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The relationship between advertising preference accuracy and consumer engagement in social media advertising.

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Abstract

The purpose of this study is to investigate the relationship between the advertising preference accuracy of social media advertisements and consumer engagement and the role of annoyance in this process. By performing a controlled experiment, 40 participants were asked to answer questions by using a survey. While fulfilling the survey, also the participants' eye movements and fixations were measured by eye-tracking recordings. The participants were all between an age of 18 and 29 years, were student at the University of Twente and having a personal Facebook profile. The results of this experiment are indicating that there is a (positive) relationship between the advertising preference accuracy of social media advertisements and engagement with advertisements. Thereby, annoyance is having a moderating role in the relationship between advertising preference accuracy and consumer engagement.

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The relationship between preference accuracy and consumer engagement in social media advertising.

1. Introduction

The rapid transformation of worldwide information technology (IT) has made the internet, and especially social media, the most important and extensive channel of communication nowadays. Regarding traditional marketing tools, companies were used to communicate with their (potential) customers by print ads, a company website or other conventional advertising ways. With the dawn of the era of Web 2.0, a radical change is occurring to a two-way interaction between the customer and the companies and between the costumers themselves (D. H. Lee, Kartik Nair, Harikesh S., 2014). New social media channels like for example Facebook, Twitter and Instagram assists this Web 2.0 two-way interaction, which resulted in a high need of understanding the diverse changes and opportunities that these social media channels can offer brands and companies. To be able to benefit from this digital era in terms of business, social media like Facebook are offering companies the possibility to show advertisements to everyone that is actively using their social platform. Only Facebook already has more than 955 million active users of which over 50% logs in to this social medium every day (Lukka & James, 2014; Melason, 2012; Statistics, 2015).

Regarding this area of social media advertising in marketing literature, studies are mainly focused on particular advertising elements and their effects on the advertisements' click-through-rate (Aaker & Bruzzone, 1985; Cho, 2004; Ducoffe, 1996; Lothia, Donthu, & Hershberger, 2003; Tucker, 2011). Despite the importance of particular advertising elements (images, text etc.), this study is looking from a new context and perspective towards the effectivity of social media advertising by examining the relationship between advertising preference accuracy and consumer engagement. Thereby, this study contributes to the literature gap regarding the so called just-in-time-information feeding, the existing knowledge about online consumer behavior in general and specifically on social media platforms.

Another key factor regarding the effectivity of click-through rates for social media advertisements is annoyance. The main reasons people criticize advertisements are related to the feeling of irritation or annoyance they create which could lead to a general decrease of the effectivity from the advertisement (Aaker & Bruzzone, 1985; Bauer & Greyser, 1968; Cho, 2004; Ducoffe, 1996). Based on this, also the role of annoyance in the relationship between advertising preference accuracy and consumer engagement have been examined which is strengthening the social and academical value of this study even more by looking at these factors from a social media advertising perspective.

The central research question of this research is: 'What is the relationship between the preference accuracy of social media advertisements and consumer engagement and what is the role of annoyance in this process? To answer this central research question, a controlled experiment has been performed wherein 40 participants were asked to answer questions by a survey. While fulfilling the research survey, also eye-tracking was used to record the participants' eye movements and fixation.

2. Literature review

By this literature review, the main practices and definition of social media have been exhibited, followed by an explanation of the labels of social media advertising and the Facebook advertising process in specifically. Subsequently, the three most key factors of this research, advertising preference accuracy, consumer engagement and annoyance, have been examined and defined.

2.1: A clear definition of social media and social media advertising

To give a good understanding about the framework of social media and what exactly is social media, this paragraph will give a clear definition of social media for this study. Thereby, we also described the definition of social media advertising.

In nowadays society, the influence of social media and a shift to consumer control of media is increasing. Social media is built on the technical foundations of Web 2.0 and embraces a group of internet based applications that allows us to create user-generated content (Kaplan & Haenlein, 2010; Vinerean, Cetina, Dumitrescu, & Tichindelean, 2013). Research have shown that social media gets considered as more trustworthy information sources by consumers compared to the traditional marketing instruments companies are using (Karakaya & Barnes, 2010). By affecting the two-sided relation between the consumers and the brand, social media became a key aspect of today's marketing mix (Gensler, Völckner, Liu-Thompkins, & Wiertz, 2013). Therefore, brand managers need to understand how to use social media in an effective way to engage with consumers (Gensler et al., 2013).

Terms as "social marketing" and "social media marketing" are referring to two practices of social media: the use of tools as Facebook, Twitter or Instagram, which are free to use and the use of paid media, like for example paid advertisements on Facebook (Nielsen, 2013). According to an amount of authors, we can define social media advertising as any paid form of non-personal communication about product and/or information due social media, whereby creation of awareness of a company, brand or website in order to stimulate sales and increase profits is the main objective {Kotler, 2010; Wei, 2010; Neti, 2011).

2.2: Features and labels in social media advertising

Next, we describe the labels and features used in social media advertising and how these elements are increasing the effectiveness of the advertisement. This study is focusing on the social media advertising. To create a good understanding of the performed manipulations that were done during this research regarding social media advertisements, features and labels in social media advertising are described by this paragraph.

To code the overall content of social media advertisements, marketing literature frequently classifies advertising as "informative" or "persuasive". With informative content in advertising, the content is limited to only mentioning the presence and the price of the product or service and is focused on shifting the beliefs about this aspects (D. Lee, Hosanagar, & Nair, 2014). Persuasive content on the contrary, is usually treated as a "catch-all", without the use of finer details and classification and focused on direct shifting of preferences (D. Lee et al., 2014).

Looking at further suggestions in literature from persuasive perspective and according to a number of authors, we define persuasive content in advertising as content whereby consumers' purchase decision is influenced by appealing to the so called strategies of ethos, pathos and logos (Cialdini, 2008; D. Lee et al., 2014; Nan & Faber, 2004). An example of such content could be the use of a celebrity endorser in a product or service advertisement to create a feeling of trust to the consumer which can be seen as persuasive advertising by the use of ethos trough the credibility of the endorser. Advertising messages that are focused on appealing a person's emotional, by for example inducing empathy, can be seen as attempts of persuasion via a pathos strategy (D. Lee et al., 2014). Lastly, advertising messages wherein remarkable facts are mentioned, to influence consumers' purchase intention or capture their attention, can be seen as persuasion via a logos strategy which is focused on an appeal through logic (D. Lee et al., 2014). Besides the labels that can be used in social media advertisements also the used features are important towards the effectiveness of the advertisement. Within social media advertisements several features can be used to increase effectiveness of the advertisement. Study provided that consumer are reacting favorably to colors, text and graphics on websites that are animated and therefore companies are using digital video advertising to increase consumer involvement (Tsang & Tse, 2005). Besides the use of videos in advertising, also the use of pictures in online advertising is a frequently used feature to increase effectiveness of the advertisement. The use of pictures makes the advertisement more attractive and more effective in capturing the attention of the consumer (Wei et al., 2010). The third feature is the content of the advertisement, which provides the consumer with written product and/or service information (Wei et al., 2010).

Summarized, we distinct two social media advertisement content labels, informative and as persuasive. Regarding to features to manipulate and increase the effectiveness of social media advertisements three distinctive features can be used, namely: animations, pictures and content.

2.3: The process of Facebook advertising

This study focusses on the preference accuracy of social media advertising, more in particular Facebook advertising. This makes it very relevant to answer two important questions from this perspective: how the advertising process via Facebook is working and how is this social medium deciding which advertising content will be shown to their users?

Since the start of Facebook, the social medium has been used as a platform for advertising activities. Facebook advertisements are submitted to an auction. In this auction, advertisers are competing among each other for a reproduction by a bidding system (Business, 2016; Vejačka, 2012; Facebook, 2016). To improve the advertisements' performance and effectivity, Facebook is displaying the advertisements to users that probably are the most likely to be interested in the information of the advertisement (Facebook, 2016). Facebook is using the profiles of their users to decide their areas of interest, which makes it possible for companies to target their advertisement very precise and reach relevant customer groups that are fitting with their marketing and advertising goals (Facebook, 2016; Facebook, 2016; Business, 2016; Vejačka, 2012; McGeveran, 2009).

Regarding the targeting of the advertisements, Facebook is offering advertiser different categories of targeting filters (Business, 2016; Vejačka, 2012). The first category is 'location', which is based on the IP address of the user and the location that is added to their profile information (country, province, city). The second category is 'demographics' and is based on the users' age, gender, status of relationship and preferred language. Third, the category 'education and work' is used. This category is based on the attendance from the user on a specific school, college or university and work the user currently is doing or has done in the past. The fourth used category is 'interest and likes' and is based users' status updates, groups presence or page connection. The fifth and last targeting segment is 'connections' and contains the users' connection with other Facebook groups, pages or applications. Just like the fourth targeting category, this targeting category can improve the appeal of the advertisement because advertisements can be personalized more to a specific group or customer type an advertiser wants to target (Facebook, 2016).

By embedding social media advertisements, companies are constantly trying to get in contact with possible interested consumers for their products or services. Social mediums are using a specific algorithm to figure out which type of advertorial content will be shown to their users. For example, Facebook believes that the advertisement a user of their platform is seeing, needs to be valuable and relevant to this user. Therefore, Facebook is analyzing several factors to decide which users they want to reach for each advertisement, namely: the user's activity on Facebook apps and services, the

information the user is sharing with a company or brand, geographical location of the user and the other online activities of users. The user's activity on apps and services of Facebook is a factor that is consisting of different elements like: the Facebook pages you and your Facebook friends 'liked', the information that is added to your personal Facebook and Instagram profile and the places you 'checked-in' via Facebook (Facebook, 2016).

