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A closer investigation of dispositional persuasion knowledge of sponsored content: Exploring determinants and clusters

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ABSTRACT

Persuasion knowledge (PK) has become an essential construct to understand how sponsored content affects audiences. As limited or undeveloped PK makes people vulnerable to persuasion, it is crucial to understand which factors determine people's dispositional PK of sponsored content. This study aims to (1) explore whether individual factors and medium type determine people's levels of dispositional PK, and (2) identify subgroups with different levels of PK and estimate the prevalence of these groups. Results from a cross sectional survey ($N = 614$) show that need for cognition, education, age, medium usage, and medium type determine individual levels of conceptual and/or attitudinal PK. Thus, individual levels of dispositional PK of sponsored content depend on one's ability and motivation to process information and one's experience with sponsored content. Furthermore, based on a cluster analysis with three central components of dispositional PK (i.e., understanding tactic, self-reflective knowledge, and scepticism), we present four distinct groups: the *Naïve* (the largest group), the *Critical Realists*, the *Uncritical Realists*, and the *Invulnerables*. Our findings reveal that there are different types of consumers, and improve our theoretical understanding of who have better developed dispositional PK of sponsored content.

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Introduction

The persuasion knowledge model (PKM), introduced by Friestad and Wright (1994), regained scholarly attention in recent years (e.g., Boerman et al. 2018; Evans and Park 2015; Eisend and Tarrahi 2022; Ham, Nelson, and Das 2015). Persuasion knowledge (PK) refers to people's general understanding of the motives and strategies regarding persuasion attempts. People use their PK to decide whether they want to be persuaded or resist the attempt. PK develops throughout life and evolves when confronted with persuasion (Friestad and Wright 1994; Wright, Friestad, and Boush 2005).

The PKM is relevant to sponsored content, because sponsored content is designed to resemble entertainment or editorial content and therefore blurs the lines between

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commercial and non-commercial content (e.g., Boerman et al. 2018; Tutaj and Van Reijmersdal 2012). Examples include brand placements in TV programs or video games, and paid product reviews on blogs. If targets are unaware of the persuasive intent of a message, they are unable to activate and use PK to exert self-control and to cope with the attempt (Friestad and Wright 1999; Ham and Nelson 2019). In addition, people can only develop an understanding that particular covert executions were in fact advertising over time and with continued exposure (Wojdyski and Evans 2020). As limited and undeveloped PK is associated with higher vulnerability to persuasion (Hudders et al. 2017; Friestad and Wright 1994; Rozendaal et al. 2011), it is vital to understand which factors determine people's level of PK of sponsored content.

In this study, we explore the determinants of people's *dispositional* PK regarding sponsored content. Dispositional PK is a personal trait and refers to individuals' PK that has been formed throughout their lifetime via diverse interactions with persuasion agents (Ham and Nelson 2019). Thus, we focus on individual levels of PK of sponsored content in general, instead of their PK of a specific instance of sponsored content (e.g., the recognition or understanding of a particular brand placement in a video game). People's dispositional PK of sponsored content is an important construct in research, as previous research has found it to play a (moderating) role in the effects of sponsored content (e.g., Van Dam and Van Reijmersdal 2019; Verhellen et al. 2014; Waiguny, Nelson, and Terlutter 2014). Thus, dispositional PK could be a potential covariate or confounding variable in experiments, and could provide useful insights into who is vulnerable to (hidden) persuasion, and who is not.

Despite its importance, little is known about the determinants of dispositional PK of sponsored content. Theoretical models such as the PKM (Friestad and Wright 1994), CARE model (Wojdyski and Evans 2020), and the PCMC model (Buijzen, Van Reijmersdal, and Owen 2010) suggest that individual characteristics, such as information processing ability and prior experience, predict the level of PK. However, empirical research on the identification of these personal determinants of PK regarding sponsored content is scarce. Insights into how individual characteristics relate to people's level of PK are important, because it can help to identify who are potentially most vulnerable to the effects of sponsored content. In addition, PK varies for various medium types, due to different appearances of sponsored content in various media and platforms (Wojdyski and Evans 2020; Hudders et al. 2016; Owen et al. 2013). Insights into the determinants of PK can be used to guide future research on dispositional PK of sponsored content and may aid policy makers and educators in the development of campaigns and interventions to enhance PK for specific groups or medium types.

Our first aim is to explore which factors determine people's level of dispositional PK of sponsored content. We examine the influence of individuals' ability and motivation to process information (i.e., need for cognition [NFC], education, and age), experience with sponsored content (i.e., medium usage), and differences between medium types (i.e., blogs, video games, and television).

Our second aim is to identify subgroups with different levels of PK and estimate the prevalence of these groups. We explore whether we can differentiate clusters of people based on their levels of three central components of PK of sponsored content (i.e., understanding of the persuasive tactic, self-reflective awareness of the effectiveness of

sponsored content on the self, and scepticism). We also study how these clusters differ with respect to individual characteristics and between medium types.

Components of dispositional PK

In the literature, a distinction is made between conceptual and attitudinal PK (Boerman et al. 2018; Rozendaal et al. 2011). Conceptual PK encompasses people's recognition of persuasion, their understanding of the intent and tactics used, and their insights into the effects of persuasion. Attitudinal PK relates to people's evaluation of the persuasion attempt and includes their general attitudes and scepticism toward persuasion formats (Rozendaal et al. 2011). Most PK research assumes that conceptual and attitudinal PK are related (e.g., Isaac and Grayson 2020; Hibbert et al. 2007). Research also shows that the activation and use of conceptual PK precedes attitudinal PK, and thus that people need to understand that a message has a persuasive intent to critically evaluate this persuasion attempt (e.g., Boerman et al. 2014; Campbell and Kirmani 2000; Lorenzon and Russell 2012; Wojdyski and Evans 2016).

Boerman et al. (2018) developed measures of nine dimensions of conceptual and attitudinal PK in the context of sponsored content. They distinguish six conceptual components. First, the recognition of sponsored content, which is people's ability to discern sponsored content from other media content. Second, the understanding of the selling and persuasive intent of sponsored content, which is people's understanding that sponsored content aims to increase sales and to influence people's attitude and feelings toward products or services. Third, the recognition of the commercial source of sponsored content, which is the understanding that an advertiser paid for featuring brands or services in media content. Fourth, the understanding of persuasive tactics, which is the understanding of the strategies (such as masking the persuasive intent) that are used in sponsored content to persuade people. Fifth, the understanding of the economic model of sponsored content, which is people's understanding that the content is financed by an advertiser and is therefore available for free or at a lower cost. Sixth, the self-reflective awareness of the effectiveness of sponsored content, which are the perceptions of the effects of sponsored content on one's own but also others' cognitions, evaluations, and behaviours (Boerman et al. 2018).

