Journal of Advertising, 49: 292–308

ISSN: 0091-3367 print / 1557-7805 online
DOI: 10.1080/00913367.2020.1770639

Routledge
Taylor & Francis Group

Evaluating Adolescents' Responses to Internet Ads: Role of Ad Skepticism, Internet Literacy, and Parental Mediation

Akshaya Vijayalakshmi
Indian Institute of Management Ahmedabad, Ahmedabad, India

Meng-Hsien (Jenny) Lin
California State University Monterey Bay, Seaside, California, USA

Russell N. Laczniak
Iowa State University, Ames, Iowa, USA

In this article, we first compare adolescents' responses to two formats (easily recognizable versus not easily recognizable) Internet ads. We find that Internet literacy and ad skepticism are necessary for adolescents to effectively apply persuasion knowledge to identify both ad formats. Second, we demonstrate that parental mediation and parents' levels of Internet skills are critical for children's development of Internet literacy. As a result, this article advances our understanding of adolescents' responses to different Internet ad formats and the influential role of parental mediation in facilitating children's development of such skills.

The purpose of this research is to investigate children's responses to easily recognizable versus not easily recognizable Internet ads and the role of parental mediation in influencing children's responses. Past research in media socialization points to the importance of developing persuasion knowledge (i.e., an understanding of marketing tactics) and ad skepticism for the purpose of building defensive mechanisms against incoming persuasive messages (Tutaj and van Reijmersdal 2012). Further, research has established the role of parents in helping children develop their ability to identify and critically process advertising content (Kowalczyk and Royne 2016; Mangleburg and Bristol 1998). However, the not-so-obvious representation of commercial content presents a challenge for adolescents, and even more so for younger children, correspondingly making them particularly vulnerable to the underlying selling intent of these ads (De Wolf, Hudders, and Cauberghe 2016; Lawlor, Dunne, and Rowley 2016). Some Internet ads look and feel like content developed by the publisher rather than an advertiser, making it difficult for the viewer to clearly identify the creator of the content (Wojdynski and Evans 2016). As a result, children and parents may need to develop newer techniques and skills to deal with not easily recognizable Internet ads, and this research attempts to understand the same.

A study of 7,804 students from middle school through college found that more than 80% of them (irrespective of their education level) could not distinguish between sponsored content and an actual news story on a website (Shellenbarger 2016). Similarly, Cornish (2014) found that children have difficulty correctly distinguishing between some advertising and editorial content on the Internet; in other words, some advertisements appear to be editorial content. Such findings are not particularly surprising because Internet ads contain a wide array of messaging formats, including Facebook brand pages, commercial websites, and mobile apps that use interaction, integration, and personalization to merge

Address correspondence to Meng-Hsien (Jenny) Lin, California State University Monterey Bay, 309 Joel and Dena Gambord Business and Information Technology Building, Seaside, CA 93955. E-mail: jelin@csumb.edu

Akshaya Vijayalakshmi (PhD, Iowa State University) is an assistant professor of marketing, Indian Institute of Management Ahmedabad, Ahmedabad, India.

Meng-Hsien (Jenny) Lin (PhD, Iowa State University) is an assistant professor of marketing, California State University Monterey Bay, Seaside, California, USA.

Russell N. Laczniak (PhD, University of Nebraska–Lincoln) is the associate dean of graduate programs and research, John and Connie Stafford Professor of Marketing, Iowa State University, Ames, Iowa, USA.

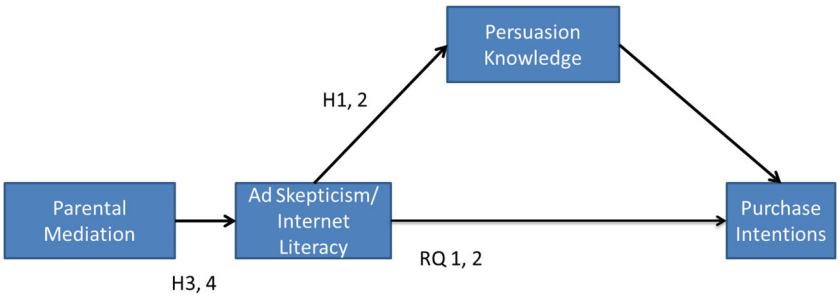

FIG. 1. Proposed model; hypothesis 1 (H1) is only for explicit ads.

commercial and noncommercial content (Verhellen et al. 2014). For example, mobile gaming apps, such as Hot Wheels Race-Off and Disney Magic Kingdom (both of which have more than 10 million downloads from the Google Play Store and have been identified as being family friendly), are not required by law to be labeled as "advertisements" (Confos and Davis 2016).

There is research suggesting that persuasion knowledge and ad skepticism, which have shown to be critical to responding to traditional TV and print ads, are insufficient for children to correctly identify and appropriately respond to today's Internet ads (Hudders et al. 2017). Therefore, we propose that additional Internet literacy (i.e., skills to use tools on the Internet) is essential to aid response to a wider range of Internet ads types. Further, because parents play a critical role in the socialization of their children in the early years of their lives, we examine which form of parental mediation (active/restrictive/monitoring/co-surfing) might be necessary for children when developing such skills. While prior work has demonstrated that specific parental characteristics predict children's reactions to traditional advertising media (cf. Carlson, Laczniak, and Walsh 2001; Nathanson 2001), the present study is one of the first to link four types of parental mediation to adolescents' responses to Internet-based ads, thus extending the domain of prior work. As such, the article integrates theory and findings associated with the persuasion knowledge model (PKM) (Friestad and Wright 1991) and parental mediation of Internet content (Livingstone and Helsper 2008) to develop its conceptual model (see Figure 1 for the complete proposed model).

Based on a survey of parents and adolescents, we find that higher-level skills, such as Internet literacy, become particularly important for adolescents to accurately process Internet ads. Further, we find that active mediation and parental monitoring play a significant role in enabling children to develop skills useful in navigating Internet ads. By integrating parental mediation efforts with young persons' responses to Internet ads, the article offers important implications for consumer socialization theory and hopes to create awareness for the need for better Internet literacy among parents and children alike. Moreover, by investigating how adolescents will use persuasion knowledge when responding to Internet-based ads, the present article tests the boundaries of the PKM and its application to the ever-changing media landscape. This topic of research is also of utmost practical importance given that this generation is composed of heavy users of online media while vulnerable to commercial messages embedded in almost all online sites.

BACKGROUND AND HYPOTHESES DEVELOPMENT

Easily Recognizable versus Not Easily Recognizable Ads

Typically, young children in the United States are exposed to online ads by the time they are four or five years old (Kowalczyk and Royne 2016). More than 60% of 13- to 17-year-olds were suggested to have at least one profile on a social networking site (American Academy of Child and Adolescent Psychiatry 2017), indicating that the majority of adolescents are actively using the Internet. By being on these social networking sites, young consumers are connecting digitally with brands even more so than before. To attract and retain the attention of adolescents for an extended period, advertisers have created personalized and interactive multimedia content online with embedded ads (Zarouali et al. 2016). Such ads may include social media pages, pop-up ads, e-mail newsletters, sponsored ads embedded on websites (Mallinckrodt and Mizerski 2007), and more. Many Internet ads blur the boundaries between information, entertainment, and commercial content, which may have significant consequences for viewers. For example, advergames, though entertaining, also place a demand on a child's cognitive resources, thus sparing little cognitive capacity for recognizing and processing brand information (Panic, Cauberghe, and De Pelsmacker 2013). In comparison, a TV ad played between programs is less demanding on the

cognitive resources of a child, making it easier for her or him to activate cognitive defenses (Panic, Cauberghe, and De Pelsmacker 2013). In other cases of online ads, sometimes the advertising format will be so interactive and engaging that adolescents may become distracted by the fun of playing the game and overlook the persuasive intent. Further, adolescents might be overwhelmed by emotionally appealing cues (e.g., personalized avatars or animated characters) used in embedded advertising formats (Hudders et al. 2017).

Even though 12- to 14-year-old participants consider ads to be irritating and believe they should be avoided (Lawlor, Dunne, and Rowley 2016), these young consumers still actively participate in sharing brand-related information via social media (e.g., Facebook status messages or tweets) because they do not always realize that such status messages or tweets are brand advertisements. Moreover, adolescents do not yet fully know how to comprehend (or even recognize) the advertising nature of the content of news updates, competitions, videos, and gaming tactics that are prevalent on social networking sites (Lawlor, Dunne, and Rowley 2016). Thus, some have concluded that adolescents are at risk of wrongly forming brand beliefs from web materials, such as social networking sites or YouTube, which appear to be created by other consumers but in fact are made by marketers (Lawlor, Dunne, and Rowley 2016).

Persuasion knowledge (PK) is defined as personal knowledge consumers maintain about marketers' motives and tactics (Friestad and Wright 1994). Such knowledge is thought to provide consumers with the ability to identify how, when, and why they are being influenced by others (Friestad and Wright 1994). As it is with the more generalized (knowledge) concept, PK is thought to develop throughout childhood into adolescence and continue into adulthood. In general, PK is composed of two main capabilities: (1) the ability to discriminate between commercial and noncommercial content in the media and (2) the ability to identify the persuasive and selling intents of advertising content (Watkins et al. 2016). The realization that a persuasion attempt is being made through the activation of PK structures is likely to influence the viewer's attitudes and thoughts about the persuasive agent (An, Jin, and Park 2014). In this article, we propose that certain concepts (e.g., Internet literacy) will be antecedents of PK and then develop research questions that explore the extent to which PK mediates the linkage between these antecedents and purchase intentions.

