports examined • Method of addressing reports in languages other than English • Process for determining study eligibility: - Aspects of reports were examined (i.e., title, abstract, and/or full text) - Number and qualifications of relevance judges - Indication of agreement ▪ How disagreements were resolved • Treatment of unpublished studies

Paper Section and Topic	Description
Coding Procedures	• Number and qualifications of coders (e.g., level of expertise in the area, training) • Inter-coder reliability or agreement • Whether each report was coded by more than one coder and if so, how disagreements were resolved • Assessment of study quality: - If a quality scale was employed, a description of criteria and the procedures for application - If study design features were coded, what these were • How missing data were handled
Statistical Methods	• Effect size metric(s): - Effect sizes calculating formulas (e.g., Ms and SDs, use of univariate F to r transform) - Corrections made to effect sizes (e.g., small sample bias, correction for unequal ns) • Effect size averaging and/or weighting method(s) • How effect size confidence intervals (or standard errors) were calculated • How effect size credibility intervals were calculated, if used • How studies with more than one effect size were handled • Whether fixed and/or random effects models were used and the model choice justification • How heterogeneity in effect sizes was assessed or estimated • Ms and SDs for measurement artifacts, if construct-level relationships were the focus • Tests and any adjustments for data censoring (e.g., publication bias, selective reporting) • Tests for statistical outliers • Statistical power of the meta-analysis • Statistical programs or software packages used to conduct statistical analyses
Results	• Number of citations examined for relevance • List of citations included in the synthesis • Number of citations relevant on many but not all inclusion criteria excluded from the meta-analysis • Number of exclusions for each exclusion criterion (e.g., effect size could not be calculated), with examples • Table giving descriptive information for each included study, including effect size and sample size • Assessment of study quality, if any • Tables and/or graphic summaries: - Overall characteristics of the database (e.g., number of studies with different research designs) - Overall effect size estimates, including measures of uncertainty (e.g., confidence and/or credibility intervals) • Results of moderator and mediator analyses (analyses of subsets of studies): - Number of studies and total sample sizes for each moderator analysis - Assessment of interrelations among variables used for moderator and mediator analyses • Assessment of bias including possible data censoring

Paper Section and Topic	Description
Discussion	• Statement of major findings • Consideration of alternative explanations for observed results: - Impact of data censoring • Generalizability of conclusions: - Relevant populations - Treatment variations - Dependent (outcome) variables - Research designs • General limitations (including assessment of the quality of studies included) • Implications and interpretation for theory, policy, or practice • Guidelines for future research

Note: *The item was addressed in Method chapter. **Because the study also conducts a systematic review, the items were not addressed in the introduction and literature review.

Appendix C. Coding Sheet

Part I.

1. Title of the article:

2. Authors(s)' name (Write in)
   (1)
   (2)
   (3)
   (4)
   (5)
   (6)

3. Publication name (Write in the name of a journal or conference)

4. Year of Publication (Write in)

5. Publication form
- ❍ Journal
- ❍ Full published conference proceedings
- ❍ Abstract form of conference proceedings
- ❍ Dissertation or master's thesis
- ❍ Other (write in) _____

[6-9] Please use the following definition for engagement.

> "Engagement" is here defined as turning on a prospect to a brand idea in an advertising message enhanced by the surrounding context (i.e., influence of media environment (programs, editorial etc.) on advertising effectiveness) as represented by "media engagement," "context effect," "vehicle effect," "source effects," "program involvement," "media involvement," and "priming."

6. Is an explicit label used to denote the engagement effect as defined above?
- ❍ Yes
- ❍ Not provided/ not defined (Go to Q10)

7. What is the label (Check all that apply)?
- ❑ Media engagement
- ❑ Context effect
- ❑ Vehicle effect
- ❑ (Vehicle) Source effects
- ❑ Program involvement
- ❑ Media involvement
- ❑ Priming
- ❑ Other (Write in) _____

8. Referring back to Q7, is the definition provided? (Consider only explicitly stated definitions. For example, "X is defined as Y" "X refers to Y.")
- ❍ Yes
- ❍ Not provided/ not defined (Go to Q10)

9. Write in definition(s) (Include the label.)
(1)
(2)
(3)
(4)
(5)
(6)

10. Is theory/theories explicitly named as foundation to explain the engagement effect? (e.g., theories such as "XX theory," or "theory of XX," "XX frameworks," "XX models," and "XX effects"):
- ❍ Yes
- ❍ No (Go to Q12)

11. Name the theories.
(1)
(2)
(3)
(4)
(5)
(6)

12-1. Was the engagement effect measured explicitly*?
- ❍ Yes
- ❍ No (Go to Q12-3)

*Note: It would be "explicit" when engagement is mentioned as variable of a study.

12-2. Does the article examine engagement as a variable (e.g., relationship and/or effect) by:
- ❍ Media only (Reactions to media only)
- ❍ Advertising in media (Reactions to ad in various media types)
- ❍ Both media and advertising in media (Reactions to both media and ad in various media types)

12-3. Empirical data reported*
- ❍ Qualitative data**
- ❍ Quantitative data***
- ❍ Both qualitative & quantitative data
- ❍ Not reported (Stop Coding)

*Empirical data: The data are derived from objective observation or experimentation. On the other hand, non-empirical is when the condition above is not met, code as "Not reported." Usually, (literature) review or theory pieces do not report empirical data.

**Qualitative data: The data are derived usually from Interviews, focus groups, case study, critical analysis, ethnography, discourse analysis, textual analysis, historical analysis, rhetorical analysis, reception analysis, and etc.

***Quantitative data: The data are derived usually from survey, experiment, secondary analysis, and content analysis.

Part II.

Note: Often you will encounter articles with a series of studies (e.g., study 1, study 2, study 3) to test engagement effect. At the end of the Part III (Q45), you will be asked to indicate whether there are other studies such as study 2, study 3, study 4, and etc. If you find more than 1 study, you will be asked to fill out a full sequence of Part II and III questions for each study. In order to identify the study and hypothesis that you are coding, you will be asked to specify the study number in Q13.

13. Specify the study number
- ❍ Study 1
- ❍ Study 2
- ❍ Study 3
- ❍ Study 4
- ❍ Study 5
- ❍ Study 6
- ❍ Study 7

14. Method Type (Check all that apply).
- ❑ Experiment (if you selected this method, answer Q15-a, 15-b, 15-c, 15-d, & 15-e)
- ❑ Survey
- ❑ Secondary data analysis
- ❑ Content analysis
- ❑ Meta-analysis
- ❑ Interviews
- ❑ Focus group
- ❑ Critical analysis
- ❑ Ethnography
- ❑ Textual Analysis
- ❑ Other (write in) _____

15-a. Types of experiments (Answer if you selected "field/lab experiments" in Q14)
- ❍ Field experiment (experiments conducted in natural events or settings closer to everyday life experiences)
- ❍ Laboratory experiment (e.g., experiments conducted with college students as participants)
- ❍ Not specified

15-b. Types of experimental design (Answer if you selected "field/lab experiments" in Q14)
- ❍ Within-subject design (uses the same subjects with every condition of the research)
- ❍ Between-subject design (uses two or more groups of subjects each being tested by a different testing factor simultaneously)
- ❍ Mixed factorial design (uses both the within-subject and between-group designs)
- ❍ Not specified

15-c. Are subjects randomly assigned? (Answer if you selected "field/lab experiments" in Q14)
- ❍ Yes
- ❍ No

15-d. Presence of explicit manipulation check? (Answer if you selected "field/lab experiments" in Q14)
- ❍ Yes
- ❍ No/ Not specified (Go to Q16)

15-e. Outcome of manipulation check (Answer if you selected "field/lab experiments" in Q14)
- ❍ All significant
- ❍ Mixed (some are significant and some are not significant)
- ❍ Not significant

16. Nonexperimental sampling method (Answer if you selected any nonexperimental methods in Q14)
- ❍ Census
- ❍ Random sampling
- ❍ Stratified sampling
- ❍ Cluster sampling
- ❍ Convenience sampling
- ❍ Purposive sampling
- ❍ Quarter sampling

❍ Other (write in) _____
❍ Unclear/ Not specified

17. Where data collected (write in countries):

18. Qualified total final sample size(s):
If there are multiple sample sizes for different method types, please specify both method type and sample size. For example, in a study, if 30 people participated in an interview and 150 participated in a survey, write in "interview: 30" and "survey: 150".

(1)
(2)
(3)
(4)
(5)
(6)
(7)

19. Participants in sample and experimental cells:

1) Student
❍ Yes
❍ No

2) Children (below 18)
❍ Yes
❍ No

3) Adult (both women and men above 18)
❍ Yes
❍ No

4) Women only (18+)
❍ Yes
❍ No

5) Men only (18+)
❍ Yes
❍ No

20. Advertising media (Channels) specified?
❍ Yes
❍ No

21. Types of Advertising media (Channels):

1) TV
❍ Yes
❍ No

2) Radio
❍ Yes
❍ No

3) Newspapers
❍ Yes
❍ No

4) Magazines
- ❍ Yes
- ❍ No

5) Film
- ❍ Yes
- ❍ No

6) Websites
- ❍ Yes
- ❍ No

7) Video games
- ❍ Yes
- ❍ No

8) Hand-held devices
- ❍ Yes
- ❍ No

9) Other (write in)

22. Types of Advertising media Vehicle* (write in):
(1)
(2)
(3)
(4)
(5)
(6)

*Media vehicle indicates a specific TV program, magazine, newspaper such as “60 Minutes,” “Time magazine,” “Wall Street Journal,” etc., which ads are inserted/carried. If media vehicles are not specified in the manuscript except for the characteristics of media vehicle such as "documentary," "sitcom," "funny/sad/happy program etc, write in the characteristics of the program (e.g., "Funny program," "Sad program," etc).

23. Product category that advertised (Write in):
(1)
(2)
(3)
(4)
(5)
(6)

[24-25] Note: Real brands or real ads refer to the cases when they were known by research participants, whereas fictitious brands and ads are unknown by the research participants. Thus, search for information such as if manuscript authors mentioned that they used real ads or brands known by the recipients for real ads (real brands or real ads) or brands or ads were modified and brand names were created (fictitious brands and fictitious ads). When authors did not mention what types of ads or brands, mark on “No brand used/Not specified)

24. Brand-specific:
- ❍ All real brands
- ❍ All fictitious brands
- ❍ Some are real and some are fictitious brand
- ❍ No brand used/ Not specified

25. Types of ads?
- ❍ All real ads
- ❍ All fictitious ads
- ❍ Both real ads and fictitious ads
- ❍ Unclear/ Not specified

Part III.

[26-28] Direction: Now that many articles test a series of hypotheses and measure relationships among variables, code the following section as much as you need (i.e., each relationship between one DV and one IV, interaction effect, different hypotheses/RQs related to "engagement" effects). Answer the following questions for the first hypothesis and the first relationship first. Then repeat this part for the next relationship and hypothesis.

26. Hypothesis/Research Question (RQ) used:
- ❍ Hypothesis
- ❍ RQ
- ❍ Neither hypothesis nor RQ

27. Specify hypothesis/RQ number (For example, if you are coding hypothesis 1, enter "1"; and if you are coding hypothesis 2a, enter "2a".)

28. Write in the hypothesis/RQ:

[Q29-Q45] Following questions are based on the relationship between variables. Please select 1 relationship between variables (e.g., one IV (& possibly 1 moderator) and one DV; a correlational relationship between 2 variables). Since relationship between variables can be examined as a dependence technique[*] and an interdependence technique[**], specify the type of variable (i.e., IV, DV) if it is a dependence relationship, and N/A for interdependence relationship. In addition, one hypothesis may be tested using several IVs and DVs. In that case, repeat the Q33-45. Please select a relationship presented in order in the Result section.

[*]**Dependence: defined as one in which a variable or set of variables is identified as the dependent variable to be predicted or explained by other variables known as independent variables. Examples are ANOVA, Regression, etc.**

[**]**Interdependence: one in which no single variable or group of variables is defined as being independent or dependent. Examples are factor analysis, cluster analysis, and correlation, etc.**

29-a. Variable 1 of the hypothesis/RQ (if not specified, leave it blank)
Name variable:
Specify type of variable (IV, DV, etc):
# of items (indicators)[*]:
Reliability (e.g., Cronbach's alpha):
# of levels (if nominal variable)[**]:
Specify the levels (e.g., high/ low involvement):

29-b. Variable 2 of the hypothesis/RQ
Name variable:
Specify type of variable (IV, DV, etc):
# of items (indicators)[*]:
Reliability (e.g., Cronbach's alpha):
# of levels (if nominal variable)[**]:
Specify the levels (e.g., high/ low involvement):

30-a. Is there an interaction effect testing this hypothesis/RQ?

❍ Yes
❍ No (Go to Q35)

30-b. Write in the additional variable (e.g., moderator, covariate) of the hypothesis/RQ

Name variable:
# of items (indicators)*:
Reliability (e.g., Cronbach's alpha):
# of levels (if nominal variable)**:
Specify the levels (e.g., high/ low involvement):

Note:
*# of items or indicators: Number of observations for a variable. For example, some study will ask respondents/subjects to assess dependent variable, brand attitude, by three-item (indicator) seven-point scales anchored by the phrases "good-bad," "like-dislike," and "favorable-unfavorable." Some study will assess the same dependent variable, brand attitude, by one item (indicator) seven-point scale. Write in the number of scale items. However, it is not reported, leave it blank.
**Levels of nominal variable: attributes composing variable. For example, gender is composed of the attributes feminine and masculine and thus it has 2 levels.

[Reported Statistics]
Direction: Please write in all reported statistics to test the hypothesis written in Q28. If not reported, leave it blank.

For example, when reported statistics are:
x2(2) =.051, p = .975, Chi-Square (x2) is ".051", significance level is ".975".
t(52) = 2.09, p =.01, t statistic is "2.09", df1 is "1", df2 is "52", significance level is ".01".
F(1,52) = 4.33, p < .05, F statistic is "4.33", df1 is "1", df2 is "52", significance level is "<.05".

[Q31-43]
If the IV(s) and DV have a main effect, simply write all reported statistics under condition 1.
However, if you have an interaction effect, specify each condition. For example, you may have high involvement condition vs. low involvement condition. In this case, write *high involvement* for condition 1 and *low involvement* for condition 2, and write all reported statistics for each condition. If you have condition 3 & 4, report them as well.

Condition 1
31. correlation coefficient (r):
32. Chi-Square:
33. t statistic:
34. F statistic:
35. df (df1 or between group df or numerator df):
36. df2 (within-groups df):
37. Beta coefficients:
38. Means (Standard Deviation) of the cell:
39. Significance level:
40. Other (Write in & outcome of the analysis):

Condition 2
31. correlation coefficient (r):
32. Chi-Square:
33. t statistic:
34. F statistic:
35. df (df1 or between group df or numerator df):
36. df2 (within-groups df):
37. Beta coefficients:
38. Means (Standard Deviation) of the cell:

39. Significance level:
40. Other (Write in & outcome of the analysis):

Condition 3

31. correlation coefficient (r):
32. Chi-Square:
33. t statistic:
34. F statistic:
35. df (df1 or between group df or numerator df):
36. df2 (within-groups df):
37. Beta coefficients:
38. Means (Standard Deviation) of the cell:
39. Significance level:
40. Other (Write in & outcome of the analysis):

Condition 4

31. correlation coefficient (r):
32. Chi-Square:
33. t statistic:
34. F statistic:
35. df (df1 or between group df or numerator df):
36. df2 (within-groups df):
37. Beta coefficients:
38. Means (Standard Deviation) of the cell:
39. Significance level:
40. Other (Write in & outcome of the analysis):

41. Is there another relationship between IV(s) and DV(s) (or interaction effects) examined to test the current hypothesis/research question?

- ❍ Yes (Start coding from Q29-a)
- ❍ No

42. Hypothesis Outcome based on authors' definition [Answer if you selected hypothesis in Q26]:

- ❍ Supported
- ❍ Partially supported
- ❍ Not supported
- ❍ Cannot determine

43. Findings/ outcome of Hypothesis/RQ:

44. Is there another hypothesis/research question to test engagement effect?

- ❍ Yes (Start coding from Q26)
- ❍ No

45. Is there another study – study 2, study 3, study 4, etc. – to test engagement effect?

- ❍ Yes (Start coding from Q13)
- ❍ No

46. Nature of Engagement Effects (Choose all that apply)

- ☐ Engagement is found to increase effectiveness of advertising
- ☐ Engagement is found to decrease effectiveness of advertising
- ☐ Engagement is found not to affect the effectiveness of advertising
- ☐ Cannot determine
- ☐ Other (write in) _____

Appendix D. Formula for Calculating Effect Size and Correcting Attenuation Effect

*Note: When cell sample sizes were not explicitly mentioned in the manuscript, sample sizes for experiments were projected from the final total sample sizes by equally dividing by the number of cells examined.

1. When the independent variable was binary but the dependent variable was continuous:

1-1. First, a point-biserial correlation (pbs r) coefficient was calculated

- When means and standard deviations were reported using Hedge's g (Rosenthal, 1991):

  $r_{pbs} = \sqrt{\frac{g^2 \times n_1 \times n_2}{(g^2 \times n_1 \times n_2) + (n_1 \times n_2) \times df (= n_1 + n_2 - 1)}}$

  where g is Hedge's g, and n is the sample size for each group.

  - $\text{Hedges g} = \frac{\Delta mean1 - \Delta mean2}{Pooled\ SD}$

- When t/F but no standard deviation was reported (Lipsey & Wilson 2001, p. 201):

  $r_{pbs} = \sqrt{\frac{t^2}{(t^2) + df (= n_1 + n_2 - 2)}}$

  Note: As for the direction, + or – of the t statistic was used. As for F statistics, the primary investigator went back to the manuscript and searched for additional information to identify the direction of the effect size.

1-2. Then, pbs r was adjusted to a biserial correlation (r_b) (MacCallum et al., 2002)

$r_b = r_{pbs} \times (\frac{\sqrt{pq}}{h})$

where p and q are the proportions of the population above and below the point of dichotomization, and h is the ordinate of the normal curve at that same point.

2. When both the independent variable and the dependent variable were binary (Kubinger, 2003)

$$\text{Tetrachoric r} = \cos \frac{180°}{(1 + \sqrt{\frac{bc}{ad}})}$$

3. Correction of attenuating effects of measurement error on estimates of effect size and sampling error (Spearman, 1904) (Lipsey & Wilson, 2001), when ES'_r and SE' are reliability-corrected correlations prior to Fisher's Zr transformation and the standard error of the adjusted effect size; ESr and SE are the observed effect size and the standard error for the unadjusted effect size; r_{xx} and r_{yy} are reliability (i.e., Cronbach's alpha) for each independent variable X and dependent variable Y respectively. **If more than 1 Cronbach's alpha are reported (e.g., alpha for different media types), the alpha values are averaged.

- When the variable is the dependent variable upon which the two groups are contrasted

  $ES'_r = \frac{ES_r}{\sqrt{r_{yy}}}$ $SE' = \frac{SE}{\sqrt{r_{yy}}}$

- When wanting to adjust both independent and dependent variables

  $ES'_r = \frac{ES_r}{\sqrt{r_{xx}r_{yy}}}$ $SE' = \frac{SE}{\sqrt{r_{xx}r_{yy}}}$

4. Fisher's Zr transformation formula (Rosenthal 1991)

   Fisher's Zr = $.5 \times \ln\frac{(1+r_p)}{(1-r_p)}$

   which is approximately normally distributed with mean z (r_p = population correlation coefficient) and inverse variance is n-3.

5. Confidence intervals (CIs) calculating formula (Lipsey & Wilson, 2001, p 114-115)

- 95% CI around the mean effect size = mean ES ± $Z \times SE_{ES}$

  which Z is the critical value (1.96 for 95% confidence interval), and

  $SE_{ES} = \sqrt{\frac{1}{\Sigma W}}$ (w is the inverse variance weight associated with effect size [Hedges & Olkin, 1985]).

6. Homogeneity test

- Q statistic $Q = \Sigma\,(w \times ES^2) - \frac{[\Sigma(w \times ES)]^2}{\Sigma w}$

  where w is the inverse variance weight and ES is the effect sizes (Hedges & Olkin, 1985).