The three components of attitudinal dispositional PK are: scepticism, which is people's disbelief of sponsored content; appropriateness, which are their beliefs about the morality of sponsored content; and (dis)liking, which reflects people's general attitude toward sponsored content (Boerman et al. 2018).

Exploring the determinants of dispositional PK

Based on the PKM (Friestad and Wright 1994), CARE model (Wojdyski and Evans 2020), the PCMC model (Buijzen, Van Reijmersdal, and Owen 2010), and other seminal work on PK of sponsored content (e.g., Evans and Park 2015), we argue that there are two main categories of individual characteristics that may determine personal levels of dispositional PK of sponsored content: (1) the ability and motivation to process information (i.e., NFC, education, and age), and (2) experience with sponsored content (i.e., medium usage). Beside these individual characteristics, we also focus on the possible influence of medium

type (blogs, video games, and television programs) on people's level of dispositional PK of sponsored content.

Need for cognition

Firstly, we explore the influence of individual levels of Need for Cognition (NFC). NFC refers to an individual's tendency to engage in and enjoy activities that require thinking (Cacioppo and Petty 1982). As developing and accessing PK requires a certain amount of thinking about persuasion attempts, we expect a relationship between individual's levels of NFC and dispositional PK. People scoring higher on NFC are likely to be more motivated to put effort into thinking about what they encounter in the media they are using, including the sponsored content they are exposed to (Haugtvedt, Petty, and Cacioppo 1992). Thus, we expect people who are higher in NFC to be more likely to enjoy thinking about a persuasion attempt, while people who are low in NFC will avoid effortful thinking. People scoring higher on NFC may therefore put more effort to understand the persuasive nature of sponsored content and may also be more motivated to engage in critical thinking about sponsored content.

Education

PK is assumed to increase with level of education (Friestad and Wright 1994; Nelson 2016). The more educated someone is, the higher their media and advertising literacy, and thus their PK (Eisend and Tarrahi 2022). Additionally, higher education has been shown to be associated with more critical thinking and more critical evaluations of sponsored content (de Gregorio and Sung 2010). Previous research found evidence for a positive relationship between education and the attitudinal components of PK of sponsored content (i.e., scepticism, appropriateness, and disliking), but not between education and the conceptual components of PK of sponsored content (Boerman et al. 2018).

Age

Adults are assumed to have higher levels of PK regarding all forms of advertising compared to children, due to better developed information processing abilities (Wright, Friestad, and Boush 2005). Research has indeed found evidence for this assumption in the context of traditional advertising (Rozendaal, Buijzen, and Valkenburg 2010). However, less is known about age differences in PK between adults of different ages. Insights from developmental psychology suggest that the prefrontal part of the brain (the part responsible for information processing) continues to mature well into the 20s (Best and Miller 2010). After that time, we would therefore no longer expect growth of information processing abilities with age, rather a decrease due to aging. This may have consequences for people's levels of PK of sponsored content as well. Additionally, as people get older, PK may also be developed sufficiently and thus may no longer increase.

Furthermore, older generations generally hold more negative attitudes toward advertising, especially regarding advertising in more contemporary media, such as social media

and smartphones (Van der Goot et al. 2018). This means that levels of attitudinal PK of sponsored content are also likely to differ between age groups.

Medium usage

Next to the ability and motivation to process persuasive messages, one's experience with sponsored content may also influence individual levels of dispositional PK of sponsored content. People who use media more often are assumed to have more experience with sponsored content because they encounter it more often (Evans and Park 2015). This experience and continued exposure is needed to develop ad-specific PK, and thus to recognize the use of sponsored content, understand its persuasive intent and strategies, and critically evaluate the sponsored content (Wright, Friestad, and Boush 2005; Wojdyski and Evans 2020). In addition, the extent to which you use a medium, may also influence whether you believe sponsored content within this medium is appropriate, or annoying, or disturbs your experience with this medium.

Medium type

Dispositional PK may also differ between medium types. In the current study, we compare levels of PK for three different media formats in which sponsored content is frequently embedded: television programs, video games, and blogs (PQ Media 2015). Sponsored content in TV programs has been around for a relatively long time; it was one of the first medium types to feature sponsored content (Karrh 1998; Van Reijmersdal et al. 2007). As a result, most people are familiar with this form of sponsored content, which may positively affect conceptual PK. Moreover, making sponsored content in TV programs clearly recognizable is mandatory in many countries for years (Boerman and Van Reijmersdal 2016; Cain 2011; Spielvogel, Naderer, and Matthes 2021). The continued experience with brand placement and disclosure thereof may positively affect levels of PK. In contrast, sponsored content in blogs and in games is relatively new and often not clearly identifiable by means of a sponsorship disclosure (Boerman et al. 2018; Nairn and Hang 2012).

Altogether, to study which factors determine people's level of dispositional PK of sponsored content, we pose the exploratory research question:

RQ1: *How are a) NFC, b) education, c) age, d) medium usage and e) medium type related to the conceptual and attitudinal components of dispositional PK of sponsored content?*

Identifying groups of people based on their dispositional PK

While prior studies have explored people's level of dispositional PK regarding sponsored content (e.g., De Pauw, Hudders, and Cauberghe 2018; Van Dam and Van Reijmersdal 2019), no empirical work to this point has identified distinct groups of people based on the patterns in their levels of the different components of PK of sponsored content. While some people might score high (or low) on all the components of PK, others may score

high on some components and low on others. For example, some people might be highly knowledgeable regarding sponsored content, but not that critical towards it.