From a developmental perspective, young consumers should become better suited in using PK to aptly cope with persuasive influence attempts as they develop into adulthood (Tutaj and van Reijmersdal 2012). Children begin to show an understanding of how advertising works at around eight years old (Brucks, Armstrong, and Goldberg 1988). Moreover, adolescents (11 to 16 years old) are thought to have sufficient processing skills and possess a more nuanced understanding of marketing tactics (John 1999). However, research has found that with nontraditional ads, such as brand messages by social influencers which are often used in Internet advertising, it takes children longer to understand such tactics (Oates, Blades, and Gunter 2002). Identifying the commercial aspect of certain formats of Internet ads may be particularly difficult for adolescents because of their resemblance to editorial content (Wojdynski and Evans 2016). Similarly, Zarouali et al. (2016) conclude that it might be difficult even for teenagers to defend themselves against not easily recognizable Internet ads because such ads provide fewer cues. This suggests that understanding of ads, especially among other online distractions, demands mature cognitive skills, which young children might not fully possess (Rozendaal et al. 2013). That is, the activation of PK structures during exposure to Internet ads might be limited because these ads demand higher amounts of cognitive elaboration and emotional disengagement and higher task performance (Tutaj and van Reijmersdal 2012; Hudders et al. 2017). Prior research has speculated that the presence of, but lack of access to, persuasion knowledge is what makes a viewer more susceptible to its effects (Rozendaal et al. 2013). This becomes even more so in cases where ad messages are integrated with the content. Consequently, depending on the nature of the Internet ad, whether the commercial message is recognizable or not, adolescents may respond to them very differently.

As children grow older and reach their teens, they are suggested to develop adultlike ad skepticism and knowledge of ad tactics. At a younger age, children are unlikely to have the perspective-taking skills that enable them to understand the multiple purposes of an advertisement, including promoting, informing, persuading, and selling a product (Connell, Brucks, and Nielsen 2014). If viewers believe that the ad intends to persuade and not inform them, then they are likely to consider the ad more critically. So how and when will young viewers be able to detect the persuasive intent of an ad to evaluate the advertisers' tactics or credibility? Waiguny, Nelson, and Terlutter (2014) suggest that high PK needs to be activated for children to be able to defend against incoming messages. For this to occur, we contend that a general skepticism toward ads and Internet literacy are both needed for a viewer to apply dispositional persuasion knowledge to understand various Internet ad formats. We formulate and discuss these hypotheses in the following section.

Ad Skepticism

Ad skepticism is a negatively valenced construct that deals with a critical attitude toward advertising and its persuasive intent (Boush, Friestad, and Rose 1994). Ad skepticism is likely to lead adolescents to recognize that not all ad messages are trustworthy, thus making them less vulnerable to the impact of some ads on their subsequent purchase decisions (Shin, Huh, and Faber 2012). Highly skeptical adolescent receivers are likely to understand that ads are not their only source of information about products, thus often regarding them less than positively (Obermiller and Spangenberg 1998). PK has its desired effects only when the persuasion is associated with skepticism; in other words, skepticism has to be prompted for knowledge about advertising to become accessible (Isaac and Grayson 2017). Those with higher knowledge about advertiser tactics are also suggested to have a more critical attitude toward ads (Rozendaal et al. 2013). Campbell and Kirmani (2000) have shown that ad skepticism increases advertising knowledge. Similarly, Rozendaal et al. (2013) find that critical attitude toward advertising facilitates the application of persuasion knowledge, irrespective of the viewer's media experience. This is because while the entertaining nature of Internet ad formats might hinder elaborative processing of ads (Buijzen et al. 2010; Nairn and Fine 2008), having a general skepticism toward ads can trigger negative affect, which helps viewers consider the persuasive message more critically (Rozendaal et al. 2013). Further, we expect negative affect to transfer to the brand via PK. Consequently, a general ad skepticism becomes even more important as it can be activated with minimal cognitive effort (Nairn and Fine 2008). In fact, due to advertisers' use of Google AdWords and other data-based software, even a recognizable Internet ad is displayed based on personal Web search history. Hence, even the most innocuous ad demands some level of cognitive investment to apply persuasion knowledge.

> **H1:** Adolescents' level of ad skepticism will be positively associated with their likelihood to apply persuasion knowledge for easily recognizable Internet ads.

To be able to form a skeptical attitude toward an ad, an individual has to acknowledge initially that it is, indeed, an ad. However, an ad that is not as easy to recognize as an Internet ad, by nature, may not be processed as an advertisement. In such cases, we contend that Internet skills rather than ad skepticism become more important for activating PK. Internet literacy, gained by spending time on the Internet, affords children the ability to discern various types of content, thus allowing them to better identify the persuasive and selling intent of not easily recognizable commercial content.

Internet Literacy

Older children, despite having more critical attitudes toward advertising, were shown to have a positive attitude toward online ads (Shin, Huh, and Faber 2012). Consequently, we believe that, in addition to ad skepticism, children need to possess specific skills to help them respond critically to Internet advertising. Internet literacy, one such essential skill, deals with an individual's competency, fluency, and knowledge; thus, level of Internet literacy is likely to affect children's experiences when using the Internet (Lee and Chae 2012; Litt 2013). Internet literacy, defined as the ability to assess, analyze, evaluate, and create online content, can be measured based on the specific skill sets required of the individual to navigate and interact effectively on the Internet (e.g., ability to download a file or access a video on the Internet).

Livingstone and Helsper (2008) argue that Internet literacy is likely to have a more considerable influence on a young person's Internet experience than a user's age. Individuals with high Internet literacy are more exposed to various Internet ad formats and should be more adept at processing most types of commercial content. Rozendaal et al. (2013) find that media experience is essential for viewers to activate and use their knowledge as a defense. More media exposure comes with more opportunities to learn to cope with incoming information, thus building knowledge on a variety of ad formats (Rozendaal et al. 2013). Further, as children continue to interact with online commercial content, these experiences become more familiar and appear less novel, leaving children with cognitive resources to evaluate the ads more critically as compared to the first few times they are experiencing a new media format (Rozendaal et al. 2013). Being able to identify the persuasive and selling intent of an ad is considered a cognitive defense, thus requiring more processing effort. Further, prior research on consumer socialization, though not in the context of Internet ads, suggests that domain-specific content knowledge gained via experience with persuasive attempts will influence the development and application of PK (Hudders et al. 2017). Here, we investigate the role of Internet literacy on adolescents' ability to identify the persuasive and selling intent of Internet ads. Overall, we hypothesize that Internet literacy will help adolescents apply persuasion knowledge when encountering Internet ads.

> **H2:** Adolescents' Internet literacy will be positively associated with their likelihood to apply persuasion knowledge to both (a) easily recognizable and (b) not easily recognizable Internet ads.

Impact of Ad Skepticism and Internet Literacy on Purchase Intention

Most researchers dealing with PK draw from Friestad and Wright's (1991) model that suggests by understanding an advertiser's persuasive intent consumers concomitantly develop an increased skepticism toward ads, which in turn leads them to question claims made therein (An, Jin, and Park 2014). Yet, high levels of PK do not necessarily lead to less favorable attitudes toward an ad. Studies note that consumers, despite accessing persuasion knowledge, might consider a persuasion attempt in a positive manner (Isaac and Grayson 2017). This is likely to happen when consumers find a particular ad tactic to be credible, leading to increased trust. Such a notion is consistent with Friestad and Wright's (1994) original conceptualization of PK, which contends that consumers cope with incoming persuasion attempts, instead of simply resisting such information. An ad can also be persuasive when it provides useful and new information about a product (Preston 1996). Similarly, several studies have failed to find a negative impact of PK on purchase intent (refer to An and Stern 2011; Mallinckrodt and Mizerski 2007; van Reijmersdal, Rozendaal, and Buijzen 2012).

On the other hand, there is also evidence showing that ad skepticism can reduce a child's desire for an advertised brand (Vanwesenbeeck, Ponnet, and Walrave 2017). In the absence of a critical view of ads, positive affect triggered from the ad might lead to positive attitudes toward the brand (Hudders and Cauberghe 2018). In our previous hypothesis, we suggest that ad skepticism acts as a motivation to trigger and apply PK. When the ad knowledge is activated, viewers are likely to demonstrate higher levels of understanding of the persuasive and selling intent, which could lead to less interest in the advertised products (Friestad and Wright 1991). Given the varying past research findings and new theoretical possibilities, we pose the following research questions:

> **RQ1:** How will persuasion knowledge mediate the relationship between adolescents' ad skepticism and purchase intention of the advertised product for easily recognizable Internet ads?

> **RQ2:** Will persuasion knowledge mediate the relationship between adolescents' Internet literacy and purchase intention of the advertised product for easily recognizable (versus not easily recognizable) Internet ads?

Parental Mediation and Its Influence on Adolescents' Ad Responses

Prior research has focused on individual factors of children such as age and cognitive development (Shin et al. 2012), need for cognition and perspective taking (Vanwesenbeeck, Ponnet, and Walrave 2017), and users' engagement with the medium (Waiguny, Nelson, and Terlutter 2014) to understand their response to ads. However, a critical influencer of an adolescent's knowledge and ability are the socializing agents: parents. Although research on traditional advertising has demonstrated the importance of parental mediation in preparing children for the marketplace (Mikeska, Harrison, and Carlson 2017), to date, only a handful of studies have investigated this phenomenon for Internet ads (Lin, Vijayalakshmi, and Laczniak 2019; Rozendaal, Buijzen, and Valkenburg 2009; Vanwesenbeeck, Walrave, and Ponnet 2016). Hudders et al. (2017) suggest "there is a pressing need for research on how parental mediation can impact children's advertising literacy" (p. 15). Further, researchers suggest that parents can play a critical role in educating their children on various Internet ad formats and, thus, better preparing them for the online marketplace (Zarouali et al. 2016).