Another important factor is the information the user is sharing with a company or brand. For example, this could be the telephone number or email-address a user had shared. This kind of information could be added to a customer list which can be linked to the Facebook profile of the user (Facebook, 2016). The geographical location of the user is also an important factor within this process. Facebook is using this element to show advertisements from companies that want to reach people which are located nearby a specific place. Via the users' IP-address, GPS and location mentions on social platforms, Facebook is constantly monitoring the location of their users to more specify the advertisements that will be shown to their users (Facebook, 2016).

Lastly, the online activities of Facebook users are also an important factor that needs to be mentioned. According to many websites, a so called 'Facebook-pixel' is frequently used to tell companies exactly what kind of content consumers are looking for when they are not actively using Facebook pages or apps (Facebook, 2016; Nguyen, 2016). This pixel consist of a small JavaScript code that moderates the online journey of the consumer step by step (Facebook, 2016; Nguyen, 2016). By this, companies and stores are showing you an Facebook advertising of, for example, a new pair of trainers you looked for on a totally different website a day before. Via this construct, Facebook knows that you are interested in buying a pair of trainers, even though you did not tell Facebook you like training or do sports. The pixel that is embedded at the website of the shoe store, tells Facebook when, how and if you were looking at that particular webpage, even bought a product from the website or downloaded an app of that company (Facebook, 2016; Nguyen, 2016)

To summarize, Facebook submits advertisements via an auction wherein advertisers are competing by a bidding system. Finally, the advertisements are shown to users that are the most likely to be interested in the advertising content, based on factors like user's activity on apps/services, information the user had shared with a company, the users' IP-address, GPS and location mentions and the online activities of the user. These elements are all contributing to the possibility to target advertisements very precise to the audience a company wants to reach, which makes it a significant advantage of advertising on social platforms like Facebook.

2.4: Advertising preference accuracy

By this paragraph, we took a further look at Facebook's advertising preference tool to contribute to the literature gap regarding the so called just-in-time-information feeding. Besides this contribution, advertising preference accuracy is one of the factors of research for this study. Therefore, relevant questions to answer by this paragraph are: how is Facebook dividing the users' preferences and how is preference accuracy defined for this study?

Within Facebooks' advertising preference tool, the social medium is collecting all the information and interests of every unique user and divides this information within different categories. Within this tool users can see whether or not they want to see advertisements that are based on their personal interest and they are able to see Facebook's assumptions on what their areas of interest are. It is also possible for users to even remove predicted areas of interest when they are not accurate at all. To be able to provide the right information, at the right time, in the right context to the right individual via Facebook advertising, this advertising preference tool needs to show valuable, relevant and accurate results for their users (Institute, 2016).

To specify the user's areas of interest, Facebook is subdividing the preferences of users within the following categories: 'traveling, places & events', 'companies & sectors', 'news & entertainment', 'sport & outdoor', 'shopping & fashion', 'lifestyle & culture', 'hobbies & activities', 'persons', 'technology', 'food & drinks', 'education', 'fitness & wellness', 'family and relationships'.

To generate a clear explanation of what accuracy exactly is, different definitions are available. According to Miller (1996), accuracy can be defined as a reflection of the underlying reality. Other authors stated that accuracy can be described as the correctness of the output information (Bailey & Pearson, 1983; Baroudi & Olson; Baskarada, 2010; Miller, 1996). For this study, accuracy is defined as recorded value that conforms to the real-world fact or value (Fisher & Kingma, 2001). Therefore, advertisements which accounting advertising elements (text and visual) that are following the advertising preference of the participant, tend to increase the level of accuracy as well as creating consumer engagement towards the social media advertisements. On that account and for this research, a high level of (advertising) accuracy can be described as a high level of following advertising preferences whereas a low level of (advertising) accuracy contains a low level of following the participants' advertising preferences.

Summarized, it can be concluded that Facebook is constantly collecting user information and divides this information into different categories to create accurate advertising preferences for each user specifically. Thereby, for this study advertising preference accuracy is defined as advertisements which accounting advertising elements that are following the advertising preference of the Facebook user.

2.5: Consumer engagement

In this paragraph the phenomena of consumer engagement (CE) have been examined. By this, two important questions need to be answered: what are the different dimension of consumer engagement and how is consumer engagement defined from the perspective of this study?

Most people know how 'engagement' with, for example, a media platform feels like. Maybe you are engaged with a specific website or having a sort of connection with it by visiting it very often. The Economist Intelligence Unit (2007) established the importance of consumer engagement once by stating that companies nowadays are realizing that engagement is a more strategic way of looking at consumers. 'Engagement' is referring to the creation of a deeper and more meaningful connection between the company and their customers, and is also seen as a way to create customer interaction and participation (Kekic, 2007; Sharma & Nagpal, 2015). Nevertheless, it is not very easy to define what exactly is engagement for a costumer. Within the academic literature, very few articles used the terms 'consumer engagement', 'customer engagement' or 'brand engagement' to describe this phenomenon. Brodie, Hollebeek, Juric and Illic (2011) stated that costumer engagement is a psychological state that happens when a customer is having virtue of interactive or co-creative experiences with a focal object/brand in focal service relationships. Other studies defines engagement as a behavioral construct with hierarchical activity levels, from message consumption in a passive way (viewing a video or picture) to content contributing in an active way like a two way conversation and online participation (Brodie, Hollebeek, Juric, & Ilic, 2011; Tsai & Men, 2014). The Advertising Research Foundation (ASF) states the definition as the process of "turning on a prospective customer to a brand idea enhanced by the surrounding context" (Burns, 2006). Both academic as well as industry researchers are looking at engagement as an important and increasingly construct of brand consumer relationships (Calder, Malthouse, & Schaedel, 2009). Others stated that customer engagement goes beyond purchase and is the level of interactions and connections a customer has with a brand or firm's offerings or activities (Vivek, Beatty, Dalela, & Morgan, 2014).

Ertell (2010) describes customer engagement due a model named the 'Customer Engagement Cycle'. This model states that customer engagement is a cycle, consisting of different stages: customer awareness, customer acquisition, customer satisfaction, customer conversion, customer retention and customer referral (Ertell, 2010). These components together are forming the customer engagement cycle and makes, when these component are aimed individually, the costumer engaged successfully (Ertell, 2010). Behaving in an engaging way by consumers go further than doing a transaction and therefore costumer engagement behavior could be defined as behavior by a customer that is focused on a brand or firm, beyond purchase, resulting from motivational drivers (van Doorn et al., 2010).

To further explain the concept of consumer engagement, recent studies about interactive experience and value co creation in marketing relationships could form a meaningful addition. Vargo (2009) specified this perspective with the so called "service-dominant-logic" (SD-logic). This theoretical perspective prescribes a transcending view of relationships, is labelled as the "good-dominant" perspective (Brodie et al., 2011; Vargo, 2009). This perspective states that certain consumer behaviors are the result of particular interactive, value co creative experiences from the consumer with the organization (Vargo, 2009). Based on relationship marketing and the SD-logic, Vivek et al. (2014) created a conceptual three-dimensional view on CE, also called the 'Customer Engagement Scale' (CUE). This concept is composed on three dimensions of consumer engagement: 'conscious attention', 'enthused participation' and 'social connection'. 'Conscious attention' is defined as the degree of interest the person has or would like to have in interacting with the focus of their engagement (Calder et al., 2009; Hollebeek, 2011; Vivek et al., 2014). The dimension 'enthused participation' can be described as the zealous feelings and reactions a person has related to using or to interact with the focus of their engagement (Calder et al., 2009; Hollebeek, 2011; Vivek et al., 2014). 'Social connection' enhanced the interaction based on the inclusion of other persons with the focus of engagement, indicating mutual or reciprocal action in the presence of other persons (Calder et al., 2009; Hollebeek, 2011; Vivek et al., 2014).

According the available and above described findings regarding consumer engagement, the first hypothesis that is formulated for this research is:

• H1: There is a relationship between the level of advertising preference accuracy and consumer engagement towards social media advertisements.



Figure 1. Hypothesis 1

2.6: Advertising annoyance

Where many studies are focusing on the most desirable outcomes of social media advertising, like for example click-through-rates, (Lothia et al., 2003; Tucker, 2011) a look at why social media advertisement will not lead to the desired goal(s) of the advertiser could even be more valuable. Why would the perceiver of a social media advertisement do not click on the advertisement or even get annoyed by observing the advertisement while being active on a social media platform? And if so, how can we define annoyance for this study?

The main reason people criticize advertisements are related to feeling of irritations or annoyance they create. This causation of annoyance could lead to a general decrease of the effectivity from the

advertisement (Aaker & Bruzzone, 1985; Bauer & Greyser, 1968). When having feelings of offensiveness, consumers are more likely to perceive the advertisement as an unwanted influence (Ducoffe, 1996). Based on research of Bauer and Greyser (1968), three categories of causes of advertising annoyance can be distinguished, namely: advertising content, execution and placement. According to the first category, advertising content, consumers are perceiving advertisements as annoying if the content of the advertisement is confusing, untrustworthy, or insulting the observers' intelligence (Bauer & Greyser, 1968). Second, advertisements are perceived as annoying when they are poorly executed (Li et al., 2013). Advertisements are perceived as poorly executed (and subsequently annoying) when they are too noisy, too long or when their size is to large (Aaker & Bruzzone, 1985; Bauer & Greyser, 1968). The third category, placement, is about the frequency of which advertisements are shown to the perceiver. Consumers are perceiving a feeling of annoyance when there are too much advertisement shown to them and when the same advertisement is appearing too often, which results in being more likely to even wanting to avoid the advertisements (Aaker & Bruzzone, 1985; Bauer & Greyser, 1968; Li et al., 2013).

