Adolescents’ self-reported level of dispositional advertising literacy: how do adolescents resist advertising in the current commercial media environment?

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Abstract

Purpose – This study aims to examine adolescents’ (between 12 and 18 years) perceptions of their knowledge and skills related to advertising (i.e. dispositional advertising literacy). More specifically, adolescents’ beliefs about their recognition and understanding of advertising (cognitive facet), their emotional reaction to advertising (affective facet) and their moral evaluation of advertising (moral facet) were investigated together with their beliefs about the way they resist advertising.

Design/methodology/approach – A large-scale survey was conducted, taking information from 2,602 adolescents between the ages of 12 and 18 years.

Findings – The findings show that adolescents believe they can recognize advertising reasonably well and have a moderate understanding of it. They tend to be negative toward advertising, perceive it as an unfair practice and claim to resist it strongly. In addition, adolescents’ self-reported moral and affective advertising literacy positively affect advertising resistance. Adolescents’ cognitive advertising literacy increases with the number of different media device types owned, and cognitive and moral advertising literacy increase with age.

Originality/value – This study is one of the first to examine adolescents’ beliefs about their dispositional advertising literacy. Most previous studies examined advertising literacy among young children (under 12 years) or adults after exposure to a specific advertising format (i.e. situational advertising literacy), while this study focuses on adolescents’ self-reported levels of cognitive, moral and affective dispositional advertising literacy. In addition, the focus on resistance strategies to examine how adolescents resist advertising is unique.

Keywords Adolescents, Resistance strategies, Age differences, Dispositional advertising literacy, Media device ownership

Paper type Research paper

Adolescents are heavily targeted with advertising. They became an important target group for advertisers because they already have substantial budgets to spend and have an important impact on family decisions. This spending power makes them vulnerable for advertising as it may create product cravings and may even lead them into debt (Baker and George, 2010). In the past, longitudinal research also showed that exposure to advertising may lead to higher levels of materialism among young children (between 8 and 11 years; Opree et al., 2014). Many nonprofit organizations are, therefore, investing in programs to educate adolescents about money and the role advertising plays in this (e.g. the website Allesovercenten.be in Belgium, which gives adolescents tips and tricks to make better purchase decisions).

To break through the advertising clutter and persuade adolescents more effectively, advertisers use more integrated and interactive tactics (Hudders et al., 2017). These tactics
hide the commercial content into the media content (e.g. advergames), which makes it more difficult to skip the commercial content and arouses less irritation. In addition, the longer exposure time and interactive engagement with the commercial content makes these formats much more persuasive. Accordingly, it is important that adolescents critically reflect on advertising and that they are able to resist unwanted persuasion attempts. The current study, therefore, examines the strategies applied by adolescents to resist advertising and the role advertising literacy plays here. These insights can be applied in educational programs to help adolescents’ expand their advertising literacy.

Advertising literacy refers to a person’s knowledge of advertising as well as the abilities and skills to cope with it (Boush et al., 1994). Dispositional advertising literacy can be perceived as an associative network of information nodes related to advertising. This network needs to be activated when being confronted with advertising because it enables people to recognize the persuasive attempt and critically reflect on it (i.e. situational advertising literacy). This way unconscious persuasion can be avoided. Most previous research in this area measured the level of advertising literacy among young children (under 12 years; Panic et al., 2013), and after exposure to a specific advertising format (mainly television commercials and advergames; Vanwesenbeeck et al., 2016). These studies showed that children’s advertising literacy is much lower for embedded advertising than it is for traditional advertising (An et al., 2014; Verhellen et al., 2014) and that even 12-year-olds have not acquired an adult level of advertising literacy (Rozendaal et al., 2010). Although these studies often assume that a limited situational advertising literacy is related to a limited dispositional advertising literacy, research examining the extensiveness of the latter is scarce (Hudders et al., 2017). Especially the adolescent age group is largely ignored in current research on advertising literacy, and the few studies that did focus on adolescents (Zarouali et al., 2018) measured situational advertising literacy.

The current study examines how dispositional advertising literacy can assist adolescents in resisting advertising. Insights from Fransen et al. (2015) will be used to examine the different resistance strategies applied by adolescents, namely, avoiding, contesting and empowering. These resistance strategies provide more evidence for the vulnerability of adolescents for advertising. In addition, the study explores the effects of two important influential factors in the development of advertising literacy in this relationship; these are media ownership and age. Friestad and Wright (1994) stress the importance of practice when resisting advertising and, hence, suggest that advertising literacy can develop through experience with advertising. As socialization theory suggests that advertising literacy develops through a process of trial and error (John, 1999); children learn to resist advertising by experiencing the (positive or negative) effects of applying different resistance strategies for different persuasion attempts. This trial and error process will expand their dispositional advertising literacy by adding the newly gained information to the stored information in the associative network and will make them learn how to resist unwanted persuasion attempts. Besides media device ownership, advertising literacy also increases with age (John, 1999). Adolescents’ cognitive and emotional capabilities are still developing during adolescence and their level of advertising literacy is, therefore, not fully mature (Friestad and Wright, 1994); this impacts the way in which they deal with advertising (Hudders et al., 2017). The paper further examines how age impacts adolescents’ perceived level of dispositional advertising literacy and how this, in turn, affects the resistance strategies applied.