Parental mediation is defined as "a strategy parents use to control, supervise or interpret media content for children" (Warren 2001, p. 212). These include active mediation, restrictive mediation, restrictive mediation, co-surfing, and monitoring (Livingstone and Helsper 2008). *Active mediation* involves parental engagement and interaction with children on Internet content, usage, and other related topics. *Restrictive mediation* deals with parents applying rules and time limits for their child's media consumption. *Monitoring* practices include parents installing filtering or blocking software that can assist in supervising a child's Internet activity. Finally, *co-surfing* involves parents being present while children use the Internet. Parents use the occasion to interpret media content or restrict specific activities online (Livingstone and Helsper 2008). A likely outcome of parental mediation (in the Internet context) is a heightened level of ad skepticism and improved Internet skills in children (An, Jin, and Park 2014). Consequently, in the present study, we investigate the effectiveness of different parental mediation strategies on increasing both adolescents' ad skepticism and Internet literacy.

Active mediation Children whose parents use this form of mediation are more likely to learn from their parents about the harmful effects of ads and hence become more resistant to persuasion messages (Moschis and Moore 1979). Such communication is important to help children defend against persuasive Internet ads because many of these online ads appear in subtle, non-traditional forms which makes it more difficult to restrict or monitor (Kowalczyk and Royne 2016). Under the influence of active mediation, children are likely to learn to use the media with the aid of their parents and thus become media-literate consumers (Lwin, Stanaland, and

Miyazaki 2008). Together, when parents and children together directly engage in media use, it helps children avoid the persuasive impact of advertising and instills a sense of competency and confidence in them (Buijzen and Valkenburg 2005; Shin, Huh, and Faber 2012). This outcome is demonstrated through the increase in knowledge and skepticism of media content in children (Hudders and Cauberghe 2018; Gentile et al. 2012). Consequently, we expect parents' use of active mediation (as compared to the use of other mediation methods) to lead to higher ad skepticism and Internet literacy in adolescents.

Restrictive mediation Setting limitations on media use (e.g., amount of time and types of websites) for children, a standard method of restrictive mediation, has a positive influence on the child's performance. For instance, children who consume less screen time are suggested to perform well academically and are less likely to engage in gender stereotyping or demonstrate aggressive tendencies (Gentile et al. 2012). This is expected, as limiting exposure to media automatically minimizes the influence (whether negative or positive) on them. Because of parents' reservations and skepticism about media and advertising influence, parents often choose to restrict a child's use of media. In the process, restrictive mediation helps children develop negative attitudes toward media content as they learn that their parents do not always approve of it (Cornish 2014). We expect this skepticism to "rub off" on their children as well. However, at the same time, limiting exposure to media using restrictive mediation deprives a child from the opportunity to learn and adapt to the changing media environment (Lee and Chae 2012). Hudders and Cauberghe (2018) further support this by arguing that restricting media consumption will be particularly detrimental for older (versus younger) children, as they are deprived of opportunities to learn critical thinking skills, which are useful for viewing persuasive ads. Other authors suggest that limiting media use will hinder the consumer socialization process (Hudders and Cauberghe 2018), resulting in low Internet literacy. In sum, the reduction of online exposure using restrictive mediation while increasing ad skepticism in children may come at a cost: low Internet literacy.

Findings suggest that parents mainly use active or restrictive mediation; they use monitoring and co-surfing more limitedly (Nelson et al. 2017). Although it should be noted that research on the impact of monitoring and co-surfing on children's Internet ad consumption is also somewhat limited. However, other research demonstrates that as children grow older, their parents are likely to co-use (surf and view) media more with fewer restrictions (Connell, Lauricella, and Wartella 2015). In general, the forms of parental mediation used by parents tend to shift as their children grow older and are likely to spend more time with their peers instead. Further, parents tend to believe that their children have advanced in their skills of handling media and, thus, parental monitoring is less needed (Shin 2017). Hence, we believe that while the other two parental mediation methods might be used to a lesser extent, it is still relevant to study the effects of parental monitoring and co-surfing as it may be used more for older children.

Parental monitoring Parental monitoring includes parents soliciting information from their children on their Internet use, tracking children's Internet use through any apps or devices, children's self-disclosure, and use of software to restrict access to certain websites (Khurana et al. 2015; Livingstone and Helsper 2008). Parents use the log of their children's Internet activities to discourage certain kinds of Internet usage, suggesting engaged discussions about advertisements are absent in this mediation method (Khurana et al. 2015). Consequently, in such homes, children are more likely to be susceptible to being persuaded by Internet ads because they are monitored and demonstrate lower comprehension of advertising, as children are not taught about the effects of advertising but are only restrained from viewing them (Buijzen and Valkenburg 2005). Further, using monitoring tools for the Internet may not be as effective because sponsored interactive websites or games may not be detected by monitoring software (Kowalczyk and Royne 2016). Yet the effects of monitoring are different from restrictive mediation because parents act via dissuading certain online activities, which does not necessarily reduce Internet time usage (Khurana et al. 2015). Thus, children are likely to still pick up Internet skills from increased Internet consumption experiences. Overall, monitoring could lead to increased Internet literacy but reduced ad skepticism.

Co-surfing Co-surfing is mostly used by parents who themselves tend to have higher screen time and stay at home longer with their kids (Evans, Hoy, and Childers 2018; Connell, Lauricella, and Wartella 2015). Parents who prefer to co-surf generally have a positive view of media and have higher media efficacy as compared to parents engaged in other parental mediation methods (Connell, Lauricella, and Wartella 2015). Parents occasionally share general opinions about media content with their children during co-surfing rather than actively hold conversations about advertisements (and its persuasive intent) as done in active mediation (Jiow, Lim, and Lin 2016). However, because the discussion is often focused on the content and not on the commercial aspect of ads, this may limit deliberations, which are necessary to develop a critical attitude toward the Internet (Youn

2008). Further, many studies point to the fact that parents' knowledge of the latest embedded persuasive techniques is also limited (Evans, Carlson, and Hoy 2013; Evans, Hoy, and Childers 2018). Despite the limited advantage of adopting this mediation for developing ad skepticism, co-surfing could still prevent the child from misuse or exposure to age-inappropriate content while still allowing the child to pick up necessary Web navigation skills (Youn 2008). Therefore, we suggest that, in the case of co-surfing, adolescents are likely to show higher Internet literacy but lower ad skepticism. Based on this information on the different forms of parental mediation, their individual impact on ad skepticism and Internet literacy are as predicted (also see Figure 1):

H3: Parents' use of active mediation and restrictive mediation (versus monitoring or co-surfing) will be positively (versus negatively) related to adolescents' skepticism toward ads.

H4: Parents' use of active mediation, monitoring, and co-surfing (versus restrictive mediation) will be positively (versus negatively) related to adolescents' Internet literacy.

METHODS

Participants

Parents with adolescents between the ages of 10 and 15 years (related dyads) in the United States were recruited through a Qualtrics online panel for the study. We restricted the sample age to 15 years because, according to John's (1999) cognitive development classifications, children between the ages of 11 and 16 years are supposed to be in the last stage of cognitive development—called the reflective stage—in which they develop abstract thinking and consider multiple perspectives (John 1999).

Qualtrics-partnered panels have been widely used in academic research and are considered reliable and well managed (e.g., Bennett, Hill, and Daddario 2015; Wang, Beatty, and Lu 2012). The survey included attention checks to make sure that participants, both parents and children, who were not paying attention were screened out. Further, timers were included to screen participants who spent too little or too much time on the survey. The e-mail invitation was sent to the parent, instructing the participants to take the survey on a computer and have a headset/speaker handy for viewing video ads. Participants were prompted with a question about having a headset/speaker available at the start of the survey as well. Those who selected *No* were taken to the end of the survey. Parents were requested to grant consent for their children's participation, which was the second half of the survey. Further, parents were provided with a sample of children's survey questions so that they would have an idea of the kind of questions the children would answer. We adopted measures based on Walker (2016).

A total of 1,330 sets of participants started the survey. With the screener questions applied, a total of 334 sets were completed (response rate = 25.11%). At the end of the survey, we had the following question: "Did you make any false responses? Please be honest about this question as it would be very helpful for the project." Participants who chose *Yes* were excluded from further analysis, resulting in a final data set of 307 sets of participants. In the final data set, half of the adolescents were in the age range of 10 to 12 years ($n = 152$), and the other half were between 13 and 15 ($n = 155$). Among the child participants, 161 (52.4%) were boys. Among the parent participants, 243 (79.2%) identified as mothers and 205 (66.8%) parents were married. This aligned with previous research, which found that mothers are the primary caretakers and socializers and more likely to be mediating their adolescents' advertising exposure (Kowalczyk and Royne 2016). The median income of the parent participants was between $50,000 and $74,999 (the median income in 2017 was $58,714; Short 2017). Moreover, 73% of our parent participants were Caucasian, whose median income in 2015 was recorded to be $59,698 (U.S. Census Bureau 2015). These figures show that our sample is representative of the population. In our sample, 62% of parents had completed at least some college.

Study Procedure for Parents

Parent participants filled out the first half of the survey, as described, responding to the screener questions, agreeing to the consent form, permitting their child to be part of the study. Next, they answered parental mediation questions, reported their level of Internet use and social media knowledge (capturing their Internet skills), and completed demographic questions presented in the Qualtrics online survey tool.