We attempt to identify distinct groups of people according to the patterns in their levels of PK of sponsored content. To limit the number of variables in the cluster analysis and increase the interpretability of the clusters, we focus on three divergent, key components¹ to identify the clusters: understanding of persuasive tactics, self-reflective awareness of the effectiveness of sponsored content, and scepticism towards sponsored content. These components represent three different aspects of PK. First, the understanding of persuasive tactics is *conceptual* in nature and represents an objective understanding of sponsored content as a persuasive attempt. We propose that this component is relevant to distinguish who understand why sponsored content is made and used, and who is not. Second, self-reflective awareness of the effectiveness of sponsored content is *reflective* in nature and shows someone's perceived, subjective (in)vulnerability to sponsored content. This component identifies those who believe to be affected by sponsored content, and those who think to be relatively immune to its persuasive effects. Third, scepticism towards sponsored content is *attitudinal* in nature and reflects critical perceptions regarding sponsored content. As the three attitudinal PK components are highly correlated, we decided to include scepticism as this is seen as an important component of consumer persuasion knowledge and is often used to understand consumers' critical evaluations of persuasive content (Friestad and Wright 1994; Obermiller and Spangenberg 2000). We propose the following research question:

RQ2: *a) Which different subgroups of individuals can be distinguished based on their conceptual PK (i.e., understanding of persuasive tactics, self-reflective awareness of the effectiveness of sponsored content) and attitudinal PK (i.e., scepticism), b) what is the prevalence of these subgroups, and c) how do these subgroups differ with regard to individual characteristics (i.e., NFC, education, age, and medium usage) and between medium types?*

Materials and methods

Sample

The data used in this study were collected via Prolific amongst a UK sample in May 2016 with the purpose to develop the Persuasion Knowledge Scales of Sponsored Content (PKS-SC; Boerman et al. 2018). In total, 638 people finished the survey. The survey included three attention checks (e.g., 'Please tick 2 here'). Removing all respondents who incorrectly answered two or three of the three attention checks ($n = 11$), and those who participated twice ($n = 13$), left a final sample of 614 respondents. To limit the burden on our respondents, we created three versions of the survey, adapted all questions to one medium type, and randomly assigned respondents to one of the versions (TV $n = 189$, blogs $n = 215$, video games $n = 210$). The final sample had a good distribution of gender (52% female), age ($M = 36.34$, $SD = 10.99$, range 19–75), and educational level (24% had completed high school or less, 13% had completed lower or higher professional

education, 48% has completed a bachelor college degree, 15% had a masters or doctoral degree).

Measures

Dispositional PK of sponsored content

We used the exact scales from the PKS-SC (Boerman et al. 2018), which include the conceptual components: recognition of sponsored content ($M = 2.34$, $SD = 0.80$), understanding of selling and persuasive intent ($M = 6.15$, $SD = 0.82$), recognition of the commercial source of sponsored content ($M = 6.11$, $SD = 1.20$), understanding of persuasive tactics ($M = 5.43$, $SD = 0.94$), understanding of the economic model ($M = 3.85$, $SD = 1.34$), self-reflective awareness of the effects of sponsored content on the self ($M = 3.40$, $SD = 1.49$), self-reflective awareness of the effects of sponsored content on others ($M = 5.30$, $SD = 1.12$). Additionally, we included the three attitudinal components: scepticism toward sponsored content ($M = 4.29$, $SD = 1.40$), appropriateness of sponsored content ($M = 4.02$, $SD = 1.34$), and (dis)liking of sponsored content ($M = 4.25$, $SD = 1.26$). Higher scores on these attitudinal components reflect more critical perceptions (i.e., more scepticism, less perceived appropriateness, more disliking).

NFC

We used the 18-item scale by Cacioppo *et al.* (1984) to measure individual levels of NFC. Items included 'I would prefer complex to simple problems', 'Thinking is not my idea of fun' (reverse-coded), and 'I really enjoy a task that involves coming up with new solutions to problems'. We recoded the nine reverse-coded items and used a mean score of the 18 items as a measure of NFC (eigenvalue = 9.39, explained variance = 52.15%; $\alpha = .94$, $M = 4.75$, $SD = 1.15$).

Medium usage

To measure the relative frequency that participants used the medium that they were assigned to, we asked them: 'Do you ever play video games on a computer, phone, tablet, or using a console?' (answer options: 1 = *Never*, 2 = *Yearly*, 3 = *Monthly*, 4 = *Weekly*, 5 = *Daily*), or 'How often do you read blog posts?' (answer options: 1 = *Never*, 2 = *Yearly*, 3 = *Monthly*, 4 = *Weekly*, 5 = *Daily*), or 'How many hours do you watch television, online and offline, on a regular weekday?' (open question). To create one variable representing the relative use of the medium types, we recoded all answers into light, moderate, and heavy medium usage, and merged participants' answers into one variable. For blogs and video games, we coded *never* and *yearly* as light usage, *monthly* and *weekly* as moderate usage, and *daily* as heavy medium usage. For TV, we coded answers up to 2 hours a weekday as light usage, 2–4 hours a day as moderate usage, and >4 hours a day as heavy medium usage. These cut-off points were based upon the percentiles (25% = 2.00, 50% = 3.00, 75% = 4.25), and research suggesting that watching >4 hours a day is excessive television viewing (e.g., Jordan et al. 2006; Wong et al. 1992). The final, merged variable ranged from light (14.5%) to moderate (50.5%) to heavy medium usage (35%).

Demographic variables

We recoded the continuous *age* variable into the following age groups: 19–29 years old ($n = 210$; 34.4%), 30–39 years old ($n = 199$; 32.5%), 40–49 years old ($n = 111$; 18.1%), and 50 years or older ($n = 92$; 15.0%). In addition, we asked participants to indicate the highest level of *education* they had completed (ranging from 1 = *less than high school* to 7 = *doctoral degree [PhD]*). Finally, we asked whether respondents were male (47.6%) or female (52.4%; gender 0 = *male*, 1 = *female*).

Analytic method

To answer RQ1, we performed separate regression analyses for each of the nine components of the PKS-SC. Because self-reflective PK is divided into effects on the self and on others, this resulted in ten dependent variables. In these analyses, we included the predictors: NFC, education, age groups (with 19–29 as reference group), medium usage (with light use as reference group), and the assigned medium (with TV as reference group). Gender was included as a covariate (Results in [Tables 1 and 2](#)).

To analyse which different clusters of individuals can be distinguished (RQ2a) and how prevalent these clusters are (RQ2b), we performed a Two-Step Cluster Analysis in IBM SPSS Statistics 25. Two-Step Cluster Analysis is a statistical procedure that can identify groups or ‘clusters’ of individuals with similar patterns within data sets (Norusis 2012). It is suitable for large data sets and it automatically selects the appropriate number of clusters. Because we only included continuous variables, we used the Euclidean algorithm in the first step to decide – based on its similarity using a likelihood distance measure – if an observed case should be merged with a previously formed precluster or to start a new precluster. In the second step, IBM Statistics 25 uses the standard hierarchical clustering algorithm on the preclusters, producing a range of solutions, which is then reduced to the best number of clusters based on the Schwarz’s Bayesian information criterion (BIC; Okazaki 2006; Norusis 2012). In our analysis, we set the maximum clusters to 5 (Results and clusters in [Table 3](#) and [Figures 1 and 2](#)).