Hence, the current study contributes to past research because

- it provides a more in-depth insight into adolescents’ advertising literacy (whereas past research mainly focused on young children or adults);

- has a clear focus on dispositional advertising literacy (whereas past research merely examined situational advertising literacy); and
examines the resistance strategies used by adolescents (whereas previous research mainly focused on advertising literacy and its effects on advertising effects).

We believe that this focus is not only relevant for practitioners and public policy, but also for advertising researchers as resistance strategies are rarely taken into account in current research. These resistance strategies can provide further evidence on how advertising literacy affects advertising effects. As empirical evidence on the nature of this relationship is inconclusive (some studies find negative effects, others find positive effects or no effect), the resistance strategy applied may further explain why these effects appear.

To achieve these aims, the study is based on a large-scale quantitative study involving 2,602 adolescents (12-18 years). It examines

- adolescents’ self-reported dispositional advertising literacy;
- how adolescents believe they resist advertising;
- how advertising literacy can affect resistance strategies;
- how media device ownership impacts adolescents’ beliefs in their ability to resist advertising via advertising literacy; and
- how age impacts those beliefs.

**Theoretical foundation**

In the past years, advertising literacy has been identified as an important construct to consider when examining how children and adolescents respond to advertising (Rozendaal et al., 2011). To avoid unwanted and subconscious persuasion, advertising literacy needs to be activated when confronted with advertising. This implies that people are able to recognize the persuasive attempt as advertising and critically reflect on it, skills that are referred to as situational advertising literacy (Hudders et al., 2017). The quality of this critical reflection depends on the extensiveness of people’s dispositional advertising literacy. This can be defined as the “knowledge, skills, and abilities consumers possess regarding persuasion in an advertising context” (Hudders et al., 2017, p. 7). It refers to all associations people make regarding advertising and consists of three components, a cognitive, affective and moral component. The cognitive component refers to the capacity to recognize advertising and understand its selling and persuasive intent as well as the tactics and strategies that are used (Wright et al., 2005). The affective dimension refers to people’s emotional reactions to advertising (Rozendaal et al., 2011), while the moral dimension refers to the ability to evaluate the fairness and appropriateness of advertising and the knowledge needed to do this (e.g. insights into the use of gender stereotypes or think models; Friestad and Wright, 1994; Nelson et al., 2009).

Dispositional advertising literacy develops when children and adolescents grow older as different developmental skills (cognitive, social, emotion regulation and moral abilities) are needed to be able to fully understand advertising and its persuasive intent and form moral evaluations about it (Moses and Baldwin, 2005; Rozendaal et al., 2011). Minors’ cognitive development comprises many different skills, including memory and the processing of messages, as well as the theory of mind – a child’s capacity to take the perspective of others and to understand that other people think differently (Premack and Woodruff, 1978). Minors are capable of understanding advertising’s persuasive intent when they possess this capacity (Moses and Baldwin, 2005). Further, and as contemporary advertising is mainly based on emotional cues, minors’ ability to process this advertising chiefly depends on the ability to control emotional reactions to the messages. It is suggested that this ability to control emotions develops when minors mature (Rozendaal et al., 2011).
Additionally, evidence suggests that experience with advertising helps children and adolescents to expand their associative network (John, 1999). Trial and error processes teach them that advertising does not always tell the truth, that advertising claims are sometimes too good to be true and that a particular offer is not the best one for them.

An extensive dispositional advertising literacy is necessary to be able to recognize a persuasive attempt as advertising and critically reflect on it. However, it is also crucial to take into account the strategies adolescents apply to resist advertising. Accordingly, next to critical reflections and developing counterarguments, as suggested in the conceptual model of Hudders et al. (2017) and in the persuasion knowledge model of Friestad and Wright (1994), other strategies may be applied. In particular, Fransen et al. (2015) developed an ACE typology that proposes three potential resistance strategies: avoiding, contesting and empowering. First, people can physically, mechanically or cognitively avoid advertising, for example by installing ad blockers. Second, people can resist advertising by contesting it – actively refuting the advertisement by challenging its content, source or persuasive tactics. Third, people can resist advertising by empowering themselves against it, potentially using three empowerment techniques: attitude bolstering, social validation and self-assertion (Fransen et al., 2015; Fransen et al., 2015). However, research on how adolescents think they apply these three strategies and the role dispositional advertising literacy plays in this is largely non-existent.

Hypotheses development

The current study examines how adolescents’ beliefs about the extensiveness of their dispositional advertising literacy and how its different components are related to the resistance strategies they apply. In addition, we examine how age and experience with advertising (measured by media device ownership) affect this dispositional advertising literacy and the resistance strategies applied.