- $I^2 = \frac{100\% \times (Q - df)}{Q}$

  where Q is Cochran's heterogeneity statistic and *df* is the degrees of freedom (Higgins et al., 2003).

Appendix E. Theories Named in Media Engagement Studies (Cited Less than 3)

Theories	Frequency
Appraisal Theory	2
Balance Theory	2
Categorization Theory	2
Cognitive Neoassociation Theory	2
Cultivation Effect/Theory	2
Effects of Telepresence	2
Emotion Theory	2
Framing Theory	2
Halo Effect	2
Heuristic-Systematic Model	2
Information Processing Model	2
Intensity (arousal) theory	2
Interference Theory	2
Mood Management Theory	2
Mood-Consistency Effect	2
Multiple Resource Theory	2
Persuasion Knowledge Model	2
Schema Congruity Theory	2
Selective Exposure Hypothesis/Theory	2
Social Judgment Theory	2
Spreading Activation Model/Theory	2
Structural Theory of Attitude	2
Theory of Construct Accessibility	2
Thought Disruption Hypothesis	2
Transfer Theory	2
Transportation Theory/Effect	2
Two-factor Theories of Emotion	2
Adaptation Level Theory	1
Action Decrement Theory	1
Activation Model of Information Exposure	1
Activation Models of Semantic Memory	1
Activation Theory	1
Ad Literacy Theory	1
Advertising Schema Framework/ Sponsorship Schema Framework	1
Instrumental Media Uses and Effects Model	1

Theories	Frequency
ARF Model	1
Associative Learning Theory	1
Attention Allocation Theory	1
Attentional Inertia	1
Audience Activity-Based Model of Channel Changing	1
Behavioral Modeling Effects	1
Brand Equity Model	1
Classificatory Model of Context Effects	1
"Closure" Theory	1
Cognitive Dissonance Theory	1
Cognitive Effect	1
Cognitive Response Model	1
Context-Induced Mood Effects	1
Context-Induced Mood Effects	1
Cue-Utilization Theory	1
Damasio's Somaticmarker Theory	1
Demand Effect	1
Displacement Effects	1
Divergent Processing Model	1
Drive Reduction Theory	1
Dual Coding Theory	1
Dual Mode Model	1
Dual-Motivational Theory	1
Effects of Thematic Incongruence	1
"Efficient Frontier" Model	1
Emotion Appraisal Theory	1
Impairment Effect	1
Implicit Memory Effect	1
Information Interaction	1
Innerscope Brand Immersion Model	1
"Interesting and Involving" Theory	1
Inverted U Theory	1
Magnifier Effect	1
"The Medium is the Message" Theory	1
Memory-Affect-Cognition (MAC) Model, Ambler's Model.	1
Memory-Surrounding Effects of Surrounding Program Environment	1

Theories	Frequency
Model of Political Preference Formation	1
Mood (Feeling)-As Input Hypothesis	1
Mood Misattribution Theory	1
Mood-Cognition Theory	1
Optimal Complexity Theory	1
Overload Effect	1
Parallel Processing Theory	1
Perception Theory	1
Play Theory	1
Preference Matrix Model	1
Presence (i.e., Sense of "Being There") Theory	1
Primacy Effect	1
Processing Efficiency Principle	1
Program Elaboration Effect	1
Recency Effect	1
Relevance-Accessibility Model	1
Schema Incongruent Effect	1
Serial Position Effect	1
Simple Affect-Referral or Classical-Conditioning Effects	1
Soap Opera Cultivation Effect	1
Social Identity Theory	1
Social Learning Theory	1
Social Reality Theory	1
Sponsorship Effect	1
Stimulus-Seeking Theory	1
General Aggression Model	1
Theory of Affect-Dependent Stimulus Arrangement	1
Theory of Automatic vs. Strategic Processing	1
Theory of Information Relevancy	1
Theory of Matching Activation	1
Theory of Public Opinion Formation	1
Theory of Reasoned Action	1
Theory of Selective Attention	1
Theory of Working Memory and Cognitive Load	1
Traditional Persuasion Models	1
Von Restorff Effect	1

Appendix F. Sample Characteristics of Total Effect Sizes

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Aaker & Brown (1972)	Survey 256 women Magazine	Vehicle types (prestige vs. expert)	Performance of ads (expected price)	***	.13	.06	.00	.25
		Vehicle types (prestige vs. expert)	Performance of ads (expected price)	Image ads	.16	.09	-.01	.34
		Vehicle types (prestige vs. expert)	Performance of ads (expected price)	Reason-why ads	.10	.09	-.08	.27
		Vehicle types (prestige vs. expert)	Performance of ads (expected price)	Nonuser case (user condition not reported)	.00	.09	-.19	.18
		Vehicle types (prestige vs. expert)	Performance of ads (expected price)	Nonusers & in image ads ***	.18	.13	-.08	.43
		Vehicle types (prestige vs. expert)	Performance of ads (expected price)	Nonusers & in reason-why ads***	-.22	.14	-.50	.05
		Vehicle types (prestige vs. expert)	Performance of ads (quality of product)	***	.15	.06	.02	.27
		Vehicle types (prestige vs. expert)	Performance of ads (quality of product)	Image ads	.15	.09	-.02	.33
		Vehicle types (prestige vs. expert)	Performance of ads (quality of product)	Reason-why ads	.17	.09	.00	.35
		Vehicle types (prestige vs. expert)	Performance of ads (quality of product)	Nonuser case (user condition not reported)	.19	.09	.01	.38
		Vehicle types (prestige vs. expert)	Performance of ads (quality of product)	Nonusers & in image ads***	.31	.13	.07	.58
		Vehicle types (prestige vs. expert)	Performance of ads (quality of product)	Nonusers & in reason-why ads***	.09	.14	-.19	.36
		Vehicle types (prestige vs. expert)	Performance of ads (reliability of product)	***	.01	.06	-.12	.13
		Vehicle types (prestige vs. expert)	Performance of ads (reliability of product)	Image ads	-.01	.09	-.18	.17
		Vehicle types (prestige vs. expert)	Performance of ads (reliability of product)	Reason-why ads	.03	.09	-.14	.21
		Vehicle types (prestige vs. expert)	Performance of ads (reliability of product)	Nonuser case (user condition not reported)	.01	.09	-.17	.20
		Vehicle types (prestige vs. expert)	Performance of ads (reliability of product)	Nonusers & in image ads***	.36	.13	.12	.63
		Vehicle types (prestige vs. expert)	Performance of ads (reliability of product)	Nonusers & in reason-why ads***	-.20	.14	-.48	.08
		Vehicle types (prestige vs. expert)	Performance of ads (believability)	***	.01	.06	-.12	.13
		Vehicle types (prestige vs. expert)	Performance of ads (believability)	Image ads	.08	.09	-.09	.26
		Vehicle types (prestige vs. expert)	Performance of ads (believability)	Reason-why ads	-.07	.09	-.25	.10
		Vehicle types (prestige vs. expert)	Performance of ads (informativeness)	***	.00	.06	-.12	.12
		Vehicle types (prestige vs. expert)	Performance of ads (informativeness)	Image ads	-.02	.09	-.19	.16
		Vehicle types (prestige vs. expert)	Performance of ads (informativeness)	Reason-why ads	.02	.09	-.16	.19
		Vehicle types (prestige vs. expert)	Performance of ads (live up to claims)	***	.03	.06	-.10	.15
		Vehicle types (prestige vs. expert)	Performance of ads (live up to claims)	Image ads	.03	.09	-.15	.20
		Vehicle types (prestige vs. expert)	Performance of ads (live up to claims)	Reason-why ads	-.03	.09	-.20	.15
Abernethy (1991)	Survey 50 adults Radio	Car radio listening vs. Broadcast listening	Commercial viewing/listening time		.84	.15	.93	1.50
Aiken & Malkewitz (2010)	Experiment 396 students TV	Programming intensity	Ad recall		-.14	.05	-.24	-.04
		Programming intensity	Ad recall (topic)		-.02	.05	-.12	.08
		Programming intensity	Ad recall (setting)		-.20	.05	-.31	-.11
		Programming intensity	Ad recall (brand name)		-.11	.05	-.21	-.02
		Programming intensity	Ad recall (product category)		-.04	.05	-.14	.06

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Programming intensity	Ad recall	Against the war (opponents)	-.02	.05	-.12	.08
		Programming intensity	Ad recall	Supporter of the war	-.16	.05	-.26	-.06
		Level of attitude (weak vs. Strong)	Recall embedded ads	Low intensity (opponent)	.04	.10	-.16	.24
		Level of attitude (weak vs. Strong)	Recall embedded ads	High intensity (opponent)	.05	.10	-.15	.25
		Level of attitude (weak vs. Strong)	Recall embedded ads	Low intensity (proponent)	-.02	.10	-.22	.18
		Level of attitude (weak vs. Strong)	Recall embedded ads	High intensity (proponent)	-.26	.10	-.46	-.06
		Programming intensity	Ad effectiveness		-.02	.05	-.12	.08
		Programming intensity	Product value,		-.04	.05	-.14	.06
		Programming intensity	Product quality		-.09	.05	-.19	.01
		Programming intensity	PI		-.06	.05	-.16	.03
		Programming intensity	Affective connection to the firm		-.01	.05	-.11	.09
Anand & Sternthal (1992)	Experiment 31 students Radio	Program involvement	Brand evaluations	Read ad	.51	.29	-.01	1.14
		Program involvement	Brand evaluations	Sung ad	-.71	.28	-1.44	-.34
Appel (1987)	Interview 1027 women Magazines	Magazine readership	Ad believability	National Enquirer	.40	.03	.36	.48
		Magazine readership	Ad believability	McCall's	.21	.06	.10	.33
		Magazine readership	Ad believability	People	-.03	.05	-.13	.06
		Magazine readership	Ad believability	Reader's digest	-.03	.05	-.13	.06
		National Enquirer readership	Ad believability	McCall's	.36	.06	.26	.49
		National Enquirer readership	Ad believability	People	.29	.05	.21	.40
		National Enquirer readership	Ad believability	Reader's digest	.25	.05	.16	.35
Aylesworth & MacKenzie (1998)	Experiment 199 students Film	Peripheral-cue mood valence	Aad	Positive context-induced mood	.17	.08	.02	.33
		Peripheral-cue mood valence	Aad	Negative context-inducted mood	.24	.08	.09	.40
Bae (1996)	Experiment 104 students Magazine	Magazine credibility	Ab		.41	.10	.24	.64
Barclay, Doub, & McMurtrey, (1965)	Interview 2129 women TV	Day vs. night	Proved recall (unaided)		.00	.02	-.04	.04
		Day vs. night	Proved recall (total)		-.03	.02	-.07	.01
		Spot vs. in-program	Proved recall (unaided)		.21	.02	.17	.25
		Spot vs. in-program	Proved recall (total)		.20	.02	.16	.24
		Program types (situation comedy vs. serial)	Proved recall (unaided)		.13	.06	.01	.25
		Program types (serial vs. quiz/audience participation)	Proved recall (unaided)		.03	.05	-.07	.13
		Program types (situation comedy vs. quiz/audience participation)	Proved recall (unaided)		.10	.05	-.01	.21
		Program types (situation comedy vs. serial)	Proved recall (total)		.15	.06	.03	.27
		Program types (serial vs. quiz/audience participation)	Proved recall (total)		.07	.05	-.03	.17
		Program types (situation comedy vs. quiz/audience participation)	Proved recall (total)		.08	.05	-.03	.19
Bee & Madrigal (2012)	Experiment 168 students TV	Program suspense (control vs. high suspense)	Ad emotion	1st half of the game 1st ad position	.29	.10	.11	.49
		Program suspense (control vs. high suspense)	Ad emotion	1st half of the game 2nd ad position	-.13	.10	-.32	.06
		Program suspense (control vs. high suspense)	Ad emotion	After the game 1st ad position	.42	.10	.26	.65
		Program suspense (control vs. high suspense)	Ad emotion	After the game 2nd ad position	.02	.10	-.17	.21
		Program suspense (control vs. low suspense)	Ad emotion	1st half of the game 1st ad position	-.06	.10	-.25	.14
		Program suspense (control vs. low suspense)	Ad emotion	1st half of the game 2nd ad position	.14	.10	-.05	.33
		Program suspense (control vs. low suspense)	Ad emotion	After the game 1st ad position	.11	.10	-.08	.30

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Program suspense (control vs. low suspense)	Ad emotion	After the game 2nd ad position	.15	.10	-.04	.34
		Program suspense (control vs. high suspense)	Aad	1st half of the game 1st ad position	.12	.10	-.08	.31
		Program suspense (control vs. high suspense)	Aad	1st half of the game 2nd ad position	-.09	.10	-.29	.10
		Program suspense (control vs. high suspense)	Aad	After the game 1st ad position	.26	.10	.07	.46
		Program suspense (control vs. high suspense)	Aad	After the game 2nd ad position	-.05	.10	-.24	.15
		Program suspense (control vs. low suspense)	Aad	1st half of the game 1st ad position	-.04	.10	-.23	.15
		Program suspense (control vs. low suspense)	Aad	1st half of the game 2nd ad position	.08	.10	-.11	.27
		Program suspense (control vs. low suspense)	Aad	After the game 1st ad position	-.07	.10	-.26	.12
		Program suspense (control vs. low suspense)	Aad	After the game 2nd ad position	.07	.10	-.13	.26
		Program suspense (control vs. high suspense)	Ab	1st half of the game 1st ad position	-.18	.10	-.38	.01
		Program suspense (control vs. high suspense)	Ab	1st half of the game 2nd ad position	-.25	.10	-.45	-.07
		Program suspense (control vs. high suspense)	Ab	After the game 1st ad position	.25	.10	.06	.45
		Program suspense (control vs. high suspense)	Ab	After the game 2nd ad position	-.16	.10	-.36	.03
		Program suspense (control vs. low suspense)	Ab	1st half of the game 1st ad position	-.23	.10	-.42	-.04
		Program suspense (control vs. low suspense)	Ab	1st half of the game 2nd ad position	.17	.10	-.02	.36
		Program suspense (control vs. low suspense)	Ab	After the game 1st ad position	-.18	.10	-.38	.00
		Program suspense (control vs. low suspense)	Ab	After the game 2nd ad position	-.08	.10	-.27	.11
Bezjian-Avery et al. (1998)	Experiment 96 adults Websites	Ad format (linear format (e.g., TV) vs. interactive)	Time spent viewing ad		-.27	.10	-.48	-.08
		Ad format (linear format (e.g., TV) vs. interactive)	PI		-30	.10	-.51	-.10
Bhatnager & Fang (2011)	Experiment 88 students Magazine	Self character similarity	Ab	High immersion	-.49	.19	-.91	-.15
		Self character similarity	Ab	Low immersion	.41	.19	.06	.82
		Narrative immersion	Ab	Self-character similar	-.46	.19	-.88	-.13
		Narrative immersion	Ab	Self-character not similar	.46	.19	.12	.87
	Experiment 99 students Magazine	Self character similarity	Unaided brand recall	Immerse condition	.41	.17	.11	.76
		Self character similarity	Unaided brand recall	No immerse condition	-.35	.17	-.69	-.04
		Self character similarity	Aided brand recall	Immerse condition	.42	.17	.13	.78
		Self character similarity	Aided brand recall	No immerse condition	-.24	.17	-.57	.09
Braun & Pfleiderer (2003)	Survey 872 adults Magazine	Flow experiences vs. Not	Ad recognition		.27	.03	.21	.34
Bronner & Neijens (2006)	Survey/interview 1000 adults TV, radio, newspaper, magazines, film, websites, mail free local papers	Media experience (TV)	Ad experience (information)		.10	.03	.04	.16
		Media experience (Radio)	Ad experience (information)		.38	.03	.34	.46
		Media experience (Newspaper)	Ad experience (information)		.25	.03	.19	.32
		Media experience (Magazine)	Ad experience (information)		.40	.03	.36	.49
		Media experience (Internet)	Ad experience (information)		.08	.03	.02	.14
		Media experience (Free local news)	Ad experience (information)		.36	.03	.31	.44
		Media experience (Cinema)	Ad experience (information)		.30	.03	.25	.37
		Media experience (Mail)	Ad experience (information)		.30	.03	.25	.37

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Media experience (TV)	Ad experience (transformation)		.00	.03	-.06	.06
		Media experience (Radio)	Ad experience (transformation)		.16	.03	.10	.22
		Media experience (Newspaper)	Ad experience (transformation)		.18	.03	.12	.24
		Media experience (Magazine)	Ad experience (transformation)		.16	.03	.10	.22
		Media experience (Internet)	Ad experience (transformation)		-.19	.03	-.25	-.13
		Media experience (Free local news)	Ad experience (transformation)		.27	.03	.21	.34
		Media experience (Cinema)	Ad experience (transformation)		.22	.03	.16	.29
		Media experience (Mail)	Ad experience (transformation)		.25	.03	.19	.32
		Media experience (TV)	Ad experience (negative emotion/irritation)		-.04	.03	-.10	.02
		Media experience (Radio)	Ad experience (negative emotion/irritation)		.17	.03	.11	.23
		Media experience (Newspaper)	Ad experience (negative emotion/irritation)		.18	.03	.12	.24
		Media experience (Magazine)	Ad experience (negative emotion/irritation)		.16	.03	.10	.22
		Media experience (Internet)	Ad experience (negative emotion/irritation)		-.09	.03	-.15	-.03
		Media experience (Free local news)	Ad experience (negative emotion/irritation)		.25	.03	.19	.32
		Media experience (Cinema)	Ad experience (negative emotion/irritation)		-.01	.03	-.07	.05
		Media experience (Mail)	Ad experience (negative emotion/irritation)		.44	.03	.41	.53
		Media experience (TV)	Ad experience (stimulation)		.36	.03	.31	.44
		Media experience (Radio)	Ad experience (stimulation)		.29	.03	.24	.36
		Media experience (Newspaper)	Ad experience (stimulation)		.28	.03	.23	.35
		Media experience (Magazine)	Ad experience (stimulation)		.37	.03	.33	.45
		Media experience (Internet)	Ad experience (stimulation)		.48	.03	.46	.59
		Media experience (Free local news)	Advertising experience (stimulation)		.18	.03	.12	.24
		Media experience (Cinema)	Advertising experience (stimulation)		.18	.03	.12	.24
		Media experience (Mail)	Advertising experience (stimulation)		.24	.03	.18	.31
		Media experience (TV)	Advertising experience (usefulness)		.00	.03	-.06	.06
		Media experience (Newspaper)	Advertising experience (usefulness)		.38	.03	.34	.46
		Media experience (Magazine)	Advertising experience (usefulness)		.27	.03	.21	.34
		Media experience (Internet)	Advertising experience (usefulness)		.61	.03	.65	.77
		Media experience (Free local news)	Advertising experience (usefulness)		.51	.03	.50	.62
		Media experience (Mail)	Advertising experience (usefulness)		.49	.03	.47	.60
Bushman (1998)	Experiment 200 students TV/video tape	Television violence	Brand name recall		-.24	.07	-.39	-.11
		Television violence	Commercial message recall		-.29	.07	-.44	-.16
	Experiment 200 students TV/video tape	Television violence	Brand name recognition		-.22	.07	-.37	-.09
		Television violence	Brand name recall		-.34	.07	-.49	-.21
		Television violence	Commercial message recall		-.16	.07	-.30	-.02