Based on the Two-Step Cluster Analysis, we created groups and ran a MANOVA with the groups as predictor and understanding of the persuasive tactic, self-reflective awareness, and scepticism as dependent variables to test whether the mean scores were significantly different between the clusters (see [Table 3](#)).

Finally, to examine the specific characteristics of each subgroup (RQ2c), we conducted a multinomial logistic regression with NFC, education, age, medium usage, and medium type as predictors (results in [Table 5](#)).

Results

Predictors of dispositional PK of sponsored content

The results of all regression analyses predicting dispositional conceptual PK are presented in [Table 1](#), and the results predicting dispositional attitudinal PK are presented in [Table 2](#). For reasons of clarity and conciseness, we only discuss the significant effects ($p < .05$).



Table 1. Regression analyses predicting the level of dispositional conceptual PK.

| | Recognition of sponsored content | | Understanding of persuasive and selling intent | | Understanding of persuasive tactics | | Recognition of commercial source | | Understanding of economic model | | Self-reflective awareness of effect on self | | Self-reflective awareness of effect on others | |
|----------------------------------|----------------------------------|------|--|------|-------------------------------------|------|----------------------------------|------|---------------------------------|------|---|------|---|------|
| | <i>b</i> (SE) | beta | <i>b</i> (SE) | beta | <i>b</i> (SE) | beta | <i>b</i> (SE) | beta | <i>b</i> (SE) | beta | <i>b</i> (SE) | beta | <i>b</i> (SE) | beta |
| Constant | 2.01*** | | 5.93*** | | 4.99*** | | 6.47*** | | 3.22*** | | 3.05*** | | 4.68*** | |
| NFC | 0.05 (0.03) | | 0.10 (0.03) | | 0.07 (0.03) | | 0.02 (0.04) | | 0.06 (0.05) | | -0.03 (0.05) | | 0.11 (0.04) | |
| Education | 0.02 (0.02) | | -0.05 (0.02) | | 0.02 (0.03) | | 0.01 (0.03) | | 0.03 (0.04) | | 0.02 (0.04) | | -0.01 (0.03) | |
| | 0.03 | | -0.09* | | 0.03 | | 0.01 | | 0.03 | | 0.02 | | -0.02 | |
| Age group (reference = 19–29) | | | | | | | | | | | | | | |
| 30–39 | 0.15 (0.07) | | 0.14 (0.08) | | 0.07 (0.09) | | -0.01 (0.11) | | -0.04 (0.13) | | -0.37 (0.14) | | -0.16 (0.11) | |
| | 0.09* | | 0.08 ⁺ | | 0.03 | | -0.00 | | -0.02 | | -0.12* | | -0.07 | |
| 40–49 | 0.07 (0.09) | | 0.22 (0.10) | | 0.12 (0.11) | | 0.18 (0.13) | | 0.04 (0.16) | | -0.42 (0.17) | | -0.11 (0.13) | |
| | 0.04 | | 0.10* | | 0.05 | | 0.06 | | 0.01 | | -0.11* | | -0.04 | |
| 50 ⁺ | -0.11 (0.10) | | 0.27 (0.10) | | 0.25 (0.12) | | 0.13 (0.14) | | 0.24 (0.17) | | -0.56 (0.18) | | -0.08 (0.14) | |
| | -0.05 | | 0.12** | | 0.09* | | 0.04 | | 0.07 | | -0.13** | | -0.03 | |
| Medium usage (reference = light) | | | | | | | | | | | | | | |
| Moderate | 0.21 (0.09) | | -0.25 (0.10) | | -0.09 (0.11) | | -0.21 (0.14) | | -0.02 (0.16) | | 0.51 (0.17) | | 0.02 (0.13) | |
| | 0.13* | | -0.15* | | -0.05 | | -0.09 | | -0.01 | | 0.17** | | 0.01 | |
| Heavy | 0.01 (0.10) | | -0.18 (0.10) | | -0.10 (0.12) | | -0.20 (0.15) | | -0.09 (0.17) | | 0.73 (0.18) | | 0.15 (0.14) | |
| | 0.01 | | -0.11 ⁺ | | -0.05 | | -0.08 | | -0.03 | | 0.24*** | | 0.06 | |
| Medium (reference = TV) | | | | | | | | | | | | | | |
| Blog | -0.58 (0.08) | | -0.16 (0.08) | | 0.20 (0.09) | | -0.90 (0.12) | | 0.08 (0.13) | | 0.50 (0.14) | | 0.45 (0.11) | |
| | -0.34*** | | -0.09* | | 0.10* | | -0.35*** | | 0.03 | | 0.16** | | 0.19*** | |
| Video | 0.03 (0.08) | | -0.05 (0.08) | | -0.29 (0.09) | | -0.04 (0.11) | | 0.67 (0.13) | | -0.35 (0.14) | | -0.20 (0.11) | |
| games | 0.02 | | -0.03 | | -0.15** | | -0.02 | | 0.24*** | | -0.11* | | -0.09 ⁺ | |
| Gender (female) | 0.07 (0.06) | | 0.14 (0.07) | | 0.07 (0.08) | | -0.05 (0.09) | | -0.01 (0.11) | | 0.21 (0.12) | | 0.18 (0.09) | |
| | 0.04 | | 0.08* | | 0.04 | | -0.02 | | -0.00 | | 0.07 ⁺ | | 0.08* | |
| <i>F</i> (10, 603) = | 10.39, <i>p</i> < .001 | | 4.09, <i>p</i> < .001 | | 4.52, <i>p</i> < .001 | | 9.09, <i>p</i> < .001 | | 3.80, <i>p</i> < .001 | | 7.21, <i>p</i> < .001 | | 5.17, <i>p</i> < .001 | |
| Adjusted R ² | .13 | | .05 | | .05 | | .12 | | .04 | | .09 | | .06 | |

*** *p* < .001, ** *p* < .01, * *p* < .05, ⁺ *p* < .10.

Table 2. Regression analyses predicting the level of dispositional attitudinal PK.