Parental mediation Parents' use of mediation was gathered on four subscales measuring active mediation (e.g., "Tell your child that not all products appearing on the Internet are of good quality"; six items, $\alpha = .89$), restrictive mediation (e.g., "Limit the amount of time your child can stay on a website"; seven items, $\alpha = .90$), monitoring (e.g., "Do you or your spouse/partner check your child's profile on a social network or online community?"; three items, $\alpha = .92$) and co-surfing (e.g., "Surf the Internet with your child"; three items, $\alpha = .78$) (Shin 2010). See the supplemental online appendix for the full scale.

TABLE 1
Mean and Reliability of Variables Used in the Study

Variable	Reliability (α)	*M* (*SD*)
Ad skepticism	.68	2.71 (.53)
Child Internet literacy	.94	3.09 (.71)
Active mediation	.89	3.28 (.88)
Restrictive mediation	.90	3.94 (.87)
Monitoring	.92	3.71 (1.21)
Co-surfing	.78	3.19 (.80)

Parental Internet skills In addition, parents were asked to identify how good they were at 16 different Internet-based activities (Shin 2010), including watching videos, visiting a social profile page, and using the Internet for their children's schoolwork. This measure of Internet skills was used as a control variable in testing hypotheses 3 and 4.

See Table 1 for reliability and mean estimates of the key variables measured; see the supplemental online appendix for full scale items.

Study Procedure for Adolescents

In the second part of the study, a total of seven target ads selected from existing ads and two sample ads were presented to the adolescent participants (see the supplemental online appendix for further details on the ad stimuli). These ads varied in terms of ad format, explicitness of the persuasive message, brand, and product. All of the same products are popular among adolescents (mostly gender neutral). The ads included a Starburst ad on an MTV web page; a Simple cleansing water ad embedded in an editorial blog post on https://www.seventeen.com; an *Ice Age* movie ad embedded on the home page of the Museum of Science website; an American Airlines e-mail newsletter on a Gmail account; a post on the PBS Facebook brand page; and a celebrity sponsor (LeBron James) in a McDonald's video ad on YouTube. One IKEA ad was dropped because of measurement issues. Screenshots of web pages were shown, and video ads were presented as embedded links via Qualtrics. By showing existing ads and exposing children to various ad formats we tried to keep each stimulus realistic. It is very likely that someone browsing Facebook is simultaneously exposed to a brand page as well as a banner ad of the same or different brands at the same time.

All adolescent participants saw the target ads in randomized order; each ad was displayed for 30 seconds. Following each ad was a set of questions that gauged participants' PK (commercial source, persuasive and selling intent) and purchase intention. Adolescents completed a practice trial that consisted of two sample ads followed by the questions described. The sample ads were similar to the target ads consisting of banner ads on https://www.teenvogue.com and https://www.webmath.com. The survey concluded with questions on ad skepticism, Internet skills, and other demographics.

Persuasion knowledge For each target ad shown, three sets of PK questions were used to capture adolescents' understanding of the ad, including commercial source ("Who created this message?"), persuasive intent ("Is the ad on the website intended to make you like the *ad*?"), and selling intent ("Is the ad on the website intended to make you buy the *product*?"). Participants were provided with four choices when discerning the commercial source. For example, the following response options were given for the Starburst banner ad on the MTV website: *MTV*, *Starburst*, *Fans of MTV*, and *I don't know* (van Reijmersdal, Rozendaal, and Buijzen 2012; Rozendaal et al. 2013). Only one option was the correct answer (Starburst, in this case) and was coded as 1 (versus 0 for all incorrect responses). For persuasive intent and selling intent, adolescents responded on a 4-point scale: 1 = *No, certainly not*; 2 = *No, I don't think so*; 3 = *Yes, I think so*; 4 = *Yes, for sure* (Rozendaal, Buijzen, and Valkenburg 2009; Rozendaal et al. 2013). The mean of persuasive intent and selling intent was taken and treated as PK (Panic, Cauberghe, and De Pelsmacker 2013).

Purchase intention Adolescents responded to the purchase intent ("Are you likely to purchase the [___] product?") question on a 4-point scale: 1 = *Definitely will not buy* to 4 = *Definitely will buy* (Rozendaal, Buijzen, and Valkenburg 2009). For each ad, we calculated individual means for the PK and purchase intention (presented in Table 2).

Ad skepticism This three-item measure, adopted from Rozendaal et al. (2013), captured ad skepticism of adolescents (see supplemental online appendix). The sample item, "Do you think advertising offers useful information about products?" was measured on a 4-point scale: 1 = *No, certainly not*; 2 = *No, I don't think so*; 3 = *Yes, I think so*; 4 = *Yes, for sure* (van Reijmersdal 2011; Rozendaal et al. 2013).

Adolescents' Internet literacy Participants were asked to identify how fluent they are at 16 different Internet-based activities, such as watching videos, visiting a social profile page, and using the Internet for schoolwork. The items were measured on a 4-point scale from 1 = *Very poor* to 4 = *Very good* (Shin 2010).

TABLE 2
Children's Level of Persuasion Knowledge across Ad Formats

Source Recognition	*n* / *M* (*SD*)	Persuasive Intent	*n* / *M* (*SD*)	Selling Intent	*n* / *M* (*SD*)	Purchase Intent	*n* / *M* (*SD*)
MTV Starburst banner ad ($n = 307$)							
MTV	205	No, certainly not	25	No, certainly not	18	No	215
Starburst	47 (15.3%)	No, I don't think so	76	No, I don't think so	48	Yes	92
Other fans of MTV	3	Yes, I think so	143	Yes, I think so	153		
I don't know	52	Yes, for sure	63	Yes, for sure	88		
			2.79 (0.86)		3.01 (0.82)		.30 (.46)
Ice Age movie ad on the Museum of Science website ($n = 307$)							
Museum of Science	219	No, certainly not	21	No, certainly not	14	No	102
Ice Age	55 (17.9%)	No, I don't think so	75	No, I don't think so	60	Yes	205
Other fans of Museum of Science	3	Yes, I think so	157	Yes, I think so	157		
I don't know	30	Yes, for sure	54	Yes, for sure	76		
			2.79 (.81)		2.96 (.79)		.67 (.47)
American Airlines e-mail newsletter ($n = 307$)							
American Airlines	234 (76.2%)	No, certainly not	13	No, certainly not	10		
Gmail or Google	41	No, I don't think so	45	No, I don't think so	20		
Other travelers of American Airlines	7	Yes, I think so	171	Yes, I think so	162		
I don't know	25	Yes, for sure	78	Yes, for sure	115		
			3.02 (.75)		3.24 (.72)		
McDonald's LeBron James video ($n = 307$)							
LeBron James	10	No, certainly not	7	No, certainly not	6	No	47
McDonald's	288 (93.8%)	No, I don't think so	27	No, I don't think so	17	Yes	260
I don't know	9	Yes, I think so	122	Yes, I think so	110		
		Yes, for sure	151	Yes, for sure	174		
	2		3.36 (.74)		3.47 (.69)		.85 (.36)
Simple cleansing water editorial ad ($n = 307$)							
To give makeup tips	111	No, certainly not	22	No, certainly not	16	No	267
To promote Simple cleansing water	101 (32.9%)	No, I don't think so	67	No, I don't think so	63	Yes	40
To encourage people to apply makeup	42	Yes, I think so	168	Yes, I think so	157		
I don't know	53	Yes, for sure	50	Yes, for sure	71		
			2.80 (.79)		2.92 (.80)		.13 (.34)
PBS Facebook brand page ($n = 307$)							
PBS TV channel	243 (79.2%)	No, certainly not	15	No, certainly not	12		
Researchers	2	No, I don't think so	50	No, I don't think so	32		
Facebook	39	Yes, I think so	174	Yes, I think so	175		
I don't know	23	Yes, for sure	68	Yes, for sure	88		
			2.96 (.76)		3.10 (.73)		

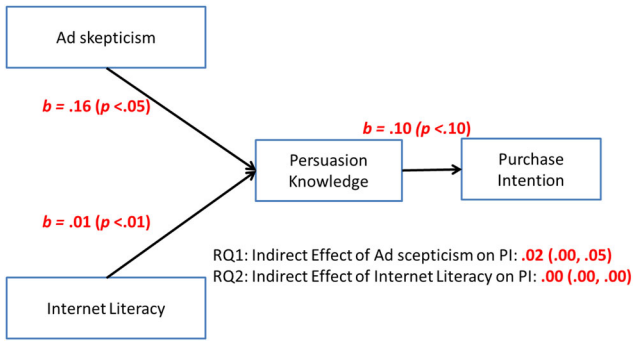

FIG. 2. Adolescents' response to an easily recognizable Internet ad. The model was defined using PROCESS macro Model 4, with 5,000 bootstrap samples (Preacher and Hayes 2004; Hayes 2013). In this mediated model for a non-native Internet ad, we find support for hypotheses 1(a) and 1(b) and note as a response to research question 1 that PK mediates the relationship between ad scepticism and purchase intentions.

We captured brand attitudes for brands popular with children to use as a control variable. Further, other background variables, such as adolescents' time spent on the Internet during weekdays and on weekends, were gathered (Shin 2010).