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
	Experiment	Television violence	Brand name recognition		-.17	.06	-.28	-.06
	320 students	Television violence	Brand name recall		-.15	.06	-.26	-.04
	TV/video tape	Television violence	Commercial message recall		-.17	.06	-.28	-.06
Bushman & Bonacci (2002)	Experiment	Program type (neutral vs. violent)	Immediate free recall		-.30	.07	-.44	-.18
	324 adults							
	TV	Program type (neutral vs. sexual)	Immediate free recall		-.36	.07	-.52	-.25
		Program type (sexual vs. violent)	Immediate free recall		.11	.07	-.02	.25
		Program type (neutral vs. violent)	Immediate recognition		-.25	.07	-.39	-.12
		Program type (neutral vs. sexual)	Immediate recognition		-.35	.07	-.50	-.23
		Program type (sexual vs. violent)	Immediate recognition		.14	.07	.00	.27
		Program type (neutral vs. violent)	Delayed free recall		-.45	.07	-.62	-.35
		Program type (neutral vs. sexual)	Delayed free recall		-.49	.07	-.67	-.40
		Program type (sexual vs. violent)	Delayed free recall		.08	.07	-.06	.21
Bushman (2005)	Experiment	Neutral vs. violent/sexual program)	Coupon choices (Behavior)		-.19	.05	-.30	-.09
	336 adults							
	TV	Neutral vs. violent/sexual program)	PI		-.31	.05	-.43	-.22
		Neutral vs. violent/sexual program)	Brand recall		-.25	.05	-.36	-.14
		Neutral vs. violent/sexual program)	Brand recognition		-.40	.05	-.53	-.31
Calder et al. (2009)	Survey/ experiment	Personal engagement	Ad click intention		.27	.01	.26	.30
		Personal engagement	Aad		.35	.01	.35	.39
	11541 adults	Interactive engagement	Ad click intention		.26	.01	.25	.28
	Website	Interactive engagement	Aad		.33	.01	.33	.36
Cantor & Venus (1980)	Experiment	Context (serious vs. Humor)	Recall of ad content		-.19	.09	-.37	-.01
	117 students							
	Radio							
Cauberghe, Geuens, & De Pelsmacker (2011)	Field experiment	Perceived program interactivity	Aad		.17	.08	.02	.34
	246 adults							
	TV	Program thoughts (positive)	Aad		.12	.07	-.01	.26
		Program thoughts (positive)	Positive ad thought		.34	.06	.23	.48
		Program thoughts (negative)	Aad		-.23	.07	-.36	-.10
		Program thoughts (negative)	Negative ad thought		.26	.06	.14	.39
Chang (2009)	Experiment	Editorial types (fact-based vs. narrative-based editorial)	Narrative ad transportation	Narrative ad	-.41	.11	-.66	-.21
	195 students							
	Magazines	Editorial types (fact-based vs. narrative-based editorial)	Degree of being hooked	Narrative ad	-.29	.12	-.53	-.07
		Editorial types (fact-based vs. narrative-based editorial)	Empathy evoked by exposure	Narrative ad	-.27	.11	-.50	-.06
		Editorial types (fact-based vs. narrative-based editorial)	Aad	Strong ad message	-.27	.11	-.49	-.07
		Editorial types (fact-based vs. narrative-based editorial)	Aad	Weak ad message	.21	.11	.00	.42
		Editorial types (fact-based vs. narrative-based editorial)	Ab	Strong ad message	-.20	.11	-.42	.02
		Editorial types (fact-based vs. narrative-based editorial)	Ab	Weak ad message	.21	.11	.00	.43
		Editorial types (fact-based vs. narrative-based editorial)*	Number of ad thoughts	Narrative ad	-.29	.10	-.50	-.10
		Editorial types (fact-based vs. narrative-based editorial)*	Number of ad thoughts	Argument (fact-based) ad	.12	.10	-.09	.32
		Editorial types (fact-based vs. narrative-based editorial)*	Warm feelings	Narrative ad	-.14	.11	-.36	.08
		Editorial types (fact-based vs. narrative-based editorial)*	Warm feelings	Argument (fact-based) ad	.21	.11	.00	.43
		Editorial types (fact-based vs. narrative-based editorial)*	Valenced ad thoughts	Narrative ad	-.15	.10	-.36	.05

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Editorial types (fact-based vs. narrative-based editorial)*	Valenced ad thoughts	Argument (fact-based) ad	.25	.10	.05	.46
		Editorial types (fact-based vs. narrative-based editorial)*	Aad	Narrative ad	-.19	.11	-.40	.02
		Editorial types (fact-based vs. narrative-based editorial)*	Aad	Argument (fact-based) ad	.18	.11	-.03	.39
		Editorial types (fact-based vs. narrative-based editorial)*	Ab	Narrative ad	-.10	.11	-.31	.12
		Editorial types (fact-based vs. narrative-based editorial)*	Ab	Argument (fact-based) ad	.13	.11	-.09	.35
Chang (2011)	Experiment 192 students Magazines	Editorial type (positive affect vs. editorial liking)	Aad	High affect intensity	-.32	.11	-.56	-.11
		Editorial type (positive affect vs. editorial liking)	Aad	Low affect intensity	.20	.11	-.02	.43
		Editorial type (positive affect vs. editorial liking)	Ab	High affect intensity	-.34	.11	-.57	-.13
		Editorial type (positive affect vs. editorial liking)	Ab	Low affect intensity	.10	.11	-.12	.32
	Experiment 80 students Magazines	Editorial type (positive affect vs. negative affect induced by editorial context)	Aad	High in absorption	.50	.19	.18	.91
		Editorial type (positive affect vs. negative affect induced by editorial context)	Aad	Low in absorption	-.19	.18	-.54	.15
		Editorial type (positive affect vs. negative affect induced by editorial context)	Ab	High in absorption	.67	.19	.45	1.17
		Editorial type (positive affect vs. negative affect induced by editorial context)	Ab	Low in absorption	-.33	.18	-.69	.00
	Experiment 255 students Magazine	Editorial-induced affect (positive vs. liking)	Aad	High affect intensity	.13	.09	-.05	.31
		Editorial-induced affect (positive vs. liking)	Aad	Low affect intensity	-.12	.09	-.31	.06
		Editorial-induced affect (positive vs. liking)	Ab	High affect intensity	.07	.10	-.12	.26
		Editorial-induced affect (positive vs. liking)	Ab	Low affect intensity	.15	.10	-.05	.34
		Editorial liking	Aad	High in absorption	.21	.10	.03	.41
		Editorial liking	Aad	Low in absorption	-.15	.09	-.33	.03
		Editorial liking	Ab	High in absorption	.14	.10	-.06	.34
		Editorial liking	Ab	Low in absorption	-.22	.10	-.42	-.04
Celuch & Slama (1993)	Experiment 234 students TV	Program type (cognitive vs. affective)	Ab	Cognitively involving ads	.19	.10	.00	.39
		Program type (cognitive vs. affective)	Ab	Affectively involving ads	.16	.10	-.02	.35
		Program type (cognitive vs. affective)	Overall Aad	Cognitively involving ads	.38	.10	.20	.59
		Program type (cognitive vs. affective)	Overall Aad	Affectively involving ads	.23	.10	.05	.43
		Program type (cognitive vs. affective)	Cognitive Aad	Cognitively involving ads	.42	.10	.26	.65
		Program type (cognitive vs. affective)	Cognitive Aad	Affectively involving ads	.16	.10	-.03	.36
		Program type (cognitive vs. affective)	Affective Aad	Cognitively involving ads	.27	.10	.08	.47
		Program type (cognitive vs. affective)	Affective Aad	Affectively involving ads	.23	.10	.04	.43
Chowdhury, Finn, & Olsen (2007)	Experiment 102 students TV	Presentation type (sequential vs. Simultaneous)	Support arguments	Strong message	-.48	.15	-.81	-.24
		Presentation type (sequential vs. Simultaneous)	Support arguments	Weak message	.09	.14	-.19	.37
		Presentation type (sequential vs. Simultaneous)	Brand evaluations	Strong message	-.37	.15	-.68	-.09

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Presentation type (sequential vs. Simultaneous)	Brand evaluations	Weak message	.15	.15	-.13	.44
		Presentation type (sequential vs. Simultaneous)	Ad-zapping intention		-.27	.10	-.47	-.08
		Presentation type (sequential vs. Simultaneous)	Ad zipping intention		-.23	.10	-.43	-.04
Clancy & Kweskin (1971)	On-air testing 6000 adults TV	Program Attitude (good vs. Very good)	Recall of commercial carried by program		.17	.01	.14	.19
		Program Attitude (poor vs. Very good)	Recall of commercial carried by program		.25	.01	.23	.29
		Program Attitude (poor vs. Good)	Recall of commercial carried by program		.09	.02	.05	.13
Coulter & Sewall (1995)	Experiment 120 students Print	Editorial context involvement	Aad		-.59	.10	-.87	-.47
	Experiment 120 students Print	Editorial context involvement	Aad		-.37	.10	-.57	-.19
Cunningham et al. (2006)	Survey 640 adults TV, Website	Program engagement (least vs. most)	Ad recall		.11	.04	.03	.19
		Program engagement (least vs. most)	Ad liking		.40	.04	.34	.50
		Program engagement (least vs. most)	Intend to visit store	Fashion retail	.14	.05	.05	.24
		Program engagement (control (not seen vs. most)	Intend to visit store	Fashion retail	.38	.05	.30	.51
		Program engagement (control vs. least)	Intend to visit store	Fashion retail	.25	.05	.16	.36
		Program engagement (least vs. most)	Intend to visit store	Mobile technology	.45	.05	.40	.58
		Program engagement (control (not seen vs. most)	Intend to visit store	Mobile technology	.74	.05	.85	1.06
		Program engagement (control vs. least)	Intend to visit store	Mobile technology	.42	.05	.35	.55
		Program engagement (least vs. most)	Intend to visit store	Auto company	.30	.05	.22	.41
		Program engagement (control (not seen vs. most)	Intend to visit store	Auto company	.65	.05	.68	.89
		Program engagement (control vs. least)	Intend to visit store	Auto company	.43	.05	.36	.56
		Program engagement (least vs. most)	Company ratings	Fashion retail	.11	.08	-.05	.27
		Program engagement (control (not seen vs. most)	Company ratings	Fashion retail	.20	.07	.08	.34
		Program engagement (control vs. least)	Company ratings	Fashion retail	.10	.06	-.03	.22
		Program engagement (least vs. most)	Company ratings	Mobile technology	.23	.08	.08	.40
		Program engagement (control (not seen vs. most)	Company ratings	Mobile technology	.38	.07	.27	.53
		Program engagement (control vs. least)	Company ratings	Mobile technology	.16	.06	.04	.29
		Program engagement (least vs. most)	Company ratings	Auto company	.21	.08	.05	.37
		Program engagement (control (not seen vs. most)	Company ratings	Auto company	.38	.07	.28	.54
		Program engagement (control vs. least)	Company ratings	Auto company	.19	.06	.06	.32
Dahlén (2005)	Experiment 589 students Newspaper, elevator	Media type (traditional media vs. congruent media)	Brand Association/ sheltering	Insurance company	.20	.04	.13	.29
		Media type (incongruent media vs. congruent media)	Brand Association/ sheltering	Insurance company	.22	.04	.14	.31
		Media type (incongruent media vs. traditional media)	Brand Association/ sheltering	Insurance company	.06	.04	-.02	.14
		Media type (traditional media vs. congruent media)	Brand association/Necessary	Insurance company	.19	.04	.11	.27

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Media type (incongruent media vs. congruent media)	Brand association/Necessary	Insurance company	.20	.04	.12	.28
		Media type (incongruent media vs. traditional media)	Brand association/Necessary	Insurance company	.05	.04	-.03	.13
		Media type (traditional media vs. congruent media)	Brand association/practical	Insurance company	.19	.04	.11	.27
		Media type (incongruent media vs. congruent media)	Brand association/practical	Insurance company	.19	.04	.11	.27
		Media type (incongruent media vs. traditional media)	Brand association/practical	Insurance company	.04	.04	-.04	.12
		Media type (traditional media vs. congruent media)	Brand association/creative	Insurance company	.34	.04	.28	.44
		Media type (incongruent media vs. congruent media)	Brand association/creative	Insurance company	.23	.04	.15	.31
		Media type (incongruent media vs. traditional media)	Brand association/creative	Insurance company	-.20	.04	-.28	-.12
		Media type (traditional media vs. congruent media)	Brand Association/ uplifting	Energy drink	.17	.04	.10	.26
		Media type (incongruent media vs. congruent media)	Brand Association/ uplifting	Energy drink	.25	.04	.18	.34
		Media type (incongruent media vs. traditional media)	Brand Association/ uplifting	Energy drink	.18	.04	.10	.26
		Media type (traditional media vs. congruent media)	Brand association/ powerful	Energy drink	.27	.04	.20	.36
		Media type (incongruent media vs. congruent media)	Brand association/ powerful	Energy drink	.28	.04	.21	.37
		Media type (incongruent media vs. traditional media)	Brand association/ powerful	Energy drink	.17	.04	.09	.25
		Media type (traditional media vs. congruent media)	Brand association/ fast	Energy drink	.17	.04	.09	.26
		Media type (incongruent media vs. congruent media)	Brand association/ fast	Energy drink	.25	.04	.18	.34
		Media type (incongruent media vs. traditional media)	Brand association/ fast	Energy drink	.15	.04	.07	.23
		Media type (incongruent media vs. traditional media)	Brand association/ cool	Energy drink	.18	.04	.10	.26
		Media type (traditional media vs. congruent media)	Brand association/ cool	Energy drink	.06	.04	-.02	.14
		Media type (incongruent media vs. traditional media)	Brand association/ cool	Energy drink	-.06	.04	-.14	.02
		Media type (traditional media vs. congruent media)	Ad credibility	Insurance company	.29	.08	.14	.47
		Media type (incongruent media vs. congruent media)	Ad credibility	Insurance company	.31	.08	.15	.48
		Media type (incongruent media vs. traditional media)	Ad credibility	Insurance company	.13	.08	-.04	.29
		Media type (traditional media vs. congruent media)	Ad credibility	Energy drink	.28	.08	.13	.45
		Media type (incongruent media vs. congruent media)	Ad credibility	Energy drink	.55	.08	.45	.78
		Media type (incongruent media vs. traditional media)	Ad credibility	Energy drink	.44	.08	.31	.63
		Media type (traditional media vs. congruent media)	Aad	Insurance company	.28	.08	.13	.44
		Media type (incongruent media vs. congruent media)	Aad	Insurance company	.27	.08	.12	.43
		Media type (incongruent media vs. traditional media)	Aad	Insurance company	-.03	.08	-.19	.12
		Media type (traditional media vs. congruent media)	Aad	Insurance company	.33	.08	.19	.50
		Media type (incongruent media vs. congruent media)	Aad	Insurance company	.28	.08	.13	.44
		Media type (incongruent media vs. traditional media)	Aad	Insurance company	-.10	.08	-.25	.06
		Media type (traditional media vs. congruent media)	Ab	Insurance company	.27	.08	.13	.43

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Media type (incongruent media vs. congruent media)	Ab	Insurance company	.27	.08	.13	.43
		Media type (incongruent media vs. traditional media)	Ab	Insurance company	.02	.08	-.13	.17
		Media type (traditional media vs. congruent media)	Ab	Energy drink	.31	.08	.17	.47
		Media type (incongruent media vs. congruent media)	Ab	Energy drink	.30	.08	.16	.46
		Media type (incongruent media vs. traditional media)	Ab	Energy drink	-.01	.08	-.16	.14
Eadie (2007)	Interview 25000 adults Magazine	Magazine engagement	Ad recall		.16	.01	.15	.17
		Magazine engagement	Actions taken		.16	.01	.15	.17
Finch (1987)	Experiment 168 students Magazine	Vehicle credibility (low vs. high vehicle credibility)	Recall	Brand Woolrest	.01	.08	-.14	.17
		Vehicle credibility (low vs. high vehicle credibility)	Recall	Brand Escort	.05	.08	-.11	.20
		Vehicle credibility (low vs. high vehicle credibility)	Acceptance of message arguments	Brand Woolrest	.63	.09	.57	.93
		Vehicle credibility (low vs. high vehicle credibility)	Acceptance of message arguments	Brand Escort	.61	.09	.54	.89
		Vehicle credibility (low vs. high vehicle credibility)	Ad message believability	Brand Woolrest	.49	.08	.38	.69
		Vehicle credibility (low vs. high vehicle credibility)	Aad message believability)	Brand Escort	.52	.08	.42	.73
France & Bone (1998)	Experiment 80 students TV	Pod (1st pod vs. 3rd pod)	Aad	Positive perceptual program	-.09	.17	-.42	.25
		Pod (1st pod vs. 3rd pod)	Aad	Negative perceptual program	-.22	.17	-.55	.11
		Pod (1st pod vs. 3rd pod)	Ab	Positive perceptual program	-.11	.17	-.44	.23
		Pod (1st pod vs. 3rd pod)	Ab	Negative perceptual program	-.27	.17	-.61	.06
		Pod (1st pod vs. 3rd pod)	Aad	Positive perceptual program	-.31	.17	-.66	.01
		Pod (1st pod vs. 3rd pod)	Aad	Negative perceptual program	.85	.17	.92	1.58
		Pod (1st pod vs. 3rd pod)	Ab	Positive perceptual program	.39	.17	.08	.75
		Pod (1st pod vs. 3rd pod)	Ab	Negative perceptual program	.89	.17	1.07	1.74
Freiden (1982)	Experiment 135 students Magazine	High vs. low prestige media vehicle	Product attitude (overall opinion)	***	.10	.09	-.07	.27
		High vs. low prestige media vehicle	Product attitude (perceived price)	***	.08	.09	-.10	.25
		High vs. low prestige media vehicle	PI	***	.01	.09	-.16	.18
		High vs. low prestige media vehicle	Product attitude (overall opinion)	Ordinary Consumer	.19	.16	-.12	.51
		High vs. low prestige media vehicle	Product attitude (overall opinion)	Expert	.03	.14	-.25	.31
		High vs. low prestige media vehicle	Product attitude (overall opinion)	Celebrity	.10	.16	-.22	.42
		High vs. low prestige media vehicle	Product attitude (perceived price)	Ordinary Consumer	-.16	.16	-.48	.15
		High vs. low prestige media vehicle	Product attitude (perceived price)	Expert	.03	.14	-.25	.31
		High vs. low prestige media vehicle	Product attitude (perceived price)	Celebrity	.30	.16	-.01	.62
		High vs. low prestige media vehicle	PI	Ordinary Consumer	-.32	.16	-.65	-.02
		High vs. low prestige media vehicle	PI	Expert	.13	.14	-.15	.41
		High vs. low prestige media vehicle	PI	Celebrity	.16	.16	-.16	.47