As defined by Aaker and Bruzzone (1985), an annoying advertisement is an advertisement that is "provoking, causing displeasure and momentary impatience". Annoyance in consumers' response towards advertisements has been determined as more negative than dislike but less negative than offensiveness, that is frequently provoked by moral concerns regarding the content of the advertisement (Aaker & Bruzzone, 1985; Bauer & Greyser, 1968; Kelly & Kerr, 2010; Li, Edwards, & Lee, 2013).

Based on the available and described findings regarding advertising preference accuracy and annoyance, the second hypothesis that is formulated for this research is:

• H2: Annoyance is having a moderating role in the relationship between advertising preference accuracy and consumer engagement.



Figure 2. The relationship between advertising preference accuracy and consumer engagement in social media advertising.

3. Methods and instruments

By this section, we describe the research design, followed by the instrument design, validity/reliability and the population and research sample.

3.1 Research Design

This research has examined 3 different factors by a controlled experiment, namely: advertising preference accuracy, consumer engagement and advertising annoyance. Based on these factors, the research consisted of 7 moments of measurement.

Regarding the first factor of research, advertising preference accuracy, several manipulations were done to simulate the advertising preferences Facebook is using. By this, the same areas of interest Facebook is using were used the first phase of research namely: 'traveling, places & events', 'companies & sectors', 'news & entertainment', 'sport & outdoor', 'shopping & fashion', 'lifestyle & culture', 'hobbies & activities', 'persons', 'technology', 'food & drinks', 'education', 'fitness & wellness', 'family and relationships'. First the participant was asked to select 3 areas he/she felt the most affinity with at that moment. Subsequently further questions, related to these specific areas, were asked to get a deeper view in the advertising preferences of the participant.

After simulating and creating the participants' advertising preferences, within the selected areas of interest, the second phase of this research started. Within the second phase of research, 6 different social media advertisements were shown to the participant, all with a low or high degree of advertising preference accuracy. By the use of randomization regarding the shown the advertisements, the researcher avoided that the participant would recognize any patterns within the order of the shown advertisements.

After each time a manipulated social media advertisement was shown, two new moments of measuring have been performed: the measurement of the relationship between the social media advertisement and the participants' possible engagement towards it, and the role of annoyance in this case. During all phases of research, also eye-tracking measurements were performed. By this eye-tracking measurement, the participants' eye movements and fixations were recorded constantly.



A complete overview of the research design is shown below, in figure 3.

Figure 3. Overview of the research design

3.2 Instrument design

3.2.1 Stimuli design and measurements

Advertising preference accuracy, consumer engagement and advertising annoyance are the main factors of this research. Each different construct has been measured by formed scientifically proved scales regarding the construct topic. Which scales were used, for each of the factors, has been described in the following paragraph.

Advertising preference accuracy, consumer engagement and advertising annoyance

To measure the construct of advertising preference accuracy, a five point 'Likert' scale has been used (from strongly disagree to strongly agree). To measure the construct of consumer engagement, the three-dimensional concept of Vivek at al. (2014) has been used. This concept is dividing the construct of consumer engagement in to three sub-constructs: 'conscious attention', 'enthused participation'

and 'social connection'. This concept presents a reliable and valid 10-item scale that is validated across several contexts (Vivek et al., 2014). To measure the construct of advertising annoyance, scales from Aaker and Bruzzone (1985), which are based on the basic of reaction people have towards advertisements, has been used (from irritating to appealing).

Besides the use of this above-mentioned measuring scales, also an eye-tracking system has been used as an extra research indicator. Eye-tracking is reflecting visual attention. In addition to measuring the emotions of the participant, it is also possible to measure the amount of cognitive processing by using an eye-tracking system. Roughly speaking, for this research this method measures how much the subject's brain is engaged by the shown advertisements (Rowntree, 2016). With using eye-tracking measurement, together with the earlier described scales, triangulation has been realized by involving multiple sources of data to produce understanding.

For these eye-tracking measures, two Tobii Pro Glasses systems were used. To analyze the made eye-tracking recordings and creating detailed eye-tracking heatmaps, the analyzing tool Tobii Pro Lab has been used.

3.2.2: Pre-test

Table 1

Pre-test: Mean scores textual advertising variants (example categories/areas of interest)

Categories		Frequency	Responsibility	Attraction	Informativeness	Comprehensibility	Realness	Mean score	Missing
Winkelen & mode	Ad.text 1	4	2,00	1,75	2,75	4,25	3,50	2,85	8
	Ad.text 2	3	2,00	1,67	4,00	5,00	4,00	3,33	9
	Ad.text 3	5	2,40	2,60	2,80	3,40	3,40	2,92	7
Personen	Ad.text 1	2	4,00	4,00	3,00	4,50	4,00	3,90	10
	Ad.text 2	4	2,75	3,00	2,75	3,75	4,00	3,25	8
	Ad.text 3	5	2,00	2,40	2,80	4,40	3,80	3,08	7

To decide which information and visual is needed for these advertisements, a pre-test have been conducted to answer two important questions: 'is the used advertising text responsible, attractive, informative, comprehensible and realistic?'', and "is the used advertising visual representative for the selected category/area of interest towards the participant?''. To be able to pre-test these elements, 3 different textual advertisements (in some cases 4 variants) and 2 different visuals are created for each of the categories/areas of interest. Therefore, this pre-test made clear which type of written information is the most suitable for further measurements in this research. In addition, this pre-test also made clear which visuals could be combined to created relevant advertisements for each of the categories/areas of interest and would be a part of the final research stimulus to create the manipulated advertisements.

The survey of the pre-test has been created with the use of Qualtrics. The pre-test survey was filled in by a total of 12 participants, which all owned the specific properties of the aimed target group of this research (18 - 29 years and Facebook users) or were professional Advertising/Social Media Specialists. Regarding the advertising texts, for each pre-structured category/area of interest 3 or 4 advertising texts were conducted. To be able to offer relevant advertisements towards the participants, the 3 selected areas of interest were further specified by 2 or 3 deeper sub categories. By selecting a further specified sub-category, the participant is giving his/her advertising preference a deeper meaning. For the areas of interest that had 2 deeper sub-categories, 3 textual advertising variants were conducted in this pre-test. For the areas of interest that had 3 deeper sub-categories 4 textual advertising variants were conducted in this pre-test. For each category, the 2 textual advertising variants with the highest overall score were used in the final measuring instrument for this research.

As an example, for the area 'Winkelen & mode' 3 textual advertising variants were created. As shown in the table above (table 1), for this category the mean score of advertising text 1 was m=2,85. For advertising text 2 the means score was m=3,33 and for advertising text 3 the mean score was m=2,92. As a result for this area, the second and third textual advertising variant has been taken in to the final measurements of this research because these were the highest scoring variants of all three. Regarding the area of interest 'Personen', the means score of advertising text 1 was m=3,90. The second advertising text received m=3,25 and the third variant got a mean score of m=3,08. For this category and as a result of these pre-test results, the first and second textual advertising variant have been taken along to the final measurements of this research. The pre-test results regarding the textual advertisements for all the categories can be found in appendix 1.1 (table 4).

Table 2

Categories	Frequency	Visual 1	Visual 2	Mean score	Missing
Bedrijven & sectoren	3	1	2	1,67	9
Nieuws & entertainment	5	1	4	1,80	7
Sport & outdoor	8	5	3	1,38	4
Hobby's & activiteiten	6	5	1	1,17	6
Reizen, plaatsen & evenementen	5	5	0	1,00	7
Winkelen & mode	2	1	1	1,50	10
Lifestyle & cultuur	4	1	3	1,75	8
Personen	5	4	1	1,20	7
Technologie	5	1	4	1,80	7
Eten & drinken	3	1	2	1,67	9
Opleiding	4	1	3	1,75	8
Fitness & welzijn	4	0	4	2,00	8
Familie & relaties	6	1	5	1,83	6

Pre-test; mean scores advertising visuals

To test if the advertising visuals, which the researcher pre-selected, truly forming a good representation of the specific categories, also these visuals were taken into account with this pretest. By showing the participants 2 visuals, of which were a good representation of a specific category in eyes of the researcher, the best scoring visual has been taken to the final measurements of this research. As a results, when m < 1,50 the first visual was selected to be the best representation of the specific category and when m > 1,50 the second visual was selected. For the category 'Winkelen & mode', the mean score became m=1,50. In this case the researcher has chosen the visual who was most suitable from his perspective. The mean (pre-test) advertising visuals scores for all the different categories are shown in the table above, in table 2.

As earlier described, the features of a social media advertising are, multimedia, use of pictures and the written product and/or service information (content). In the pre-test elements, and subsequently the final manipulated advertisements, no multimedia has been used and the written information in the advertisement mainly were equal for all the advertisements. Only the used picture/visual were different to be more relevant towards the stated preferences of the participants. For the label of the social media advertisement, the label 'informative' has been used. As mentioned, with informative content in advertising, the content was limited to only mentioning the presence and the price of the

product or service and is focused on shifting the beliefs about these aspects. To prevent a possible influence from the price of the product, this element has not been shown in the content of the advertisement.