RESULTS

Adolescent Response to Online Ad Formats

Commercial source recognition To discern the level of explicitness for each ad, we first analyzed the accuracy rate of commercial source recognition for each of the ads used in the study. The PKM suggests that consumers' ability to effectively cope with advertising messages is predicated on recognition and understanding of the persuasive nature of the messages (Wojdynski and Evans 2016). For example, correctly identifying an article as a sponsored ad was critical for the activation of PK and impact on attitude toward the ad (Wojdynski 2016). Therefore, the ability to identify commercial content is used as a basis to identify the nature of the Internet ad content. Easily recognizable Internet ads, such as a McDonald's celebrity video ad and a PBS Facebook brand page, were accurately identified by 93.8% and 79.2% of the adolescents, respectively. However, Internet ads such as the Starburst ad and Ice Age embedded ad on the Science Museum website reached recognition rates of only 15.3% and 17.9%, respectively, suggesting lower recognition (see Table 2). Given this finding, we used the McDonald's celebrity ad and the Starburst ad on the MTV web page as exemplars for easily recognizable and less recognizable Internet ads, and were subsequently used for hypothesis testing.

Hypotheses testing The regression model was defined using PROCESS macro Model 4, with 5,000 bootstrap samples (Preacher and Hayes 2004; Hayes 2013). In this model, ad skepticism and Internet literacy were specified as the independent variables. These variables were predicted to have direct relations to PK, the mediator in the model. Purchase intention was the dependent variable. We combined the persuasive intent and selling intent measures to create the PK variable because they were highly correlated ($p < .01$; Panic, Cauberghe, and De Pelsmacker 2013). We ran separate models for easily recognizable ads and not easily recognizable ads, as explained next. Because PROCESS allowed for only one independent variable at a time, two models with either ad skepticism or Internet literacy were run while controlling for independent variables, including adolescents' age (which can influence PK, Livingstone and Helsper 2008), and children's liking of McDonald's. We also controlled for adolescents' age, as past research has shown that it can influence PK (Livingstone and Helsper 2008). For the easily recognizable Internet ad, we also controlled for children's liking of McDonald's.

Easily recognizable Internet ad: McDonald's celebrity video We find that both ad skepticism ($\beta = .16$; $p < .05$) and Internet literacy ($\beta = .01$; $p < .01$) lead to increased PK for the easily recognizable Internet ad, thus providing support for hypotheses 1 and 2(a). Coming to the research question on the impact of these types of Internet ads on purchase intentions, we find no significant direct relationship between either ad skepticism or Internet literacy on purchase intention. We did find that higher persuasive intent led to marginally higher recognition of selling intent ($\beta = .10$; $p < .10$). Moreover, we find a significant indirect relationship between ad skepticism and purchase intentions via persuasion knowledge (IE (CI) = .02 [.00, .05]). We do not find a significant relationship between Internet literacy and purchase intentions via PK (IE (CI) = .00 [.00, .00]). To answer research question 1, based on the results, we find that ad skepticism tends to increase purchase intentions via PK only, thus demonstrating a boomerang effect of ad skepticism for easily recognizable Internet ads. Further, Internet literacy appears not to affect purchase intentions. See Figure 2 for a visual representation of the results. Liking of the brand was included as a control variable because it had a significant direct impact on purchase intentions ($\beta = .54$; $p < .001$).

Not easily recognizable Internet ad: Starburst ad on website As expected, we find that Internet literacy has a significant effect on PK ($\beta = .01$; $p < .001$) for the not easily recognizable Internet ad, thus providing support for hypothesis 2(b). Further strengthening our claims, we find no significant relationship between ad skepticism and PK

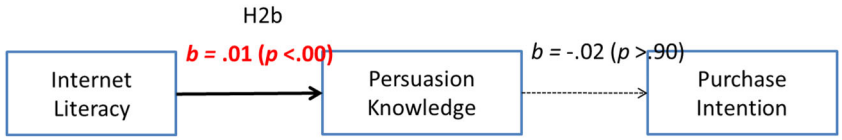

FIG. 3. Adolescents' response to a less than easily recognizable Internet ad. The model was defined using PROCESS macro Model 4, with 5,000 bootstrap samples (Preacher and Hayes 2004; Hayes 2013). In this mediated model for a native Internet ad, we find support for hypothesis 2(b) and note as a response to research question 2 that persuasive knowledge mediates the relationship between Internet literacy and purchase intentions.

TABLE 3
Direct Effects (β) of Parental Mediation

Parental Mediation	Ad Skepticism	Internet Literacy
Active mediation	**−.15**	.09
Restrictive mediation	−.01	**−.24**
Monitoring	.11	**.13**
Co-surfing	**.18**	−.04
Control variable		
Child's age	.08	**.29**
Parents' Internet skills	.08	**.39**
	H3 partially supported	H4 partially supported

of the less-recognizable Internet ad. We find a significant direct relationship between Internet literacy and purchase intention. We find that higher Internet literacy leads to higher purchase intentions ($\beta = .03$; $p < .05$). The indirect effect of Internet literacy via PK was statistically significant but nonsubstantial (IE (CI) = .00 [.00, .01]). To answer research question 2, based on the results, we find that Internet literacy tends to increase purchase intentions directly, thus demonstrating a boomerang effect of Internet literacy for not easily recognizable Internet ads. See Figure 3 for a visual representation of the results. Here, we also find that the control variable, child's age, has a significant negative impact on PK ($\beta = -.06$; $p < .05$) and significant positive effect on purchase intentions ($\beta = .23$; $p < .05$).

Role of parental mediation In hypothesis 3, we predicted that the use of active and restrictive mediation would result in high ad skepticism in adolescents. Regression results revealed that active mediation was negatively related to child ad skepticism ($\beta = -.15$; $p < .05$; ad skepticism was reverse scored), while co-surfing was positively related to child ad skepticism ($\beta = .18$; $p < .01$), implying that active mediation led to increased ad skepticism but co-surfing reduced it. We did not find, however, a significant relationship for restrictive mediation and monitoring on ad skepticism, hence providing only partial support for hypothesis 3. Hypothesis 4 predicted that active mediation, co-surfing, and monitoring would result in higher levels of Internet literacy in adolescents. Results revealed that monitoring ($\beta = .13$; $p < .05$) was positively related to adolescents' Internet literacy, while restrictive mediation was negatively associated with it ($\beta = -.24$; $p < .001$). Co-surfing and active mediation did not have any significant direct effect on Internet literacy. Thus, hypothesis 4 is only partially supported (see Table 3). In addition, we find that the control variables child's age ($\beta = .29$; $p < .001$) and parental Internet skills ($\beta = .39$; $p < .001$) had a significant impact on child's Internet skills.

Conclusions from the Studies

As noted in the introduction, the aim of this study is twofold. First, adolescents' understanding of both easily recognizable and not easily recognizable online ad formats is examined, followed by the second goal to unravel parents' role in influencing adolescents' understanding of various ad formats. Based on the results, we arrive at three main contributions for this study.

First, Internet ads are subtle, entertaining, and engaging in nature, thus requiring us to activate advanced defensive mechanisms (i.e., ad skepticism leading to persuasion knowledge). Indeed, we find support for such a proposal. Second, the results point to the important role of Internet literacy, along with ad skepticism, to identify the persuasive intent of different Internet ad formats. We show that adolescents with high (versus low) Internet literacy were more likely to activate PK for both easily recognizable and not easily recognizable Internet advertisements. Third, we find that children of parents who use active mediation and have higher Internet skills

displayed higher ad skepticism and Internet literacy, respectively, which resulted in better activation of PK when exposed to Internet ads. Unsurprisingly, the use of restrictive mediation resulted in adolescents with lower levels of Internet literacy. On the other hand, while parents routinely using monitoring mediation helped increase Internet literacy in their children, this method did not help increase their ad skepticism. Co-surfing seemed to be the least helpful, as it not only reduced ad skepticism (necessary for applying PK) but also restricted the development of Internet literacy in children. This is, to our knowledge, the first article attempting to connect parents' characteristics and Internet mediation methods to adolescents' responses to Internet ads in a single study (see Figure 1).

DISCUSSION

Researchers have called for the urgent need to find ways to prepare children to handle newly emerging persuasive practices online (An, Jin, and Park 2014; Nelson 2016). This article responds to that call.

We show that not all Internet ads are created equal; some ads are more easily recognizable than the others. Research on the relationship between PK and purchase intentions has mainly been conducted on advergames and social network games with younger children (under 13 years old). The persuasive message and intent are masked through the nature of these games being entertaining and are likely to have an implicit influence on children engaged in such games. On the other hand, Internet ads exist in various formats ranging in their level of explicitness in the persuasion message, and adolescents are assumed to be more cognitively prepared to handle persuasion in more explicit contexts, hence gaining less attention from researchers. Researchers have also examined different Internet ad formats like social network games and banner ads in separate studies (De Wolf, Hudders, and Cauberghe 2016; De Jans, Hudders, and Cauberghe 2016; Tutaj and van Reijmersdal 2012). However, no work, to our knowledge, has considered the level of explicitness of such ads, comparing them all together in the same study from the perspective of adolescents. Investigating the exposure purchase intention relationship for both easily recognizable and not easily recognizable Internet ad formats is vital because adolescents are thought to be less vulnerable to an ad message if they understand the ad format (Tutaj and van Reijmersdal 2012).