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Furnham et al. (1998)	Experiment 92 adolescents TV	Program type (humor)	Free recall		-.30	.11	-.51	-.10
		Program type (humor)	Product recognition		-.49	.11	-.74	-.33
		Program type (humor)	Brand recognition		-.38	.11	-.60	-.19
		Program type (humor)	Global recall		-.32	.11	-.54	-.12
		Program type (humor)	Global recognition		-.54	.11	-.81	-.40
		Program type (humor)	Global memory**		-.44	.11	-.68	-.27
Gallagher et al., (2001)	Experiment 85 students Websites	Medium (print vs. web)	Number of products listed (unaided recall)	***	-.01	.11	-.22	.21
		Medium (print vs. web)	Number of brands listed (unaided recall)	***	-.06	.11	-.27	.16
		Medium (print vs. web)	Product class unaided recall	Coffee shop ad	-.29	.28	-.84	.25
		Medium (print vs. web)	Product class unaided recall	Craft store ad	.08	.28	-.47	.62
		Medium (print vs. web)	Product class unaided recall	Boat tours	.49	.28	-.01	1.08
		Medium (print vs. web)	Product class unaided recall	Art galleries	-.24	.28	-.79	.30
		Medium (print vs. web)	Product class unaided recall	Parks	-.13	.28	-.68	.41
		Medium (print vs. web)	Brand unaided recall	Caribou coffee	.04	.28	-.50	.58
		Medium (print vs. web)	Brand unaided recall	Blueberry Hill craft store	-.22	.28	-.77	.32
		Medium (print vs. web)	Brand unaided recall	J&B boat tours	.28	.28	-.26	.83
		Medium (print vs. web)	Brand unaided recall	AGNL art gallery	-.46	.28	-1.04	.05
		Medium (print vs. web)	Brand unaided recall	Memorial botanical garden	-.21	.28	-.75	.33
		Medium (print vs. web)	Interest in the ad	Coffee shop ad	.03	.28	-.52	.57
		Medium (print vs. web)	Number of copy points recalled	Coffee shop ad	.28	.28	-.25	.83
		Medium (print vs. web)	Interest in the ad	Craft store ad	-.14	.28	-.68	.40
		Medium (print vs. web)	Number of copy points recalled	Craft store ad	.13	.28	-.42	.67
Gardner & Wilhelm (1987)	Experiment 220 students Print	Context-induced mood (negative vs. positive)	Ad evaluations		.12	.07	-.03	.26
		Context-induced mood (negative vs. positive)	Brand evaluations		.21	.07	.07	.36
		Context-induced mood (negative vs. positive)*	Ad affect	Positive ad appeal	.40	.11	.21	.63
		Context-induced mood (negative vs. positive)*	Ad affect	Negative ad appeal	-.08	.10	-.28	.13
		Context-induced mood (negative vs. positive)*	Affect toward the advertised brand	Positive ad appeal	.39	.11	.20	.63
		Context-induced mood (negative vs. positive)*	Affect toward the advertised brand	Negative ad appeal	-.04	.11	-.25	.17
Goldberg & Gorn (1987)	Experiment 160 students TV	Mood induced by program (happy)	Positive commercial thoughts		.81	.08	.97	1.29
		Mood induced by program (happy)	Negative commercial thoughts		-.51	.08	-.73	-.40
Grigorovici & Constantin (2004)	Experiment 144 students Online video game	Secondary task reaction time (measure of processing time)	Brand recall		-.06	.08	-.23	.10
		Secondary task reaction time (measure of processing time)	Brand recognition (car)		-.12	.08	-.29	.04
		Secondary task reaction time (measure of processing time)	Brand recognition (soda)		-.13	.08	-.30	.03
Gunter et al. (1997)	Experiment 129 students TV	Program rating (Liking)	Free recall		-.15	.09	-.33	.02
		Program rating (Liking)	Cued recall		-.26	.09	-.44	-.09
		Program rating (credible)	Free recall		-.16	.09	-.34	.01
		Program rating (credible)	Cued recall		-.18	.09	-.36	-.01
		Program rating (pleasant)	Free recall		-.01	.09	-.18	.16
		Program rating (pleasant)	Cued recall		.04	.09	-.13	.21
		Program rating (contemporary)	Free recall		-.20	.09	-.38	-.03
		Program rating (contemporary)	Cued recall		-.06	.09	-.23	.11
		Program rating (affective Involvement)	Free recall		-.16	.09	-.34	.01
		Program rating (affective involvement)	Cued recall		-.21	.09	-.39	-.04

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Gunter, Furnham, & Frost (1994)	Experiment 66 children TV	Program types (sitcom vs. drama)	Free recall of the ad		-.14	.16	-.45	.17
		Program types (sitcom vs. news)	Free recall of the ad		-.12	.16	-.43	.19
		Program types (news vs. drama)	Free recall of the ad		-.02	.16	-.33	.28
		Program types (sitcom vs. drama)	Cued recall of the ad		-.49	.16	-.85	-.23
		Program types (sitcom vs. news)	Cued recall of the ad		-.19	.16	-.50	.11
		Program types (news vs. drama)	Cued recall of the ad		-.36	.16	-.68	-.07
		Program rating (liking)	Free recall		-.07	.13	-.32	.18
		Program rating (liking)	Cued recall		-.18	.13	-.43	.06
		Program rating (affective involvement)	Free recall		.21	.13	-.03	.46
		Program rating (affective involvement)	Cued recall		.26	.13	.02	.51
		Program rating (personal impact)	Free recall		.02	.13	-.23	.27
		Program rating (personal impact)	Cued recall		-.07	.13	-.32	.18
		Program rating (credibility)	Free recall		.04	.13	-.21	.29
		Program rating (credibility)	Cued recall		-.03	.13	-.28	.22
		Program rating (appeal)	Free recall		-.03	.13	-.28	.22
		Program rating (appeal)	Cued recall		-.17	.13	-.42	.08
		Program rating (contemporaneity)	Free recall		.16	.13	-.09	.41
		Program rating (contemporaneity)	Cued recall		.13	.13	-.12	.38
		Program rating (pleasant)	Free recall		.04	.13	-.21	.29
		Program rating (pleasant)	Cued recall		.02	.13	-.23	.27
Gunter et al. (2002)	Experiment 56 children TV	Cartoon program vs. noncartoon program*	Free recall of ad contents	Non-cartoon ads	.75	.21	.57	1.39
		Cartoon program vs. noncartoon program*	Free recall of ad contents	Cartoon ads	.00	.19	-.38	.38
		Cartoon program vs. noncartoon program*	Cued recall of ad contents	Non-cartoon ads	.72	.21	.50	1.32
		Cartoon program vs. noncartoon program*	Cued recall of ad contents	Cartoon ads	-.28	.19	-.66	.09
		Cartoon program vs. noncartoon program*	Brand recognition	Non-cartoon ads	.83	.21	.78	1.60
		Cartoon program vs. noncartoon program*	Brand recognition	Cartoon ads	.41	.19	.05	.81
Gunter et al. (2005)	Experiment 80 students Film	Nonviolent vs. violent program*	Free recall	Nonviolent ads (citroen ad)	-.50	.12	-.78	-.31
		Nonviolent vs. violent program*	Free recall	Nonviolent ads (Philips flat screen TV ad)	-.31	.12	-.56	-.08
		Nonviolent vs. violent program *	Brand recognition	Nonviolent ads (citroen ad)	-.30	.12	-.54	-.07
		Nonviolent vs. violent program)*	Brand recognition	Nonviolent ads (Philips flat screen TV ads)	-.29	.12	-.53	-.06
		Nonviolent vs. violent program*	Cued recall	Nonviolent ads (Citroen ad)	-.29	.12	-.53	-.06
		Nonviolent vs. violent program*	Cued recall	Nonviolent ads (Philips Flat Screen TV ad)	-.43	.12	-.70	-.22
		Hostility induced by violent program	Brand recognition	Violent ad	.49	.16	.21	.86
		Hostility induced by violent program	Cued recall	Nonviolent ad1	-.47	.16	-.83	-.19
		Hostility induced by violent program	Cued recall	Nonviolent ad2	-.37	.16	-.71	-.07

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Herrewijn & Poels (2013)	Experiment 99 adults PC Games	Game difficulty level (medium vs. easy)	IGA recognition (REC product)		.32	.13	.08	.58
		Game difficulty level (hard vs. easy)	IGA recognition (REC product)		.68	.13	.59	1.08
		Game difficulty level (hard vs. medium)	IGA recognition (REC product)		.33	.13	.10	.59
		Game difficulty level (medium vs. easy)	IGA recognition (REC brand)		.28	.13	.04	.53
		Game difficulty level (hard vs. easy)	IGA recognition (REC brand)		.55	.13	.38	.87
		Game difficulty level (hard vs. medium)	IGA recognition (REC brand)		.32	.13	.08	.58
		Game difficulty level (medium vs. easy)	IGA recognition (REC billboard)		.35	.13	.12	.62
		Game difficulty level (hard vs. easy)	IGA recognition (REC billboard)		.65	.13	.54	1.03
		Game difficulty level (hard vs. medium)	IGA recognition (REC billboard)		.39	.13	.16	.65
		Game difficulty level (medium vs. easy)	Brand likeability		.13	.13	-.12	.38
		Game difficulty level (hard vs. easy)	Brand likeability		.33	.13	.09	.59
		Game difficulty level (hard vs. medium)	Brand likeability		.29	.13	.05	.55
		Pleasure	IGA recognition (REC product)		.29	.10	.10	.50
		Pleasure	IGA recognition (REC brand)		.25	.10	.06	.46
		Pleasure	IGA recognition (REC billboard)		.33	.10	.14	.54
		Pleasure	Brand likeability		.31	.12	.08	.56
		Dominance	IGA recognition (REC product)		.27	.10	.08	.48
		Dominance	IGA recognition (REC brand)		.21	.10	.01	.41
		Dominance	IGA recognition (REC billboard)		.35	.10	.17	.57
		Dominance	Brand likeability		.02	.12	-.21	.26
		Arousal	IGA recognition (REC product)		-.06	.10	-.26	.14
		Arousal	IGA recognition (REC brand)		-.06	.10	-.26	.14
		Arousal	IGA recognition (REC billboard)		-.21	.10	-.41	-.01
		Arousal	Brand likeability		.04	.12	-.20	.27
		Competence	IGA recognition (REC product)		.35	.10	.17	.57
		Competence	IGA recognition (REC brand)		.33	.10	.14	.54
		Competence	IGA recognition (REC billboard)		.38	.10	.20	.60
		Competence	Brand likeability		.09	.12	-.14	.33
		Tension	IGA recognition (REC product)		-.17	.12	-.40	.05
		Tension	IGA recognition (REC brand)		-.16	.12	-.39	.07
		Tension	IGA recognition (REC billboard)		-.24	.12	-.47	-.02
		Tension	Brand likeability		.01	.12	-.22	.24
		Challenge	IGA recognition (REC product)		-.08	.12	-.32	.15
		Challenge	IGA recognition (REC brand)		-.07	.12	-.31	.17
		Challenge	IGA recognition (REC billboard)		-.13	.12	-.37	.11
		Challenge	Brand likeability		.13	.12	-.11	.37

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Flow (immersion)	IGA recognition (REC product)		-.11	.12	-.34	.11
		Flow (immersion)	IGA recognition (REC brand)		-.28	.12	-.52	-.07
		Flow (immersion)	IGA recognition (REC billboard)		-.17	.12	-.40	.06
		Flow (immersion)	Brand likeability		-.03	.12	-.26	.19
Horn & McEwen (1977)	Experiment 279 students TV	Consistency vs. inconsistency	Brand name recall	Schlitz brand	.15	.12	-.09	.39
		Consistency vs. inconsistency	Brand name recall	Allerest brand	.04	.12	-.20	.28
		Consistency vs. inconsistency	Brand name recall	Old Spice brand	.12	.12	-.11	.36
Hyun, Gentry, Park, & Jun (2006)	Survey 1699 adults Newspaper	Article readership (not read vs. read most)	Free ad-recall	Year 1992	.29	.01	.27	.32
		Article readership (not read vs. read some)	Free ad-recall	Year 1992	.23	.01	.21	.26
		Article readership (read some vs. read most)	Free ad-recall	Year 1992	.06	.01	.03	.08
		Article readership (not read vs. read most)	Ad notedness	Year 1992	.23	.01	.21	.26
		Article readership (not read vs. read some)	Ad notedness	Year 1992	.09	.01	.07	.12
		Article readership (read some vs. read most)	Ad notedness	Year 1992	.14	.01	.11	.16
		Article readership (not read vs. read most)	Free ad-recall	Year 1993	.62	.01	.70	.74
		Article readership (not read vs. read some)	Free ad-recall	Year 1993	.57	.01	.62	.66
		Article readership (read some vs. read most)	Free ad-recall	Year 1993	.07	.01	.05	.10
		Article readership (not read vs. read most)	Ad notedness	Year 1993	.26	.01	.25	.29
		Article readership (not read vs. read some)	Ad notedness	Year 1993	.13	.01	.11	.15
		Article readership (read some vs. read most)	Ad notedness	Year 1993	.14	.01	.12	.17
Janssens et al. (2012)	Experiment 85 students Website	Congruency between webpage & product category	Aad (emotional responses)	Ad after page	.35	.13	.11	.62
		Congruency between webpage & product category	Click intention	Ad after page	.26	.12	.04	.50
		Congruency between webpage & product category	Aad (emotional responses)	Ad before page	-.33	.14	-.61	-.07
	Experiment 66 students Website	Congruency between webpage & product category	Aad (emotional responses)	Pop-up (then staying) ads	-.17	.16	-.48	.14
		Congruency between webpage & product category	Click intention	Pop-up (then staying) ads	-.31	.13	-.58	-.06
		Congruency between webpage & product category	Aad (emotional responses)	Pop-up (then disappearing) ads	.34	.16	.05	.66
		Congruency between webpage & product category	Click intention	Pop-up (then disappearing) ads	.29	.13	.04	.56
	Experiment 71 students Website	Congruency between webpage & product category	Aad (emotional response toward ad)	Few gaze jumps	.31	.15	.02	.61
		Congruency between webpage & product category	Aad (emotional response toward ad)	Many gaze jumps	-.41	.15	-.73	-.14
		Congruency between webpage & product category	Click intention	Few gaze jumps	.29	.13	.05	.55
		Congruency between webpage & product category	Click intention	Many gaze jumps	.46	.13	.25	.75
Jeong (2007)	Field experiment 120 students TV	Program-generating mood (negative vs. positive)	Recall		-.08	.09	-.26	.11
		Program-generating mood (negative vs. positive)	Recall	15 sec	.08	.14	-.19	.35
		Program-generating mood (negative vs. positive)	Recall	30 sec	-.23	.13	-.48	.02
		Program-generating mood (negative vs. positive)	Recognition		.03	.09	-.16	.21

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Program-generating mood (negative vs. positive)	Recognition	15 sec	-.02	.14	-.29	.25
		Program-generating mood (negative vs. positive)	Recognition	30 sec	.27	.13	.02	.53
		Program-generating mood (negative vs. positive)	Aad		.24	.11	.04	.45
		Program-generating mood (negative vs. positive)	Aad	15 sec	.01	.15	-.29	.32
		Program-generating mood (negative vs. positive)	Aad	30 sec	.42	.15	.16	.74
		Program-generating mood (negative vs. positive)	PI		.09	.10	-.10	.28
		Program-generating mood (negative vs. positive)	PI	15 sec	.00	.14	-.28	.27
		Program-generating mood (negative vs. positive)	PI	30 sec	.18	.13	-.08	.45
Jeong & King (2010)	Experiment 134 students	Contextual relevancy (topic)	Ad liking (computer store banner)		.44	.13	.22	.72
	Website	Contextual relevancy (topic)	PI (computer banner)		.49	.13	.27	.79
		Contextual relevancy (topic)	PI (student loan)		-.45	.13	-.73	-.23
Jeong, Bohil, & Biocca (2011)	Experiment 80 students	Spatial presence	Brand logo recognition		.51	.12	.33	.79
		Engagement	Brand logo recognition		.45	.12	.24	.72
	Video game	Spatial presence	Attitude change toward the brands		-.26	.12	-.50	-.03
		Engagement	Attitude change toward the brands		.17	.12	-.07	.41
Jun, Putrevu, Hyun, & Gentry (2003)	Experiment 104 students	General magazine vs. specialty magazine	Recall of ad claims	Attribute-based ad	.09	.14	-.19	.37
	Magazines	General magazine vs. specialty magazine	Recall of ad claims	Category-based ad	-.23	.14	-.51	.05
		General magazine vs. specialty magazine	Ab	Attribute-based ad	.25	.16	-.05	.57
		General magazine vs. specialty magazine	Ab	Category-based ad	-.15	.16	-.46	.16
		General magazine vs. specialty magazine	Belief in economy feature	Attribute-based ad	.06	.15	-.24	.36
		General magazine vs. specialty magazine	Belief in economy feature	Category-based ad	-.20	.15	-.50	.10
		General magazine vs. specialty magazine	Belief	Attribute-based ad	.08	.17	-.24	.41
		General magazine vs. specialty magazine	Belief	Category-based ad	.41	.17	.11	.76
Kamins et al. (1991)	Experiment 120 students	Program type (sad vs. happy)	Cognitions	Happy ad	.13	.15	-.16	.42
	TV	Program type (sad vs. happy)	Cognitional	Sad ad	-.42	.14	-.73	-.17
		Program type (sad vs. happy)	Ad effectiveness	Happy ad	.08	.15	-.21	.37
		Program type (sad vs. happy)	Ad effectiveness	Sad ad	-.42	.14	-.73	-.16
		Program type (sad vs. happy)	Aad	Happy ad	.08	.18	-.27	.43
		Program type (sad vs. happy)	Aad	Sad ad	-.54	.17	-.95	-.27
		Program type (sad vs. happy)	Liking for the commercial	Happy ad	.16	.15	-.13	.45
		Program type (sad vs. happy)	Liking for the commercial	Sad ad	-.43	.14	-.74	-.17
		Program type (sad vs. happy)	Behavioral intention (intention to use the service)	Happy ad	.54	.15	.32	.90
		Program type (sad vs. happy)	Behavioral intention (intention to use the service)	Sad ad	-.47	.14	-.79	-.22
Kline et al. (2011)	Survey 20000 adults	In territory (complementary context of ad message) vs. out of territory (not complementary)	Brand recall		.19	.01	.18	.21
	TV, radio, newspaper, magazine, film, website, video games, circulars /coupons	In territory vs. out of territory	Sum of actions taken		.14	.01	.13	.16

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Krugman, Cameron, & White, 1995)	Focus group, survey	Program observation	Commercial observation	Initial commercial & program observation	.40	.13	.17	.67
	64 children-adults TV	Program observation	Commercial observation	2nd commercial & program observation	.54	.13	.35	.86
		Eyes-on-screen time	Product memory (free recall)	Initial commercial & program observation	.19	.13	-.06	.44
		Eyes-on-screen time	Product memory (free recall)	2nd commercial & program observation	.31	.13	.07	.57
		Eyes-on-screen time	Brand memory (free recall)		.23	.13	-.02	.49
Lee & Thorson (2009)	Experiment 110 students Website	Cognitive vs. affective website	Unaided ad recall		.99	.10	2.44	2.85
		Cognitive vs. affective website	Aided recall		.99	.10	2.44	2.85
		Cognitive vs. affective website	Aad (banner ad)		.20	.12	-.03	.43
		Cognitive vs. affective website	Ab		.31	.12	.09	.55
		Cognitive vs. affective website	PI		.37	.12	.16	.62
Levy & Nebenzahl (2006)	Experiment 243 students TV program played on PC	Program involvement	Participation in interactive communication with interactive ads	Ally McBeal program	-.33	.10	-.53	-.15
		Program involvement	Participation in interactive communication with interactive ads	Sports program	-.19	.09	-.38	-.01
Liu & Smeesters (2010)	Experiment 94 students TV	Media context (neutral vs. death related media context)	Brand liking rating	Delayed (24 hr later)	.77	.15	.72	1.31
		Media context (neutral vs. death related media context)	Brand liking rating	Immediate	.12	.15	-.18	.41
	Experiment (field) 74 adults Film	Media context (neutral vs. death related media context)	Consumers' relative preference for domestic and foreign brands		.38	.12	.16	.63
	Experiment 65 students	Media context (neutral vs. death related media context)	Consumers' relative preference for domestic and foreign brands	Day1	.50	.19	.19	.91
	Websites (news reports on computer)	Media context (neutral vs. death related media context)	Consumers' relative preference for domestic and foreign brands	Day2	-.22	.19	-.59	.14
	Experiment 135 students Websites (news reports on computer)	Media context (neutral vs. death related media context)	Liking of foreign brands	Pro-domestic ad claim (of foreign brand)	.43	.18	.11	.82
		Media context (neutral vs. death related media context)	Liking of foreign brands	Neutral ad slogan (foreign brand)	-.49	.18	-.89	-.18
Lloyd & Clancy (1991a)	Experiment 470 women TV	Program involvement (moderate vs. high)	Advertising response (unaided recall)		.03	.06	-.08	.14
		Program involvement (low vs. high)	Advertising response (unaided recall)		.09	.06	-.02	.20
		Program involvement (low vs. moderate)	Advertising response (unaided recall)		.06	.06	-.05	.18
		Program involvement (moderate vs. high)	Advertising response (Aided Recall)		.09	.06	-.02	.21
		Program involvement (low vs. high)	Advertising response (Aided Recall)		.31	.06	.21	.44
		Program involvement (low vs. moderate)	Advertising response (Aided Recall)		.23	.06	.12	.34
		Program involvement (moderate vs. high)	Advertising response (Copy point credibility)		.07	.06	-.05	.18
		Program involvement (low vs. high)	Advertising response (Copy point credibility)		.30	.06	.20	.42
		Program involvement (low vs. moderate)	Advertising response (Copy point credibility)		.24	.06	.13	.36