The relation between dispositional advertising literacy and resistance strategies

Brehm’s (1966) reactance theory states that when individuals perceive something as threatening to their freedom, they will offer resistance to reaffirm their autonomy and freedom. Consumers, who realize they have been subjected to a persuasive attempt, perceive it as a threat and resist it in an effort to restore their freedom. This resistance potentially compromises the advertiser, message, brand and/or product (Fransen et al., 2015).

Most empirical studies examining how people resist advertising, and the role advertising literacy plays in this focus on how advertising literacy is related to advertising effects and focus on young children (under 12 years; Hudders et al., 2016). Some studies found that a better understanding of advertising and the tactics that are used (cognitive advertising literacy) has a negative impact on advertising effects (Rozendaal et al., 2009), while others found no significant effects (Mallinckrodt and Mizerski, 2007; van Reijmersdal et al., 2012) or found that especially young children’s disliking of the ad negatively affects advertising effects (Hudders et al., 2016). On the basis of these insights, we expect that adolescents’ affective and moral dispositional advertising literacy leads to higher resistance, in that they avoid and contest advertising to a greater extent if their dispositional advertising literacy is perceived to be higher and they empower more. This can be explained because a high affective and moral advertising literacy is related to a more critical stance, which may make them more likely to resist advertising as suggested by Rozendaal et al. (2011). A higher cognitive advertising literacy among adolescents on the other hand may give them more insights into the persuasive tactics used, as well as in the positive facets related to advertising (learn them about new products, offer product promotions, etc.). While this understanding may be limited for young children, we believe that this may be more
elaborate for adolescents owing to higher experience with advertising and more developmental skills. In addition, these promotions, for instance, may be more interesting for adolescents given their own spending power. Accordingly, we expect that a higher cognitive advertising literacy may lead to a lower resistance regarding advertising (less avoidance, contesting and empowerment). This leads us to the formation of the following hypotheses:

\[ H1a. \] Adolescents’ self-reported moral dispositional advertising literacy will be positively related to the indicated advertising resistance (more avoidance, contesting and empowerment).

\[ H1b. \] Adolescents’ self-reported affective dispositional advertising literacy will be positively related to the indicated advertising resistance (more avoidance, contesting and empowerment).

\[ H1c. \] Adolescents’ self-reported cognitive dispositional advertising literacy will be negatively related to the indicated advertising resistance (less avoidance, contesting and empowerment).

**The impact of media device ownership on advertising literacy and advertising resistance**

Recent figures show that adolescents spend about nine hours per day in front of screens (Common Sense Media, 2015). This suggests that they are very likely to be exposed to advertising on these different screens. Adolescents’ ownership of media devices, including smartphones, tablets, game consoles and laptops, is rapidly growing and ownership starts at increasingly younger ages (Kirsh, 2011; Lauricella, Cingel, Blackwell, Wartella, and Conway, 2014). For example, in Flanders (the Dutch-speaking part of Belgium), 92.3 per cent of adolescents own smartphones and 57.7 per cent have their own laptops (Apestaartjaren, 2017). As adolescents surf the internet, play videogames and watch online videos on these devices, they are daily exposed to innumerable advertising messages and gain experience with them. This will increase their experience with advertisements and may positively affect their dispositional advertising literacy. This assumption is based on John’s (1999) consumer socialization model that suggests that socialization influences help children to develop their advertising literacy. The model is based on Piaget’s (1929) theory of cognitive development, and identified consumer socialization as a developmental process consisting of three stages: the perceptual (3-7 years), analytical (7-11 years) and reflective (11-16 years) stages. Children are able to recognize advertising attempts and critically reflect on them when they reach the analytical stage (John, 1999). Thus, socialization processes help children recognize advertising attempts; they learn to cope with them through a process of trial-and-error (Friestad and Wright, 1994), extending their experience with advertising as they do so. Hence, experience with advertising attempts is a crucial factor in the development of advertising literacy.

In line with John’s (1999) consumer socialization theory, therefore, the more media device types adolescents own, the more advertising (and different formats) we expect them to experience and the greater will become their ability to understand and resist it – they will develop their associative network related to advertising (i.e. dispositional advertising literacy). Moral and affective dispositional advertising literacy will further increase advertising resistance, while cognitive advertising literacy will decrease it (see Figure 1):

\[ H2a. \] Adolescents have a higher level of self-reported cognitive dispositional advertising literacy when they own a greater range of media device types. Cognitive advertising literacy will negatively affect advertising resistance.

\[ H2b. \] Adolescents have a higher level of self-reported moral dispositional advertising literacy when they own a greater range of media device types. Moral advertising literacy will positively affect advertising resistance.
Adolescents have a higher level of self-reported affective dispositional advertising literacy when they own a greater range of media device types. Affective advertising literacy will positively affect advertising resistance.