Burns and Lutz (2006) find that young consumers are likely to have a positive attitude toward a banner ad if they find it informative. On the other hand, their attitude toward an ad that floats on the page while viewing the page may be lower because they find a floating ad to be annoying. Given varying preferences and responses toward different ad formats, we investigated multiple ad formats in our study to see how certain characteristics of adolescents (such as age, attitude, or skill levels) drive these varying effects. Rather than making assumptions about the ad formats, in our study we captured adolescents' response to actual ads. We find that adolescents struggled to correctly identify the commercial source of certain banner ads and sponsored ads embedded on a website. Though previous research had suggested that banner ads may be considered as an easily recognizable type of Internet ad (Tutaj and van Reijmersdal 2012), this finding may not necessarily be the case for children and adolescents, as they may assume a banner ad to be part of the page content. An, Jin, and Park (2014) suggest that source identification is essential in developing PK.

More importantly, we discover that higher-level skills, such as Internet literacy, become particularly important when processing Internet ads. While we find that ad skepticism is useful for applying PK for easily recognizable Internet ads (i.e., product and message of the product is clear and salient to the viewers), such as celebrity sponsored video, it was only those adolescents with high Internet literacy who were able to identify the persuasive intent of *both* types of Internet ads.

Our results show that Internet literacy is influenced by both adolescents' age and their time spent on the Internet, which is consistent with findings from previous research (Livingstone, Bober, and Helsper 2005). Overall, we recommend greater emphasis be placed on other individual difference variables (than age) like Internet literacy (not yet widely studied in advertising context) to resolve constant debates on adolescents' response to Internet ads.

While adolescents' Internet literacy affords them the ability to identify the persuasive and selling intent of an ad, it is also a double-edged sword. Adolescents with high Internet literacy are likely to spend more time on the Internet, hence being exposed to more Internet ads, and this might also make them a vulnerable target to a host of other Internet threats. This could also explain why they demonstrate higher purchase intentions, as we saw in the case with the less easily recognizable ad. Lee and Chae (2012) find that children who had higher Internet literacy and had more restrictions placed on them were least likely to be exposed to online risks. But even that did not completely prevent them from exposure to risks. Therefore, the authors recommend parents not only discuss with their children the potential risks of using the Internet but also make use of filtering software (Lee and Chae 2012). In particular, we find that parents engaging in active mediation were likely to raise the child's skepticism, whereas co-surfing along with the child reduced it.

On the other hand, monitoring (versus restrictive mediation) increased (versus decreased) children's Internet literacy. The results suggest that parents would have to use a combination of mediation methods to address children's Internet usage.

Implications for Parents, Teachers, and Public Policymakers

Because access to technology, including tablets and smartphones, is occurring at increasingly younger ages, the role of parents cannot be fully replaced by formal education at school. As we show in our study, parental mediation style has a significant impact on the formation of a child's response to Internet ads. Also, children's interactions on such mobile devices create a challenge for parents to exercise mediation methods effectively. Hence, similar to Lee and Chae (2012), we would recommend parents adopt a mix of active and monitoring mediation. That is, we encourage parents to discuss various ad formats while also monitoring their children's activities online. Parents should be encouraged to utilize large screens and project their child's media content in the common rooms, as smart devices allow such technologies to be made possible. Parents should also educate their adolescents on other likely harms of the Internet, such as bullying, identity theft, and online predators. In their survey of 291 parents, De Pauw et al. (2016) find that more than half of these parents did not talk critically about Internet ads or their formats to their children. Our results suggest an urgent need to educate parents on the significance of having such discussions with their children. It is likely that children's ad skepticism and Internet literacy are from parents' mediation of the Internet rather than Internet ads specifically. We believe there will be gains from focusing on Internet ads in addition to the content.

Parents should be educated about not only the existence of different ad formats but also the subtleties of them, as Evans, Carlson, and Hoy (2013) find that even parents struggled to identify advergames despite being provided with a definition for them. Further, Evans (2014) argues that one must not assume that prior experience in defending against traditional ads will make a consumer better prepared for nontraditional Internet ads. If anything, it might hinder parents' recognition of unconventional ads (Evans, Carlson, and Hoy 2013). This confirms the need to develop advertising literacy programs for both adults and adolescents to better understand Internet ads and stress the differing nature of ad formats. Such programs could also include information about the Internet marketing environment, how desirable messages are created and shared, and how one could apply these lessons to make better choices (Austin et al. 2018). While our findings seem to suggest parents play a crucial role in their child's development of Internet literacy and persuasion knowledge skills, these are also skills that can be learned with support in a more institutional setting, such as schools. Internet literacy could be built into school curriculums, given the increasing use of technology for homework and learning at the grade-school level. Providing training for teachers on how to teach subjects such as ad persuasion could also be fruitful.

It is also worth noting that improving Internet skills for the parents can have a positive impact on effective parenting as well (Vijayalakshmi, Lin, and Laczniak 2018). For instance, parents who actively (versus passively) use social media are more likely to mediate the impact of social media influencers (Lin, Vijayalakshmi, and Laczniak 2019). Educational programs directed at parents in forms of public service announcements and early parenthood education could prove to be potential channels to disseminate knowledge about the Internet, to understand what is good practice, and to provide resources for both the parents' personal development (i.e., keeping up with technology) and their children's well-being. Apart from parental guidance, what are the other ways by which children develop Internet literacy? Livingstone, Bober, and Helsper (2005) predict that Internet literacy will increase with age. Further, Internet literacy is expected to correlate with time spent online. Viewers with media experience tend to be well versed with various ad formats as compared to viewers who do not use much media. Given that there is a positive correlation between media ownership and Internet literacy (De Jans, Hudders, and Cauberghe 2016), adolescents using more media are likely to possess higher persuasion knowledge. With practice (dealing with and becoming familiar with persuasive messages), adolescents improve their ability to apply persuasion knowledge (Friestad and Wright 1991) effectively.

Creating targeted messages or programs for parents to convey this information based on parental mediation style might be challenging for policymakers. As a result, we identified some demographic characteristics based on a tertile split of parents on their respective mediation scores (see Table A1 in the supplemental online appendix). Inferring from the descriptive analysis of the sample background, we find that mothers more than fathers are likely to use monitoring. Parents tend to co-surf more often with their sons than with their daughters. Further, parents with an advanced degree or native English speakers are likely to use co-surfing in comparison to parents with a lower education degree or non–native English speakers. Divorced/separated parents are less likely to use co-surfing, and many single parents show a preference for monitoring. Latino/Hispanic parents are likely to use active mediation over co-surfing. Similarly, parents

earning $150,000 or more or non–native English speakers tend to use active mediation the most. These demographic characteristics could be used to reach targeted groups of parents, such as those who use co-surfing, to emphasize the significance of discussing Internet ads with their children.

Limitations and Future Research

Some of the previous research has not found a strong connection between PK and purchase intention (refer to An and Stern 2011; Mallinckrodt and Mizerski 2007), and our study confirms this. Isaac and Grayson (2017) demonstrate that once an ad is perceived to be credible and fair, activation of PK leads to a positive evaluation of the ad. It can be speculated that viewers find the ad interesting, and activation of PK might not be sufficient to dissuade them from purchasing the product. Future research should confirm any such speculation. Furthermore, future research should consider other aspects of PK, such as beliefs about the effectiveness and appropriateness of marketers' goals or one's own coping goals, above and beyond persuasive and selling intent, to understand its impact on purchase intentions (Ham, Nelson, and Das 2015). Future research could also test and capture consumers' PK in other ways, such as asking them to create an ad or showing them an ad and then quizzing them on the likely target audience for the ad (Hudders et al. 2017).

For the purpose of simulating a more natural ad-viewing situation that adolescents would encounter on the Internet, in this study we included real ads that consist of a mix of different ad formats and vary in their level of commercial explicitness. However, while such an approach allows us to better justify external validity, the trade-off is the internal validity of a less-controlled ad stimuli. Future research could be conducted to replicate our findings with lab-developed ads that are similar in terms of brand but presented in different formats to rule out other factors, such as ad mode and brand awareness.

Another limitation of this research is that because it was an online survey, parents with little or no Internet literacy may have been excluded from the panel. As a result, participants with low Internet literacy in the current survey could still be considered to have higher Internet literacy compared to some nonparticipants. Future research should consider using alternative data collection procedures (such as pen-and-paper surveys) to include these participants. Similarly, other populations of parents might have also inadvertently not been included in the study. While the current study affirms the internal validity of the results, future research should extend it to various other samples to confirm the external validity of the findings.

It is also important to note that although ads were presented in randomized order, demand effects could start to become an issue and are difficult to mitigate given the number of ads presented in the study. While we investigated different Internet ad formats, in this article we were limited by the length of the survey and adolescents' limited attention span. Hence, we did not include advergames, which is a popular type of ad. Future research should consider alternative measures for Internet literacy and study the influence of ad skepticism on the application of PK for advergames. To simulate an online environment more closely representing the experience a participant would have online, while also maintaining a balanced level of control in the study, we included a wide range of real branded ads from explicit to implicit persuasive messages in various forms, including print and video. Future research could test these findings in a more controlled setting, using constructed ads and fictitious brands, to better ensure causal effects or in an interactive Internet experience to increase external validity. We acknowledge that adolescents may vary in their responses to Internet ads, and parent's facilitation increases understanding of persuasive messages and development of cognitive defenses against advertising.

ACKNOWLEDGMENTS

The authors thank Les Carlson and Arunachalam Swaminathan for their feedback. Akshaya Vijayalakshmi and Meng-Hsien (Jenny) Lin share equal first authorship.

SUPPLEMENTAL MATERIAL

A supplemental online appendix (A Note on the Ad Stimuli; Scale Items Used in the Study; Table A1: Demographic Characteristics of Parents Based on the Mediation Methods) is available on the publisher's website.

REFERENCES

American Academy of Child and Adolescent Psychiatry (2017), "Social Networking and Children," https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Children-and-Social-Networking-100.aspx.