| | Scepticism | Appropriateness | Liking |
|----------------------------------|------------------------------|------------------------------|----------------------------------|
| | <i>b</i> (SE) <i>beta</i> | <i>b</i> (SE) <i>beta</i> | <i>b</i> (SE) <i>beta</i> |
| Constant | 3.88*** | 3.25*** | 3.83*** |
| NFC | 0.09 (0.05) 0.08* | 0.13 (0.05) 0.11** | 0.09 (0.04) 0.08* |
| Education | 0.13 (0.04) 0.14*** | 0.10 (0.04) 0.11** | 0.07 (0.03) 0.08* |
| Age group (reference = 19–29) | | | |
| 30–39 | 0.19 (0.13) 0.06 | 0.16 (0.16) 0.01 | 0.31 (0.12) 0.12** |
| 40–49 | –0.11 (0.15) –0.03 | 0.03 (0.16) 0.01 | 0.26 (0.15) 0.08 ⁺ |
| 50 ⁺ | –0.05 (0.17) –0.01 | 0.14 (0.17) 0.04 | 0.27 (0.16) 0.08 ⁺ |
| Medium usage (reference = light) | | | |
| Moderate | –0.60 (0.16) –0.22*** | –0.35 (0.16) –0.13* | –0.22 (0.15) –0.09 |
| Heavy | –0.70 (0.17) –0.24*** | –0.49 (0.17) –0.17** | –0.56 (0.16) –0.21*** |
| Medium (reference = TV) | | | |
| Blog | 0.41 (0.13) 0.14** | 0.14 (0.13) 0.05 | –0.34 (0.12) –0.13** |
| Video games | –0.57 (0.13) –0.20*** | –0.27 (0.13) –0.10* | –0.10 (0.12) –0.04 |
| Gender (female) | –0.01 (0.11) –0.00 | 0.09 (0.11) 0.03 | –0.06 (0.10) –0.02 |
| <i>F</i> (10, 603) = | 10.75, <i>p</i> < .001 | 4.26, <i>p</i> < .001 | 4.25, <i>p</i> < .001 |
| Adjusted <i>R</i> ² | .14 | .05 | .05 |

Higher scores represent more critical evaluations.
 *** *p* < .001, ** *p* < .01, * *p* < .05, ⁺ *p* < .10.

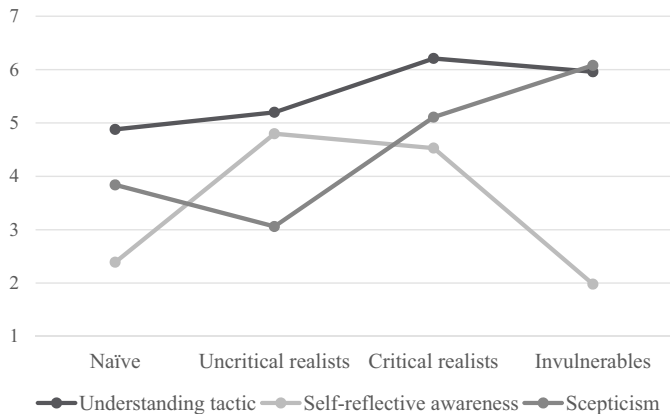


Figure 1. Mean scores of self-reflective awareness, scepticism, and understanding tactic for the four clusters.

With respect to RQ1a, NFC had a significant, positive effect on ad recognition (*beta* = 0.08, *p* = .047), understanding intent (*beta* = 0.14, *p* < .001) and tactic (*beta* = 0.09, *p* = .026), the perception that others are influenced by sponsored content (*beta* = 0.11, *p* = .007), and on scepticism (*beta* = 0.08, *p* = .048) and appropriateness (*beta* = 0.11, *p* = .008).

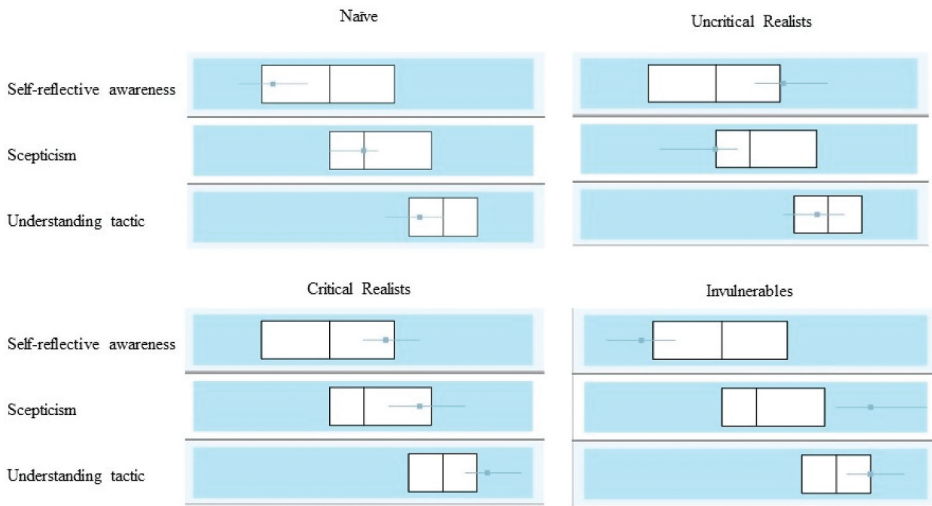


Figure 2. Boxplots of the four-class solution.

Table 3. Mean scores for the four-class solution.

| | Naïve (n = 212) | Uncritical Realists (n = 167) | Critical Realists (n = 122) | Invulnerables (n = 113) |
|---------------------------|--------------------|----------------------------------|--------------------------------|----------------------------|
| Understanding tactics | 4.88 ^a | 5.20 ^b | 6.21 ^c | 5.96 ^c |
| Self-reflective awareness | 2.39 ^a | 4.80 ^b | 4.53 ^c | 1.98 ^d |
| Scepticism | 3.84 ^a | 3.06 ^b | 5.11 ^c | 6.08 ^d |

^{a,b,c,d}Values with different superscripts in the same row differ significantly from each other at $p < .05$.

Thus, *NFC* was positively related to several components of conceptual PK and to two components of attitudinal PK.

Regarding RQ1b, we found a significant, negative effect of *education* on understanding persuasive intent ($\beta = -0.09, p = .030$), and a consistent, positive effect of education on attitudinal PK (scepticism: $\beta = 0.14, p < .001$; appropriateness $\beta = 0.11, p = .006$; liking $\beta = 0.08, p = .039$), showing that higher educated people are more critical towards sponsored content.