**The impact of age on advertising literacy and advertising resistance**

It is generally assumed that young children are more susceptible to advertising than adolescents and that adolescents possess similar advertising processing skills than adults; however, consumers’ abilities and skills to cope with advertising are still developing during adolescence (Boush et al., 1994; Friestad and Wright, 1994). It is suggested that several skills regarding information processing, memory and cognitive resources, which are referred to as cognitive development, are needed to develop advertising literacy (Rozendaal et al., 2011; Wright et al., 2005). Rozendaal et al. (2011) argue that especially the development of executive function and emotion regulation abilities are needed for a critical evaluation of advertising. However, adolescents’ executive function (e.g. working memory) and emotion regulation abilities are still developing, whereby they have more difficulties controlling their feelings, thoughts and actions than adults (Best and Miller, 2010; Hudders et al., 2017; McRae et al., 2012; van Reijmersdal et al., 2017). Furthermore, social capacities, for example, the understanding of what acceptable social behavior entails, also develops according to age (Hudders et al., 2017). Therefore, adolescents’ advertising literacy is not yet fully developed, and this is especially the case when it comes to embedded advertising formats (Verhellen et al., 2014).

Owing to adolescents’ stage of cognitive and social development, it cannot be assumed that adolescents possess a similar level of advertising literacy as young children or adults. In sum, on the basis of adolescents’ developmental characteristics and their experience with advertising (as indicated above), we expect adolescents’ self-reported cognitive, moral and affective dispositional advertising literacy to increase with age. In addition, moral and affective advertising literacy will further enhance advertising resistance while cognitive advertising literacy will decrease it (see Figure 2):

**H3a.** Adolescents’ level of self-reported cognitive dispositional advertising literacy increases with age. Cognitive advertising literacy will decrease advertising resistance.

**H3b.** Adolescents’ level of self-reported moral dispositional advertising literacy increases with age. Moral advertising literacy will further increase advertising resistance.

**H3c.** Adolescents’ level of self-reported affective dispositional advertising literacy increases with age. Affective advertising literacy will further increase advertising resistance.
Method

Survey
A large-scale survey involving 2,602 adolescents was conducted in Belgium (Flanders). Between September 2015 and January 2016, the data were gathered through Apestaartjaren, a biennial survey by LINC, Mediaraven and Ghent University, which examines the ways in which Flemish adolescents are integrated into the digital world. Apestaartjaren covers a wide spectrum, but the current study focuses only on the questions about advertising. The participants were asked to fill in the survey individually in a classroom setting, with a researcher and a teacher always present to supervise and answer questions. Afterwards, the adolescents were debriefed about the purpose of the study.

Sample
A representative sample of 2,602 adolescents (12-18 years of age; \(M_{\text{age}} = 14.72, SD = 1.84\)) from 11 high schools took part in the study. Half (51 per cent) were boys. Schools were recruited with as much geographic scatter (urban versus rural) as possible. Different classes of different grades from each school took part in the study. The socio-demographic representativeness of adolescents was pursued for the total sample by weighting the variables gender and grade.

Measures
The three dimensions of dispositional advertising literacy (cognitive, moral and affective) were measured independently using five-point Likert-type scales. Self-reported cognitive advertising literacy was measured by three items on a five-point Likert-type scale ranging from “strongly disagree” to “strongly agree” (\(\alpha = 0.73, M = 3.36, SD = 0.81\)): “I feel like I know a lot about advertising”, “I feel like I can easily recognize when something is advertising” and “I feel like I critically cope with advertising”. Self-reported affective advertising literacy was measured by three more items on the same five-point scale: “I find advertising annoying”, “I think advertising is fun” and “I think it’s good that advertising exists”. The last two items were recoded before the construct was computed (\(\alpha = 0.65, M = 3.67, SD = 0.81\)). Finally, self-reported moral advertising literacy was measured by two items on the same five-point scale (\(\alpha = 0.75, M = 4.48, SD = 0.72\)): “I believe everything that is said/shown in advertising” and “Advertising always tells the truth”. The construct was recoded so that a higher score indicates a more skeptical attitude toward advertising. These scales were developed from the studies of Rozendaal et al. (2016), Hudders et al. (2016) and Fransen et al. (2015).
Another set of questions, based on the resistance strategies of Fransen et al. (2015), was designed to investigate how adolescents resist advertising. The first resistance strategy, avoidance, was measured on a five-point Likert-type scale ranging from “never” to “very often” ($M = 3.87$, $SD = 1.10$): “I try to avoid advertising when I see it”. Contesting was measured by two items on a five-point Likert-type scale: “When I see advertising, I forward it to my friends” (“never” to “very often”) and “I follow brands that I like on social media” (“totally disagree” to “totally agree”). Both items were recoded so that a higher score indicates stronger advertising resistance ($r = 0.13$, $p < 0.001$, $M = 3.68$, $SD = 0.77$). Finally, empowerment was measured by the item “If I see advertising, I let it persuade me” on a five-point Likert-type scale from “never” to “very often”. The item was also recoded so that a higher score indicates more advertising resistance ($M = 4.20$, $SD = 0.87$).

A list of eight items was used to record the ownership of different media device types that expose their users to advertising. Adolescents were asked to say which of the following they owned (0: no; 1: yes): computer, laptop, smartphone, television, smart television, tablet, game console and mobile game console. The computed score for this construct varies from zero to eight ($M = 6.08$, $SD = 1.30$).