3.3 Validity & Reliability

3.3.1 Validity Table 3 Explained variances & reliability

Component	N of items	Expl. var.	Cronbach's Alpha
Advertising preference	3	60,709	0,654
Annoyance	6	57,132	0,645
Consumer engagement			
Conscious attention	36	81, 622	0,891
Enthused participation	35	82, 134	0,884
Social connection	18	76,753	0,888

To prove whether each research construct also actually results in one construct a confirmatory factor analysis has been performed. For all the different constructs, the items of the construct are analyzed whether they ended up in one construct. Within the table above (table 3), the amount of 'explained variance' tells something about the degree to which the items entered in the analysis for each construct form one component. In general, this interpretation gets explained by the rule of thumb, which says that a variance above 50% can be considered as good.

In the case of the construct 'advertising preference', the confirmatory factor analysis revealed that one component is detected, explaining 60,709% of the total variance. Regarding the construct 'annoyance', the confirmatory factor analysis showed that the construct explaining 57,132% of the total variance. Factor analyses also made clear that the first dimension of the construct 'Consumer engagement', conscious attention, explaining 81,622% of the total variance. The second dimension of the construct 'consumer engagement', enthused participation, explaining 82,134% of the total variance. The third dimension of the construct 'consumer engagement', social connection, explaining 76,753% of the total variance. An overview of the 'explained variance' for each of the constructs is shown above, in table 3. Within this table also the Cronbach's Alpha of each construct is shown, which will be explained in the next paragraph about reliability.

3.3.2 Reliability

The Cronbach's Alpha from each construct is calculated by means to determine the internal consistency. A construct can be clarified as reliable if the alpha is equal higher than 0,80. A construct can be clarified as not reliable if the alpha is below 0,60.

The table above (table 3) already showed the number of items and alpha score of each construct. 'Advertising preference' had 3 numbers of items and an alpha of 0,654. The impact of 'annoyance' got 6 numbers of items and an alpha of 0,645. The first part of the construct 'consumer engagement'; 'conscious attention', got 36 numbers of items and an alpha of 0,891 The second part of this specific construct, 'enthused participation' got a number of 35 items and an alpha of 0,884. The last part of the consumer engagement construct, 'social connection', got 18 numbers of items and an alpha of 0,888.

3.4: Population and research sample

3.4.1 Data collection procedure

For each participant, the survey started with two demographic questions about age and gender. Beyond these two questions, no further demographic information has been collected to maintain anonymity. From the start of this survey and during all the following phases of data collection, eyetracking recordings have been made.

After the demographic questions were answered, the second phase of research followed: measurement of the factor 'advertising preference accuracy'. This factor has been measured by showing the participant the 13 pre-structured areas of interest Facebook is using regarding their advertising preference tool. The participant was asked to select 3 areas, out of the 13 areas of interest, he or she felt the most affinity with at that moment. After selecting the 3 areas of interest that were the most relevant for the participant, another question was asked (for each selected area) to more specify the participant's preference regarding the areas of interest.

When the participant also answered the deeper question for each selected area of interest, the third phase of date collection started. Within this phase the first manipulated social media advertisement was shown to the participant. The shown social media advertisement contained a low or high degree of accuracy towards the preferences the participant assigned by selecting 3 favorable areas of interest during the first step of research. Once observed the manipulated social media advertisement, this phase continued by the measurement of the second and third factor of this research: the engagement towards the advertisements and the role of annoyance in this case.

When the above described phase (phase 3) was fulfilled by the participant, the same phase (phase 3) started over again which meant that the next manipulated social media advertisement was shown to the participant followed by the same measurements as mentioned before. In total the participant saw 6 manipulated social media advertisements, which contained a low or high degree of accuracy towards the preferences of the participant and each time followed by the same questions to measure the announced factors (consumer engagement, annoyance). To further visualize the date collection procedure, an overview of the process is shown below, in figure 4.



Figure 4. Overview of the data selection procedure

In the first phase of research, the participants were informed that the research was about understanding the participants' thoughts towards social media advertisement in general. Within this phase, no mention of the advertising preference accuracy has been done, to avoid any response biases. Fulfilling the whole experiment took around 15 minutes and the participants were informed that involvement was totally voluntary. The researcher also promised that the information and data that was going to be collected by this research, keeps strictly anonymous. The research data has been collected over a period of 1 week and the stimuli and experiment (and related survey) were both designed in Dutch language using Qualtrics.

3.4.2: Sample

Table 4

Sample characteristics; Gender and age of respondents

Gender	Ν	%	Mage	SD
Man	26	65	22,4	3,164
Vrouw	14	35	21,8	1,847
Total	40	100	22,2	2,766

For this research, data has been collected from undergraduate students of the University of Twente. The main reason of selecting students of the University of Twente as the target group for this research was because of the fact that college students are compromising one of the largest user segments of the Internet and can be mentioned as opinion leader regarding Internet and social media, content which makes them a very lucrative consumer group for online marketers (Davis, 1999). Thereby, they were relatively easy to attain and approach for the researcher.

Besides being an undergraduate student of the University of Twente, also Facebook usage and age were important conditions to be included in this research. To more specify, the target group for this study was: Facebook using students of the University of Twente with an age between 18 and 29 years. Participants that are younger than 18 or older than 29 years old were excluded from this research. The choice regarding this level of age is based on recent demographic statistics about Facebook users. These statistics are showing that between the age of 18 and 29 years, 88% is using Facebook, which represents the highest percentage of all user group segmented on age (York, 2017). By using this category of age, the change of selecting participant that are familiar with Facebook is statistically the highest. At last, another important reason to select students of the University of Twente to be a part of this research is because of the ease of reach between this target group and the researcher.

The sample of this research consisted of 41 different participants. Based on the above described conditions, 1 participant was excluded from the research afterwards because of not having/using a personal Facebook profile. The other 40 participants are all having/using a personal Facebook profile and were between the age of 18 and 29 years old at the moment of participating. The selection of the remained participant made it possible to constantly create two research cells, each consisting of 20 participants. One cell, consisting of 20 participants, wherein a high level of advertising preference accuracy was conducted, and a second cell also consisting of 20 participants, wherein a low level of advertising preference accuracy has been occurred.

In total 40 participants filled in the survey (in conformity with the research conditions), of which 26 were male and 16 were female with an age ranging from a minimum of 18 years and a maximum of 28 years (Mage=22,2). An overview of the sample characteristics is shown above, in table 4. A more comprehensive overview of the sample characteristics can be found in appendix 2.1.

4. Research results

Within this section, the results of the research are shown. First the general results are explained, followed by analysis of variances.

4.1. General results

4.1.1: Advertising preference

Table 5

Advertising preference categories

Preference category	Ν
Bedrijven & sectoren	11
Nieuws & entertainment	13
Sport & outdoor	21
Hobby's & activiteiten	8
Reizen, plaatsen & evenementen	14
Winkelen & mode	5
Lifestyle & cultuur	0
Personen	6
Technologie	12
Eten & drinken	6
Opleiding	13
Fitness & welzijn	6
Familie & relaties	5
Total	120

Within the first phase of research, the participants' advertising preference have been measured, based on the preference categories used by Facebook. Each participant selected 3 areas of interest he or she felt the most affinity with at that moment. The most selected area was 'Sport & outdoor', which was selected 21 times followed by the area 'Reizen, plaatsen & evenement' which was selected by 14 participants. The results regarding all the advertising preference areas are shown in the table above, in table 5.

Table 6

Eye-tracking results; High & Low level of advertising preference

Level of ad. Pref.	N	Mean fixation duration (sec.)
High level of adv. pref.	3	6,040
Low level of adv. pref.	3	10,516
Total	6	8,278

As mentioned earlier, also eye-tracking measurements have been performed during all phases of research. The first aspect that was important for analyzing the results of these eye-tracking measurements was the fixation duration of each participant while an advertising with a low/high level of advertising preference accuracy was shown. Looking at the fixation duration of both conditions, the shown advertisements with a high level of advertising preference accuracy resulted in a fixation duration m= 6,040. On the other hand, the shown advertisements with a low level of advertising preference accuracy resulted in a fixation duration m= 10,516. An overview of the eye-tracking results is shown above, in table 6.

To further analyze the eye-tracking results, also heatmaps of all eye-tracking recordings have been created. Within these heatmaps, all eye movements and fixations of the participants were registered while looking at the different manipulated social media advertisements. As an example, two eye-

tracking heatmaps are shown below, in figure 5. An overview of all the created eye-tracking heatmaps can be found in appendices 3.2 and 3.3.