With respect to *age* (RQ1c), we found significant differences between age groups in both conceptual and attitudinal PK. Overall, older age groups do not score significantly lower on conceptual PK of sponsored content than younger age groups. Compared to the youngest age group (19–29), older age groups had higher levels of ad recognition (30–39 $\beta = .09, p = .048$) and a better understanding of the persuasive intent (40–49 $\beta = 0.10, p = .009$; 50+ $\beta = 0.12, p = .009$). The oldest age group (50+) also had a better understanding of tactics, compared to the youngest ($\beta = .09, p = .032$). Furthermore, our findings indicated that the older age groups had lower perceptions of being influenced by sponsored content (30–39 $\beta = 0.12, p = .010$; 40–49 $\beta = 0.11, p = .013$; 50+ $\beta = 0.13, p = .002$). Finally, the 30–39 age group disliked sponsored content more than the youngest age group ($\beta = 0.12, p = .010$).

Medium usage (RQ1d) had a significant effect on some conceptual components, and on scepticism and appropriateness. Compared to light users of the media, moderate users

had higher levels of ad recognition ($\beta = 0.13, p = .025$) but less understanding of the persuasive intent of sponsored content ($\beta = -0.15, p = .012$). In addition, compared to light medium users, both moderate ($\beta = 0.17, p = .004$) and heavy ($\beta = 0.24, p < .001$) medium users had a higher awareness of being influenced by sponsored content. Furthermore, compared to light users, both moderate (scepticism: $\beta = -0.22, p < .001$; appropriateness $\beta = -0.13, p = .031$) and heavy (scepticism: $\beta = -0.24, p < .001$; appropriateness $\beta = -0.17, p = .004$) users were significantly less sceptical and perceived sponsored content as more appropriate. Thus, overall, results suggest that the more people use the media, the less critical they are about the sponsored content they encounter in those media.

Our results suggest that dispositional conceptual and attitudinal PK differ between *medium types* (RQ1e), but without a clear and consistent pattern. Compared to TV², people had significantly lower levels of ad recognition ($\beta = -0.34, p < .001$) and understanding of the source ($\beta = -0.36, p < .001$) in the context of blogs. Additionally, compared to TV, people had a better understanding of the persuasive tactics in blogs ($\beta = 0.10, p = .029$), and a higher self-reflective awareness of the effectiveness of sponsored content in blogs on the self ($\beta = 0.16, p = .001$) and on others ($\beta = 0.19, p < .001$). Furthermore, people's understanding of the persuasive tactics in video games were significantly lower than for TV ($\beta = -0.15, p = .002$). However, the understanding of the economic model was better for video games than for TV ($\beta = 0.24, p < .001$). People also had a lower self-reflective awareness of the effectiveness of sponsored content in video games ($\beta = -0.11, p = .014$).

Attitudinal PK also differed between medium types. Compared to TV, people were more sceptical ($\beta = 0.14, p = .002$) and liked sponsored content less ($\beta = \text{liking} -0.13, p = .007$) in blogs. In addition, people were less sceptical ($\beta = -0.20, p < .001$) and found sponsored content more appropriate ($\beta = -0.10, p = .042$) in video games than in TV programs.

Table 4. Composition of clusters.

| | Total (N = 614) | Naïve (n = 212) | Uncritical Realists (n = 167) | Critical Realists (n = 122) | Invulnerables (n = 113) |
|-----------------|--------------------|--------------------|----------------------------------|--------------------------------|----------------------------|
| NFC | 4.75 | 4.73 | 4.63 | 4.71 | 4.98 |
| Education | 3.83 | 3.84 | 3.74 | 3.90 | 3.87 |
| Age group | | | | | |
| 19–29 | 34.4 | 28.9 | 45.8 | 34.4 | 27.4 |
| 30–39 | 32.5 | 35.5 | 26.5 | 32.8 | 35.4 |
| 40–49 | 18.1 | 20.9 | 15.1 | 17.2 | 18.6 |
| 50 and older | 15.0 | 14.7 | 12.7 | 15.6 | 18.6 |
| Medium usage | | | | | |
| Light | 14.5 | 14.2 | 7.8 | 13.1 | 26.5 |
| Moderate | 50.5 | 48.1 | 50.3 | 56.6 | 48.7 |
| Heavy | 35.0 | 37.7 | 41.9 | 30.3 | 24.8 |
| Medium | | | | | |
| TV | 30.8 | 31.6 | 29.9 | 27.0 | 34.5 |
| Blog | 34.2 | 16.5 | 33.5 | 56.6 | 44.2 |
| Video games | 35.0 | 51.9 | 36.5 | 16.4 | 21.2 |
| Gender (female) | 52.4 | 51.9 | 54.5 | 55.7 | 46.9 |

All scores indicate percentages within clusters, except for NFC and Education which represent mean scores.

Table 5. Multinomial logistic regression predicting membership of the clusters.

| | Uncritical Realists | Critical Realists | Invulnerables |
|----------------------------------|------------------------------|------------------------------|------------------------------|
| | <i>b</i> (SE) <i>beta</i> | <i>b</i> (SE) <i>beta</i> | <i>b</i> (SE) <i>beta</i> |
| Intercept | 0.08 (0.63) | -0.93 (0.70) | -1.28 (0.72) ⁺ |
| NFC | -0.06 (0.09) | -0.03 (0.11) | 0.22 (0.12) ⁺ |
| Education | 0.94 | 0.97 | 1.24 |
| Age group (reference = 19–29) | -0.05 (0.07) | 0.10 (0.09) | 0.08 (0.09) |
| | 0.95 | 1.11 | 1.08 |
| 30–39 | -0.71 (0.26)** | -0.20 (0.30) | 0.06 (0.31) |
| | 0.49 | 0.82 | 1.06 |
| 40–49 | -0.74 (0.31)* | -0.42 (0.36) | -0.21 (0.36) |
| | 0.48 | 0.66 | 0.81 |
| 50 and older | -0.56 (0.34) ⁺ | -0.12 (0.38) | 0.28 (0.38) |
| | 0.57 | 0.89 | 1.32 |
| Medium usage (reference = light) | | | |
| Moderate | 0.47 (0.37) | 0.02 (0.37) | -0.80 (0.33)* |
| | 1.59 | 0.98 | 0.45 |
| Heavy | 0.66 (0.38) ⁺ | -0.05 (0.39) | -0.96 (0.36)** |
| | 1.92 | 0.89 | 0.38 |
| Medium (reference = TV) | | | |
| Blog | 0.78 (0.29)** | 1.39 (0.30) | 1.01 (0.31)** |
| | 2.19 | 4.03*** | 2.74 |
| Video games | -0.31 (0.25) | -1.02 (0.33) | -0.91 (0.31)** |
| | 0.73 | 0.36** | 0.40 |
| Gender (female) | 0.13 (0.22) | 0.22 (0.25) | -0.08 (0.25) |
| | 1.14 | 1.24 | 0.93 |

The Naïve (largest group) is the reference group. *** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .10$. $R^2 = .20$ (Nagelkerke). Significant differences are bold.