**Results**

**Correlations**

Before examining the proposed hypotheses, we investigate the relationships among the different constructs. Table I presents the correlations among all the constructs included in this study. First, device ownership is positively related to cognitive advertising literacy, but to neither affective nor moral advertising literacy. Second, age is positively related to cognitive and negatively related to affective advertising literacy. Looking at resistance strategies, device ownership and age are positively related to avoiding and negatively related to both contesting and empowering, while cognitive advertising literacy is positively related to avoiding and negatively related to contesting. Finally, both affective and moral advertising literacy are positively related to the three resistance strategies.

**Adolescents’ self-reported dispositional advertising literacy**

A repeated measures analysis of variance (ANOVA) was conducted to examine adolescents’ levels of cognitive, moral and affective dispositional advertising literacy. The analysis shows that the levels of at least two dimensions of advertising literacy differ significantly [Wilks’ Lambda = 0.39, $F(2, 2086) = 1,625.30$, $p < 0.001$, $\eta_p^2 = 0.61$; see

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Media device ownership</th>
<th>Age</th>
<th>Cognitive advertising literacy</th>
<th>Affective advertising literacy</th>
<th>Moral advertising literacy</th>
<th>Avoiding</th>
<th>Contesting</th>
<th>Empowering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media device ownership</td>
<td>1</td>
<td>0.06**</td>
<td>0.08***</td>
<td>0.01</td>
<td>0.00</td>
<td>0.04*</td>
<td>−0.08***</td>
<td>−0.04*</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>−0.07**</td>
<td>0.03</td>
<td>0.09***</td>
<td>−0.14***</td>
<td>−0.08***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive advertising literacy</td>
<td>1</td>
<td>−0.05**</td>
<td>0.11***</td>
<td>0.18***</td>
<td>−0.10***</td>
<td>−0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective advertising literacy</td>
<td>1</td>
<td>0.34***</td>
<td>0.41***</td>
<td>0.21***</td>
<td>0.33***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moral advertising literacy</td>
<td>1</td>
<td>0.24***</td>
<td>0.24***</td>
<td>0.34***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoiding</td>
<td>1</td>
<td>0.07**</td>
<td>0.16***</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Contesting</td>
<td>1</td>
<td>0.38***</td>
<td></td>
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<tr>
<td>Empowering</td>
<td>1</td>
<td>1</td>
<td></td>
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</tbody>
</table>

Notes: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$
Adolescents claim to be most moral advertising literate ($M = 4.48, SD = 0.71$), with affective advertising literacy next ($M = 3.72, SD = 0.77$) and cognitive advertising literacy last ($M = 3.36, SD = 0.84$). The levels of cognitive and affective advertising literacy also differ significantly (see Table II).

**Adolescents’ self-reported advertising resistance**

To investigate adolescents’ self-reported advertising resistance strategies, another Repeated Measures ANOVA was conducted. The analysis shows that at least two resistance strategies differ [Wilks’ Lambda = 0.75, $F(2, 2729) = 452.42, p < 0.001, \eta^2 = 0.25$; see Figure 4]. Adolescents claim that their main strategy is to empower themselves against advertising ($M = 4.19, SD = 0.87$) rather than to contest ($M = 3.67, SD = 0.77$) or avoid it ($M = 3.88, SD = 1.10$). The levels of avoiding and contesting also differ significantly (see Table III).

**Impact of media device ownership on advertising resistance via advertising literacy**

Multiple mediation analyses (Hayes, 2013; PROCESS; Model 4; 5,000 bootstrap samples) were conducted to examine the effect of adolescents’ self-reported advertising literacy on advertising resistance ($H1$) and the impact of media device ownership on advertising resistance through advertising literacy ($H2$). Table IV summarizes the results.

Avoiding. First, the results show an indirect effect of media device ownership on avoidance via cognitive advertising literacy [$B_1 = 0.01, SE = 0.00, 95$ per cent CI = (0.0028, 0.0195), see Figure 5]. The more media device types adolescents own, the more cognitive advertising literacy they believe they have ($a_1$); this self-belief ensures more advertising

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**Table II** Adolescents’ self-reported dispositional advertising literacy

<table>
<thead>
<tr>
<th>Pairs</th>
<th>$95$ per cent confidence interval of the difference</th>
<th>$t$</th>
<th>$df$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1: moral versus affective advertising literacy</td>
<td>0.7305</td>
<td>0.8097</td>
<td>38.18</td>
<td>1931</td>
</tr>
<tr>
<td>Pair 2: moral versus cognitive advertising literacy</td>
<td>1.0644</td>
<td>1.1577</td>
<td>46.71</td>
<td>1931</td>
</tr>
<tr>
<td>Pair 3: cognitive versus affective advertising literacy</td>
<td>−0.3628</td>
<td>−0.2711</td>
<td>−13.56</td>
<td>2524</td>
</tr>
</tbody>
</table>
avoidance ($b_1$). No indirect effects were found of media device ownership on avoiding via affective ($B_2 = -0.00, SE = 0.01, 95\% CI = (-0.0168, 0.0117)$ or moral ($B_3 = -0.00, SE = 0.00, 95\% CI = (-0.0038, 0.0038)$) advertising literacy as there is no impact of media device ownership on affective ($a_2$) and moral ($a_3$) advertising literacy. We did find positive effects of self-reported affective ($b_2$) and moral ($b_3$) advertising literacy on advertising avoidance.