Figure 5. Examples of eye-tracking heatmaps

4.1.2: Advertising annoyance

Table 7

Analyses main test; Annoyance



Level of approvance		N	%	Mean	SD
Annovance pre -statement			,,,	mean	
	Irritant	31	77,50	1,487	1,062
	Nep	3	7,50		
	Amuserend	4	10,00		
	Levendig	1	2,50		
	Overtuigend	0	0,00		
	Informatief	1	2,50		
	Aantrekkelijk	0	0,00		
	Total	40	100,00		
Annoyance; Low level of adv. pref.					
	Irritant	47	39,17	2,942	2,16
	Nep	27	22,50		
	Amuserend	3	2,50		
	Levendig	9	7,50		
	Overtuigend	8	6,67		
	Informatief	15	12,50		
	Aantrekkelijk Total	11 120	9,17 100,00		
Annoyance; High level of adv. pref.					
	Irritant	22	18,33	4,153	2,224
	Nep	16	13,33		
	Amuserend	10	8,33		
	Levendig	16	13,33		
	Overtuigend	11	9,17		

Informatief	20	16,67	
Aantrekkelijk	25	20,83	
Total	120	100,00	

Based on the scale that was used for these specific measurements we can state: the higher the measured score, the lower the level of annoyance. The measurements of advertising annoyance before any social media advertisements were shown to the participants resulted in a mean score of m=1,487. After showing each participant 3 different social media advertisements, with a low level of advertising preference accuracy, the level of annoyance was measured once again and resulted in a mean score of m=2,942. Subsequently, after showing each participant 3 different social media advertisements with a high level of advertising preference accuracy, the measurement of annoyance resulted in a mean score of m=4,153. Especially the results of last two annoyance measurements made clear the enormous differences between both settings and related scores (low/high level of advertising preference accuracy).

In combination with the above described findings, another look towards the eye-tracking results (table 6) have been done from 'annoyance' perspective. Indirectly, it can be stated that the social media advertisements (with a low level of advertising preference accuracy), which resulted in a score of m=2,942 regarding annoyance, also resulted in a score mean fixation duration of m=10,516. In addition, the social media advertisements (with a high level of advertising preference accuracy), which resulted in a score of m=4,153 regarding annoyance, indirectly resulted in a score mean fixation duration of m=6,040. An overview of all analyses and results regarding advertising annoyance is shown in the table above, in table 7. A more comprehensive overview of all analyses and results regarding advertising annoyance can be found in appendix 2.3.

4.1.3: Consumer engagement

Table 8

Analyses main test; Consumer engagement

Dimensions of Consumer engagement		N	Mean
Consumer engagement; Low level of adv. pref.			
	Conscious attention	6	2,60
	Enthused participation	6	2,22
	Social connection	3	2,95
	Total	15	2,59
Consumer engagement; High level of adv. pref.			
	Conscious attention	6	3,36
	Enthused participation	6	2,89
	Social connection	3	3,55
	Total	15	3,27

The next important results of this research are related to consumer engagement. The measurements of consumer engagement towards social media advertisement with a low level of advertising preference accuracy resulted in a mean score of m=2,60 regarding conscious attention, a mean score of m=2,22 regarding enthused participant and a mean score of 2,95 related to social connection. On the contrary, the measurements of consumer engagement towards social media advertisement with a high level of advertising preference accuracy resulted in a mean score of m=3,36 regarding

conscious attention, a mean score of m=2,89 regarding enthused participant and a mean score of 3,55 related to social connection.

Based on the above described results, measurements regarding consumer engagement for both conditions are demonstrating differences. An overview of all analyses and results regarding consumer engagement is shown in the above, in table 8. A more comprehensive overview of all analyses and results regarding consumer engagement can be found in appendix 2.4.

4.2. Analysis of variances

Table 9

Multivariate test; descriptive statistics of the main factors

Source	Factors	F	Sig.
Social media advertisement	nent Advertising preference Annoyance		0,048
			0,184
	Consumer Engagement	5,826	0,049

Based on the results as described in the previous paragraph, also an analysis of variances has been performed. Results are showing a main-effect between social media advertisements and advertising preference, with a significance value of 0,048 (F=5,871). These results are showing no main-effect between social media advertisements and annoyance, with a significance value of 0,184 (F=1,608). There is also is a main affect between social media advertisements and consumer engagement, with a significance value of 0,049 (F=5,826). Because the significance values are all smaller than 0.05 (p<0.05), it can be concluded that there is a main effect of advertising preference (high/low level), there is no main effect of annoyance and there is a main effect of consumer engagement with social media advertisements. An overview of all results of these analyses, by a multivariate test, is shown in the table above, in table 9.

Table 10

Regression analyses; ANOVA

Model	Mean Square	F	Sig.
Regression	78,865	5,047	0,003
Redisual	136,735		
Total	215,600		

Table 11

Regression analyses; moderation of annoyance on the relationship between CE and adv. pref. acc.

Path	Coeff.	t	Sig.
CE x Advertising preference accuracy	0,629	2.454	0,000
CE x Annoyance x Advertising preference accuracy	1,398	2,234	0,214

Also a linear regression analysis was calculated to predict consumer engagement based on advertising preference accuracy and annoyance. A significant regression equation was found (F (4,35) = 5,047, P > 0.000) with a R² of 0,366. This regression analyses made clear that none of the explanatory variables of consumer engagement are predictors of advertising preference accuracy and annoyance. Nevertheless, these analyses also made clear that annoyance is having a moderating role in the relationship between advertising preference accuracy and consumer engagement. As shown in the table above (table 11), the significance between consumer engagement and advertising preference accuracy was P=0.000 with a coefficient of 0.629, without annoyance being in the model. When putting 'annoyance' in to this model, the P-value is no longer significant (P=0,214). This makes clear that putting in annoyance reduces the significance of the path between consumer engagement and advertising preference accuracy which makes annoyance a clear mediator in this model. An overview of all results of these regression analyses is shown in the tables above, in table 10 and 11.

5. Conclusions

Based on the research results, different conclusions can be drawn. Within this section, first the conclusions towards the hypotheses will be drawn. Followed by the drawn conclusion towards the central question of this research.

The main question of this research was: "What is the relationship between the preference accuracy of social media advertisements and consumer engagement what is the role of annoyance in this process? To examine this question, 2 different hypotheses were formulated. The conclusions to confirm or reject these hypotheses are discussed below.

Hypothesis 1:

• There is a relationship between the level of advertising preference accuracy and consumer engagement towards social media advertisements.

Regarding the first hypothesis of this research, it can be concluded that this hypothesis can be confirmed. This research made clear that there is a relationship between the level of advertising preference accuracy and consumer engagement towards social media advertisements. Regarding all dimensions of consumers engagement (conscious attention, enthused participation and social connection) this research made clear a positive effect from advertising preference accuracy: the higher the level of advertising preference accuracy is, the higher de level of engagement towards the social media advertisement.

Hypothesis 2:

• Annoyance is having a moderating role in the relationship between advertising preference accuracy and consumer engagement.

Based on this study, this hypothesis can be confirmed. This research made clear that annoyance is having a moderating role in the relationship between advertising preference accuracy and consumer engagement. By this, annoyance is reducing the significance of the relationship between consumer engagement and advertising preference accuracy.

Based on the results of this research, it can be concluded that there is a positive relationship between the preference accuracy of social media advertisements and engagement with advertisements, the higher the level of preference accuracy (of social media advertisements), the higher the level of consumer engagement. Besides that, also the role of annoyance in this case became clear by this research. This research made clear that the lower the level of advertising preference accuracy is, the higher the level of annoyance on social media advertisements will be. Nevertheless, the level of annoyance is having a moderating role in the relationship between advertising preference accuracy and consumer engagement.

6. Discussion

The results and conclusions obtained from this study are relevant implications in addition to academic research regarding social media advertising. By this study a new context and perspective towards social media advertising has been exhibited, namely: the relationship between the

preference accuracy of social media advertisements and engagement with advertisements and the role of annoyance in this process. Thereby, this study contributes to the existing knowledge about online consumer behavior in general and specifically on social media platforms. Besides that, this study also contributes to the literature gap regarding just-in-time-information feeding for social media advertising.

As with any study, several limitations were faced during this research which may provide some relevant indications for future research. At first due the novelty of this social media advertising topic and lack of research regarding this specific context of social media advertising, conclusions that are made in this study had to be made with caution.

Furthermore, for this study data has been collected from students only and non-student populations were not included for this research. Therefore, the relationship between the preference accuracy of social media advertisements and engagement with advertisements (and the role of annoyance in this process) is still unaddressed for non-student populations. Thereby, the used method/procedure of this study also include some limitations that commonly are associated with using a survey as the main measurement instrument for research, including social desirability bias.

This study was about social media advertising and the advertisements that were used during this study were manipulated Facebook advertisements. However, the shown advertisements in the survey were not shown in a manipulated Facebook setting towards the participants. Participants' responses may have been different when advertisements are shown in a real Facebook 'time-line setting'. Thereby, the study is about social media advertising but only manipulated Facebook advertisements were used while there currently are lots of other social media advertising platforms like for example Twitter or Instagram. However, the researcher would argue the present findings can be applied to all social media advertising platforms.

Finally, a major limitation of this study is the nature of the social media environment. Trends and new ways of reaching your target audiences by social media (advertising) are evolving constantly. However, this dynamic and constantly changing nature of the social media environment makes further research of this subject very important and recommendable to, for instance, identify which type of eye fixation patterns are related to a high level of advertising preference accuracy and which eye fixation patterns can be matched to a low level of advertising preference accuracy on social media. Notwithstanding these limitations, the researcher believes that this paper makes a useful contribution to research literature regarding the topic of social media advertising.