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Program involvement (moderate vs. high)	Advertising response (purchase interest)		.04	.06	-.07	.15
		Program involvement (low vs. high)	Advertising response (purchase interest)		.12	.06	.01	.23
		Program involvement (low vs. moderate)	Advertising response (purchase interest)		.08	.06	-.03	.19
		Program involvement (moderate vs. high)	Advertising response (Pre/post behavioral change)		.06	.06	-.05	.17
		Program involvement (low vs. high)	Advertising response (Pre/post behavioral change)		.34	.06	.24	.47
		Program involvement (low vs. moderate)	Advertising response (Pre/post behavioral change)		.29	.06	.18	.41
Lloyd & Clancy (1991b)	Experiment 470 women TV	Exposure condition (program involvement)	Advertising response (unaided recall)		.09	.06	-.02	.20
		Exposure condition (program involvement)	Advertising response (aided recall)		.31	.06	.21	.44
		Exposure condition (program involvement)	Advertising response (copy point credibility)		.30	.06	.20	.42
		Exposure condition (program involvement)	Advertising response (purchase interest)		.12	.06	.01	.23
		Exposure condition (program involvement)	Advertising response (pre-post behavioral change; persuasability)		.34	.06	.24	.47
Lorch & Palmgreen (1994)	Field experiment 318 students TV	Sensation value	Attention to PSA	High sensation seeker	.16	.09	-.01	.34
		Sensation value	Attention to PSA	Low sensation	-.11	.09	-.29	.07
Lord & Burnkrant (1988)	Experiment 41 students TV	Response time (during the commercial)	Response time (before the commercial)	Low elaboration (response time change)	.65	.24	.31	1.26
Lord & Burnkrant (1993)	Experiment 264 students TV	Attention engaging mechanism (absent vs. present)	Ad-relevant thought	Low ad & low program involvement	.15	.13	-.10	.40
		Attention engaging mechanism (absent vs. present)	Ad-relevant thought	Low ad & high program involvement	-.33	.13	-.58	-.09
		Attention engaging mechanism (absent vs. present)	Ad-relevant thought	High ad & low program involvement	-.06	.13	-.31	.19
		Attention engaging mechanism (absent vs. present)	Ad-relevant thought	High ad & high Program involvement	.35	.13	.11	.61
	Experiment 133 students TV	Attention engaging mechanism (absent vs. present)	Ad-relevant thought	Low program involvement	-.35	.13	-.62	-.12
		Attention engaging mechanism (absent vs. present)	Ad-relevant thought	High program involvement	.16	.13	-.08	.41
Luna & Peracchio (2005)	Experiment 56 bilinguals Magazine	Media contexts	Product evaluations	Majority-to-minority ads	.67	.14	.54	1.09
		Media contexts	Product evaluations	Minority-to-majority ads	.50	.14	.27	.82
Mathur & Chattopadhyay (1991)	Experiment 64 students TV	Sad vs. happy program	Affective tone of cognitive response toward ad		.33	.13	.09	.60
		Sad vs. happy program	Ad recall (free recall)		.39	.13	.16	.66
		Sad vs. happy program	Commercial-directed cognitive responses		.54	.13	.35	.85
Marci (2006)	Field experiment 27 men TV	Program type (no context vs. successful program)	Emotional engagement	Ad A	.33	.20	-.06	.74
		Program type (no context vs. successful program)	Emotional engagement	Ad B	.74	.20	.56	1.36

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Mattes & Cantor (1982)	Experiment 60 students TV	Arousal Arousal	Commercial enjoyment Effectiveness		.42 .43	.13 .13	.19 .20	.71 .71
McConnell (1970)	Experiment 45 students TV, radio, newspaper	Press vs. radio Press vs. radio Press vs. radio Press vs. TV Press vs. TV Press vs. TV TV vs. radio TV vs. radio TV vs. radio	Learning points recalled Learning points recalled Learning points recalled Learning points recalled Learning points recalled Learning points recalled Learning points recalled Learning points recalled Learning points recalled	Pepsi Schlitz beer Command Pepsi Schlitz beer Command Pepsi Schlitz beer Command	-.53 .53 -.26 .06 .49 -.13 .60 .11 .10	.11 .11 .11 .11 .11 .11 .11 .11 .11	-.80 .39 -.47 -.15 .32 -.34 .49 -.10 -.11	-.38 .81 -.05 .27 .74 .08 .91 .32 .31
McGrath & Mahood (2004)	Experiment 75 students TV	Program arousal Program arousal	Aad Unaided recall		.45 -.39	.14 .13	.20 -.66	.77 -.16
Mehta et al. (2003)	Interviews 100 adults Newspaper, magazine	Print media buying behavior Page exposure Attachment/bonding/ affiliation with media Image of publication	Affinity to ad Affinity to ad Affinity to ad Affinity to ad		.02 .02 .00 .11	.10 .10 .10 .10	-.18 -.18 -.20 -.09	.22 .22 .20 .31
Moore et al. (2005)	Experiment 195 students Website	Congruence between website and product category Congruence between website and product category (color: warm vs. Cool color)	(Recall/recognition) attention (Recall/recognition) attention		.26 .09	.07 .07	.12 -.05	.40 .23
Moorman et al., (2002)	Survey & interview 263 women Magazine	Magazine involvement Positive affect induced by magazine Magazine involvement Positive affect induced by magazine Context-ad congruence Context-ad congruence	Ad recognition Ad recognition Aad Aad Ad recognition Aad		-.01 .03 .09 .17 .46 -.04	.07 .07 .08 .07 .04 .05	-.15 -.10 -.06 .03 .41 -.13	.13 .16 .24 .32 .59 .06
Moorman (2003)	Interview 263 adults Magazine	Magazine involvement Positive affect induced by magazine Involvement induced magazine Positive affect induced by magazine Congruency between ad and magazine Congruency between ad and magazine	Ad recognition Ad recognition Aad Aad Ad recognition Aad		-.01 .03 .09 .17 .46 -.03	.07 .07 .08 .07 .06 .07	-.15 -.10 -.06 .03 .38 -.17	.13 .16 .24 .32 .62 .10
	Interviews 344 adults TV	Low vs. high program involvement) Low vs. high program involvement) Low vs. high program involvement) Low vs. high program involvement)	Ad exposure Free recall Corrected aided recall Proven recall		.41 .57 .48 .39	.06 .11 .11 .11	.31 .45 .32 .20	.56 .86 .73 .62
Moorman, Neijens, & Smit (2005)	Survey 1447 adults TV	Program attention Program attention Program attention	Free recall Aided recall Proven recall		.03 .66 .22	.03 .03 .03	-.02 .75 -.17	.08 .85 .27
Moorman et al. (2007)	Interview 344 adults TV	Program involvement Program involvement Program involvement Program involvement	Aided recall Free recall Proven recall Commercial Exposure (commercial attention)		.30 .20 .30 .32	.13 .13 .13 .06	.05 -.04 .06 .21	.56 .45 .55 .46
Moorman, Neijens, Smit, & Willemsen (2009)	Survey 1952 adults TV	Program involvement Program involvement Program involvement Program involvement	Commercial recall Commercial attention Aad In-program ad recall		.10 .11 -.05 .10	.02 .02 .02 .02	.05 .07 -.09 .05	.14 .16 .00 .14

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Moorman et al. (2012)	Survey 1952 adults TV	Program involvement	Commercial (successive ads) recall		.10	.02	.05	.14
		Program involvement	Embedded ad (billboard around the playing field) recall		.10	.02	.05	.14
		Program involvement	Commercial attention		.11	.02	.07	.16
		Program involvement	Aad in general		-.05	.02	-.09	.00
Mundorf et al. (1991)	Experiment 48 students TV	Exposure to disturbing news	Recall	Time1	-.25	.15	-.55	.04
		Exposure to disturbing news	Recall	Time2	-.33	.15	-.64	-.06
		Exposure to disturbing news	Recall	Time3	.07	.15	-.23	.36
		Involvement (concentrate)	Recall		-.40	.12	-.66	-.19
		Involvement (very relaxed)	Recall		-.08	.12	-.31	.15
Murphy, Cunningham, & Wilcox (1979)	Experiment 115 students TV	Documentary vs. action/adventure	Unaided recall	Humorous ad	.21	.18	-.13	.56
		Documentary vs. situation comedy*	Unaided recall	Humorous ad	-.20	.18	-.56	.15
		Action/adventure vs. situation comedy	Unaided recall	Humorous ad	.40	.16	.12	.73
		Documentary vs. action/adventure	Unaided recall	Nonhumorous ad	-.21	.21	-.63	.19
		Documentary vs. situation comedy	Unaided recall	Nonhumorous ad	.40	.17	.08	.76
		Action/adventure vs. situation comedy	Unaided recall	Nonhumorous ad	-.40	.18	-.77	-.08
		Documentary vs. action/adventure	Unaided recall of products or services advertised	Humorous ad	.46	.24	.02	.97
		Documentary vs. situation comedy	Unaided recall of products or services advertised	Humorous ad	.30	.30	-.28	.90
		Action/adventure vs. situation comedy	Unaided recall of products or services advertised	Humorous ad	.18	.22	-.25	.61
		Documentary vs. action/adventure	Unaided recall of products or services advertised	Nonhumorous ad	.46	.14	.21	.77
		Documentary vs. situation comedy	Unaided recall of products or services advertised	Nonhumorous ad	-.30	.14	-.59	-.03
		Action/adventure vs. situation comedy	Unaided recall of products or services advertised	Nonhumorous ad	-.18	.15	-.47	.12
Nelson, Yaros, & Keum (2006)	Experiment 62 adults Video Game	Media watcher vs. game player	Brand recall	Real brand	-.73	.13	-1.19	-.68
		Media watcher vs. game player	Brand recall	Fictitious brand	-.81	.13	-1.39	-.88
		Media watcher vs. game player	Ab	Real brand	-.20	.16	-.51	.11
		Media watcher vs. game player	Ab	Fictitious brand	.18	.15	-.10	.47
Newell et al. (2001)	Survey 203 students TV	Team supporter (winning team vs. losing team)	Ad recall		.00	.08	-.15	.16
		Team supporter (winning team vs. losing team)	Brand recall		.00	.08	-.15	.16
		Neutral vs. team supporter	Ad recall		.06	.07	-.08	.20
		Neutral vs. team supporter	Brand recall		.07	.07	-.06	.21
		Ad placement (the first/second half game vs. 3/4 half of the game)	Ad recall		-.62	.07	-.86	-.58
		Ad placement (the first/second half game vs. 3/4 half of the game)	Brand recall		-.65	.07	-.92	-.64
		Ad placement (the first/second half game vs. 3/4 half of the game)	Ad recall	Neutral (no team supporter)	-.20	.16	-.51	.11
		Ad placement (the first/second half game vs. 3/4 half of the game)	Brand recall	Neutral (no team supporter)	-.31	.16	-.63	-.01

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Nicovich (2005)	Experiment 152 students Video game	Spatial presence	Ad evaluation (logos; ad believability)		.38	.10	.21	.60
		Spatial presence	Ad evaluation (pathos; ad emotionality)		.43	.10	.26	.65
		Presence (engagement)	Ad evaluation (logos; ad believability)		.34	.11	.15	.56
		Presence (engagement)	Ad evaluation (pathos; ad emotionality)		.41	.10	.23	.63
		Involvement with CMC event (involvement: interest)	Ad evaluation (logos; ad believability)		.24	.10	.06	.43
		Involvement with CMC event (involvement: interest)	Ad evaluation (pathos; ad emotionality)		.34	.09	.18	.54
		Involvement with CMC event (involvement: importance)	Ad evaluation (logos; ad believability)		.23	.10	.04	.42
		Involvement with CMC event (involvement: importance)	Ad evaluation (pathos; ad emotionality)		.38	.09	.22	.58
Nicovich (2010)	Experiment 299 student Online game	Presence (spatial)	Ethods ad (attitude toward the company & source)		.46	.10	.31	.70
		Presence (engage)	Ethods ad (attitude toward the company & source)		.40	.10	.21	.62
		Presence (spatial)	Ethos WOM (attitude toward WOM)		.40	.10	.23	.62
		Presence (engage)	Ethos WOM (attitude toward WOM)		.49	.10	.33	.74
		Involvement with the CMC situation (Interest)	Ethods ad (attitude toward the company & source)		.23	.09	.06	.42
		Involvement with the CMC situation (Importance)	Ethods ad (attitude toward the company & source)		.24	.09	.06	.43
		Involvement with the CMC situation (Interest)	Ethos WOM (attitude toward WOM)		.27	.09	.09	.46
		Involvement with the CMC situation (Importance)	Ethos WOM (attitude toward WOM)		.34	.09	.16	.53
Norris & Colman (1992)	Experiment 73 students Magazine	Involvement (very entertaining)	Recall		-.32	.12	-.57	-.10
		Involvement (very involved)	Recall		-.11	.12	-.34	.12
		Involvement (very suspenseful)	Recall		-.20	.12	-.44	.03
		Involvement (very interesting)	Recall		-.36	.12	-.61	-.14
		Involvement (learned a great deal)	Recall		-.03	.12	-.26	.20
		Involvement (enjoyed very much)	Recall		-.33	.12	-.58	-.11
		Involvement (very absorbed)	Recall		-.43	.12	-.69	-.23
		Involvement (very tense)	Recall		-.04	.12	-.27	.19
		Involvement (attended very closely)	Recall		-.35	.12	-.60	-.13
		Involvement (general quality very high)	Recall		-.02	.12	-.25	.21
		Involvement (very entertaining)	Recognition		-.34	.12	-.59	-.12
		Involvement (very involved)	Recognition		-.15	.12	-.39	.08
		Involvement (very suspenseful)	Recognition		-.29	.12	-.53	-.06
		Involvement (could concentrate)	Recognition		-.47	.12	-.74	-.28
		Involvement (very relaxed)	Recognition		-.14	.12	-.38	.09
		Involvement (very interesting)	Recognition		-.35	.12	-.60	-.13
		Involvement (learned a great deal)	Recognition		-.05	.12	-.28	.18
		Involvement (enjoyed very much)	Recognition		-.33	.12	-.58	-.11
		Involvement (very absorbed)	Recognition		-.46	.12	-.73	-.26
		Involvement (very tense)	Recognition		-.11	.12	-.34	.12
		Involvement (attended very closely)	Recognition		-.47	.12	-.74	-.28

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Involvement (general quality very high)	Recognition		-.09	.12	-.32	.14
		I was very absorbed in the article	Ad attention		-.28	.12	-.52	-.05
		I felt very tense when reading the articles	Ad attention		-.30	.12	-.54	-.08
		I attended very closely to the articles	Ad attention		-.27	.12	-.51	-.04
		I could concentrate when reading the articles	Ad attention		-.22	.12	-.46	.01
Norris & Colman (1993)	Experiment 90 adults TV	Broad involvement (summed score of involvement level)	Free recall		-.07	.11	-.28	.14
		Broad involvement (summed score of involvement level)	Product recognition		-.13	.11	-.34	.08
		Broad involvement (summed score of involvement level)	Cued recall		-.23	.11	-.44	-.02
		Broad involvement (summed score of involvement level)	Brand recognition		-.23	.11	-.44	-.02
		Broad involvement (summed score of involvement level)	Global recall (free r+ cued recall)**		-.13	.11	-.34	.08
		Broad involvement (summed score of involvement level)	Global recognition (product + brand recognition)**		-.20	.11	-.41	.01
		Broad involvement (summed score of involvement level)	Global memory (recall + recognition)**		-.14	.11	-.35	.07
		Involvement (involving)	Free recall	****	-.19	.11	-.40	.02
		Involvement (absorbing)	Free recall	****	-.05	.11	-.26	.16
		Involvement (stimulating)	Free recall	****	-.14	.11	-.35	.07
		Involvement (suspenseful)	Free recall	****	-.25	.11	-.47	-.05
		Involvement (boring)	Free recall	****	-.07	.11	-.28	.14
		Involvement (interesting)	Free recall	****	-.06	.11	-.27	.15
		Involvement (thought-provoking)	Free recall	****	-.08	.11	-.29	.13
		Involvement (worth-remembering)	Free recall	****	-.14	.11	-.35	.07
		Involvement (impact)	Free recall	****	-.06	.11	-.27	.15
		Involvement (attention-grabbing)	Free recall	****	-.10	.11	-.31	.11
		Involvement (challenging)	Free recall	****	-.17	.11	-.38	.04
		Involvement (attended)	Free recall	****	-.11	.11	-.32	.10
		Involvement (concentrated)	Free recall	****	-.12	.11	-.33	.09
		Involvement (immersed)	Free recall	****	-.14	.11	-.35	.07
		Involvement (involving)	Product recognition	****	-.22	.11	-.43	-.01
		Involvement (absorbing)	Product recognition	****	-.18	.11	-.39	.03
		Involvement (stimulating)	Product recognition	****	-.18	.11	-.39	.03
		Involvement (suspenseful)	Product recognition	****	-.28	.11	-.50	-.08
		Involvement (boring)	Product recognition	****	.18	.11	-.03	.39
		Involvement (interesting)	Product recognition	****	-.11	.11	-.32	.10
		Involvement (thought-provoking)	Product recognition	****	-.08	.11	-.29	.13
		Involvement (worth-remembering)	Product recognition	****	-.14	.11	-.35	.07
		Involvement (impact)	Product recognition	****	-.12	.11	-.33	.09
		Involvement (attention-grabbing)	Product recognition	****	-.17	.11	-.38	.04
		Involvement (challenging)	Product recognition	****	-.14	.11	-.35	.07
		Involvement (attended)	Product recognition	****	-.01	.11	-.22	.20
		Involvement (concentrated)	Product recognition	****	-.02	.11	-.23	.19
		Involvement (immersed)	Product recognition	****	-.17	.11	-.38	.04
		Involvement (involving)	Cued recall	****	-.24	.11	-.45	-.03
		Involvement (absorbing)	Cued recall	****	-.21	.11	-.42	.00
		Involvement (stimulating)	Cued recall	****	-.20	.11	-.41	.01
		Involvement (suspenseful)	Cued recall	****	-.30	.11	-.52	-.10
		Involvement (boring)	Cued recall	****	.09	.11	-.12	.30
		Involvement (interesting)	Cued recall	****	-.11	.11	-.32	.10
		Involvement (thought-provoking)	Cued recall	****	-.19	.11	-.40	.02