Contesting. A significant indirect effect of media device ownership on contesting via cognitive advertising literacy was found ($B_1 = -0.00, SE = 0.00, 95\% CI = (-0.0091, -0.0013)$; see Figure 6). Adolescents’ self-reported cognitive advertising literacy increases with their media device ownership, as we have already seen. Further, there is a negative relationship between cognitive advertising literacy and contesting ($b_1$) and a significant main effect of media device ownership on contesting ($c' = -0.05, SE = 0.01, t = -3.85, p < 0.001$). We found no indirect effects of media device ownership on contesting via affective ($a_2$) and moral ($a_3$) advertising literacy. We did find a positive impact of affective ($b_2$) and moral advertising literacy ($b_3$) on contesting.

Empowering. There is an indirect effect of media device ownership on empowerment via cognitive advertising literacy ($B_1 = -0.00, SE = 0.00, 95\% CI = (-0.0048, -0.0002)$, see Figure 7). Cognitive advertising literacy increases with media device ownership, and higher levels of cognitive advertising literacy ensure weaker empowerment ($b_1$). Again, there are no indirect effects of media device ownership on empowerment via affective ($B_2 = -0.00, SE = 0.00, 95\% CI = (-0.0014, 0.0036)$ or moral ($B_3 = -0.00, SE = 0.00, 95
per cent CI = (−0.0084, 0.0079) advertising literacy. We did find positive effects of affective (b2) and moral (b3) advertising literacy on empowering.

In sum, adolescents’ self-reported moral and affective advertising literacy increase their perceived advertising resistance. These results, therefore, confirm H1a and H1b. H1c cannot be confirmed; however, as adolescents’ cognitive advertising literacy positively affects avoiding and negatively affects contesting and empowering, against our expectation, that cognitive advertising literacy would negatively affect all three advertising resistance strategies. In addition, adolescents’ media device ownership increases only their self-reported cognitive advertising literacy; in turn, this increases avoiding but decreases contesting and empowering. This result partly confirms H2a, as we expected a positive effect of media device ownership on cognitive advertising literacy, but a negative impact of
cognitive advertising literacy on the three advertising resistance strategies. Media device ownership has no impact on affective and none on moral advertising literacy. H2b and H2c, therefore, cannot be confirmed.

**Impact of age on advertising resistance via advertising literacy**

Multiple mediation analyses were conducted to investigate the impact of age on the resistance strategies via advertising literacy (H3; Hayes, 2013; PROCESS; Model 4; 5,000 bootstrap samples). The results are summarized in Table V.

Avoiding. We found significant indirect effects of age on avoiding via cognitive [$B_1 = 0.01$, $SE = 0.00$, 95 per cent $CI = (0.0056, 0.0196)$] and moral [$B_3 = 0.00$, $SE = 0.00$, 95 per cent $CI = (0.0003, 0.0063)$; see Figure 8] advertising literacy. Adolescents’ self-reported cognitive ($a_1$) and moral ($a_3$) advertising literacy increase with age. Further, cognitive ($b_1$) and moral ($b_3$) advertising literacy are positively related to advertising avoidance. In addition, the direct effect of age on avoidance is significant ($c' = 0.03$, $SE = 0.01$, $t = 2.50$, $p = 0.012$). We found no indirect effect of age on avoidance via affective advertising literacy [$B_2 = -0.01$, $SE = 0.01$, 95 per cent $CI = (-0.0226, 0.0003)$] as age has no impact on the affective dimension of advertising literacy ($a_2$).

Contesting. The main effect of age on contesting is mediated by both cognitive [$B_1 = -0.01$, $SE = 0.00$, 95 per cent $CI = (-0.0091, -0.0024)$] and moral [$B_3 = 0.00$, $SE = 0.00$, 95 per cent $CI = (0.0002, 0.0085)$; see Figure 9] advertising literacy. Adolescents’ cognitive and moral advertising literacy increase with age. A higher level of cognitive advertising literacy ensures less contesting ($b_1$), while a higher level of moral advertising literacy
ensures more contesting ($b_3$). There is no indirect effect of age on contesting via affective advertising literacy ($B_2 = -0.00$, $SE = 0.00$, 95 per cent CI = (−0.0063, 0.0001)).