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Appendices

1. Pre-test analysis

1.1 Pre-test advertising texts & visuals

Table 4

Pre-test; mean scores advertising texts

Categories		Frequency	Responsibility	Attraction	Informativeness	Comprehensibility	Realness	Mean score	Missing
Bedrijven & sectoren	Ad.text 1	1	4,00	3,00	4,00	4,00	4,00	3,80	11
	Ad.text 2	3	2,33	2,67	2,67	4,67	3,67	3,20	9
	Ad.text 3	2	1,50	2,50	2,00	2,50	2,00	2,10	10
Nieuws & entertainment	Ad.text 1	3	2,00	1,67	2,33	3,67	3,33	2,60	9
	Ad.text 2	1	2,00	2,00	2,00	4,00	4,00	2,80	11
	Ad.text 3	1	2,00	2,00	2,00	4,00	4,00	2,80	11
Sport & outdoor	Ad.text 1	2	1,50	1,50	3,00	5,00	4,00	3,00	10
	Ad.text 2	5	2,60	2,20	2,60	4,20	4,00	3,12	7
	Ad.text 3	4	2,00	2,25	2,00	3,25	3,25	2,55	8
Hobby's & activiteiten	Ad.text 1	2	4,50	4,50	4,00	4,50	4,50	4,40	10
	Ad.text 2	4	1,75	1,75	2,00	3,25	3,00	2,35	8
	Ad.text 3	5	2,60	2,40	3,20	3,80	3,80	3,16	7
Reizen, plaatsen & evenementen	Ad.text 1	2	3,50	3,00	3,50	4,00	4,00	3,60	10
	Ad.text 2	2	3,50	3,00	3,50	4,00	3,50	3,50	10
	Ad.text 3	4	4,00	3,25	3,00	3,75	3,75	3,55	8
	Ad.text 4	2	2,00	2,00	3,00	4,50	3,00	2,90	10
Winkelen & mode	Ad.text 1	4	2,00	1,75	2,75	4,25	3,50	2,85	8
	Ad.text 2	3	2,00	1,67	4,00	5,00	4,00	3,33	9
	Ad.text 3	5	2,40	2,60	2,80	3,40	3,40	2,92	7
Lifestyle & cultuur	Ad.text 1	4	2,25	2,25	2,75	4,50	4,25	3,20	8
	Ad.text 2	1	2,00	2,00	3,00	3,00	3,00	2,60	11
	Ad.text 3	3	2,00	2,00	2,67	3,67	3,33	2,73	9
Personen	Ad.text 1	2	4,00	4,00	3,00	4,50	4,00	3,90	10
	Ad.text 2	4	2,75	3,00	2,75	3,75	4,00	3,25	8
	Ad.text 3	5	2,00	2,40	2,80	4,40	3,80	3,08	7
Technologie	Ad.text 1	0	/	/	/	/	/	0,00	12
	Ad.text 2	2	3,00	4,00	4,00	4,00	4,00	3,80	10
	Ad.text 3	4	3,00	2,50	2,50	4,00	3,00	3,00	8
	Ad.text 4	1	4,00	4,00	4,00	4,00	4,00	4,00	11
Eten & drinken	Ad.text 1	2	2,00	2,00	2,00	4,00	3,50	2,70	10
	Ad.text 2	2	3,00	3,00	2,50	4,00	3,50	3,20	10
	Ad.text 3	1	1,00	2,00	3,00	5,00	5,00	3,20	11
Opleiding	Ad.text 1	3	3,33	3,33	3,33	4,00	4,00	3,60	9
	Ad.text 2	0	/	/	/	/	/	0,00	12
	Ad.text 3	4	2,25	2,00	3,00	3,75	3,50	2,90	8
Fitness & welzijn	Ad.text 1	4	3,50	2,75	3,00	4,25	4,25	3,55	8
	Ad.text 2	1	2,00	2,00	2,00	4,00	4,00	2,80	11
	Ad.text 3	1	2,00	2,00	3,00	4,00	4,00	3,00	11

Familie & relaties	Ad.text 1	3	2,00	1,67	2,00	4,33	4,00	2,80	9
	Ad.text 2	2	2,00	2,00	3,50	4,00	3,50	3,00	10
	Ad.text 3	4	2,50	3,25	3,00	4,25	3,75	3,35	8

Table 5

Pre-test; mean scores advertising visuals

Categories	Frequency	Visual 1	Visual 2	Mean score	Missing
Bedrijven & sectoren	3	1	2	1,67	9
Nieuws & entertainment	5	1	4	1,80	7
Sport & outdoor	8	5	3	1,38	4
Hobby's & activiteiten	6	5	1	1,17	6
Reizen, plaatsen & evenementen	5	5	0	1,00	7
Winkelen & mode	2	1	1	1,50	10
Lifestyle & cultuur	4	1	3	1,75	8
Personen	5	4	1	1,20	7
Technologie	5	1	4	1,80	7
Eten & drinken	3	1	2	1,67	9
Opleiding	4	1	3	1,75	8
Fitness & welzijn	4	0	4	2,00	8
Familie & relaties	6	1	5	1,83	6