Identifying different clusters

The Two-Step Cluster Analysis identified four distinct cluster groups with similar patterns of dispositional PK. Cluster quality was fair (silhouette measure of cohesion and separation = 0.4), and the clusters had a good ratio of sizes (ratio of sizes = 1.88). Table 3 shows the mean scores of understanding tactic, self-reflective awareness of the effect of the self, and scepticism for each cluster, Figure 1 visualizes these mean scores for each cluster, and Figure 2 presents the box plots for each cluster. Table 4 summarizes the distribution of the predictors within the clusters, and Table 5 presents the outcomes of the multinomial logistic regression. In addition, there is a correlation matrix available for all variables in Online Appendix A.

The first and largest cluster was named the *Naïve* ($n = 212$, 34.5%). This group consists of people that have the lowest understanding of the tactics used in sponsored content ($M = 4.88$) and below average self-reflective awareness ($M = 2.39$), and score at the midpoint regarding scepticism ($M = 3.84$). Thus, this group knows something about the tactic, but is not very sceptical and does not consider themselves affected by sponsored content. This group is used as the reference category in the multinomial regression analysis.

The second group consists of the *Uncritical Realists* ($n = 167$, 27.2%). This group has an average understanding of tactics ($M = 5.20$), above average awareness of the effects of sponsored content on the self ($M = 4.80$), and the lowest level of scepticism of all groups

($M = 3.06$). Thus, the people in this group are fairly knowledgeable and do think that they are influenced by sponsored content but are not sceptical towards it. Compared to the Naïve, this cluster consists of significantly more young people (see Table 5).

The third group is called the *Critical Realists* ($n = 122, 19.9\%$). The people in this cluster have the best understanding of the persuasive tactics ($M = 6.21$), higher than average self-reflective awareness ($M = 4.53$) and are also more sceptical than average ($M = 5.11$). Thus, the people in this group are very knowledgeable, do think that they are influenced by sponsored content, and are sceptical.

The fourth group is the smallest group ($n = 113, 18.4\%$) and consists of the perceived *Invulnerables*. The people in this cluster have higher than average understanding of the tactic ($M = 5.96$), have the highest level of scepticism ($M = 6.08$), and have the lowest perception of being affected themselves ($M = 1.98$). Thus, the people in this group have an excellent understanding, are very sceptical, and have the perception to be invulnerable to sponsored content. Compared to the Naïve, the people in this group are more often light users of the medium (see Table 5), which may also explain why they consider themselves invulnerable to sponsored content within the medium.

A MANOVA showed that the four groups significantly differed with respect to understanding of the persuasive tactic, $F(3, 610) = 99.46, p < .001$, self-reflective awareness, $F(3, 610) = 319.18, p < .001$, and scepticism, $F(3, 610) = 435.30, p < .001$. Bonferroni post hoc comparisons revealed that all differences were significant (all p 's $< .047$), except for the mean scores of understanding of the persuasive tactic in the *Critical Realists* and *Invulnerables*, $p = .100$ (see Table 3).

Furthermore, as shown in Tables 4 and 5, the distribution of the people who filled out the questions about TV, blogs, and video games also differs between the four clusters. The Naïve group consists of significantly less people who filled out the questions about blogs compared to the other three clusters, and more people that filled out the questions about video games compared to the *Critical Realists* and *Invulnerables*. This suggests that there may be important differences in people's PK regarding these media that affects the composition of the clusters.

Discussion

This study aimed to (1) explore whether individual factors and medium type determine people's levels of dispositional PK, and (2) identify different subgroups with different levels of PK and estimate the prevalence of these groups. With regard to our first aim, our findings provide important new insights into the determinants of dispositional conceptual and attitudinal PK. Our results revealed that NFC is an important predictor of individual's dispositional PK: People with higher NFC have a better understanding of sponsored content (i.e., ad recognition, understanding of persuasive intent, and understanding of persuasive tactic), and have more critical perceptions of sponsored content. It seems that people's need to engage in cognitive activity is related to their understanding and evaluation of sponsored content as a persuasive strategy. With more thinking, PK becomes better developed and people become more critical. This emphasizes the relevance of NFC as an individual trait in the development of PK.

Furthermore, contrary to what is often assumed (e.g., Friestad and Wright 1994; Eisend and Tarrahi 2022), our study does not find *education* to predict levels of conceptual PK.

However, we do find that higher educated people are more critical towards sponsored content, suggesting that education plays an important role in developing critical attitudes toward embedded advertising. Additionally, *age* did seem to play an important role in people's level of dispositional PK. Although we expected the development of PK of sponsored content to stabilize or decline with age, we found that older age groups scored higher on several components of conceptual PK (i.e., ad recognition, understanding of persuasive intent, and understanding of persuasive tactic), and had lower perceptions of being influenced by sponsored content. In line with previous research showing that older generations generally hold more negative attitudes toward advertising, especially regarding advertising in more contemporary media (Van der Goot et al. 2018), we found that older age groups were more critical and disliked sponsored content more than the youngest age group.

With respect to *medium usage*, we found partial support for the idea that more usage of a medium implies more experience with sponsored content within this medium (Evans and Park 2015), which would thus lead to higher levels of conceptual PK. Light users indeed had lower levels of ad recognition and were less aware of being influenced by sponsored content. Furthermore, we found that moderate and heavy users were significantly less sceptical and perceived sponsored content as more appropriate. Thus, the more people use the media, the less critical they are about the sponsored content they encounter in those media.

Finally, we found important differences in PK between *medium types*, however, without a clear or consistent pattern. People did not seem to be consistently more knowledgeable about sponsored content in TV programs, or more critical toward sponsored content in video games. One explanation for these results could be that our measures concerned dispositional PK, and specific knowledge and evaluations may differ within the platforms depending on the characteristics of the sponsored content. Further research is required to investigate the generalizability of the differences between the medium types, and why PK differs between different platforms.