**Empowering.** The impact of age on empowerment is mediated by both cognitive ($B_1 = -0.00$, $SE = 0.00$, 95 per cent CI = (−0.0047, −0.00020) and moral ($B_3 = 0.01$, $SE = 0.00$, 95 per cent CI = (0.0004, 0.0126); see Figure 10) advertising literacy. A higher level of cognitive advertising literacy ensures less empowerment ($b_1$), while a higher level of moral advertising literacy ensures more empowerment ($b_3$). There is no indirect effect of age on empowerment via affective advertising literacy ($B_2 = -0.01$, $SE = 0.00$, 95 per cent CI = (−0.0113, 0.0001)).

To conclude, only adolescents’ self-reported cognitive and moral advertising literacy increase with age. Cognitive advertising literacy has a positive impact on avoiding and a
negative effect on contesting and empowering. Therefore, $H_3a$ is not confirmed. Moral advertising literacy further increases avoiding, contesting and empowering, which confirms $H_3b$. Finally, $H_3c$ cannot be proved, as age has no impact on affective advertising literacy.

Conclusion and discussions

First, this study examined adolescents’ dispositional advertising literacy, whereas most previous research measured young children’s or adults’ advertising literacy after exposure to a specific advertising attempt (i.e. situational advertising literacy). Hence, this study investigated how adolescents’ associative network related to advertising is developed to gain more insights into the general knowledge, skills and abilities adolescents possess regarding persuasion in an advertising context. Taking its information from a large-scale survey involving 2,602 adolescents (12-18 years), this study shows that adolescents believe that they have a high moral advertising literacy, while their cognitive advertising literacy scores are the lowest but still fairly high and above the mid-point of the scale. Affective advertising literacy scores are a bit higher than the cognitive advertising literacy scores and this difference is significant. Although the adolescents in our study think that they have a fairly good knowledge of advertising, future research should further elaborate on this and apply knowledge tests and thought listing procedures to examine whether the perceptions of adolescents also reflect reality. It may be that adolescents have the idea that they know a lot of advertising and that they are critical but that this is not the case in reality or for all advertising formats.
The study also examined the strategies used by adolescents to resist advertising, whereas most previous research has mainly focused on advertising literacy and how it affects advertising effects. However, as indicated above, empirical research examining the relationship between advertising literacy and advertising effects is inconclusive. The current study extends past research theoretically by suggesting taking into account the resistance strategies as they might further explain how advertising literacy affects advertising effects.

We used the theoretical framework regarding resistance strategies proposed by Fransen et al. (2015) to examine how adolescents believe they resist advertising. The results show that adolescents claim to resist advertising largely by empowering themselves against it, rather than by avoiding or contesting it. The results suggest that adolescents believe that they are most likely to reassure their own existing attitudes to resist an advertising attempt when exposed to it, and that they are less likely to resist an advertising attempt by physically, mechanically or cognitively avoiding it (e.g. by installing ad blockers or by skipping television commercials) or by refuting the attempt (by challenging the content, source or persuasive tactic).

Regarding the relationship between the different dimensions of dispositional advertising literacy and the resistance strategies adolescents apply, the results show that cognitive advertising literacy is positively related to the avoidance strategy, while it is negatively related to the contesting and empowering strategies. In addition, the study shows a positive impact of affective and moral advertising literacy on the three resistance strategies. These findings align with academics’ claims that affective, attitudinal mechanisms might be the most effective ways for children to critically process advertising and that cognitive advertising literacy alone is not sufficient (Hudders et al., 2016; Rozendaal et al., 2011).

The current study also concludes that adolescents’ ownership of a greater variety of media devices is positively related to their belief that they are better able to recognize and understand the advertising to which each device exposes them. This is in line with the socialization theory of John (1999) and with the research of Friestad and Wright (1994) who emphasize that minors’ advertising literacy increases with experience. In addition, the better adolescents are at recognizing and understanding advertising, the more often they try to avoid it. However, the same improved recognition and understanding also leads to a reduction of both contesting and self-empowerment. In fact, cognitive advertising literacy can lead to stronger persuasion when no critical reflections are triggered. No indirect effects were found of media device ownership on advertising resistance via affective or moral advertising literacy as there was no impact of media device ownership on those two dimensions of advertising literacy. Media device ownership is, thus, only related to cognitive advertising literacy.

Finally, we analyzed adolescents’ self-reported advertising literacy to investigate the impact of age on their ability to resist advertising. The results show that adolescents believe that they gain cognitive advertising literacy and become more skeptical toward advertising as they grow older. This finding confirms that the development of adolescents’ cognitive and moral advertising literacy can be linked to children’s cognitive (Piaget, 1929) and moral (Kohlberg, 1971) development. While better recognition and understanding of advertising ensures more advertising avoidance, less contesting and less empowerment, more skeptical attitudes toward advertising ensure more advertising avoidance, more contesting and more empowerment. This finding confirms that affective, attitudinal mechanisms work well to help adolescents process advertising and resist its persuasion, as they require less effort, while adolescents’ knowledge of advertising alone is not enough to help them process advertising systematically (Hudders et al., 2016; Rozendaal et al., 2011). We found no impact of age on affective advertising literacy.
Managerial implications