An, Soontae, Hyun S. Jin, and Eun H. Park (2014), "Children's Advertising Literacy for Advergames: Perception of the Game As Advertising," *Journal of Advertising*, 43 (1), 63–72. doi:10.1080/00913367.2013.795123

———, and Susannah Stern (2011), "Mitigating the Effects of Advergames on Children," *Journal of Advertising*, 40 (1), 43–56. doi:10.2753/JOA0091-3367400103

Austin, Erica W., Bruce W. Austin, Brian F. French, and Marilyn A. Cohen (2018), "The Effects of a Nutrition Media Literacy Intervention on Parents' and Youths' Communication about Food," *Journal of Health Communication*, 23 (2), 190–99. doi:10.1080/10810730.2018.1423649

Bennett, Aronté, Ronald Paul Hill, and Kara Daddario (2015), "Shopping while Nonwhite: Racial Discrimination among Minority Consumers," *Journal of Consumer Affairs*, 49 (2), 328–55. doi:10.1111/joca.12060

Boush, David M., Marian Friestad, and Gregory M. Rose (1994), "Adolescent Skepticism toward TV Advertising and Knowledge of Advertiser Tactics," *Journal of Consumer Research*, 21 (1), 165–75. doi:10.1086/209390

Brucks, Merrie, Gary M. Armstrong, and Marvin E. Goldberg (1988), "Children's Use of Cognitive Defenses against Television Advertising: A Cognitive Response Approach," *Journal of Consumer Research*, 14 (4), 471–82. doi:10.1086/209129

Buijzen, Moniek, and Patti M. Valkenburg (2005), "Parental Mediation of Undesired Advertising Effects," *Journal of Broadcasting and Electronic Media*, 49 (2), 153–65. doi:10.1207/s15506878jobem4902_1

Buijzen, Moniek, Eva A. Van Reijmersdal, and Laura H. Owen (2010) "Introducing the PCMC Model: An Investigative Framework for Young People's Processing of Commercialized Media Content," *Communication Theory*, 20 (4), 427–450.

Burns, Kelli S., and Richard J. Lutz (2006), "The Function of Format: Consumer Responses to Six On-Line Advertising Formats," *Journal of Advertising*, 35 (1), 53–63. doi:10.2753/JOA0091-3367350104

Campbell, Margaret C., and Amna Kirmani (2000), "Consumers' Use of Persuasion Knowledge: The Effects of Accessibility and Cognitive Capacity on Perceptions of an Influence Agent," *Journal of Consumer Research*, 27 (1), 69–83. doi:10.1086/314309

Carlson, Les, Russell N. Laczniak, and Ann Walsh (2001), "Socializing Children about Television: An Intergenerational Study," *Journal of the Academy of Marketing Science*, 29 (3), 276–88. doi:10.1007/BF02890785

Confos, Nicolla, and Teresa Davis (2016), "Young Consumer–Brand Relationship Building Potential Using Digital Marketing," *European Journal of Marketing*, 50 (11), 1993–2017. doi:10.1108/EJM-07-2015-0430

Connell, Paul M., Merrie Brucks, and Jesper H. Nielsen (2014), "How Childhood Advertising Exposure Can Create Biased Product Evaluations That Persist into Adulthood," *Journal of Consumer Research*, 41 (1), 119–34. doi:10.1086/675218

Connell, Sabrina L., Alexis R. Lauricella, and Ellen Wartella (2015), "Parental Co-use of Media Technology with Their Young Children in the USA," *Journal of Children and Media*, 9(1), 5–21.

Cornish, Lara S. (2014), "'Mum, Can I Play on the Internet?': Parents' Understanding, Perception, and Responses to Online Advertising Designed for Children," *International Journal of Advertising*, 33 (3), 437–73.

De Jans, Steffi, Liselot Hudders, and Veroline Cauberghe (2016), "The Immediate versus Delayed Effects of an Advertising Literacy Training on Children's Responses to Product Placement," presented at the 15th International Conference on Research in Advertising, Ljubljana, Slovenia, July.

De Pauw, Pieter, Ralf De Wolf, Liselot Hudders, and Veroline Cauberghe (2016), "Children's Knowledge and Assessment of New Advertising Tactics," a report in the AdLit Research Project, www.AdLit.Be.

De Wolf, Ralf, Liselot Hudders, and Veroline Cauberghe (2016), "Which New Formats Are Minors Most Exposed To?," a report in the AdLit Research Project, www.AdLit.Be.

Evans, Nathaniel J. (2014), "Pinpointing Persuasion in Children's Advergames: Exploring the Relationship among Parents' Internet Mediation, Marketplace Knowledge, Attitudes, and the Support for Regulation," *Journal of Interactive Advertising*, 14 (2), 73–85. doi:10.1080/15252019.2014.943354

———, Les Carlson, and Mariea Grubbs Hoy (2013), "Coddling Our Kids: Can Parenting Style Affect Attitudes toward Advergames?," *Journal of Advertising*, 42 (2–3), 228–40. doi:10.1080/00913367.2013.774602

———, Mariea Grubbs Hoy, and Courtney Carpenter Childers (2018), "Parenting 'YouTube Natives': The Impact of Pre-Roll Advertising and Text Disclosures on Parental Responses to Sponsored Child Influencer Videos," *Journal of Advertising*, 47 (4), 326–46. doi:10.1080/00913367.2018.1544952

Friestad, Marian, and Peter Wright (1991), "The Persuasion Knowledge Model: How People Cope with Persuasion Attempts," *Journal of Consumer Research*, 21 (1), 1–31. doi:10.1086/209380

Friestad, Marian, and Peter Wright (1994), "The Persuasion Knowledge model: How People Cope with Persuasion Attempts," *Journal of Consumer Research*, 21 (1), 1–31.

Gentile, Douglas A., Amy I. Nathanson, Eric E. Rasmussen, Rachel A. Reimer, and David A. Walsh (2012), "Do You See What I See? Parent and Child Reports of Parental Monitoring of Media," *Family Relations*, 61 (3), 470–87. doi:10.1111/j.1741-3729.2012.00709.x

Ham, Chang-Dae, Michelle R. Nelson, and Susmita Das (2015), "How to Measure Persuasion Knowledge," *International Journal of Advertising*, 34 (1), 17–53.

Hayes, Andrew F. (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, New York, NY: Guilford Press.

Hudders, Liselot, and Veroline Cauberghe (2018), "The Mediating Role of Advertising Literacy and the Moderating Influence of Parental Mediation on How Children of Different Ages React to Brand Placements," *Journal of Consumer Behaviour*, 17 (2), 197–210. doi:10.1002/cb.1704

———, Pieter De Pauw, Veroline Cauberghe, Katarina Panic, Brahim Zarouali, and Esther Rozendaal (2017), "Shedding New Light on How Advertising Literacy Can Affect Children's Processing of Embedded Advertising Formats: A Future Research Agenda," *Journal of Advertising*, 46 (2), 333–49. doi:10.1080/00913367.2016.1269303

Isaac, Mathew S., and Kent Grayson (2017), "Beyond Skepticism: Can Accessing Persuasion Knowledge Bolster Credibility?," *Journal of Consumer Research*, 43 (6), 895–912.

Jiow, Hee Jhee, Sun Sun Lim, and Julian Lin (2016), "Level Up! Refreshing Parental Mediation Theory for Our Digital Media Landscape," *Communication Theory*, 27 (3), 309–28. doi:10.1111/comt.12109

John, Deborah R. (1999), "Consumer Socialization of Children: A Retrospective Look at Twenty-Five Years of Research," *Journal of Consumer Research*, 26 (3), 183–213. doi:10.1086/209559

Khurana, Atika, Amy Bleakley, Amy B. Jordan, and Daniel Romer (2015), "The Protective Effects of Parental Monitoring and Internet Restriction on Adolescents' Risk of Online Harassment," *Journal of Youth and Adolescence*, 44 (5), 1039–47. doi:10.1007/s10964-014-0242-4

Kowalczyk, Christine M., and Marla B. Royne (2016), "Exploring the Influence of Mothers' Attitudes toward Advertising on Children's Consumption of Screen Media," *International Journal of Consumer Studies*, 40 (5), 610–17. doi:10.1111/ijcs.12306

Lawlor, Margaret-Anne, ÁIne Dunne, and Jennifer Rowley (2016), "Young Consumers' Brand Communications Literacy in a Social Networking Site Context," *European Journal of Marketing*, 50 (11), 2018–40. doi:10.1108/EJM-06-2015-0395

Lee, Sook-Jung, and Young-Gil Chae (2012), "Balancing Participation and Risks in Children's Internet Use: The Role of Internet Literacy

and Parental Mediation," *Cyberpsychology, Behavior, and Social Networking*, 15 (5), 257–62. doi:10.1089/cyber.2011.0552

Lin, Jenny, Akshaya Vijayalakshmi, and Russell N. Laczniak (2019), "Toward an Understanding of Parental Views and Actions on Social Media Influencers Targeted at Adolescents: The Roles of Parents' Social Media Use and Empowerment," *Frontiers in Psychology*, published electronically December 6, doi:10.3389/fpsyg.2019.02664

Litt, Eden (2013), "Measuring Users' Internet Skills: A Review of past Assessments and a Look toward the Future," *New Media and Society*, 15 (4), 612–30. doi:10.1177/1461444813475424

Livingstone, Sonia, Magdalena Bober, and Ellen J. Helsper (2005), "Active Participation or Just More Information? Young People's Take-Up of Opportunities to Act and Interact on the Internet," *Information, Community, and Society*, 8 (3), 287–314. doi:10.1080/13691180500259103