With respect to our second aim, we found evidence for four distinct groups of media users with unique patterns of dispositional PK of sponsored content. Based on a cluster analysis with three distinct components of dispositional PK (i.e., understanding tactic, self-reflective knowledge, and scepticism), we introduce the *Naïve* (the largest group), the *Critical Realists*, the *Uncritical Realists*, and the *Invulnerables*. Interestingly, the largest group (34.5%), the *Naïve*, consists of people who have the least understanding of the tactics used in sponsored content, are not very sceptical, and do not consider themselves affected by sponsored content. This suggests that quite a large group of people do not have well-developed dispositional PK of sponsored content and is seemingly quite naïve about the practice.

The other three groups do seem to be very knowledgeable, but differ with respect to their level of scepticism and perception of being affected by sponsored content. The *Uncritical Realists* (27.2%) are fairly knowledgeable and do believe that they are influenced by sponsored content but are not sceptical towards it. Interestingly, the *Uncritical Realists* are significantly younger, suggesting that younger audiences are knowledgeable but less sceptical toward sponsored content.

The *Critical Realists* (19.9%) have the best understanding of the persuasive tactics, do think that they are influenced by sponsored content, and are sceptical. This group

represents the type of person that would fit the ideal of the 'informed consumer' that is knowledgeable and critical of sponsored content. If this group is perceived as being the optimal consumers, there is still a lot to gain, as this group only accounts for 20% of our sample.

Lastly, the smallest group, the *Invulnerables*, consists of people who have a higher than average understanding of the tactic, have the highest level of scepticism, but the lowest perception of being affected themselves. Compared to the *Naïve*, the people in this group are more often light users of the medium, which may also explain why they consider themselves invulnerable to sponsored content within the medium. More importantly, although this group has an excellent understanding of sponsored content and is very sceptical, they have the illusion of being invulnerable to sponsored content which may make them less likely to resist sponsored content when being confronted with it (Sagarin et al. 2002). Paradoxically, thus, this groups believes they are not affected, but may be the most vulnerable group when confronted with sponsored content.

Theoretical and practical implications

Overall, we find empirical evidence for the theoretical assumption that individual levels of dispositional PK of sponsored content depends on one's ability and motivation to process information (i.e., NFC, education, and age), and on one's experience with sponsored content (i.e., medium usage). These findings improve our theoretical understanding of who have better developed conceptual and attitudinal dispositional PK in the context of sponsored content.

Our findings also underline the importance of the theoretical distinction between conceptual and attitudinal persuasion knowledge. Individual characteristics and also medium types show opposite relations with the two dimensions. For example, media usage is associated with higher levels of conceptual PK but at the same time with lower levels of attitudinal PK. This implies that a more nuanced approach of PK, which discerns conceptual and attitudinal dimensions and takes into account specific predictors, is needed to fully understand people's PK.

Moreover, the introduction of the four clusters based upon the scores on three distinct components of dispositional PK (i.e., understanding tactic, self-reflective knowledge, and scepticism) reveals that there are different types of consumers, and again indicates that *the* level of dispositional PK does not exist. People differ in their combinations of levels of PK. For some people high levels on one dimension go together with high levels on another dimension of PK, but for others this is not true. Our clusters indicate that we should take into account that different combinations are possible and that these combinations make specific groups of audiences.

Our study also has practical implications. The findings imply that tailored interventions and education are needed to reach specific groups of people with specific combinations of PK. More specifically, the *Naïves* who score relatively low on all element of PK deserve attention, but also the *Uncritical Realists* and the *Invulnerables* might need help in coping with sponsored content. For the *Uncritical Realists* the question remains whether their low levels of scepticism are beneficial for making informed decisions based on information in sponsored content. For the *Invulnerables*, it could be that they underestimate their

susceptibility to persuasion by sponsored content and interventions in which they experience that they too are sometimes persuaded may change their perspective (Sagarin et al. 2002).

Also, our study implies that regulations should focus on less traditional media such as blogs and video games, as people's conceptual PK regarding these media still lags behind their knowledge of sponsored content on TV. Clear disclosures of sponsored content in these medium types may aid people in enhancing their conceptual PK (Eisend et al. 2020).

Limitations and suggestions for future research

Although we were able to identify some determinants of dispositional PK, the explained variance for all components was quite low (Min adjusted $R^2 = .04$, Max adjusted $R^2 = .14$). This suggests that, although NFC, age, education, medium usage, and medium type play a role in people's level of dispositional PK regarding sponsored content, more research is needed to gain insights into which other variables determine people's level of PK. Based on the PKM (Friestad and Wright 1994) future research could for instance investigate more cultural factors, interpersonal communication, and cognitive skills.

The introduction of the different clusters opens up a need to gain more knowledge about these clusters. It is vital to increase our understanding of the role of these different clusters in the persuasion process. Future research should take into account that different people may respond differently, and should thus identify who they are dealing with.

In addition, our findings show that the different medium types influenced levels of dispositional PK and affected the composition of the clusters. Dispositional PK regarding *all* sponsored content does not seem to exist and differs between medium types and platforms. Future research should therefore consider medium differences, and further investigate and compare levels of dispositional PK between medium types and platforms, such as Instagram, YouTube and TikTok (Haenlein et al. 2020).

Notes

1. We also ran an exploratory cluster analysis with all seven conceptual dimensions and scepticism as attitudinal component. Results reveal four clusters with poor cluster quality (silhouette measure of cohesion and separation = 0.2) and a good ratio of sizes (ratio of sizes = 1.62; see the composition of the clusters in Online Appendix B). As the inclusion of the eight measures was difficult to interpret and thus to identify what these clusters represented, we decided to select three theoretically distinct scales to conduct a simplified cluster analysis.
2. We reran the analyses with blog as reference category to compare levels of PK between blogs and video games. The results show significant differences for all components, except for the understanding of persuasive and selling intent ($\beta = 0.07$, $p = .148$). Recognition of sponsored content ($\beta = 0.37$, $p < .001$), recognition of commercial source ($\beta = 0.34$, $p < .001$), understanding of economic model ($\beta = 0.21$, $p < .001$), and (dis)liking ($\beta = -0.09$, $p = .046$) were significantly higher for video games than blogs. Contrarily, understanding of persuasive tactics ($\beta = -0.25$, $p < .001$), self-reflective awareness of effect on the self ($\beta = -0.27$, $p < .001$) and on others ($\beta = -0.27$, $p < .001$), scepticism ($\beta = -0.34$, $p < .001$), and (in)appropriateness ($\beta = -0.15$, $p = .001$) were significantly higher for blogs (vs. video games).

Disclosure statement

No potential conflict of interest was reported by the authors.

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