This study showed that adolescents believe that their moral dimension of dispositional advertising literacy (i.e. their ability to evaluate advertising critically) is well developed, whereas their cognitive and affective dimensions of advertising literacy are moderately developed. This indicates that advertisers should focus on advertising in an ethical and fair manner as adolescents believe they are very capable of reflecting on the appropriateness, credibility and honesty of advertising. Adolescents further believe that their cognitive dispositional advertising literacy (i.e. their recognition and understanding of advertising) is least developed. This may be explained by the many new ad formats that embed the commercial content into the media content, which are very difficult to recognize. In addition, the different new tactics applied by advertisers may be more difficult to understand. For instance, it is not clear for many adolescents how influencer marketing exactly works or why certain friends appear on an ad in Facebook. This suggests that advertisers should clearly indicate advertising as such, for example, by implementing advertising disclosures and be more clear (and raise awareness) on the tactics they are using when targeting adolescents.

In addition, adolescents believe that they largely resist advertising, mostly by empowering themselves against it. This suggests that adolescents are actively trying to resist persuasion by advertisers and claim they can resist the requests of advertisers. Adolescents believe they resist advertising the least by avoiding it. This result indicates that practices by adolescents to avoid advertising (e.g. installing ad blockers or commercial skipping) should not be advertisers’ main concern. With regard to how advertising literacy further affects advertising resistance, the current study showed that both moral and affective advertising literacy positively affect the three resistance strategies. Cognitive advertising literacy has a positive impact on avoiding, but negatively affects contesting and empowering. This indicates that mostly the moral and affective dimensions of dispositional advertising literacy (which are the most developed among adolescents) make adolescents more able to resist advertising and thus less susceptible to it.

Furthermore, adolescents believe they have a higher level of cognitive dispositional advertising literacy when they own more different media device types on which they are exposed to advertising. Hence, adolescents feel that their recognition and understanding of advertising improves by ownership of a greater variety of media devices. Finally, adolescents believe that their cognitive and moral advertising literacy increase with age.

By examining how adolescents’ associative network related to advertising is developed, the current study gives insights into the dimensions where adolescents’ knowledge and skills are lacking, which is indispensable to adjust educational programs, awareness campaigns and public policy measures. This study provides information on how to optimize advertising literacy interventions (e.g. by giving more insights into the tactics that are used by advertisers or by helping them to learn how to control their emotional reactions to ads) that aim to enhance minors’ advertising literacy skills and their critical processing of advertising. Specifically, the results of this study give a first indication on which dimensions these interventions should focus. This is important as most educational programs in different countries currently only focus on the cognitive dimension of advertising literacy. The current study shows that it is indeed important to focus on the cognitive skills related to advertising, such as recognizing and understanding advertising. In addition, educational programs aimed at adolescents should also focus on the emotions that advertising generates and on how these emotions can be controlled.

Limitations and suggestions for future research

The current study has several limitations that translate into suggestions for future research. First, the main limitation of this study is that it is based on self-reported data. Thus, the
adolescents could have given socially desirable answers rather than honest ones. Even if the adolescents tried to answer the questions honestly, they could have lacked the ability to introspectively assess themselves. In addition, some questions were perhaps misunderstood, which would lead to a lower reliability of the results. Future research could, therefore, focus on qualitative research, using introspective techniques to examine the extensiveness of adolescents’ associative network related to advertising. A think-aloud task, thought-listing procedure, categorization task, sentence-completion task, photography task, etc. could all be used to measure adolescents’ dispositional advertising literacy and its dimensions in a more naturalistic and valid manner. Additionally, experimental studies with smaller groups of adolescents could be conducted to examine how dispositional advertising literacy affects the resistance strategies deployed by adolescents under different conditions of age and media device ownership, and the interaction effect of age and media device ownership on dispositional advertising literacy.

In addition, future research would benefit from developing an objective measure of dispositional advertising literacy. Current measures often mingle dispositional with situational advertising literacy (Grohs et al., 2012; Rozendaal et al., 2016) or even with advertising effects [e.g. advertising (dis)liking], and do not include the three dimensions of advertising literacy. Furthermore, future research could first measure minors’ dispositional advertising literacy and later conduct an experimental study among the same minors to measure situational advertising literacy, so it can be investigated how these two facets are related.

The measures for cognitive advertising literacy, contesting and media device ownership are limitations of this study. The measures analyzed for cognitive advertising literacy would be better considered as measures of the attention spent on advertising. In the same way, the contesting scale could be interpreted as a reversed word-of-mouth scale. Furthermore, the measure for media device ownership does not reflect the time adolescents’ spend on different devices or the quality of interaction with these devices. Future research could measure media use and investigate its impact on advertising literacy and further on advertising resistance.

Finally, we acknowledge that the scales incorporated into the survey can be seen as a limitation of this study in general. As the data used in this paper are part of a large-scale survey (consisting of approximately 500 items) and the authors were only able to determine the advertising related questions, the authors were not able to incorporate any large scales in the survey. The authors developed the scales based on the studies of Rozendaal et al. (2016), Hudders et al. (2016) and Fransen et al. (2015).

References


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