———, and Ellen J. Helsper (2008), "Parental Mediation of Children's Internet Use," *Journal of Broadcasting and Electronic Media*, 52 (4), 581–99. doi:10.1080/08838150802437396

Lwin, May O., Andrea J.S. Stanaland, and Anthony D. Miyazaki (2008), "Protecting Children's Privacy Online: How Parental Mediation Strategies Affect Website Safeguard Effectiveness," *Journal of Retailing*, 84 (2), 205–17. doi:10.1016/j.jretai.2008.04.004

Mallinckrodt, Victoria, and Dick Mizerski (2007), "The Effects of Playing an Advergame on Young Children's Perceptions, Preferences, and Requests," *Journal of Advertising*, 36 (2), 87–100. doi:10.2753/JOA0091-3367360206

Mangleburg, Tamara F., and Terry Bristol (1998), "Socialization and Adolescents' Skepticism toward Advertising," *Journal of Advertising*, 27 (3), 11–21. doi:10.1080/00913367.1998.10673559

Mikeska, Jessica, Robert L. Harrison, and Les Carlson (2017), "A Meta-Analysis of Parental Style and Consumer Socialization of Children," *Journal of Consumer Psychology*, 27 (2), 245–56. doi:10.1016/j.jcps.2016.09.004

Moschis, George P., and Roy L. Moore (1979), "Decision Making among the Young: A Socialization Perspective," *Journal of Consumer Research*, 6 (2), 101–12. doi:10.1086/208754

Nairn, Agnes, and Cordelia Fine (2008), "Who's Messing with My Mind? The Implications of Dual-Process Models for the Ethics of Advertising to Children," *International Journal of Advertising*, 27 (3), 447–70. doi:10.2501/S0265048708080062

Nathanson, Amy I. (2001), "Parent and Child Perspectives on the Presence and Meaning of Parental Television Mediation," *Journal of Broadcasting and Electronic Media*, 45 (2), 201–20. doi:10.1207/s15506878jobem4502_1

Nelson, Michelle R. (2016), "Developing Persuasion Knowledge by Teaching Advertising Literacy in Primary School," *Journal of Advertising*, 45 (2), 169–82. doi:10.1080/00913367.2015.1107871

———, Lucy Atkinson, Mark A. Rademacher, and Regina Ahn (2017), "How Media and Family Build Children's Persuasion Knowledge," *Journal of Current Issues and Research in Advertising*, 38 (2), 165–83. doi:10.1080/10641734.2017.1291383

Oates, Caroline, Mark Blades, and Barrie Gunter (2002), "Children and Television Advertising: When Do They Understand Persuasive Intent?," *Journal of Consumer Behavior*, 1 (3), 238–45. doi:10.1002/cb.69

Obermiller, Carl, and Eric R. Spangenberg (1998), "Development of a Scale to Measure Consumer Skepticism toward Advertising," *Journal of Consumer Psychology*, 7 (2), 159–86. doi:10.1207/s15327663jcp0702_03

Panic, Katarina, Veroline Cauberghe, and Patrick De Pelsmacker (2013), "Comparing TV Ads and Advergames Targeting Children: The Impact of Persuasion Knowledge on Behavioral Responses," *Journal of Advertising*, 42 (2–3), 264–73. doi:10.1080/00913367.2013.774605

Preacher, Kristopher J., and Andrew F. Hayes (2004), "SPSS and SAS Procedures for Estimating Indirect Effects in Simple Mediation Models," *Behavior Research Methods*, 36 (4), 717–31. doi:10.3758/bf03206553

Preston, Ivan (1996), *The Great American Blow-Up: Puffery in Advertising and Selling*, Madison: University of Wisconsin Press.

Rozendaal, Esther, Moniek Buijzen, and Patti Valkenburg (2009), "Do Children's Cognitive Advertising Defenses Reduce Their Desire for Advertised Products?," *European Journal for Communication Research*, 34 (3), 287–303.

———, Noortje Slot, Eva A. van Reijmersdal, and Moniek Buijzen (2013), "Children's Responses to Advertising in Social Games," *Journal of Advertising*, 42 (2–3), 142–54. doi:10.1080/00913367.2013.774588

Shellenbarger, Sue (2016), "Most Students Don't Know When News Is Fake, Stanford Study Finds," *Wall Street Journal*, November 21, https://www.wsj.com/Articles/Most-Students-Dont-Know-When-News-Is-Fake-Stanford-Study-Finds-1479752576.

Shin, Wonsun (2017) "Active Mediation of Television, Internet and Mobile Advertising," *Young Consumers*, 18(4), 378–392.

——— (2010), "The Role of Parental Mediation in Children's Consumer Socialization on the Web," doctoral dissertation, University of Minnesota, http://hdl.handle.net/11299/95674.

———, Jisu Huh, and Ronald J. Faber (2012), "Developmental Antecedents to Children's Responses to Online Advertising," *International Journal of Advertising*, 31 (4), 719–40. doi:10.2501/IJA-31-4-719-740

Short, Doug (2017), "February Real Median Household Income: Higher in February," *Advisor Perspectives*, March 31, https://seekingalpha.com/Article/4059357-February-Real-Median-Household-Income-Higher-February.

Tutaj, Karolina, and Eva A. van Reijmersdal (2012), "Effects of Online Advertising Format and Persuasion Knowledge on Audience Reactions," *Journal of Marketing Communications*, 18 (1), 5–18. doi:10.1080/13527266.2011.620765

U.S. Census Bureau (2015), "Selected Population Profile in the United States, 2015 American Community Survey 1-Year Estimates," https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_1YR_S0201&prodType=table.

van Reijmersdal, Eva A. (2011), "Mixing Advertising and Editorial Content in Radio Programmes: Appreciation and Recall of Brand Placements Versus Commercials," *International Journal of Advertising*, 30 (3), 425–46. doi:10.2501/IJA-30-3-425-446

———, Esther Rozendaal, and Moniek Buijzen (2012), "Effects of Prominence, Involvement, and Persuasion Knowledge on Children's Cognitive and Affective Responses to Advergames," *Journal of Interactive Marketing*, 26 (1), 33–42. doi:10.1016/j.intmar.2011.04.005

Vanwesenbeeck, Ini, Koen Ponnet, and Michel Walrave (2017), "Young Adolescents' Advertising Literacy and Purchase Intention in Social Network Games: Influence of Perspective Taking and Need for Cognition," *Journal of Consumer Behaviour*, 16 (1), 23–33. doi:10.1002/cb.1596

Verhellen, Yann, Caroline Oates, Patrick De Pelsmacker, and Nathalie Dens (2014), "Children's Responses to Traditional versus Hybrid Advertising Formats: The Moderating Role of Persuasion Knowledge," *Journal of Consumer Policy*, 37 (2), 235–55. doi:10.1007/s10603-014-9257-1

Vijayalakshmi, Akshaya, Meng-Hsien (Jenny) Lin, and Russell N. Laczniak (2018), "Managing Children's Internet Advertising Experiences: Parental Preferences for Regulation," *Journal of Consumer Affairs*, 52 (3), 595–622.

Waiguny, Martin K.J., Michelle R. Nelson, and Ralf Terlutter (2014), "The Relationship of Persuasion Knowledge, Identification of

Commercial Intent, and Persuasion Outcomes in Advergames: The Role of Media Context and Presence," *Journal of Consumer Policy*, 37 (2), 257–77. doi:10.1007/s10603-013-9227-z

Walker, Douglas M., Russell N. Laczniak, Les Carlson, and E. Deanne Brocato (2016), "Parenting Orientations As Antecedents of Children's Violent Videogame Play," *Journal of Consumer Affairs*, 50 (2), 430–57. doi:10.1111/joca.12096

Wang, Sijun, Sharon E. Beatty, and Jeanny Liu (2012), "Employees' Decision Making in the Face of Customers' Fuzzy Return Requests," *Journal of Marketing*, 76 (6), 69–86.

Warren, Ron (2001), "In Words and Deeds: Parental Involvement and Mediation of Children's Television Viewing," *Journal of Family Communication*, 1 (4), 211–31. doi:10.1207/S15327698JFC0104_01

Watkins, Leah, Robert Aitken, Kirsten Robertson, and Maree Thyne (2016), "Public and Parental Perceptions of and Concerns with Advertising to Preschool Children," *International Journal of Consumer Studies*, 40 (5), 592–600. doi:10.1111/ijcs.12304

Wojdynski, Bartosz W. (2016), "The Deceptiveness of Sponsored News Articles: How Readers Recognize and Perceive Native Advertising," *American Behavioral Scientist*, 60 (12), 1475–91. doi:10.1177/0002764216660140

———, and Nathaniel J. Evans (2016), "Going Native: Effects of Disclosure Position and Language on the Recognition and Evaluation of Online Native Advertising," *Journal of Advertising*, 45 (2), 157–68. doi:10.1080/00913367.2015.1115380

Youn, Seounmi (2008), "Parental Influence and Teens' Attitude toward Online Privacy Protection," *Journal of Consumer Affairs*, 42 (3), 362–88. doi:10.1111/j.1745-6606.2008.00113.x

Zarouali, Brahim, Michel Walrave, Koen Ponnet, Karolien Poels, and Ini Vanwesenbeeck (2016), "Children's Advertising Literacy: Recognition and Understanding of Banners and the Role of Need for Cognition and Advertising Literacy Classes," a report in the AdLit Research Project, www.AdLit.Be.