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Involvement (worth-remembering)	Cued recall	****	-.22	.11	-.43	-.01
		Involvement (impact)	Cued recall	****	-.18	.11	-.39	.03
		Involvement (attention-grabbing)	Cued recall	****	-.26	.11	-.48	-.06
		Involvement (challenging)	Cued recall	****	-.29	.11	-.51	-.09
		Involvement (attended)	Cued recall	****	.00	.11	-.21	.21
		Involvement (concentrated)	Cued recall	****	-.04	.11	-.25	.17
		Involvement (immersed)	Cued recall	****	-.29	.11	-.51	-.09
		Involvement (involving)	Brand recognition	****	-.25	.11	-.47	-.05
		Involvement (absorbing)	Brand recognition	****	-.17	.11	-.38	.04
		Involvement (stimulating)	Brand recognition	****	-.14	.11	-.35	.07
		Involvement (suspenseful)	Brand recognition	****	-.24	.11	-.45	-.03
		Involvement (boring)	Brand recognition	****	.24	.11	.03	.45
		Involvement (interesting)	Brand recognition	****	-.18	.11	-.39	.03
		Involvement (thought-provoking)	Brand recognition	****	-.14	.11	-.35	.07
		Involvement (worth-remembering)	Brand recognition	****	-.24	.11	-.45	-.03
		Involvement (impact)	Brand recognition	****	-.20	.11	-.41	.01
		Involvement (attention-grabbing)	Brand recognition	****	-.15	.11	-.36	.06
		Involvement (challenging)	Brand recognition	****	-.28	.11	-.50	-.08
		Involvement (attended)	Brand recognition	****	-.04	.11	-.25	.17
		Involvement (concentrated)	Brand recognition	****	-.14	.11	-.35	.07
		Involvement (immersed)	Brand recognition	****	-.24	.11	-.45	-.03
		Involvement (involving)	Global recall**		-.19	.11	-.40	.02
		Involvement (absorbing)	Global recall**		-.11	.11	-.32	.10
		Involvement (stimulating)	Global recall**		-.16	.11	-.37	.05
		Involvement (suspense)	Global recall**		-.27	.11	-.49	-.07
		Involvement (boring)	Global recall**		.08	.11	-.13	.29
		Involvement (interesting)	Global recall**		-.08	.11	-.29	.13
		Involvement (thought-provoking)	Global recall**		-.12	.11	-.33	.09
		Involvement (worth-remembering)	Global recall**		-.17	.11	-.38	.04
		Involvement (impact)	Global recall**		-.10	.11	-.31	.11
		Involvement (attention-grabbing)	Global recall**		-.16	.11	-.37	.05
		Involvement (challenging)	Global recall**		-.22	.11	-.43	-.01
		Involvement (attended)	Global recall**		-.08	.11	-.29	.13
		Involvement (concentrated)	Global recall**		.10	.11	-.11	.31
		Involvement (immersed)	Global recall**		-.19	.11	-.40	.02
		Involvement (involving)	Global recognition**		-.26	.11	-.48	-.06
		Involvement (absorbing)	Global recognition**		-.20	.11	-.41	.01
		Involvement (stimulating)	Global recognition**		-.18	.11	-.39	.03
		Involvement (suspenseful)	Global recognition**		-.29	.11	-.51	-.09
		Involvement (boring)	Global recognition**		.24	.11	.03	.45
		Involvement (interesting)	Global recognition**		-.16	.11	-.37	.05
		Involvement (thought-provoking)	Global recognition**		-.12	.11	-.33	.09
		Involvement (worth-remembering)	Global recognition**		-.21	.11	-.42	.00
		Involvement (impact)	Global recognition**		-.18	.11	-.39	.03
		Involvement (attention-grabbing)	Global recognition**		-.18	.11	-.39	.03
		Involvement (challenging)	Global recognition**		-.23	.11	-.44	-.02
		Involvement (attended)	Global recognition**		-.02	.11	-.23	.19
		Involvement (concentrated)	Global recognition**		-.08	.11	-.29	.13
		Involvement (immersed)	Global recognition**		-.28	.11	-.50	-.08
		Involvement (involving)	Global memory**		-.21	.11	-.42	.00
		Involvement (absorbing)	Global memory**		-.12	.11	-.33	.09
		Involvement (stimulating)	Global memory**		-.17	.11	-.38	.04
		Involvement (suspenseful)	Global memory**		-.29	.11	-.51	-.09
		Involvement (boring)	Global memory**		.10	.11	-.11	.31
		Involvement (interesting)	Global memory**		-.09	.11	-.30	.12

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Involvement (thought-provoking)	Global memory**		-.13	.11	-.34	.08
		Involvement (worth-remembering)	Global memory**		-.18	.11	-.39	.03
		Involvement (impact)	Global memory**		-.12	.11	-.33	.09
		Involvement (attention-grabbing)	Global memory**		-.17	.11	-.38	.04
		Involvement (challenging)	Global memory**		-.23	.11	-.44	-.02
		Involvement (attended)	Global memory**		.07	.11	-.14	.28
		Involvement (concentrated)	Global memory**		.08	.11	-.13	.29
		Involvement (immersed)	Global memory**		-.21	.11	-.42	.00
		Involvement (involving)	Aad	****	.23	.11	.02	.44
		Involvement (absorbing)	Aad	****	.14	.11	-.07	.35
		Involvement (stimulating)	Aad	****	.32	.11	.12	.54
		Involvement (suspenseful)	Aad	****	.07	.11	-.14	.28
		Involvement (boring)	Aad	****	-.38	.11	-.61	-.19
		Involvement (interesting)	Aad	****	.31	.11	.11	.53
		Involvement (thought-provoking)	Aad	****	.06	.11	-.15	.27
		Involvement (worth-remembering)	Aad	****	.14	.11	-.07	.35
		Involvement (impact)	Aad	****	.45	.11	.27	.69
		Involvement (attention-grabbing)	Aad	****	.51	.11	.35	.77
		Involvement (challenging)	Aad	****	.33	.11	.13	.55
		Involvement (attended)	Aad	****	.27	.11	.07	.49
		Involvement (concentrated)	Aad	****	.27	.11	.07	.49
		Involvement (immersed)	Aad	****	.41	.11	.23	.65
		Involvement (involving)	Ab (brand)	****	.27	.11	.07	.49
		Involvement (absorbing)	Ab (brand)	****	.12	.11	-.09	.33
		Involvement (stimulating)	Ab (brand)	****	.32	.11	.12	.54
		Involvement (suspenseful)	Ab (brand)	****	.08	.11	-.13	.29
		Involvement (boring)	Ab (brand)	****	-.28	.11	-.50	-.08
		Involvement (interesting)	Ab (brand)	****	.17	.11	-.04	.38
		Involvement (thought-provoking)	Ab (brand)	****	.22	.11	.01	.43
		Involvement (worth-remembering)	Ab (brand)	****	.11	.11	-.10	.32
		Involvement (impact)	Ab (brand)	****	.45	.11	.27	.69
		Involvement (attention-grabbing)	Ab (brand)	****	.55	.11	.41	.83
		Involvement (challenging)	Ab (brand)	****	.38	.11	.19	.61
		Involvement (attended)	Ab (brand)	****	.29	.11	.09	.51
		Involvement (concentrated)	Ab (brand)	****	.27	.11	.07	.49
		Involvement (immersed)	Ab (brand)	****	.38	.11	.19	.61
		Involvement (involving)	PI	****	.25	.11	.05	.47
		Involvement (absorbing)	PI	****	.02	.11	-.19	.23
		Involvement (stimulating)	PI	****	.26	.11	.06	.48
		Involvement (suspenseful)	PI	****	.18	.11	-.03	.39
		Involvement (boring)	PI	****	-.12	.11	-.33	.09
		Involvement (interesting)	PI	****	.07	.11	-.14	.28
		Involvement (thought-provoking)	PI	****	.04	.11	-.17	.25
		Involvement (worth-remembering)	PI	****	.06	.11	-.15	.27
		Involvement (impact)	PI	****	.31	.11	.11	.53
		Involvement (attention-grabbing)	PI	****	.45	.11	.27	.69
		Involvement (challenging)	PI	****	.17	.11	-.04	.38
		Involvement (attended)	PI	****	.09	.11	-.12	.30
		Involvement (concentrated)	PI	****	.20	.11	-.01	.41
		Involvement (immersed)	PI	****	.25	.11	.05	.47
		Broad involvement (summed measures)	Aad		.38	.11	.19	.61
		Broad involvement	Ab		.42	.11	.24	.66
		Broad involvement	PI		.28	.11	.08	.50

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Norris & Colman (1994)	Experiment 99 adults TV	Global Scores (sum of items)	Recall		-.09	.10	-.29	.11
		Entertaining	Recall	****	-.07	.10	-.27	.13
		Enjoyable	Recall	****	-.04	.10	-.24	.16
		Exciting	Recall	****	-.09	.10	-.29	.11
		Humorous	Recall	****	-.10	.10	-.30	.10
		Amusing	Recall	****	-.10	.10	-.30	.10
		Fun	Recall	****	.00	.10	-.20	.20
		Funny	Recall	****	-.09	.10	-.29	.11
		Global Scores	Recognition		-.12	.10	-.32	.08
		Entertaining	Recognition	****	-.13	.10	-.33	.07
		Enjoyable	Recognition	****	-.04	.10	-.24	.16
		Exciting	Recognition	****	-.10	.10	-.30	.10
		Humorous	Recognition	****	-.07	.10	-.27	.13
		Amusing	Recognition	****	-.17	.10	-.37	.03
		Fun	Recognition	****	-.07	.10	-.27	.13
		Funny	Recognition	****	-.11	.10	-.31	.09
		Global Scores	Memory**		-.10	.10	-.30	.10
		Entertaining	Memory**		-.09	.10	-.29	.11
		Enjoyable	Memory**		-.05	.10	-.25	.15
		Exciting	Memory**		-.10	.10	-.30	.10
		Humorous	Memory**		-.10	.10	-.30	.10
		Amusing	Memory**		-.11	.10	-.31	.09
		Fun	Memory**		-.01	.10	-.21	.19
		Funny	Memory**		-.10	.10	-.30	.10
		Global Scores	Aad		.08	.10	-.12	.28
		Entertaining	Aad	****	-.08	.10	-.28	.12
		Enjoyable	Aad	****	-.01	.10	-.21	.19
		Exciting	Aad	****	.14	.10	-.06	.34
		Humorous	Aad	****	.20	.10	.00	.40
		Amusing	Aad	****	.06	.10	-.14	.26
		Fun	Aad	****	.24	.10	.04	.44
		Funny	Aad	****	-.06	.10	-.26	.14
		Global Scores	Ab		.10	.10	-.10	.30
		Entertaining	Ab	****	-.03	.10	-.23	.17
		Enjoyable	Ab	****	.07	.10	-.13	.27
		Exciting	Ab	****	.15	.10	-.05	.35
		Humorous	Ab	****	.22	.10	.02	.42
		Amusing	Ab	****	-.01	.10	-.21	.19
		Fun	Ab	****	.24	.10	.04	.44
		Funny	Ab	****	-.06	.10	-.26	.14
		Global Scores	PI		.16	.10	-.04	.36
		Entertaining	PI	****	.14	.10	-.06	.34
		Enjoyable	PI	****	.19	.10	-.01	.39
		Exciting	PI	****	.19	.10	-.01	.39
		Humorous	PI	****	.25	.10	.06	.46
		Amusing	PI	****	.02	.10	-.18	.22
		Fun	PI	****	.20	.10	.00	.40
		Funny	PI	****	-.06	.10	-.26	.14
Norris & Colman (1996)	Experiment 93 students Radio	Program rating (Global involvement)	Ad rating (Aad)		.19	.11	-.01	.40
		Program rating (Global involvement)	Ad rating (Ab)		.34	.11	.15	.56
		Program rating (Global involvement)	Ad rating (PI)		.56	.11	.43	.84
		Program rating (Global entertainment)	Ad rating (Aad)		.24	.11	.04	.45
		Program rating (Global entertainment)	Ad rating (Ab)		.42	.11	.24	.65
		Program rating (Global entertainment)	Ad rating (PI)		.47	.11	.30	.72
		Program rating (Global enjoyment)	Ad rating (Aad)		.15	.11	-.06	.36
		Program rating (Global enjoyment)	Ad rating (Ab)		.32	.11	.13	.54
		Program rating (Global enjoyment)	Ad rating (PI)		.46	.11	.29	.70

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Norris et al. (2001)	Field experiment 90 students TV	Program ratings (involving)	Recall	High-rated ads ****	.28	.11	.08	.50
		Program ratings (involving)	Recall	Low-rated ads ****	.15	.11	-.06	.36
		Program ratings (absorbing)	Recall	High-rated ads ****	.07	.11	-.14	.28
		Program ratings (absorbing)	Recall	Low-rated ads ****	.05	.11	-.16	.26
		Program ratings (stimulating)	Recall	High-rated ads ****	.24	.11	.03	.45
		Program ratings (stimulating)	Recall	Low-rated ads ****	.06	.11	-.15	.27
		Program ratings (suspenseful)	Recall	High-rated ads ****	.03	.11	-.18	.24
		Program ratings (suspenseful)	Recall	Low-rated ads ****	.10	.11	-.11	.31
		Program ratings (boring)	Recall	High-rated ads ****	-.25	.11	-.47	-.05
		Program ratings (boring)	Recall	Low-rated ads ****	-.06	.11	-.27	.15
		Program ratings (interesting)	Recall	High-rated ads ****	.24	.11	.03	.45
		Program ratings (interesting)	Recall	Low-rated ads ****	.14	.11	-.07	.35
		Program ratings (thought-provoking)	Recall	High-rated ads ****	-.06	.11	-.27	.15
		Program ratings (thought-provoking)	Recall	Low-rated ads ****	-.06	.11	-.27	.15
		Program ratings (worth-remembering)	Recall	High-rated ads ****	.23	.11	.02	.44
		Program ratings (worth-remembering)	Recall	Low-rated ads ****	.12	.11	-.09	.33
		Program ratings (impact)	Recall	High-rated ads ****	.08	.11	-.13	.29
		Program ratings (impact)	Recall	Low-rated ads ****	.01	.11	-.20	.22
		Program ratings (attention-grabbing)	Recall	High-rated ads ****	-.01	.11	-.22	.20
		Program ratings (attention-grabbing)	Recall	Low-rated ads ****	-.03	.11	-.24	.18
		Program ratings (challenging)	Recall	High-rated ads ****	.16	.11	-.05	.37
		Program ratings (challenging)	Recall	Low-rated ads ****	.08	.11	-.13	.29
		Program ratings (enjoyable)	Recall	High-rated ads ****	.21	.11	.00	.42
		Program ratings (enjoyable)	Recall	Low-rated ads ****	.18	.11	-.03	.39
		Program ratings (exciting)	Recall	High-rated ads ****	-.02	.11	-.23	.19
		Program ratings (exciting)	Recall	Low-rated ads ****	.03	.11	-.18	.24
		Program ratings (entertaining)	Recall	High-rated ads ****	.16	.11	-.05	.37
		Program ratings (entertaining)	Recall	Low-rated ads ****	.22	.11	.01	.43
		Program ratings (humorous)	Recall	High-rated ads ****	-.04	.11	-.25	.17
		Program ratings (humorous)	Recall	Low-rated ads ****	.27	.11	.07	.49
		Program ratings (amusing)	Recall	High-rated ads ****	.06	.11	-.15	.27
		Program ratings (amusing)	Recall	Low-rated ads ****	.26	.11	.06	.48
		Program ratings (fun)	Recall	High-rated ads ****	.19	.11	-.02	.40
		Program ratings (fun)	Recall	Low-rated ads ****	.32	.11	.12	.54
		Program ratings (funny)	Recall	High-rated ads ****	-.11	.11	-.32	.10
		Program ratings (funny)	Recall	Low-rated ads ****	.18	.11	-.03	.39
		Program ratings (concentrated)	Recall	High-rated ads ****	.22	.11	.01	.43
		Program ratings (concentrated)	Recall	Low-rated ads ****	.15	.11	-.06	.36
		Program ratings (attended)	Recall	High-rated ads ****	.10	.11	-.11	.31
		Program ratings (attended)	Recall	Low-rated ads ****	.00	.11	-.21	.21
		Program ratings (immersed)	Recall	High-rated ads ****	.05	.11	-.16	.26
		Program ratings (immersed)	Recall	Low-rated ads ****	.02	.11	-.19	.23
		Program ratings (involving)	Recognition	High-rated ads ****	.22	.11	.01	.43
		Program ratings (involving)	Recognition	Low-rated ads ****	.17	.11	-.04	.38
		Program ratings (absorbing)	Recognition	High-rated ads ****	.05	.11	-.16	.26
		Program ratings (absorbing)	Recognition	Low-rated ads ****	.05	.11	-.16	.26
		Program ratings (stimulating)	Recognition	High-rated ads ****	.11	.11	-.10	.32
		Program ratings (stimulating)	Recognition	Low-rated ads ****	.09	.11	-.12	.30
		Program ratings (suspenseful)	Recognition	High-rated ads ****	.04	.11	-.17	.25
		Program ratings (suspenseful)	Recognition	Low-rated ads ****	.03	.11	-.18	.24
		Program ratings (boring)	Recognition	High-rated ads ****	-.16	.11	-.37	.05
		Program Ratings (boring)	Recognition	Low-rated ads ****	-.14	.11	-.35	.07
		Program ratings (interesting)	Recognition	High-rated ads ****	.17	.11	-.04	.38
		Program ratings (interesting)	Recognition	Low-rated ads ****	.19	.11	-.02	.40
		Program ratings (thought-provoking)	Recognition	High-rated ads ****	-.19	.11	-.40	.02
		Program ratings (thought-provoking)	Recognition	Low-rated ads ****	-.08	.11	-.29	.13

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Program ratings (worth-remembering)	Recognition	High-rated ads ****	.05	.11	-.16	.26
		Program ratings (worth-remembering)	Recognition	Low-rated ads ****	.05	.11	-.16	.26
		Program ratings (impact)	Recognition	High-rated ads ****	-.08	.11	-.29	.13
		Program ratings (impact)	Recognition	Low-rated ads ****	.02	.11	-.19	.23
		Program ratings (attention-grabbing)	Recognition	High-rated ads ****	.01	.11	-.20	.22
		Program ratings (attention-grabbing)	Recognition	Low-rated ads ****	.03	.11	-.18	.24
		Program ratings (challenging)	Recognition	High-rated ads ****	-.05	.11	-.26	.16
		Program ratings (challenging)	Recognition	Low-rated ads ****	.03	.11	-.18	.24
		Program ratings (enjoyable)	Recognition	High-rated ads ****	.09	.11	-.12	.30
		Program ratings (enjoyable)	Recognition	Low-rated ads ****	.11	.11	-.10	.32
		Program ratings (exciting)	Recognition	High-rated ads ****	.02	.11	-.19	.23
		Program ratings (exciting)	Recognition	Low-rated ads ****	.11	.11	-.10	.32
		Program ratings (entertaining)	Recognition	High-rated ads ****	.05	.11	-.16	.26
		Program ratings (entertaining)	Recognition	Low-rated ads ****	.02	.11	-.19	.23
		Program ratings (humorous)	Recognition	High-rated ads ****	.03	.11	-.18	.24
		Program ratings (humorous)	Recognition	Low-rated ads ****	-.02	.11	-.23	.19
		Program ratings (amusing)	Recognition	High-rated ads ****	.03	.11	-.18	.24
		Program ratings (amusing)	Recognition	Low-rated ads ****	.00	.11	-.21	.21
		Program ratings (fun)	Recognition	High-rated ads ****	.05	.11	-.16	.26
		Program ratings (fun)	Recognition	Low-rated ads ****	.16	.11	-.05	.37
		Program ratings (funny)	Recognition	High-rated ads ****	.00	.11	-.21	.21
		Program ratings (funny)	Recognition	Low-rated ads ****	-.03	.11	-.24	.18
		Program ratings (concentrated)	Recognition	High-rated ads ****	.14	.11	-.07	.35
		Program ratings (concentrated)	Recognition	Low-rated ads ****	.13	.11	-.08	.34
		Program ratings (attended)	Recognition	High-rated ads ****	.05	.11	-.16	.26
		Program ratings (attended)	Recognition	Low-rated ads ****	-.06	.11	-.27	.15
		Program ratings (immersed)	Recognition	High-rated ads ****	.00	.11	-.21	.21
		Program ratings (immersed)	Recognition	Low-rated ads ****	.00	.11	-.21	.21
		Program ratings (involving)	Memory**	High-rated ads	.28	.11	.08	.50
		Program ratings (involving)	Memory**	Low-rated ads	.17	.11	-.04	.38
		Program ratings (absorbing)	Memory**	High-rated ads	.08	.11	-.13	.29
		Program ratings (absorbing)	Memory**	Low-rated ads	.05	.11	-.16	.26
		Program ratings (stimulating)	Memory**	High-rated ads	.24	.11	.03	.45
		Program ratings (stimulating)	Memory**	Low-rated ads	.07	.11	-.14	.28
		Program ratings (suspenseful)	Memory**	High-rated ads	.03	.11	-.18	.24
		Program ratings (suspenseful)	Memory**	Low-rated ads	.09	.11	-.12	.30
		Program ratings (boring)	Memory**	High-rated ads	-.25	.11	-.47	-.05
		Program ratings (boring)	Memory**	Low-rated ads	-.09	.11	-.30	.12
		Program ratings (interesting)	Memory**	High-rated ads	.24	.11	.03	.45
		Program ratings (interesting)	Memory**	Low-rated ads	.17	.11	-.04	.38
		Program ratings (thought-provoking)	Memory**	High-rated ads	-.08	.11	-.29	.13
		Program ratings (thought-provoking)	Memory**	Low-rated ads	-.07	.11	-.28	.14
		Program ratings (worth-remembering)	Memory**	High-rated ads	.22	.11	.01	.43
		Program ratings (worth-remembering)	Memory**	Low-rated ads	.12	.11	-.09	.33
		Program ratings (impact)	Memory**	High-rated ads	.07	.11	-.14	.28
		Program ratings (impact)	Memory**	Low-rated ads	.02	.11	-.19	.23
		Program ratings (attention-grabbing)	Memory**	High-rated ads	-.01	.11	-.22	.20
		Program ratings (attention-grabbing)	Memory**	Low-rated ads	-.02	.11	-.23	.19
		Program ratings (challenging)	Memory**	High-rated ads	.15	.11	-.06	.36
		Program ratings (challenging)	Memory**	Low-rated ads	.08	.11	-.13	.29
		Program ratings (enjoyable)	Memory**	High-rated ads	.21	.11	.00	.42
		Program ratings (enjoyable)	Memory**	Low-rated ads	.19	.11	-.02	.40
		Program ratings (exciting)	Memory**	High-rated ads	-.02	.11	-.23	.19
		Program ratings (exciting)	Memory**	Low-rated ads	.05	.11	-.16	.26
		Program ratings (entertaining)	Memory**	High-rated ads	.16	.11	-.05	.37