1.2: Pre-test code scheme question items and related constructs

Advertising venerous attitude (venerous) D Numer Numer Sector venerous attitude (venerous) Sector venerous venerous) Sector venerous vene	Respondent c	haracteristics ResponseID StartDate EndDate Finished Q1	String Date Date Numeric Numeric	ResponseID StartDate EndDate Finished Dank voor uw deelname aan dit experiment. Middels dit experiment	None None None None	Nominal Scale Scale Scale Scale
Advertising text (manipulation 1; social metal advertise) Numeric Numeric <td>Advertising pi</td> <td>reference attitude (factor 1) Q2</td> <td>Numeric</td> <td>Selecteer, van de onderstaande categorieën, 2 categorieën waarmee u momenteel de meeste affiniteit heeft.</td> <td> Bedrijven en Sectoren} Nieuws & Entertainment} Sport & Outdoor} Hobby's & Activiteiten} Reizen, plaatsen & evenementen} Winkelen & mode} Tcthestyle & Cultuur} Personen} Technologie} Che drinken} Djelding} Fitness & welzijn} Spannie & relaties} </td> <td>Scale</td>	Advertising pi	reference attitude (factor 1) Q2	Numeric	Selecteer, van de onderstaande categorieën, 2 categorieën waarmee u momenteel de meeste affiniteit heeft.	 Bedrijven en Sectoren} Nieuws & Entertainment} Sport & Outdoor} Hobby's & Activiteiten} Reizen, plaatsen & evenementen} Winkelen & mode} Tcthestyle & Cultuur} Personen} Technologie} Che drinken} Djelding} Fitness & welzijn} Spannie & relaties} 	Scale
Q3_1NumericHoe evanatu de onderstaande advertentie texts? Dera advertentie sprekt mij aan.(1, Volledig mee oneens)ScaleQ3_2NumericWat vind u van de advertentie? Ik vind deza advertentie informatief.(1, Volledig mee oneens)ScaleQ3_3NumericWat vind u van de advertentie? Ik vind deza advertentie? Ik vind deza advertentie? Ik vind deza advertentie?(1, Volledig mee oneens)	Advertising te	ext (manipulation 1; social me	dia advertisen	nents)→ Block contains of 39 different texts. Randomization: present only 7 of total questions (moderator)		
Q3_2 Numeric Wit wind u van de advertentie'- Ik van de dez advertenkelijk. (1, Volledig mee oneens) Scale Q3_4 Numeric Wat vind u van de advertentie'- Ik van dez advertentie. (1, Volledig mee oneens) Scale Q3_5 Numeric Wat vind u van de advertentie'- Ik van dez advertentie. (1, Volledig mee oneens) Scale Advertising visual (manipulation 1; social media advertisements) Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Bedrijven en Sectoren' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Nieuws & entertainment' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Q12 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Nieuws & entertainment' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Q13 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Neuws & activiteiten' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Q14 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Nickles & activiteiten' in het algemeen? (1, Zeer onwaarschijnlijk) Sc		Q3_1	Numeric	Hoe ervaart u de onderstaande advertentie tekst?- Deze advertentie spreekt mij aan.	(1, Volledig mee oneens}	Scale
G2-3 Numeric Val vinde Uvan de advertentier's ik beging beging ear dwertentie. [1] volledig mee oneens) Scale G3-5 Numeric Wat vinde uvan de advertentier's ik beging beging ear dwertentie. [1] volledig mee oneens) Scale Advertising visual (manipulation 1; social media advertisements) Numeric Nameric Nameric Nameric Nameric Nameric Nameric Scale Advertising visual (manipulation 1; social media advertisements) Numeric Nameric Nameric Nameric Nameric Scale Advertising visual (manipulation 1; social media advertisements) Numeric Nameric Nameric Nameric Scale Advertising visual (manipulation 1; social media advertisements) Numeric Nameric Nameric Scale Advertising visual (manipulation 1; social media advertisements) Nameric Nameric Nameric Scale Advertising visual (manipulation 1; social media advertisements) Nameric Nameric Nameric Nameric Scale Advertising visual (manipulation 1; social media advertisements) Nameric Nameric Nameric Nameric Scale Advertising visual (manipulation 1; social media advertisements)		Q3_2	Numeric	Wat vindt u van de advertentie?- Ik vind deze advertentie aantrekkelijk.	(1, Volledig mee oneens}	Scale
L2_5 Numeric Wit with tu van de advertentièr le kind deze advertentièr ealistisch. L1 volleiging me oneens) Scale Advertising visual (manipulation 1; social media advertise=ments). Numeric Nameric Nar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Bedrijven en Sectoren' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertise=ments). Numeric Nar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Nieuws & entertainment' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertise=ments). Numeric Nar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Sport & outdoor' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertise=ments). Numeric Nar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Sport & outdoor' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertise=ments). Numeric Nar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Neuvy's & activiteten' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertise=ments). Numeric Nar uw mening, welke v		Q3_3 Q3_4	Numeric	Wat vindt u van de advertentie?- ik vind deze advertentie informatier. Wat vindt u van de advertentie?- ik begrin deze advertentie	(1, Volledig mee oneens} (1, Volledig mee oneens}	Scale
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Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Nopvor & outdoor' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Sport & outdoor' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Hobby's & activiteiten' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Neklen & mode' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements) Au uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Neklen & mode' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements) Naur uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Lifestyle & cultur in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements) Naur uw mening, w	Advertising vi	sual (manipulation 1; social n Q11	nedia advertise Numeric	ments)) Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Bedrijven en Sectoren' in het algemeen?	(1, Zeer onwaarschijnlijk}	Scale
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Q14NumericNara uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Hobby's & activiteiten' in het algemeen?(1, Zeer onwaarschijnlijk)ScaleAdvertising visual (manipulation 1; social-weita advertis-weits)NumericNara uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Reizen, plaatsen & evenementen in het algemeen?(1, Zeer onwaarschijnlijk)ScaleAdvertising visual (manipulation 1; social-weita advertis-weits)NumericNara uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Winkelen & mode' in het algemeen?(1, Zeer onwaarschijnlijk)ScaleAdvertising visual (manipulation 1; social-weita advertis-weits)NumericNara uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Uifestyle & cultuur in het algemeen?(1, Zeer onwaarschijnlijk)ScaleAdvertising visual (manipulation 1; social-weita advertis-weits)NumericNara uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Lifestyle & cultuur in het algemeen?(1, Zeer onwaarschijnlijk)ScaleAdvertising visual (manipulation 1; social-weita advertis-weits)NumericNara uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Personen' in het algemeen?(1, Zeer onwaarschijnlijk)ScaleAdvertising visual (manipulation 1; social-weita weits)NumericNara uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Personen' in het algemeen?(1, Zeer onwaarschijnlijk)ScaleAdvertising visual (manipulation 1; social-weita weits)NumericNara uw mening, welke van de onderstaand	Advertising vi	sual (manipulation 1; social n	nedia advertise	ements))		
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Advertising visual (manipulation 1; social media advertisements)) Advertising visual (manipulation 1;	Advertising vi	Q15	Numeric	Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Reizen, plaatsen & evenementen in het algemeen?	(1, Zeer onwaarschijnlijk}	Scale
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Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Personen' in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Technologie' in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Technologie' in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Technologie' in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Opleiding'in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements))	Advertising vi	sual (manipulation 1; social n 017	nedia advertise Numeric	ments)) Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Lifestvle & cultuur in het algemeen?	(1. Zeer onwaarschiinliik)	Scale
Advertising visual (manipulation 1; social media advertisements)) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fersonen in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Technologie' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Eten & drinken' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Printess & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnli	Advertising vi	sual (manipulation 1; social n	nedia advertise	rments))	(1, 7	Carla
Advertising visual (manipulation 1; social media advertisements)) Q19 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Technologie' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Q20 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Eten & drinken' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Q20 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Deleiding'in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Q21 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Q22 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Q22 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Q22 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk) Scale	Advertising vi	Q17 sual (manipulation 1: social m	Numeric nedia advertise	Naar uw mening, weike van de onderstaande arbeeldingen is net meest representatier voor "Personen in net algemeen" meentsi)	(1, zeer onwaarschijnlijk}	Scale
Advertising visual (manipulation 1; social media advertisements)) Q19 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Eten & drinken' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Q20 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Opleiding'in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Advertising visual (manipulation 1; social media advertisements)) Q21 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Advertising visual (manipulation 1; social media advertisements)) Q22 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Familie & relaties' in het algemeen? (1, Zeer onwaarschijnlijk) Scale Q22 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Familie & relaties' in het algemeen? (1, Zeer onwaarschijnlijk) Scale	, are the set of the s	Q18	Numeric	Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Technologie' in het algemeen?	(1, Zeer onwaarschijnlijk}	Scale
Advertising visual (manipulation 1; social media advertisements)) Name weak was not and weak was	Advertising vi	sual (manipulation 1; social n Q19	nedia advertise Numeric	ments)) Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Eten & drinken' in het algemeen?	(1, Zeer onwaarschijnlijk}	Scale
Advertising visual (manipulation 1; social media advertisements)) Q21 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements)) Q21 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements)) Q22 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Familie & relaties' in het algemeen? (1, Zeer onwaarschijnlijk} Scale	Advertising vi	sual (manipulation 1; social n	nedia advertise	ments)) Naar uw maning, walka van de onderstaande afbeeldingen is het meest representatief voor 'Opleiding'in het algemeen?	(1 Zeer onwaarschijnlijk)	Scale
Q21 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen? (1, Zeer onwaarschijnlijk} Scale Advertising visual (manipulation 1; social media advertisements)) Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Familie & relaties' in het algemeen? (1, Zeer onwaarschijnlijk} Scale	Advertising vi	sual (manipulation 1: social m	nedia advertise	radio de mening, weike van de onderstaande arbeeldingen is net meest representatier voor opielding in net algemeen? ments)	(1, Zeer onwaarschijningky	Julie
Advertising visual (manipulation 1; social media advertisements)) Q22 Numeric Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Familie & relaties' in het algemeen? (1, Zeer onwaarschijnlijk} Scale		Q21	Numeric	Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Fitness & welzijn' in het algemeen?	(1, Zeer onwaarschijnlijk}	Scale
	Advertising vi	Q22	Numeric	ments)) Naar uw mening, welke van de onderstaande afbeeldingen is het meest representatief voor 'Familie & relaties' in het algemeen?	(1, Zeer onwaarschijnlijk}	Scale

2. Main-test analysis

2.1: Sample characteristics

Table 1

Gender of respondents	Ν	%
Male	26	65
Female	14	35
Total	40	100

Table 2

Sample characteristics; Age of respondents

	Age of respondents	Ν	Minimum	Maximum	Mean	SD
Age		40	18	28	22,2	2,766
Valid N		40				
Missing		0				
Total		40				

Table 3

Sample characteristics; Gender and age of respondents

Gender	N	%	Mean	SD
Man	26	65	22,4	3,164
Vrouw	14	35	21,8	1,847
Total	40	100	22,2	2,766

Table 4

Sample characteristics; Personal Facebook profile

Facebook usage	N	%
Yes	40	100
No	0	0
Total	40	100

2.2: Advertising preference

Table 1

Advertising preference categories

Advertising preference categories	Ν	%
Bedrijven en sectoren	11	9,2%
Nieuws & entertainment	13	10,8%
Sport & outdoor	21	17,5%
Hobby's & activiteiten	8	6,7%
Reizen, plaatsen & evenementen	14	11,7%
Winkelen & mode	5	4,2%
Lifestyle & cultuur	0	0,0%
Personen	6	5,0%
Technologie	12	10,0%
Eten & drinken	6	5,0%
Opleiding	13	10,8%
Fitness & welzijn	6	5,0%
Familie & relaties	5	4,2%
Total	120	100,0%

2.3: Annoyance

Table 2

Sample characteristics; Annoyance pre -statement

Level of annoyance	Ν	%	Mean	SD
Irritant	31	77,50	1,487	1,062
Nep	3	7,50		
Amuserend	4	10,00		
Levendig	1	2,50		
Overtuigend	0	0,00		
Informatief	1	2,50		
Aantrekkelijk	0	0,00		
Total	40	100,00		

Table 3

Annoyance; Low level of advertising preference

Level of annoyance	N	%	Mean	SD
Irritant	47	0,39	2,942	2,160
Nep	27	0,23		
Amuserend	3	0,03		
Levendig	9	0,08		
Overtuigend	8	0,07		
Informatief	15	0,13		
Aantrekkelijk	11	0,09		

120 1,00

Table 4

Annoyance; High level of advertising preference

Level of annoyance	Ν	%	Mean	SD
Irritant	22	0,18	4,153	2,224
Nep	16	0,13		
Amuserend	10	0,08		
Levendig	16	0,13		
Overtuigend	11	0,09		
Informatief	20	0,17		
Aantrekkelijk	25	0,21		
Total	120	1,00		

Table 5

Analyses main test; Annoyance

Level of annoyance		N	%	Mean	SD
Annoyance pre -statement					
	Irritant	31	77,50	1,487	1,062
	Nep	3	7,50		
	Amuserend	4	10,00		
	Levendig	1	2,50		
	Overtuigend	0	0,00		
	Informatief	1	2,50		
	Aantrekkelijk	0	0,00		
	Total	40	100,00		
Annoyance; Low level of adv. pref.					
	Irritant	47	39,17	2,942	2,16
	Nep	27	22,50		
	Amuserend	3	2,50		
	Levendig	9	7,50		
	Overtuigend	8	6,67		
	Informatief	15	12,50		
	Aantrekkelijk	11	9,17		
	Total	120	100,00		
Annoyance; High level of adv. pref.					
	Irritant	22	18,33	4,153	2,224
	Nep	16	13,33		
	Amuserend	10	8,33		
	Levendig	16	13,33		
	Overtuigend	11	9,17		
	Informatief	20	16,67		
	Aantrekkelijk	25	20,83		
	Total	120	100,00		

2.4: Consumer engagement

Table 1

Consumer engagement; Low level of advertising preference

	Number of items	Mean
Conscious attention	6	2,60
Enthused participation	6	2,22
Social connection	3	2,95
Total	15	2,59

Table 2

Consumer engagement; High level of advertising preference

	Number of items	Mean
Conscious attention	6	3,36
Enthused participation	6	2,89
Social connection	3	3,55
Total	15	3,27

Table 3

Analyses main test; Consumer engagement

Level of annoyance		Ν	Mean
Consumer engagement; Low level of adv. pref.			
	Conscious attention	6	2,60
	Enthused participation	6	2,22
	Social connection	3	2,95
	Total	15	2,59
Consumer engagement; High level of adv. pref.			
	Conscious attention	6	3,36
	Enthused participation	6	2,89
	Social connection	3	3,55
	Total	15	3,27

2.5: Analyses of variances

Table 1

Multivariate test; descriptive statistics of the factors

Source	Factors	F	Sig.
Social media advertisement	Advertising preference	5,871	0,048
	Annoyance	1,608	0,184
	Consumer Engagement	5,826	0,049

Table 10

Regression analyses; ANOVA

Model	Mean Square	F	Sig.
Regression	78,865	5,047	0,003
Redisual	136,735		
Total	215,600		

Table 11

Regression analyses; moderation of annoyance on the relationship between CE and adv. pref. acc.