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Program ratings (entertaining)	Memory**	Low-rated ads	.20	.11	-.01	.41
		Program ratings (humorous)	Memory**	High-rated ads	-.03	.11	-.24	.18
		Program ratings (humorous)	Memory**	Low-rated ads	.23	.11	.02	.44
		Program ratings (amusing)	Memory**	High-rated ads	.06	.11	-.15	.27
		Program ratings (amusing)	Memory**	Low-rated ads	.24	.11	.03	.45
		Program ratings (fun)	Memory**	High-rated ads	.18	.11	-.03	.39
		Program ratings (fun)	Memory**	Low-rated ads	.32	.11	.12	.54
		Program ratings (funny)	Memory**	High-rated ads	-.10	.11	-.31	.11
		Program ratings (funny)	Memory**	Low-rated ads	.16	.11	-.05	.37
		Program ratings (concentrated)	Memory**	High-rated ads	.22	.11	.01	.43
		Program ratings (concentrated)	Memory**	Low-rated ads	.16	.11	-.05	.37
		Program ratings (attended)	Memory**	High-rated ads	.10	.11	-.11	.31
		Program ratings (attended)	Memory**	Low-rated ads	-.01	.11	-.22	.20
		Program ratings (immersed)	Memory**	High-rated ads	.05	.11	-.16	.26
		Program ratings (immersed)	Memory**	Low-rated ads	.02	.11	-.19	.23
		Program ratings (involving)	Aad	High-rated ads ****	.21	.11	.00	.42
		Program ratings (involving)	Aad	Low-rated ads ****	-.05	.11	-.26	.16
		Program ratings (absorbing)	Aad	High-rated ads ****	.20	.11	-.01	.41
		Program ratings (absorbing)	Aad	Low-rated ads ****	.03	.11	-.18	.24
		Program ratings (stimulating)	Aad	High-rated ads ****	.22	.11	.01	.43
		Program ratings (stimulating)	Aad	Low-rated ads ****	-.13	.11	-.34	.08
		Program ratings (suspenseful)	Aad	High-rated ads ****	.04	.11	-.17	.25
		Program ratings (suspenseful)	Aad	Low-rated ads ****	.30	.11	.10	.52
		Program ratings (boring)	Aad	High-rated ads ****	-.09	.11	-.30	.12
		Program ratings (boring)	Aad	Low-rated ads ****	.01	.11	-.20	.22
		Program ratings (interesting)	Aad	High-rated ads ****	.18	.11	-.03	.39
		Program ratings (interesting)	Aad	Low-rated ads ****	.00	.11	-.21	.21
		Program ratings (thought-provoking)	Aad	High-rated ads ****	.18	.11	-.03	.39
		Program ratings (thought-provoking)	Aad	Low-rated ads ****	.12	.11	-.09	.33
		Program ratings (worth-remembering)	Aad	High-rated ads ****	.15	.11	-.06	.36
		Program ratings (worth-remembering)	Aad	Low-rated ads ****	-.08	.11	-.29	.13
		Program ratings (impact)	Aad	High-rated ads ****	.13	.11	-.08	.34
		Program ratings (impact)	Aad	Low-rated ads ****	.03	.11	-.18	.24
		Program ratings (attention-grabbing)	Aad	High-rated ads ****	.11	.11	-.10	.32
		Program ratings (attention-grabbing)	Aad	Low-rated ads ****	-.14	.11	-.35	.07
		Program ratings (challenging)	Aad	High-rated ads ****	.08	.11	-.13	.29
		Program ratings (challenging)	Aad	Low-rated ads ****	-.04	.11	-.25	.17
		Program ratings (enjoyable)	Aad	High-rated ads ****	.21	.11	.00	.42
		Program ratings (enjoyable)	Aad	Low-rated ads ****	.12	.11	-.09	.33
		Program ratings (exciting)	Aad	High-rated ads ****	.02	.11	-.19	.23
		Program ratings (exciting)	Aad	Low-rated ads ****	-.11	.11	-.32	.10
		Program ratings (entertaining)	Aad	High-rated ads ****	.28	.11	.08	.50
		Program ratings (entertaining)	Aad	Low-rated ads ****	.11	.11	-.10	.32
		Program ratings (humorous)	Aad	High-rated ads ****	.00	.11	-.21	.21
		Program ratings (humorous)	Aad	Low-rated ads ****	.02	.11	-.19	.23
		Program ratings (amusing)	Aad	High-rated ads ****	.20	.11	-.01	.41
		Program ratings (amusing)	Aad	Low-rated ads ****	.00	.11	-.21	.21
		Program ratings (fun)	Aad	High-rated ads ****	.15	.11	-.06	.36
		Program ratings (fun)	Aad	Low-rated ads ****	.23	.11	.02	.44
		Program ratings (funny)	Aad	High-rated ads ****	-.03	.11	-.24	.18
		Program ratings (funny)	Aad	Low-rated ads ****	.09	.11	-.12	.30
		Program ratings (concentrated)	Aad	High-rated ads ****	.16	.11	-.05	.37
		Program ratings (concentrated)	Aad	Low-rated ads ****	-.10	.11	-.31	.11
		Program ratings (attended)	Aad	High-rated ads ****	.09	.11	-.12	.30
		Program ratings (attended)	Aad	Low-rated ads ****	.00	.11	-.21	.21
		Program ratings (immersed)	Aad	High-rated ads ****	.12	.11	-.09	.33
		Program ratings (immersed)	Aad	Low-rated ads ****	.02	.11	-.19	.23

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Program ratings (involving)	Ab	High-rated ads ****	.24	.11	.03	.45
		Program ratings (involving)	Ab	Low-rated ads ****	.06	.11	-.15	.27
		Program ratings (absorbing)	Ab	High-rated ads ****	.16	.11	-.05	.37
		Program ratings (absorbing)	Ab	Low-rated ads ****	.23	.11	.02	.44
		Program ratings (stimulating)	Ab	High-rated ads ****	.23	.11	.02	.44
		Program ratings (stimulating)	Ab	Low-rated ads ****	.03	.11	-.18	.24
		Program ratings (suspenseful)	Ab	High-rated ads ****	.02	.11	-.19	.23
		Program ratings (suspenseful)	Ab	Low-rated ads ****	-.07	.11	-.28	.14
		Program ratings (boring)	Ab	High-rated ads ****	-.19	.11	-.40	.02
		Program ratings (boring)	Ab	Low-rated ads ****	-.06	.11	-.27	.15
		Program ratings (interesting)	Ab	High-rated ads ****	.26	.11	.06	.48
		Program ratings (interesting)	Ab	Low-rated ads ****	.05	.11	-.16	.26
		Program ratings (thought-provoking)	Ab	High-rated ads ****	.18	.11	-.03	.39
		Program ratings (thought-provoking)	Ab	Low-rated ads ****	.22	.11	.01	.43
		Program ratings (worth-remembering)	Ab	High-rated ads ****	.29	.11	.09	.51
		Program ratings (worth-remembering)	Ab	Low-rated ads ****	.04	.11	-.17	.25
		Program ratings (impact)	Ab	High-rated ads ****	.25	.11	.05	.47
		Program ratings (impact)	Ab	Low-rated ads ****	.04	.11	-.17	.25
		Program ratings (attention-grabbing)	Ab	High-rated ads ****	.24	.11	.03	.45
		Program ratings (attention-grabbing)	Ab	Low-rated ads ****	-.10	.11	-.31	.11
		Program ratings (challenging)	Ab	High-rated ads ****	.17	.11	-.04	.38
		Program ratings (challenging)	Ab	Low-rated ads ****	-.06	.11	-.27	.15
		Program ratings (enjoyable)	Ab	High-rated ads ****	.41	.11	.23	.65
		Program ratings (enjoyable)	Ab	Low-rated ads ****	.17	.11	-.04	.38
		Program ratings (exciting)	Ab	High-rated ads ****	.14	.11	-.07	.35
		Program ratings (exciting)	Ab	Low-rated ads ****	-.01	.11	-.22	.20
		Program ratings (entertaining)	Ab	High-rated ads ****	.40	.11	.21	.63
		Program ratings (entertaining)	Ab	Low-rated ads ****	.21	.11	.00	.42
		Program ratings (humorous)	Ab	High-rated ads ****	.05	.11	-.16	.26
		Program ratings (humorous)	Ab	Low-rated ads ****	-.08	.11	-.29	.13
		Program ratings (amusing)	Ab	High-rated ads ****	.24	.11	.03	.45
		Program ratings (amusing)	Ab	Low-rated ads ****	.02	.11	-.19	.23
		Program ratings (fun)	Ab	High-rated ads ****	.20	.11	-.01	.41
		Program ratings (fun)	Ab	Low-rated ads ****	.21	.11	.00	.42
		Program ratings (funny)	Ab	High-rated ads ****	-.05	.11	-.26	.16
		Program ratings (funny)	Ab	Low-rated ads ****	.11	.11	-.10	.32
		Program ratings (concentrated)	Ab	High-rated ads ****	.24	.11	.03	.45
		Program ratings (concentrated)	Ab	Low-rated ads ****	.00	.11	-.21	.21
		Program ratings (attended)	Ab	High-rated ads ****	.17	.11	-.04	.38
		Program ratings (attended)	Ab	Low-rated ads ****	.04	.11	-.17	.25
		Program ratings (immersed)	Ab	High-rated ads ****	.22	.11	.01	.43
		Program ratings (immersed)	Ab	Low-rated ads ****	.21	.11	.00	.42
		Program ratings (involving)	PI	High-rated ads ****	.37	.11	.18	.60
		Program ratings (involving)	PI	Low-rated ads ****	.10	.11	-.11	.31
		Program ratings (absorbing)	PI	High-rated ads ****	.28	.11	.08	.50
		Program ratings (absorbing)	PI	Low-rated ads ****	.16	.11	-.05	.37
		Program ratings (stimulating)	PI	High-rated ads ****	.29	.11	.09	.51
		Program ratings (stimulating)	PI	Low-rated ads ****	.12	.11	-.09	.33
		Program ratings (suspenseful)	PI	High-rated ads ****	.02	.11	-.19	.23
		Program ratings (suspenseful)	PI	Low-rated ads ****	-.04	.11	-.25	.17
		Program ratings (boring)	PI	High-rated ads ****	-.31	.11	-.53	-.11
		Program ratings (boring)	PI	Low-rated ads ****	-.16	.11	-.37	.05
		Program ratings (interesting)	PI	High-rated ads ****	.38	.11	.19	.61
		Program ratings (interesting)	PI	Low-rated ads ****	.15	.11	-.06	.36
		Program ratings (thought-provoking)	PI	High-rated ads ****	.15	.11	-.06	.36
		Program ratings (thought-provoking)	PI	Low-rated ads ****	.08	.11	-.13	.29

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Program ratings (worth-remembering)	PI	High-rated ads ****	.36	.11	.17	.59
		Program ratings (worth-remembering)	PI	Low-rated ads ****	.19	.11	-.02	.40
		Program ratings (impact)	PI	High-rated ads ****	.36	.11	.17	.59
		Program ratings (impact)	PI	Low-rated ads ****	.17	.11	-.04	.38
		Program ratings (attention-grabbing)	PI	High-rated ads ****	.24	.11	.03	.45
		Program ratings (attention-grabbing)	PI	Low-rated ads ****	-.01	.11	-.22	.20
		Program ratings (challenging)	PI	High-rated ads ****	.28	.11	.08	.50
		Program ratings (challenging)	PI	Low-rated ads ****	.13	.11	-.08	.34
		Program ratings (enjoyable)	PI	High-rated ads ****	.53	.11	.38	.80
		Program ratings (enjoyable)	PI	Low-rated ads ****	.20	.11	-.01	.41
		Program ratings (exciting)	PI	High-rated ads ****	.28	.11	.08	.50
		Program ratings (exciting)	PI	Low-rated ads ****	.02	.11	-.19	.23
		Program ratings (entertaining)	PI	High-rated ads ****	.47	.11	.30	.72
		Program ratings (entertaining)	PI	Low-rated ads ****	.18	.11	-.03	.39
		Program ratings (humorous)	PI	High-rated ads ****	.11	.11	-.10	.32
		Program ratings (humorous)	PI	Low-rated ads ****	.01	.11	-.20	.22
		Program ratings (amusing)	PI	High-rated ads ****	.25	.11	.05	.47
		Program ratings (amusing)	PI	Low-rated ads ****	.06	.11	-.15	.27
		Program ratings (fun)	PI	High-rated ads ****	.39	.11	.20	.62
		Program ratings (fun)	PI	Low-rated ads ****	.19	.11	-.02	.40
		Program ratings (funny)	PI	High-rated ads ****	.05	.11	-.16	.26
		Program ratings (funny)	PI	Low-rated ads ****	.05	.11	-.16	.26
		Program ratings (concentrated)	PI	High-rated ads ****	.38	.11	.19	.61
		Program ratings (concentrated)	PI	Low-rated ads ****	.19	.11	-.02	.40
		Program ratings (attended)	PI	High-rated ads ****	.27	.11	.07	.49
		Program ratings (attended)	PI	Low-rated ads ****	.34	.11	.14	.56
		Program ratings (immersed)	PI	High-rated ads ****	.30	.11	.10	.52
		Program ratings (immersed)	PI	Low-rated ads ****	.23	.11	.02	.44
Norris, Colman, & Aleixo (2003)	Experiment 86 adults TV	Program rating (entertainment)	Recall	1st ad position	.12	.11	-.09	.34
		Program rating (entertainment)	Recall	2nd position	.01	.11	-.21	.23
		Program rating (enjoyment)	Recall	1st ad position	.12	.11	-.09	.34
		Program rating (enjoyment)	Recall	2nd position	.04	.11	-.18	.26
		Program rating (involvement)	Recall	1st ad position	.27	.11	.06	.49
		Program rating (involvement)	Recall	2nd position	.08	.11	-.13	.30
		Program rating (entertainment)	Recognition	1st ad position	-.08	.11	-.30	.13
		Program rating (entertainment)	Recognition	2nd position	.08	.11	-.13	.30
		Program rating (enjoyment)	Recognition	1st ad position	.05	.11	-.17	.27
		Program rating (enjoyment)	Recognition	2nd position	.23	.11	.02	.45
		Program rating (involvement)	Recoginition	1st ad position	.02	.11	-.20	.24
		Program rating (involvement)	Recoginition	2nd position	-.04	.11	-.26	.18
		Program rating (entertainment)	Memory**	1st ad position	.09	.11	-.12	.31
		Program rating (entertainment)	Memory**	2nd position	.02	.11	-.20	.24
		Program rating (enjoyment)	Memory**	1st ad position	.11	.11	-.10	.33
		Program rating (enjoyment)	Memory**	2nd position	.09	.11	-.12	.31
		Program rating (involvement)	Memory**	1st ad position	.25	.11	.04	.47
		Program rating (involvement)	Memory**	2nd position	.05	.11	-.17	.27
		Program rating (entertainment)	Aad		.46	.11	.28	.71
		Program rating (enjoyment)	Aad		.41	.11	.22	.65
		Program rating (involvement)	Aad		.27	.11	.06	.49
		Program rating (entertainment)	Ab		.41	.11	.22	.65
		Program rating (enjoyment)	Ab		.30	.11	.09	.52
		Program rating (involvement)	Ab		.29	.11	.08	.51
		Program rating (entertainment)	PI		.33	.11	.13	.56
		Program rating (enjoyment)	PI		.37	.11	.17	.60
		Program rating (involvement)	PI		.26	.11	.05	.48
van Reijmersdal et al. (2010)	Survey 1195 children-adults TV	Special interest programs vs. general interest program	Recognition		.52	.03	.52	.63
		Special interest programs vs. general interest program	Behavioral reactions (search info & PI)		.48	.03	.47	.59

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Park & McClung (1986)	Experiment 102 women	Program involvement (low vs. high)	Commercial involvement		.25	.10	.05	.45
	TV (videotaped newscast)	Program involvement (cognitive vs. affective)	Commercial involvement	Low involvement	-.51	.18	-.91	-.21
		Program involvement (cognitive vs. affective)	Commercial involvement	Moderate involvement	.28	.18	-.07	.64
		Program involvement (cognitive vs. affective)	Commercial involvement	High involvement	.27	.18	-.07	.63
Parker & Furnham (2007)	Experiment 60 students	Nonsexual vs. sexual program	Free recall		-.51	.13	-.82	-.30
		Nonsexual vs. sexual program	Cued recall		-.74	.13	-1.20	-.68
	TV	Nonsexual vs. sexual program*	Free recall	Sexual ad	-.68	.19	-1.21	-.45
		Nonsexual vs. sexual program*	Free recall	Nonsexual ad	-.26	.19	-.65	.11
		Nonsexual vs. sexual program*	Cued recall	Sexual ad	-.82	.19	-1.54	-.78
		Nonsexual vs. sexual program*	Cued recall	Nonsexual ad	-.65	.19	-1.15	-.39
Pavelchak et al. (1988)	Survey 135students TV	City (neutral vs. team supporter)	Ad recall		-.41	.11	-.64	-.22
De Pelsmacker et al. (2002)	Experiment 314 adults	Context/ad congruency	Aad (likability)	Low product category involvement	.08	.04	-.01	.16
	TV/Magazine	Context/ad congruency	Aad (likability)	High product category involvement	-.11	.04	-.19	-.03
		Context/ad congruency	Aad (informativeness)	Low product category involvement	.06	.04	-.02	.15
		Context/ad congruency	Aad (informativeness)	High product category involvement	-.07	.04	-.16	.01
		Context/ad congruency	Aad (clarity)	Low product category involvement	.11	.05	.02	.20
		Context/ad congruency	Aad (clarity)	High product category involvement	-.12	.05	-.21	-.03
		Context/ad congruency	Ad content recall	Low product category involvement	.00	.04	-.08	.08
		Context/ad congruency	Ad content recall	High product category involvement	.03	.04	-.05	.11
		Context appreciation (Positive vs. Negative)	Aad (likability)	***	.23	.03	.18	.30
		Context appreciation (Positive vs. Negative)	Aad (informativeness)	***	.24	.03	.18	.30
		Context appreciation (Positive vs. Negative)	Aad (clarity)	***	.32	.03	.26	.40
		TV vs. Print	Aad (likability)	***	-.33	.03	-.40	-.29
		TV vs. Print	Aad (informativeness)	***	-.19	.03	-.25	-.13
		TV vs. Print	Aad (clarity)	***	.01	.03	-.05	.07
		Context appreciation (Positive vs. Negative)	Aad (likability)	Print	.47	.04	.42	.59
		Context appreciation (Positive vs. Negative)	Aad (likability)	TV	.20	.04	.12	.29
		Context appreciation (Positive vs. Negative)	Aad (informativeness)	Print	.38	.05	.31	.49
		Context appreciation (Positive vs. Negative)	Aad (informativeness)	TV	.23	.05	.14	.32
		Context appreciation (Positive vs. Negative)	Aad (clarity)	Print	.35	.05	.27	.46
		Context appreciation (Positive vs. Negative)	Aad (clarity)	TV	.30	.05	.21	.40
		Context appreciation (Positive vs. Negative)	Brand recall	TV	-.03	.04	-.11	.05
		Context appreciation (Positive vs. Negative)	Brand recall	Print	.10	.04	.02	.19
		Context appreciation (Positive vs. Negative)	Ad content recall	TV	.20	.04	.12	.28
		Context appreciation (Positive vs. Negative)	Ad content recall	Print	-.15	.04	-.23	-.07
Perry, Jenzowsky, &King (1997)	Field experiment 99 students	Humor level of the program	Brand recall		-.27	.10	-.48	-.08
	TV	Humor level of the program	Product evaluation	Male case	-.82	.22	-1.58	-.72

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Prasad & Smith (1994)	Experiment 95 children TV	Program (low vs. high violence)	Brand/product recall	Ad viewed after program	-.08	.15	-.37	.22
		Program (low vs. high violence)	Ad copy recognition	Ad viewed after program	-.38	.15	-.70	-.11
		Program (low vs. high violence)	Aad	Ad viewed after program	-.54	.16	-.92	-.28
		Program (low vs. high violence)	Ab	Ad viewed after program	-.62	.16	-1.04	-.40
Russell et al. (2004)	Survey 12263 adults TV	Connectedness	Memory for product placement		.14	.01	.12	.16
		Connectedness	Brand imagination		.17	.01	.15	.19
		Connectedness	Brand community		.70	.01	.85	.88
	Experiment 99 students TV	Connectedness	Long-term memory (recall more brands)		.50	.10	.34	.74
		Connectedness	Brand imagination		.52	.10	.38	.78
Schumann (1986)	Experiment 322 students TV	Liking of the program	Liking for the pen		.11	.06	.01	.22
		Liking of the program	Negative thoughts about product/brand/ad		-.22	.06	-.33	-.12
		Liking of the program	Positive thoughts about program/product/ad		.13	.06	.02	.24
		Attitude toward the program	Positive thoughts about brand/product/ad	High relevance	.21	.08	.06	.37
		Attitude toward the program	Positive thoughts about brand/product/ad	Low relevance	.03	.08	-.12	.19
		Attitude toward the program	Positive thoughts about brand/product/ad	High relevance	.19	.08	.03	.35
		Attitude toward the program	Positive thoughts about brand/product/ad	Low relevance	.00	.08	-.16	.16
		Type of program (documentary vs. comedy)	Negative thoughts about brand/product/ad		.15	.06	.04	.26
		Program liking	Ad liking	High relevance	.16	.08	.01	.32
Shamdasani et al. (2001)	Field experiment, survey 400 adults Website	Establishment (reputation) of website	Aad	Relevant website (high involvement product)	.47	.11	.28	.73
		Establishment (reputation)of website	Aad	Irrelevant website (high involvement product)	-.06	.11	-.29	.16
		Establishment (reputation)of website	Aad	Relevant website (low involvement product)	.19	.11	-.03	.42
		Establishment (reputation)of website	Aad	Irrelevant website (low involvement product)	.66	.11	.57	1.01
		Establishment (reputation)of website	Ab	Relevant website (high involvement product)	-.33	.10	-.55	-.14
		Establishment (reputation)of website	Ab	Irrelevant website (high involvement product)	.11	.10	-.10	.31
		Establishment (reputation)of website	Ab	Relevant website (low involvement product)	.07	.10	-.13	.28
		Establishment (reputation)of website	Ab	Irrelevant website (low involvement product)	.46	.10	.29	.70
		Establishment (reputation)of website	Intention to click	Relevant website (high involvement product)	.35	.10	.17	.56
		Establishment (reputation)of website	Intention to click	Irrelevant website (high involvement product)	-.11	.10	-.31	.09
		Establishment (reputation)of website	Intention to click	Relevant website (low involvement product)	.30	.10	.12	.51
		Establishment (reputation)of website	Intention to click	Irrelevant website (low involvement product)	.54	.10	.40	.80
		Establishment (reputation)of website	PI	Relevant website (high involvement product)	.35	.11	.15	.59
		Establishment (reputation)of website	PI	Irrelevant website (high involvement product)	-.08	.11	-.30	.14
		Establishment (reputation)of website	PI	Relevant website (low involvement product)	.23	.11	.02	.46
		Establishment (reputation)of website	PI	Irrelevant website (low involvement product)	.55	.11	.40	.84
		Relevance between website and banner ad	Aad	Established website (high product involvement)	.61	.11	.49	.93

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
		Relevance between website and banner ad	Aad	Nonestablished website (high product involvement)	.25	.11	.03	.47
		Relevance between website and banner ad	Aad	Established website (low product involvement)	.17	.11	-.05	.39
		Relevance between website and banner ad	Aad	Nonestablished website (low product involvement)	.40	.11	.21	.65
		Relevance between website and banner ad	Ab	Established website (high product involvement)	.43	.10	.25	.66
		Relevance between website and banner ad	Ab	Nonestablished website (high product involvement)	.34	.10	.15	.56
		Relevance between website and banner ad	Ab	Established website (low product involvement)	.01	.10	-.20	.21
		Relevance between website and banner ad	Ab	Nonestablished website (low product involvement)	.28	.10	.08	.49
		Relevance between website and banner ad	Intention to click	Established website (high product involvement)	.59	.10	.48	.87
		Relevance between website and banner ad	Intention to click	Nonestablished website (high product involvement)	.22	.10	.02	.42
		Relevance between website and banner ad	Intention to click	Established website (low product involvement)	.15	.10	-.05	.35
		Relevance between website and banner ad	Intention to click	Nonestablished website (low product involvement)	.29	.10	.10	.50
		Relevance between website and banner ad	PI	Established website (high product involvement)	.53	.11	.37	.81
		Relevance between website and banner ad	PI	Nonestablished website (high product involvement)	.22	.11	.00	.44
		Relevance between website and banner ad	PI	Established website (low product involvement)	.28	.11	.07	.51
		Relevance between website and banner ad	PI	Nonestablished website (low product involvement)	.19	.11	-.03	.41
		Relevance between website and banner ad	Aad	***	.37	.06	.28	.50
		Relevance between website and banner ad	Ab	***	.24	.05	.14	.34
		Relevance between website and banner ad	Intention to click	***	.53	.05	.50	.69
		Relevance between website and banner ad	PI	***	.37	.05	.28	.50
		Reputation of the webpage	Aad	***	.29	.06	.19	.41
		Reputation of the webpage	Ab	***	.24	.05	.14	.34
		Reputation of the webpage	Intention to click	***	.26	.05	.16	.36
		Reputation of the webpage	PI	***	.26	.05	.15	.37
Sharma (2000)	Experiment 103 students TV	Program Type (affective vs. cognitive involvement)*	Free recall	Cognitive commercial	-.72	.14	-1.18	-.62
		Program Type (affective vs. cognitive involvement)*	Free recall	Affective commercial	.55	.14	.34	.91
		Program Type (affective vs. cognitive involvement)*	Cued recall	Cognitive commercial	-.66	.14	-1.08	-.52
		Program Type (affective vs. cognitive involvement)*	Cued recall	Affective commercial	.62	.14	.45	1.02

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Shen & Prinsen (1999)	Experiment 106 students TV, Film	Nonviolent vs. violent program	Unaided brand recall	****	-.11	.10	-.30	.08
		Nonviolent vs. violent program	Ad copy recognition	****	-.18	.10	-.37	.02
		Nonviolent vs. violent program	Ab	****	.02	.10	-.19	.22
		Nonviolent vs. violent program	PI	****	-.27	.10	-.48	-.07
		Nonviolent vs. violent program	Unaided brand recall	Low involvement product	-.28	.14	-.56	-.01
		Nonviolent vs. violent program	Unaided brand recall	High involvement product	.03	.14	-.25	.31
		Nonviolent vs. violent program	Ad copy recognition	Low involvement product	-.06	.14	-.34	.22
		Nonviolent vs. violent program	Ad copy recognition	High involvement product	-.37	.14	-.66	-.11
		Nonviolent vs. violent program	Ab	Low involvement product	.06	.15	-.23	.36
		Nonviolent vs. violent program	Ab	High involvement product	-.02	.15	-.31	.27
		Nonviolent vs. violent program	PI	Low involvement product	-.23	.15	-.53	.06
		Nonviolent vs. violent program	PI	High involvement product	-.40	.15	-.71	-.13
Slater et al. (1996)	Experiment 157 children TV	Program interest	Net positive responses to the ads	Interest in sports program and beer ads with sports content	.31	.08	.16	.49
		Program interest	Net positive responses to the ads	Interest in entertainment program and beer ads with sports content	.23	.09	.06	.40
		Program interest	Net positive responses to the ads	Interest in entertainment program and beer ads without sports content	.30	.09	.14	.48
Starr & Lowe (1995)	Experiment 145 students TV	Low suspense vs. high suspense program	Perceived interference		.24	.08	.08	.41
		Low suspense vs. high suspense program	Ad annoying		.19	.08	.03	.36
		Program involvement (drive/need for closure)	Ad liking		.18	.11	-.04	.40
		Program involvement (drive/need for closure)	PI		.10	.11	-.12	.32
		Program involvement (drive/need for closure)	Brand name recall		-.24	.08	-.41	-.08
		Program involvement (drive/need for closure)	Product type recall		-.17	.08	-.34	-.01
		Time of assessment (immediately vs. 24 hours after viewing)	Product type recall		.40	.08	.26	.58
		Time of assessment (immediately vs. 24 hours after viewing)	Brand name recall		.30	.08	.14	.47
		Time of assessment (immediately vs. 24 hours after viewing)	Ad message recall		.27	.08	.12	.45
		Time of assessment (immediately vs. 24 hours after viewing)	Ad images recall		.29	.08	.13	.46
		Time of assessment (immediately vs. 24 hours after viewing)	Liking of advertisement		.32	.11	.11	.56
		Time of assessment (immediately vs. 24 hours after viewing)	PI		.21	.11	-.01	.43

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Sullivan (1990)	Field experiment 80 adults	Radio program music formats (less involving vs. Involving)	Claims recall		.37	.11	.17	.62
	Radio	Radio program music formats (less involving vs. Involving)	Product attitude		.22	.11	.00	.45
		Radio program music formats (less involving vs. Involving)	Aad		.19	.11	-.03	.41
		Radio program music formats (less involving vs. Involving)	PI		.29	.11	.08	.52
Sundar et al. (1998)	Field experiment 48 students Newspaper & website	Media types (print vs. Online)	Ad memory (recall + recognition)		-.44	.15	-.76	-.18
Terry (2005)	Experiment 27 students	Ad position (1-3 position vs. other blocks)	Brand recall		-.72	.14	-1.18	-.63
	TV	Ad presentation position (first vs. third position)	Brand recall		-.48	.14	-.80	-.25
	Experiment 23 students	Ad position (1-3 position vs. 7-9 position)	Brand recognition		-.54	.15	-.90	-.31
	TV	Ad position (4-6 position vs. 7-9 position)	Brand recognition		-.75	.15	-1.27	-.68
		Ad position (7-9 position vs. 10-12 points)	Brand recognition		-.75	.15	-1.26	-.67
		Ad position (first vs. third position)	Brand recognition		-.76	.15	-1.30	-.70
Ume (2011)	Survey 120 adults Websites	Involvement	Customer attitude towards marketing communications		.62	.09	.54	.91
		Selective exposure	Customer attitude towards marketing communications		.92	.09	1.41	1.77
Wang (2006)	Experiment 239 students	Contextual relevance (engagement)	Ad recall		.26	.07	.14	.40
	Online game	Contextual relevance (engagement)	Ad message involvement		.29	.07	.17	.43
		Contextual relevance (engagement)	Ad message believability		.22	.07	.09	.35
		Contextual relevance (engagement)	Aad (message)		.19	.07	.05	.32
		Contextual relevance (engagement)	Aad		.21	.07	.09	.35
		Contextual relevance (engagement)	Ad awareness (whether noticing the ad or not)		.33	.07	.21	.47
Wang & Calder (2006)	Experiment 56 students	Transportation	Product attitude	Ad position: end	.56	.16	.31	.95
		Transportation	Product attitude	Ad position: mid	-.41	.16	-.76	-.11
	Magazine	Transportation	Ad intrusiveness	Ad position: end	-.22	.17	-.56	.12
		Transportation	Ad intrusiveness	Ad position: mid	.68	.17	.50	1.17
	Experiment 50 students Magazine	Transportation	Product attitude	Irrelevant ad goal	.11	.17	-.23	.44
		Transportation	Product attitude	Relevant ad goal	-.95	.17	-2.13	-1.46
	Experiment 48 students Magazine	Transportation	Product attitude		-.51	.17	-.90	-.21
		Transportation	Ad intrusiveness		.83	.17	.86	1.52
Wang (2007)	Experiment 169 students	Cross-media integration (without vs. with)	Ad engagement		.37	.08	.22	.54
	Website, Mobile Device	Cross-media integration (without vs. with)	Ad message strength		.26	.08	.10	.42
		Cross-media integration (without vs. With)	Ab		.28	.08	.13	.44
		Message strength	Ad engagement		.44	.09	.30	.64
		Media engagement	Ab		.41	.09	.27	.60

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Wang & Calder (2009	Experiment 99 students	Transportation (program)	Product attitude	Thematically compatible	-.35	.11	-.58	-.15
	TV	Transportation (program)	Product attitude	Thematically incompatible	.07	.11	-.15	.29
		Transportation (program)	Ad intrusiveness	Thematically compatible	.27	.12	.05	.50
		Transportation (program)	Ad intrusiveness	Thematically incompatible	.07	.12	-.15	.30
	Experiment 137 students TV	Transportation (program)	Product attitude	Between scenes (nonintrusive) ad position	.25	.09	.07	.44
		Transportation (program)	Product attitude	Middle of scene (intrusive) ad position	-.06	.09	-.24	.13
		Transportation (program)	Product attitude (high compatibility ad)	Between scenes (nonintrusive) ad position	.31	.09	.14	.51
		Transportation (program)	Product attitude (high compatibility ad)	Middle of scene (intrusive) ad position	-.32	.09	-.51	-.14
		Transportation (program)	Ad intrusiveness	Middle of scene (intrusive) ad position	.28	.10	.10	.48
		Transportation (program)	Ad intrusiveness	Between scenes (nonintrusive) ad position	-.06	.10	-.25	.13
	Experiment 75 students TV	Transportation (program)	Aad	Between scenes (nonintrusive) ad position	.36	.15	.07	.69
		Transportation (program)	Aad	Middle of scene (intrusive) ad position	-.31	.15	-.63	.00
		Transportation (program)	Ad intrusiveness	Middle of scene (intrusive) ad position	.32	.15	.00	.65
		Transportation (program)	Ad intrusiveness	Between scenes (nonintrusive) ad position	-.18	.15	-.50	.14
		Transportation (program)	Ad transportation	Between scenes (nonintrusive) ad position	.51	.15	.24	.89
		Transportation (program)	Ad transportation	Middle of scene (intrusive) ad position	-.38	.15	-.73	-.08
Wang (2011)	Experiment 120 students	(With vs. Without) cross-channel integration	Aad		.95	.10	1.69	2.07
	TV, websites	(With vs. Without) cross-channel integration	Ab		.53	.09	.40	.77
Wang & Lang (2012)	Experiment 70 students	Program valence (Negative vs. positive)	Recognition		.31	.12	.08	.56
	TV	Arousing content (calm vs. arousing)	Aad		.99	.14	2.38	2.92
		Program valence (negative vs. positive)	Aad		.57	.14	.37	.92
Ware (2003)	Survey 326 adults	Ad position: 1st vs. 2nd half	Unaided ad recall		-.54	.06	-.72	-.50
		Ad position: right vs. Left	Unaided ad recall		.13	.06	.02	.24
	Magazine	Ad position: right vs. Spread	Unaided ad recall		.47	.06	.41	.62
		Ad position: left vs. spread)	Unaided ad recall		.37	.06	.28	.50
		Magazine ad characteristics (read the previous month issue vs. most recent issue)	Unaided ad recall		.20	.06	.10	.32
Ware et al. (2007)	Survey, interview 1511 adults	Utilitarian experience from the magazine	Ad liking		.65	.03	.71	.83
	Magazine	Visual experience from the magazine	Ad liking		.32	.03	.27	.40
		Timeout experience from the magazine	Ad liking		.59	.03	.62	.74
		Positive emotional experience from the magazine	Ad liking		.69	.03	.79	.91
		Inspirational experience from the magazine	Ad liking		.37	.03	.33	.45
		Personal engagement	Ad liking		.85	.03	1.20	1.31

Authors	Method Participant Media used	IV	DV	MV	r	se	L_{CI}	H_{CI}
Wilson & Isaac (1995)	Experiment 414 adults Magazine	Trust to the magazine	Unaided ad recall		.07	.05	-.03	.17
		Trust to the magazine	Aided ad recall		.02	.05	-.08	.12
		Trust to the magazine	Ad relevance		.39	.05	.32	.51
		Trust to the magazine	Brand purchased		.17	.05	.07	.27
		Disappointment if magazine no longer available	Brand purchased		.06	.05	-.04	.16
		Disappointment if magazine no longer available	Unaided ad recall		.05	.05	-.05	.15
		Disappointment if magazine no longer available	Aided ad recall		.16	.05	.06	.26
		Disappointment if magazine no longer available	Ad relevance		.24	.05	.15	.34
		Times an issue read	Brand purchased		.10	.05	.00	.20
		Times an issue read	Unaided ad recall		.12	.05	.02	.22
		Times an issue read	Aided ad recall		.06	.05	-.04	.16
		Times an issue read	Ad relevance		.06	.05	-.04	.16
		Number of issues bought	Brand purchased		.00	.05	-.10	.10
		Number of issues bought	Unaided ad recall		.02	.05	-.08	.12
		Number of issues bought	Aided ad recall		.09	.05	-.01	.19
		Number of issues bought	Ad relevance		.02	.05	-.08	.12
		Reader commitment	Brand purchased		.12	.05	.02	.22
		Reader commitment	Unaided ad recall		.14	.05	.04	.24
		Reader commitment	Aided ad recall		.27	.05	.18	.37
		Reader commitment	Ad relevance		.37	.05	.29	.49
Wise, Brown, & Cox (1975)	Interviews 130 adults TV	Game program vs. Drama	Awareness of products which have been advertised		.01	.09	-.16	.18
Yi (1990a)	Field experiment 72 students Magazine	2 themes (safety vs. fuel economy) within cognitive condition	Aad		.08	.19	-.29	.45
		2 different theme (safety vs. Fuel economy) within cognitive condition	Ab		.48	.18	.17	.88
		2 different theme (safety vs. Fuel economy) within cognitive condition	PI		.47	.18	.15	.88
		Positive vs. negative feelings within affective priming condition	Aad		.52	.19	.20	.94
		Positive vs. negative feelings within affective priming condition	Ab		.15	.18	-.21	.50
		Positive vs. negative feelings within affective priming condition	PI		.42	.18	.09	.81
Yi (1993)	Experiment 120 students Magazine	Program priming context (negative vs. Positive)	Ab		.23	.10	.04	.42
		Program priming context (negative vs. Positive)	PI		.22	.10	.04	.41
Zanjani et al. (2011)	Experiment 140 students Online Magazine	Task orientation	Recall		-.43	.09	-.63	-.30
		Task orientation	Brand recognition		-.57	.09	-.81	-.47
		Ad-context congruity	Recall		.11	.09	-.06	.28
		Ad-context congruity	Brand recognition		.22	.09	.06	.39
		Ad-context congruity	Brand recognition	Seekers	.53	.12	.35	.83

Note: *These effect sizes were copied later for testing congruency effects. **These effect sizes were not entered in the analysis at all because it is the construct that subordinate constructs were averaged (e.g., memory = recall + recognition). ***These effect sizes are not entered in the analysis because both main effects and interactions testing the same relationships are coded. Only interactions are included in the main analysis. ****The effect sizes were not entered in the first analysis (i.e., RQ4-a) but used in the analyses for RQ4-c & -d.