Path	Coeff.	t	Sig.
CE x Advertising preference accuracy	0,629	2.454	0,000
CE x Annoyance x Advertising preference accuracy	1,398	2,234	0,214

2.6: Main-test code scheme question items and related constructs

Respondent	characteristics				
	ResponseID	String	ResponseID	None	Nominal
	StartDate	Date	StartDate	None	Scale
	EndDate	Date	EndDate	None	Scale
	Finished	Numeric	Finished	None	Scale
Introduction					
introduction		Numeric	Dank voor uw deelname aan dit experiment. Middels dit experiment	None	Scale
Domograph	ics + Eacobook uso	Numeric	Durk voor dw deemanie dur die experiment. Widdels die experiment	None	Julie
Demographi	O1	Numeria		(1 Man)	Coolo
		Numeric	Wat is uw gestadut?	(1, Wall)	Scale
	Q2	Numeric	wat is uw leertijd?	None	Nominai
	Q3	Numeric	Beschikt u över een persoonlijk Facebook account?	(1, Ja}	Scale
Advertising	annoyance; Pre-statement (fa	ctor 3)			
	Q4	Numeric	Advertenties op social media vind ik over het algemeen:	(1, Irritant}	Scale
Advertising	preference accuracy (factor 1 Q5) Numeric	Selecteer, van de onderstaande categorieën, 3 categorieën waarmee u momenteel de meeste affiniteit heeft.	(1, Bedrijven en Sectoren} (2, Nieuws & Entertainment} (3, Sport & Outdoor} (4, Hobby's & Activiteiten}	Scale
				 (5, Reizen, plaatsen & evenementen} (6, Winkelen & mode} (7, Lifestyle & Cultuur} (8, Personen) (9, Technologie} (10, Eten & drinken} (11, Opleiding) (12, Fitness & welzijn} (13, Familie & relaties} 	
lf Q5 = 1	Q6A	Numeric	Binnen de categorie 'Bedrijven & sectoren' heb ik momenteel de meeste affiniteit met:	(1, Bedrijven} (2, Branches en sectoren}	Scale
lf Q5 = 2	Q6B	Numeric	Binnen de categorie 'Nieuws & entertainment' heb ik momenteel de meeste affiniteit met:	(1, Nieuws) (1, The muziek on theater)	Scale
lf Q5 = 3	Q6C	Numeric	Binnen de categorie 'Sport & outdoor' heb ik momenteel de meeste affiniteit met:	(1, Specifieke sporten)	Scale
lf Q5 = 4	Q6D	Numeric	Binnen de categorie 'Reizen, plaatsen & evenementen' heb ik momenteel de meeste affiniteit met:	(2, Specifieke sportclubs en toernooien) (1, Reizen) (2, Plaatsen en steden)	Scale
				(3. Evenementen en festivals)	
If Q5 = 5	Q6E	Numeric	Binnen de categorie 'Hobby's & actiiteiten' heb ik momenteel de meeste affiniteit met:	(1. Specifieke hobby's)	Scale
., _= -				(2. Algemene vrijetijdsbesteding)	
If 05 = 6	OGE	Numeric	Binnen de categorie 'Winkelen & mode' heb ik momenteel de meeste affiniteit met	(1 Kleding)	Scale
ij Q3 = 0	401	Numeric		(2 Cosmetica)	Scule
If 05 - 7	066	Numeric	Rinnen de categorie (Technologie/ heb ik momenteel de meeste affiniteit met:	(1 Games)	Scale
ij Q3 = 7	400	Numeric			Scale
				(2, fell)	
1605 0	0.011			(5, Social media)	<u> </u>
If Q5 = 8	Цен	Numeric	Binnen de categorie "Personen" heb ik momenteel de meeste affiniteit met:	(1, Bekende topsporters)	Scale
				(2, Celebrities)	
lf Q5 = 9	Q6I	Numeric	Binnen de categorie 'Lifestyle & cultuur' heb ik momenteel de meeste affiniteit met:	(1, Religie)	Scale
				(2, Levensstijl en cultuur}	
<i>lf Q5 =</i> 10	Q6J	Numeric	Binnen de categorie 'Opleiding' heb ik momenteel de meeste affiniteit met:	(1, Specifieke hogescholen)	Scale
				(2, Hogescholen en universiteiten}	
lf Q5 = 11	Q6K	Numeric	Binnen de categorie 'Eten & drinken' heb ik momenteel de meeste affiniteit met:	(1, Eten en restaurants}	Scale
				(2, Drinken en drinkgelegenheden)	
lf Q5 = 12	Q6L	Numeric	Binnen de categorie 'Fitness & welzijn' heb ik momenteel de meeste affiniteit met:	 Fitness en lichamelijke conditie} Ontspanning en welzijn} 	Scale

lf Q5 = 13	Q6M	Numeric	Binnen de ca	tegorie 'Familie & relaties' heb ik momenteel de meeste affiniteit met:	(1, Fitness en lichamelijke conditie} (2, Ontspanning en welzijn}	Scale
Example of j	follow-up questions:					
Advertising a	annoyance (factor 3) + Consur	ner engageme	nt (factor 2) \rightarrow	Manipulated advertisements with a high/low level of accuracy towards the participants advertising preference.		
If Q5=1 + Q6	5A=1	Q7A	Numeric	Neem de onderstaande advertentie waar	None	Scale
If Q5=1 + Q6	5A=1	Q7B	Numeric	Deze advertentie ervaar ik als:	(1, Irritant}	Scale
If Q5=1 + Q6	5A=1	Q7C	Numeric	lk zou graag meer willen weten over grote bedrijven.	(1, Volledig mee oneens}	Scale
			Numeric	Ik vind evenementen die gerelateerd zijn aan grote bedrijven leuk.	(1, Volledig mee oneens}	Scale
			Numeric	Ik leer graag van nieuws over grote bedrijven.	(1, Volledig mee oneens}	Scale
			Numeric	Ik besteed veel aandacht aan alles omtrent grote bedrijven.	(1, Volledig mee oneens}	Scale
			Numeric	lk ben op de hoogte van dingen gerelateerd aan grote bedrijven.	(1, Volledig mee oneens}	Scale
			Numeric	Alles gerelateerd aan grote bedrijven krijgt mijn aandacht.	(1, Volledig mee oneens}	Scale
lf Q5=1 + Q6	5A=1	Q7D	Numeric	lk besteed veel vrije tijd aan nieuws over grote bedrijven.	(1, Volledig mee oneens}	Scale
			Numeric	Ik hou heel erg van nieuws over grote bedrijven.	(1, Volledig mee oneens}	Scale
			Numeric	lk probeer het op de hoogte blijven van nieuws over grote bedrijven in mijn planning te laten passen.	(1, Volledig mee oneens}	Scale
			Numeric	Ik ben gepassioneerd over nieuws van grote bedrijven.	(1, Volledig mee oneens}	Scale
			Numeric	Mijn dag zou niet hetzelfde zijn zonder nieuws over grote bedrijven.	(1, Volledig mee oneens}	Scale
			Numeric	lk vind het leuk tijd te besteden aan nieuws over grote bedrijven.	(1, Volledig mee oneens}	Scale
If Q5=1 + Q6	5A=1	Q7E	Numeric	lk hou er van om nieuws over grote bedrijven te delen met mijn vrienden/vriendinnen.	(1, Volledig mee oneens}	Scale
			Numeric	lk vind nieuws over grote bedrijven leuker wanneer ik met vrienden/vriendinnen ben.	(1, Volledig mee oneens}	Scale
			Numeric	Nieuws over grote bedrijven is leuker wanneer er mensen om mij heen zijn die dit ook leuk vinden.	(1, Volledig mee oneens}	Scale

3. Eye-tracking analyses

3.1: Eye-tracking mean fixation duration

Table 1

Eye-tracking results; High & Low level of advertising preference

Level of ad. Pref.	Number of items	Mean fixation duration (sec.)
High level	3	6,040
Low level	3	10,516
Total	6	8,278

3.2: Eye-tracking Heatmaps; low level of advertising preference accuracy























Par 22:











3.3: Eye-tracking Heatmaps; high level of advertising preference accuracy







Par 6:





Par 20:

