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Perceptions and Attitude Toward Advertising on Social Networks and Search Engines: A Comparative Analysis

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ABSTRACT

Excessive online advertising and the advent of its new media and formats, challenge the understanding of how to use them effectively in order to break the clutter. This study adopts a model that evaluates the effectiveness factors of the advertising in two online media – social networks and search engines – from the consumer's perspective, namely how they perceive and assess advertising. A cross-sectional study was conducted based on an online questionnaire with a sample of 406 individuals. The results demonstrate that the consumers measure the value of advertising in social media based on perceived informativeness and entertainment, and in search engines on perceived informativeness and interactivity. In addition, perceived credibility has a more important role within social networks, and perceived irritation is processed differently in the two media. In turn, the mediating role of the perceived value in the relationship between determinants and attitude varies between the media. This study brings to light the effectiveness factors of online advertising, highlighting the moderating role that media play in the consumers response to advertising. Moreover, it provides important insights about the way companies should adapt their advertising messages to meet consumers' expectations in a web environment.

Introduction

The Internet has become a large ad supported medium. In the United States it has already become the main advertising medium (Interactive Advertising Bureau (IAB)) 2018) and in Portugal, where the present study has been developed, the second one after television (Marktest 2017). The online advertising industry has been in constant evolution, mainly due to the advances of underlying technology in access, bandwidth, and speed. This technological growth enabled a massive access to the Internet, the

improvement of the user experience, and the emergence of new ad formats that greatly contributed to the growth of the online advertising industry (Interactive Advertising Bureau (IAB)) 2018; Winer 2009).

However, the Internet is becoming saturated, and the ubiquity of online advertising has been identified as one of the causes of the decline of its effectiveness (Chang, Rizal, and Amin 2013; Cho and Cheon 2004; Fulgoni and Morn 2009; Taylor, Lewin, and Strutton 2011). On the other hand, the emergence of a wide variety of formats – including search, social, display, video and mobile – translates into challenging the advertisers in knowing which ones are most effective, and how they should be used (Burns and Lutz 2006; Tutaj and van Reijmersdal 2012).

The online advertising study refers to its most distinguished characteristic role, interactivity (Stewart and Pavlou 2002). This gives consumers the ability to produce content, to control what they want to see, when, in what order, and for how long (Akar and Topçu 2011; Chung and Zhao 2006; Ko, Cho, and Roberts 2005). The growing control over advertising messages has highlighted the consumer's role in influencing the effects of advertising and, consequently, its effectiveness (Stewart and Pavlou 2002). In this way, it becomes increasingly important to study the effectiveness of online advertising from the consumer's perspective to understand what he expects from advertising (Zhou and Bao 2002) namely its different formats (Rodgers and Thorson 2000; Stewart and Pavlou 2002).

In response to these challenges, one can identify in the literature an approach that lies in the evaluation of the attitude towards advertising since it involves consumer expectations, which, in turn, influences the attention paid to the adverts, the attitude towards the brand and the purchase intentions (Bruner and Kumar 2000; Chang, Rizal, and Amin 2013; Wang and Sun 2010; Wolin, Korgaonkar, and Lund 2002). However, most studies do not take into account the experience of the consumer with the media or the format in which the advertisements are conveyed (Dao et al. 2014; Logan, Bright, and Gangadhtarntla 2012). Now, considering the media or formats in the study of the effectiveness of advertising in the online context is primordially relevant in order to understand the reactions of consumer to online advertising (Bruner and Kumar 2000; Burns and Lutz 2006; Logan, Bright, and Gangadharbatla 2012; Taylor, Lewin, and Strutton 2011; Tutaj and van Reijmersdal 2012).

In fact, since the experience with advertising is a reflection of the experience with the medium (Ducoffe 1996; Logan, Bright, and Gangadharbatla 2012), consumers expect from advertising what the medium can offer. Rodgers and Thorson (2000) emphasize that in an interactive media environment, users try to satisfy certain objectives. The experience that comes from it influences their perceptions and attitude about advertising. In

regard to this, Zhou and Bao (2002) found that the objectives of searching information and social escapism on the Internet influenced, respectively, the informational and entertainment perceptions about advertising and consumer's attitudes toward it. Now, the Internet aggregates different forms of communication that fulfill differently the utilitarian expectations by making information available, or to meet hedonic expectations by offering entertainment (Dao et al. 2014; Schlosser, Shavitt, and Kanfer 1999; Zhou and Bao 2002). Thus, understanding consumers' experience with different online media or formats is a focal point for a better understanding of advertising effectiveness (Burns and Lutz 2006; Dao et al. 2014; Logan, Bright, and Gangadharbatla 2012; Tutaj and van Reijmersdal 2012).

A measure that combines both types of experiences – medium and advertising – pertains to the notion of perceived value of advertising, which was developed by Ducoffe (1996). It is a subjective consumer evaluation about their experience with advertising based on five factors: entertainment, information, irritation (Ducoffe 1996), credibility (Brackett and Carr 2001) and interactivity (Zhang and Wang 2005). On the other hand, the perceptions that these characteristics are inherent to the medium are determinant in attitude toward advertising (Fishbein and Ajzen 1975; Zhou and Bao 2002). Thus, the evaluation of the relationship between perceptions of and attitude toward advertising offers an advertising efficiency measurement that accounts for the medium in which it is conveyed (Ducoffe 1996; Logan, Bright, and Gangadharbatla 2012).

The media elected for this study were social networks and search engine. These media were chosen, firstly, because the five most visited sites in the world fall into the categories of social networks and search engines: Google, YouTube, Facebook, Baidu and Yahoo (Alexa 2018). Secondly, because there is still a significant lack of research focusing on the study of perceptions and attitudes toward advertising within social networks (Dao et al. 2014; Logan, Bright, and Gangadharbatla 2012) and search engines (Lu, Chau, and Chau 2017). Thirdly, because they designate two types of online media with very distinct characteristics and consumer experiences. Given their differences, it is expectable that consumers process advertising differently in each media, which will be examined in this study.

This work intends to respond the following research question:

> "Do online media, social networks and search engines, have a moderating role in the way consumers perceive and assess online advertising?"

To address this research question, the following three objectives have been identified. First, to evaluate and compare each medium's relative effects of five key determinants entertainment, information, irritation, credibility and interactivity on the perceived value of the advertising. Second, to determine and compare each medium's relative effects of both the

determinants and the perceived value of advertising on the attitude toward advertising. Third, to assess whether there are differences in the perceptions of and attitude toward advertising between the two media.

This paper's structure begins by introducing, in the second section, the literature review, which includes the identification of the variables, the relationship between them, the outline of the research hypotheses and the model. The third and fourth sections describe, respectively, the methodology, the analysis and presentation of the results. The fifth section presents the conclusions. The sixth section underlines the theoretical and practical implications of this study, and the last section presents its limitations and future research possibilities.

Literature review

Media and formats of online advertising

The Internet is an interactive and multifunctional medium that combines the functions of other media such as television, radio, newspapers, direct mail, etc., where consumers seek entertainment and informativeness (Schlosser, Shavitt, and Kanfer 1999). Online advertising can be defined as a commercial content available on the Internet that is intended to inform consumers about a product or service and can be conveyed in various media and formats (Schlosser, Shavitt, and Kanfer 1999). Rodgers and Thorson (2000, 49) define online advertising "format" as "the manner in which it appears", which results from "a combination of the ad's content or message and the medium or channel within which the ad is carried" (Wang et al. 2002, 1144). Thus, the online advertising formats can be classified based on the platform (or medium) in which the advertising message is transmitted. Forrester Research (2016) classifies the online advertising formats into social media, search, email, display and video.

Previous studies have focused on evaluating the perceptions and attitudes toward online advertising in specific formats such as banner ads (Burns and Lutz 2006; Tutaj and van Reijmersdal 2012) pop-ups, skyscraper, interstitials (Burns and Lutz 2006) e-mail permission-based, spamming (Chang, Rizal, and Amin 2013), word of mouth (Jalilvand and Samiei 2012), sponsored links, organic links (Jansen 2007; Lin and Hung 2009; Lu, Chau, and Chau 2017; Zhang 2011) and sponsored content (Tutaj and van Reijmersdal 2012). In complementariness to preceding research, the purpose of this study is to evaluate the perceptions of and the attitude toward advertising in social networks and search engines as two different media that integrate different formats. In fact, these two online media offer experiences that go beyond the experience with the specific formats that they incorporate (Logan, Bright, and Gangadharbatla 2012). Thus, this paper

intends to understand how the consumer processes advertising in the context of two distinct media – social networks and search engines.

Social network advertising

Boyd and Ellison (2007, 211) define social networking websites as "web-based services that allow individuals to (1) construct a public or semipublic profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system". Facebook is the world's largest social network with more than 2 billion monthly active users (Statista 2018). In Portugal, it is the largest network, with about 4.3 million users, representing 86% of social network users, followed by YouTube (75%), and Instagram (25%) (Marketest 2017).

Taylor, Lewin, and Strutton (2011) distinguish between two types of advertising on social networks: explicit – based on push tactics (e.g. banners, sponsored adverts and events) – and implicit – based on pull tactics (e.g. brand pages, shares and comments on products and brands). The present study includes the multiple forms of advertising on social networks and intends to understand the factors that improve its effectiveness from the perspective of the users.

Search engine advertising

Search engines are websites specialized in using automated tools, known as spiders or robots, to index web pages that are searched by users through keywords (Chaffey and Smith 2013). Thus, when users formulate and type a search, a set of pages is presented to them with the results, which can be organic or paid (Jansen 2007; Kennedy and Kennedy 2008). According to StatCounter (2018a) the main search engines worldwide in 2017 were Google with 88% share of the total searches, followed by Bing with 5% and Yahoo with 3.42%. Portugal follows this trend, with Google representing a share of 96.5% of total searches, followed by Bing with 2,0% and Yahoo with 1.2% (StatCounter 2018b).

Advertising in search engines can assume the organic links and paid links formats. The first is a kind of implicit advertising. It results of website optimization tactics for search mechanisms engines or of payment for inclusion. It aims to put the link to the advertiser's website in the best possible position of the organic list, i.e. at the top where there is a higher probability of the user clicking the link (Jansen, Brown, and Resnick 2007). Paid links are a type of explicit advertising. They consist in appearing in the area reserved and signaled for adverts on the results page, generally at the top, bottom

and to the right of the organic results, through the payment of an amount offered by the search terms in an auction system in competition with other advertisers (Chaffey and Smith 2013; Lo, Hsieh, and Chiu 2014). The present study aims to understand the factors that improve the effectiveness of both types of formats from the perspective of the users.

Attitude toward online advertising

Understanding the attitude toward advertising constitutes a measurement of the effectiveness of advertising in the distinct media (Logan 2013). The study of attitude toward advertising normally follows two approaches (Wang et al. 2009): (1) the attitude toward a specific advert and (2) the attitude toward advertising in general, being that this second one has influence over the first (Alwitt and Prabhaker 1992; Ducoffe 1996; Mehta 2000; Muehling 1987). This investigation follows the second approach, since it intends to study the attitude toward advertising in general in two online media, and not toward a specific advert stimulus.

MacKenzie and Lutz (1989, 53–54), define the attitude toward advertising in general "as a learned predisposition to respond in a consistently favorable or unfavorable manner toward advertising in general". The majority of the research considers attitude to have three interdependent dimensions: cognitive, affective and behavioral. The cognitive dimension refers to perceptions (e.g. informativeness, entertainment, credibility, etc.) regarding a particular object (e.g. advertising); the affective dimension refers to the feelings toward that object (e.g. pleasure, arousal, dominance, etc.); and the behavioral dimension relates to the actions that the individual intends to take in relation to that object (e.g. attend or avoid exposition to advertising, purchase intention).

In the literature about attitude toward advertising, cognitive and affective dimensions have been seen as antecedents of attitude (Ducoffe 1996; Lu, Chau, and Chau 2017; Kulviwat et al. 2007; Zhang 2011; Shimp 1981) and the attitude as a determinant of behavior (Chang, Rizal, and Amin 2013; Jalilvand and Samiei 2012; Mehta 2000; Wolin, Korgaonkar, and Lund 2002). Although both cognitive and affective dimensions are relevant to understanding attitude, their relative importance depends on the degree of motivation of the individual toward the object of the attitude. In contexts of high engagement, where the user is more committed to the information processing (e.g. searching for specific information on the web), the cognitive elements (e.g. message content, product description) have a more important role. In contexts of low engagement, the emotional and peripheral aspects attain more relevance (e.g. message appearance) (Ducoffe 1996; Zhang and Wang 2005; Wang, Wang, and Farn 2009).

Online advertising perceptions

In the expectation-value model of attitude, perception is a subjective representation that links an object (e.g. advertising) to an attribute (e.g. informative). Implicit to perception there is an evaluative factor that contributes to the formation of attitude. Thus, it implies a general evaluation of the object and of each of its attributes (Fishbein and Ajzen 1975; Henning, Hennig-Thurau, and Feiereisen 2012).

O'Donohoe (1995) considers that the literature describes the perceptions of advertising in two dimensions: a micro, personal dimension that regards advertising as an instrument; and a macro, general dimension that concerns advertising as an institution. The first dimension corresponds to the advertising attributes with which consumers have a direct experience, such as informative character, entertainment, intrusiveness, etc. The second dimension goes beyond the individual user experience and corresponds to the effects of advertising on the economy and society, such as its impact on prices, social values, etc. Sandage and Leckenby (1980) found that people have a positive attitude toward advertising as an institution but are critical of the tactics employed by advertisers (instrumental dimension).

In short, and in line with these considerations, Pollay and Mittal (1993) define the perceptions of advertising as being descriptive statements about the attributes of advertising (e.g. advertising is informative) or its consequences (e.g. advertising improves the standard of living of the people), and the attitude toward their aggregate evaluations (e.g. advertising is a good/bad thing).

Since the objective of the present study is to compare the perception of and attitude toward advertising in two online media, the institutional dimension will not be addressed, because it is assumed that different advertising media will have the same perceived effects at the socio-economic level.

Perceived value of online advertising

In an instrumental dimension of perceptions about advertising, and according to the theory of uses and gratifications of the mass media in which they are selected by individuals according to their personal needs and desires (Luo 2002; Papacharissi and Rubin 2000; Shao 2009), Ducoffe (1995, 1996) developed the concept of "perceived value of advertising." It is "an overall representation of the worth of advertising to consumers" (Ducoffe 1996, 22). The author states that the perceived value results from a cognitive assessment by consumers about the costs and benefits of their experience with advertising around three factors: perceived entertainment, informativeness and irritation. Brackett and Carr (2001) added perceived

credibility to the model due to its importance in other studies, and Zhang and Wang (2005) added perceived interactivity, because it is an important feature of the Internet that must be evaluated. The authors verified that there is a direct and positive effect of entertainment, information, credibility, interactivity and a negative effect of irritation, in the perceived value of online advertising in general. Lin and Hung (2009) and Zhang (2011) obtained identical results for the sponsor links format, and Zhang (2011) reached similar findings for the email marketing format. This section presents the literature of the effects of the abovementioned perceptions at the perceived value in the context of social networks, search engines, and respective hypotheses.

Perceived entertainment. Entertainment in advertising has the function of meeting the public's needs for distraction, fun, relaxation and esthetic pleasure (McQuail 1994). An advert can generate pleasure by being beautiful, fun, exciting and inspiring. The pleasure that results from the experience with the advert can occur both at the moment of exposure and as a memory (Pollay and Mittal 1993).

Based on the uses and gratification theory, some studies argue that the satisfaction of hedonic needs, such as entertainment, relaxation and socialization are among the main motives for using social networks (Kelly, Kerr, and Drennan 2010; Shao 2009; Whiting and Williams 2013). Therefore, advertising in this medium can be a source of pleasure and relaxation by featuring music, games, videos and photos about brands and products (Dao et al. 2014; Kelly, Kerr, and Drennan 2010). On the other hand, the consumers can satisfy their need for social escapism and entertainment by sharing, commenting and exchanging information about brands and products with their network of contacts (Chu and Kim 2011; Zhou and Bao 2002).

With concern to search engines, they have equally a role of entertaining besides informing (Waller 2011; Wang, Wang, and Farn 2009). In fact, Waller (2011) concluded that one in six searches in this medium are related to hedonic motives, as they don't involve the search for a specific query, nor do they derive from a structured and conscious effort (i.e. cognitive). Thus, they represent an end in its own and they should be regarded as having the purpose of entertaining, pass time and relax (Waller 2011; Wang, Wang, and Farn 2009). As such it is expectable that consumers are receptive to publicity in the search engines as it satisfies their hedonic motivations.

In brief, the ability that advertising in social networks and search engine has being pleasant and generating pleasure increases the perceived value of

advertising in these media. As a result, the following research hypothesis is proposed:

> H1: Advertising's perceived entertainment has a positive effect on advertising's perceived value in (a) social networks and (b) search engines.

Perceived informativeness. The provision of relevant information for the needs of consumers legitimates advertising and it is one of the most important reasons for them to accept it (Norris 1984). The informative character of advertising consists of its ability to inform consumers about alternative products in order to enable a better satisfaction in the purchase (Ducoffe 1996). This way, the consumers search for advertising to fulfill their utilitarian needs (Rodgers and Thorson 2000). The greater their capacity to satisfy these needs the greater its perceived value (Ducoffe 1996).

Similarly to entertainment, the search for information is one of the main motivations to use social networks (Shao 2009; Whiting and Williams 2013). The brands' pages, banners, comments and product sharing that are perceived as being relevant can create value to the consumers (Dao et al. 2014). A study conducted by Marktest (2016) found that 69% of Portuguese social network users follow a brand or company: 25% do so to be informed and 13% recognize the significant of influence of this medium in their purchasing decisions.

In terms of the search engines, they are considered an appropriate medium to offer relevant and updated information (Jansen, Brown, and Resnick 2007; Lo, Hsieh, and Chiu 2014; Wang, Wang, and Fran 2009) in a swift and convenient manner (Kink and Hess 2008). The links that offer relevant and structured information about brands and products, which can facilitate the users' experience and fulfill their utilitarian needs, are the most valued (Jansen, Brown, and Resnick 2007; Lu, Chau, and Chau 2017). Lo, Hsieh, and Chiu (2014) concluded, in an experimental study, that consumers pay more attention to the sponsor links (i.e. explicit advertising) than to the organic links (i.e. implicit advertising) when the former presents more relevant information.

In conclusion, the greater the perception that the advertising in social networks and in search engines is informative, the greater its perceived value. Thus, this study formulates the following hypothesis:

> H2: Advertising's perceived informativeness has a positive effect on advertising's perceived value in the (a) social networks and (b) search engines.

Perceived irritation. In the advertising persuasion process, irritation is a negative emotional reaction of the consumer to certain perceptions of advertising (Edwards, Li, and Lee 2002), such as its intrusive (e.g. interfering with consumer objectives) (Cho and Cheon 2004; Edwards, Li, and Lee

2002), excessive (e.g. perceived clutter) (Cho and Cheon 2004; Lo, Hsieh, and Chiu 2014) deceptive (e.g. creating false promises), manipulative (e.g. convincing to purchase products that are not needed) or offensive nature (e.g. that conflicts with religious, sexual, racist values, etc.) (Ducoffe 1996; Pollay and Mittal 1993). When some of these characteristics are perceived in advertising, the consumers tend to undervalue it and consequently ignore or avoid it (Cho and Cheon 2004; Lo, Hsieh, and Chiu 2014).

With relation to advertising in social networks, Taylor, Lewin, and Strutton (2011), concluded that advertising push tactics (e.g., banners, sponsored adverts and events) force the user to be exposed to the advertising and are perceived as intrusive, negatively affecting its reaction toward advertising. Hadija, Barnes, and Hair (2012) and Kelly, Kerr, and Drennan (2010) showed that most users do not pay attention to advertising in this medium, because it is considered to be excessive. In addition, Kelly, Kerr, and Drennan (2010) concluded that the negative attitude toward advertising resulted from low perceptions of credibility and relevance.

In terms of the search engines, and since the user's interaction with this medium is very goal oriented, (Jansen, Brown, and Resnick 2007; Lo, Hsieh, and Chiu 2014; Wang, Wang, and Farn 2009) advertising can be perceived as intrusive. The consumers are unwillingly exposed to adverts and these can hinder their search objectives (Cho and Cheon 2004; Edwards, Li, and Lee 2002). On the other hand, advertising can be perceived as excessive when it appear in several positions of the search results (i.e. at the top, to the right, and at the bottom) (Lo, Hsieh, and Chiu 2014). Consequently, the users adopt certain behaviors to avoid adverts that deflect their attention, such as scrolling down, or avoiding the advertising area (Cho and Cheon 2004; Edwards, Li, and Lee 2002; Lo, Hsieh, and Chiu 2014). In brief, the greater the perception that advertising in social networks and search engines is irritating, the lower its perceived value. Hence, the following hypothesis is formulated:

> H3: Advertising's perceived irritation has a negative effect on advertising's perceived value in (a) social networks and (b) search engines.

Perceived credibility. MacKenzie and Lutz (1989) define the credibility of advertising as the degree to which it is perceived as trustworthy and true. Moore and Rodgers (2005) found that the credibility of the medium has a strong effect on the credibility of advertising. Choi and Rifon (2002) concluded that the credibility of an online advert stems from three factors: the credibility of the source (e.g. the advertiser, but also other entities associated with the message, such as family, friends, experts), the relevance of the message (e.g. the degree to which it corresponds to the contents of the medium) and the credibility of the medium itself (e.g. the website).

The perception that advertising is truthful and the sense of confidence that it transmits have a strong influence on its acceptance by the consumers (Lu, Chau, and Chau 2017).

Consumers consider implicit advertising on social media such as brand pages, shares and comments of product and brands, more credible and reliable than banners, sponsored adverts (Akar and Topçu 2011; Chu and Kim 2011; Taylor, Lewin, and Strutton 2011). This indicates that there is a type of advertising in social networks, which the consumers trust and therefore value. In fact, a study conducted by Netsonda (2013) on the use of Facebook in Portugal found that 91% of the respondents assign credibility to the information on the pages that they follow as well as to the comments and shares about them. Jalilvand and Samiei (2012) argued that this type of advertising is valued by consumers, by concluding that the communication between individuals about brands and products on the online environment has an important impact on their purchasing decision process.

With concern to advertising in search engines, attributes such as relevance, utility, and the professional manner in which the links are presented, contribute to increase their credibility and consequently its acceptance by the consumers (Lu, Chau, and Chau 2017). In addition, some studies postulate that the trust in the search engine mechanism has a strong influence on the consumers' evaluation of the sponsor links (Kink and Hess 2008; Lu, Chau, and Chau 2017). Hence, despite the fact that some studies claim that in an online shopping context the majority of the users prefer to click on the organic links (Chaffey and Smith 2013; Jansen and Resnick 2006; Jansen, Brown, and Resnick 2007; Lo, Hsieh, and Chiu 2014), other studies state that the users don't distinguish between the relevance of both types organic and sponsor links (Jansen 2007; Kobylanski 2012). Consequently there seems to be an implicit trust in the criteria of the search engines with regards to the most relevant links (Jansen 2007; Keane, ÓBrien, and Smyth 2008).

In summary, the greater the perception that the advertising is true and reliable, the greater its perceived value. Accordingly, the following hypothesis is proposed formulated:

> H4: Advertising's perceived credibility has a positive effect on advertising's perceived value in (a) social networks and (b) search engines.

Perceived interactivity. The real power of the Internet and what truly sets it apart from traditional media is its interactive capacity (Rodgers and Thorson 2000; Stewart and Pavlou 2002). The interactivity of online advertising is a feature that gives the user the possibility to modify the content, the form and the structure of advertising messages. The user can receive and transmit information in an instant form, exerting a two-way communication between the advertiser and consumer and between

consumers themselves (Liu 2003; Ko, Cho, and Roberts 2005). Thus, with interactive advertising, the consumer starts to have an active role and a greater control in the advertising persuasion process (Rodgers and Thorson 2000; Stewart and Pavlou 2002). In online settings, the feeling of control in information processing is the most important dimension of perceived interactivity (Chung and Zhao 2006; Kulviwat et al. 2007).

In the context of social networks, Taylor, Lewin, and Strutton (2011) concluded that adverting using pull tactics (e.g. brand pages, shares and comments about products and brands), promote greater interactivity, allowing the consumer a high level of control over their exposure to advertising messages. Kim and Lee (2019) offer as an example of interactive advertising, the sharing of content about products and brands among users. The authors concluded that there is a positive effect of perceived interactivity in the attitude toward advertising.

Advertising on search engines gives consumers greater control over information processing compared to other formats, as it is designed to provide relevant information only when they are searching for it. In this way, the ability of the search engine in providing relevant information, in a quick and convenient way, stimulates the control perception that the consumer has during the search process(Li and Leckenby 2004).

On the other hand, the literature is consensual in considering that the perceived interactivity of a website translates into the diversity of the links it offers (Chung and Zhao 2006). In fact, this endows individuals with the capacity of deciding what they want to see and where they want to go. Accordingly, the adverts that present a results page from a search, as well as its landing page, with the possibility to access several relevant links, improve their interactivity and perceived value (Chung and Zhao 2006). Thus, the following research hypothesis can be formulated:

> H5: Advertising's perceived interactivity has a positive effect on advertising's perceived value in the (a) social networks and (b) search engines.

Perceptions of and attitude toward online advertising

As it has been argued, perceptions are attitude's antecedents. In Ducoffe (1996), Brackett and Carr (2000), and Zhang and Wang (2005) models, these antecedents constitute a composite of the elements of perceived value. Consequently, the authors propose the existence of an effect of these antecedents and of perceived value, in attitude.

Since the attitude is also a consumers' evaluation about advertising, it is important to underline what distinguishes it from value. While value results from a cognitive process, attitude derives from a cognitive and affective process (Ducoffe 1996; Kulviwat et al. 2007; Zhang and Wang 2005). In this sense, attitude is a more effective instrument in the assessment of consumers' reactions

toward advertising in contexts of low engagement (Ducoffe 1996; Lu, Chau, and Chau 2017; Zhang and Wang 2005). Meaning that the consumers may not recognize, in advertising, attributes with special value to themselves, at a given moment, but still they assume a favorable position based on a general feeling or vice-versa (Ducoffe 1996). In this sense, they make a heuristic decision (Kulviwat et al. 2007; Wang, Wang, and Farn 2009). For instance, the esthetic aspect, or the melody of an advertisement, may have a low utility value but still having a positive effect on the attitude due to the pleasure that it creates.

With regards to the flow of effects from perceptions to attitude toward online advertising, Ducoffe (1996) model considers that there is a positive and a significant effect of perceived value on attitude. Thus his model proposes an indirect effect, through the perceived value between the determinants entertainment, informativeness, irritation and attitude. However the perceived entertainment also has a direct effect on the attitude, because of its affective character (Ducoffe 1996). However, Logan (2016) tested Ducoffe's model for the Internet in general and social networks (Logan, Bright, and Gangadharbatla 2012) and concluded that irritation has a direct and negative effect on attitude, i.e. the perceived value does not exert a mediating effect in the relationship between these two variables. In addition, Brackett and Carr (2001) posited that only irritation has a direct effect on attitude. The remaining predictors have a direct and indirect effect. Using the same model for sponsor links, Lin and Hung (2009) verify that the entertainment, irritation and credibility have a direct and indirect effect on attitude, but not informativeness which have only an indirect effect via perceived value.

In the context of the Internet in general, Zhang and Wang (2005) added perceived interactivity to the model and confirmed that entertainment and credibility have a direct and indirect effect on attitude, and informativeness, irritation have only an indirect effect. Interestingly, the interactivity only has a direct effect.

In light of this argument, it is expectable that the determinants and the perceived value exert an effect on attitude regarding advertising in social networks and search engines. Therefore, the following hypotheses are formulated:

H6: Advertising's perceived entertainment has a positive effect on the attitude toward advertising in (a) social networks and (b) search engines.

H7: Advertising's perceived informativeness has a positive effect on the attitude toward advertising in (a) social networks and (b) search engines.

H8: Advertising's perceived irritation has a negative effect on the attitude toward advertising in (a) social networks and (b) search engines.

H9: Advertising's perceived credibility has a positive effect on the attitude toward advertising in (a) social networks and (b) search engines.

H10: Advertising's perceived interactivity has a positive effect on the attitude toward advertising in (a) social networks and (b) search engines.

H11: Advertising's perceived value has a positive effect on the attitude toward advertising in (a) social networks and (b) search engines.

Moderating effect of media and format in the perceptions of and attitude toward online advertising

Given that advertising's perceived value is an evaluation of the consumers experience with advertising according to its experience with the medium (Ducoffe 1996; Logan, Bright, and Gangadharbatla 2012), and given that it can vary between the different media, then it can influence the relationships mentioned before. In fact, some researchers have stressed the moderating role of traditional media in the relationship between perceptions of and attitude toward advertising (Alwitt and Prabhaker 1992; Mittal 1994; Shavitt, Lowrey, and Haefner 1998; Tan and Chia 2007).

As mentioned above, the Internet is a multifaceted medium comprising various media and formats with different characteristics. Thus, as it happens with traditional media, some studies have shown that the online context (e.g. type of website) in which the advert is conveyed has a strong effect on the perceptions and attitudes of consumers toward the advert (Bruner and Kumar 2000; Choi and Rifon 2002).

The studies conducted by Ducoffe (1996) and Brackett and Carr (2001), for example, identified that perceived informativeness is the main determinant of the perceived value of online advertising in general. In turn, a comparative study of six online advertising formats – banners, pop-ups, skyscrapers, large rectangles, floatings and interstitials – Burns and Lutz (2006) verified that perceived entertainment and irritation are determinants of the attitude toward the six formats but perceived informativeness is only a determinant in three formats: banners, pop-ups and interstitials. Dao et al. (2014) conducted a comparative study about the effects of perceptions in advertising in the perceived value between social networks and content communities websites. The authors found that informativeness and entertainment have more effect on the perceived value of advertising on content communities websites (e.g. YouTube) when compared to social networking websites (e.g. Facebook).

With respect to social networks and search engines, they offer their users very different experiences with advertising, which are inherent to these media. From the perspective of search engines, the results of advertising are based on keywords introduced by the consumers in the expectation of finding what they are looking for (Lo, Hsieh, and Chiu 2014). Consequently, it is expectable that the information perceived from advertising in this medium has a strong influential role on the perceived value and attitude toward advertising. In its turn,

Lin and Hung (2009) found that the most important determinant of perceived value of paid links is perceived credibility.

In contrast, Taylor, Lewin, and Strutton (2011) and Logan, Bright, and Gangadharbatla (2012) found that perceived entertainment stands out as the most important determinant of attitude toward advertising on social networks, followed by their informative character. This evidence is in line with Kelly, Kerr, and Drennan (2010), who concluded that social networking sites are primarily used for relaxing and socializing. Finally, Zhang (2011) compared the response of consumers to three online advertising formats and verified that perceived interactivity is the most important determinant of the perceived value of paid links, but it is not for the formats of email or targeted adverts in general, whose most important determinants are perceived entertainment and perceived informativeness, respectively.

The literature states that the relative effect of the determinants in the value and attitude toward advertising online can be moderated by the contexts of social networks and search engines, where the advertising is conveyed. As such, the following hypotheses can be formulated:

H12: The relative effects of advertising's perceived (a) entertainment, (b) informativeness, (c) irritation, (d) credibility, and (e) interactivity on advertising's perceived value vary according to both social networks and search engines.

H13: The relative effects of advertising's perceived (a) entertainment, (b) informativeness, (c) irritation, (d) credibility, (e) interactivity and (f) value on the attitude toward advertising vary according to both social networks and search engines.

H14: The perceptions of (a) entertainment, (b) informativeness, (c) irritation, (d) credibility, (e) interactivity, and (f) advertising's value, vary according to both social networks and search engines.

H15: The attitude toward advertising varies according to both social networks and search engines.

The hypothetical model is represented in Figure 1.

Methodology

Study design and data collection

This study is of a cross-sectional type. For the data collection, 406 Portuguese individuals were selected by a snowball sampling method (Baltar and Brunet 2012; Isaías, Pífano, and Miranda 2012). This method is very useful for studying individuals who are connected in a network (Noy 2008), as is the case in the present study. Each individual answered a questionnaire in Portuguese about their perceptions and attitude toward advertising in each medium. The questionnaire's URL was published on the social network Facebook and sent by
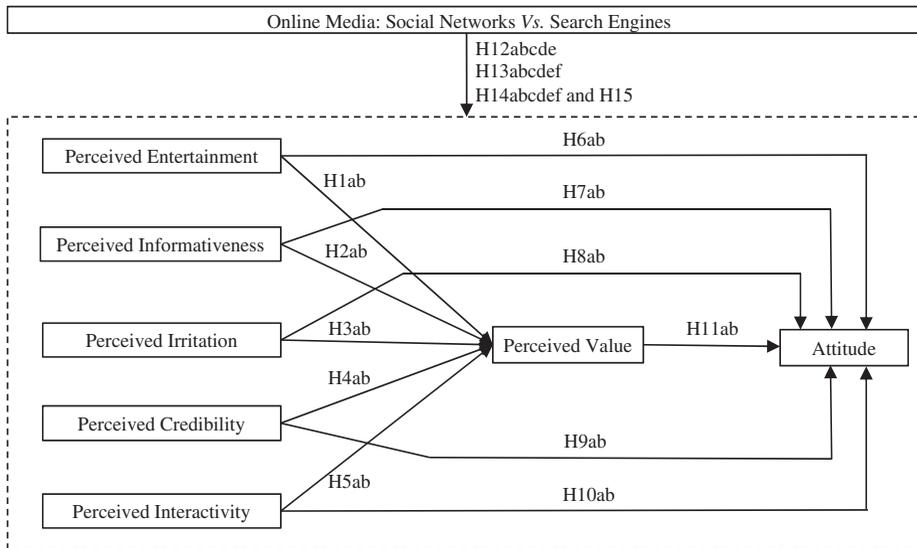
Figure 1. Research framework and hypotheses.

email to a set of personal contacts. They were asked to complete it and to share it and to suggest a new contact that would do the same, and so on. A total of 567 questionnaires were obtained, of which 156 were considered invalid due to being incomplete and five due to their answer to one of the filter questions. Thus, 406 questionnaires were accepted as valid and analyzed. The data was further processed using the Statistical Package for the Social Sciences (SPSS).

Measurement scales

Table 1 describes the scales used in this study, which were adapted from models reviewed in the literature. It should be noted that the questions were made with a personal sense, in line with the findings of Reid and Soley (1982). These authors concluded that people express a different attitude when questions are asked at a general level (e.g. advertising is misleading) and at a personal level (e.g. advertising is misleading to me).

The measurement scales were applied to both media, social networks (e.g. "the advertising in social networks is entertaining to me") and search engines (e.g. "the advertising in search engines is entertaining to me"). Responses were assessed on a Likert scale of 1 to 5: 1 = strongly disagree, 5 = strongly agree.

Data analysis and results

Principal component analysis

In order to confirm the structure of the measurement scales used in the theoretical model, the Principal Component Analysis (PCA) technique was

Table 1. Measurement scales.

Variable	Item	Source
The advertising in (social networks/search engine) …		
Perceived Entertainment	Is entertaining to me	Ducoffe (1995, 1996)
	Is fun to me	
	Provides me with a pleasant experience	
	Gives me pleasure to remember	Pollay and Mittal (1993)
Perceived Informativeness	Is a good source of information about products and service	Ducoffe (1995, 1996)
	Provides relevant information for my needs	
	Offers me updated information about products and services	
	Is a source of convenient information for me	
Perceived Irritation	Is irritating to me	Ducoffe (1995, 1996)
	Is boring to me	
	Is deceiving to me	Pollay and Mittal (1993)
	Is intrusive to me	Edwards, Li, and Lee (2002)
Perceived Credibility	Is credible to me	Brackett and Carr (2001)
	Is trustworthy to me	
	Is reliable to me	
Perceived Interactivity	Provides me with an experience of interactive communication.	
	Is personalized to meet my needs.	Zhang and Wang (2005)
	Facilitates me a two-way communication (advertiser–user).	Liu (2003)
	Gives me great control over the adverts	
Perceived Value	Is useful to me.	Ducoffe (1995, 1996)
	Is important to me.	
	Is valuable to me.	
Attitude	In general, I find the advertising on (…) to be favorable.	Zhang and Wang (2005)
	In general, I like the advertising on (…)	Pollay and Mittal (1993)
	In general, I consider the advertising on (…) to be a good thing.	

applied with varimax rotation. Four PCA were applied: two for the 19 items of the determinants and two for the six items of the dependent variables of advertising on social networks and on search engines.

With respect to the 19 items of the determinants, six components (labelled as "Factors" in Tables 2–5) that explain 80.6% of the total variance in the social networks (Table 2) were retained and five components that explain 80.8% of the total variance in search engines (Table 4) were retained. The only difference that was found compared to the theoretical model concerns the four items of the perceived interactivity determinant in the PCA with varimax rotation of the determinants of advertising on social networks (Table 2); these items were subdivided into two components instead of one. For the purpose of the study, it was decided to maintain one component as in the theoretical model.

As for the six items of perceived value and attitude, two components for the social networks (Table 3) and two for the search engines (Table 5) were retained, explaining 88.2 and 89.6% of the total variance respectively. The item "is useful to me" in social networks had an almost identical

Table 2. Principal components analysis with varimax rotation of the determinants of advertising on social networks.

	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI
	ENT	CRE	INF	IRR	INT	
… is fun to me	**0.875**					
… is entertaining to me	**0.810**					
… is pleasant to me	**0.807**					
… gives me pleasure to remember	**0.724**					
… is reliable to me		**0.882**				
… is trustworthy to me		**0.881**				
… is credible to me		**0.867**				
… offers updated information			**0.825**			
… is a good source of information			**0.754**			
… is convenient for me			**0.595**			
… provides relevant information			**0.593**			
… is intrusive to me				**0.708**		
… is irritating to me				**0.684**		
… is deceiving to me				**0.664**		
… is boring to me				**0.653**		
… facilitates a two-way communication					**0.842**	
… provides an interactive experience					**0.752**	
… is personalized						**0.892**
… gives me control over the adverts						**0.533**
Eigenvalue	**9.548**	**1.987**	**1.224**	**0.974**	**0.809**	**0.763**
Cumulative Explained Variance	50.25%	60.71%	67.15%	72.28%	76.53%	**80.55**%

ENT: Entertainment; CRE: Credibility; INF: Informativeness; IRR: Irritation; INT: Interactivity.
KMO = 0,934; Bartlett's test of sphericity: $X^2 (171) = 6034,727$; p = 0,000.

Table 3. Principal components analysis with varimax rotation of the dependent variables of advertising on social networks.

	Factor I Attitude	Factor II Value
… is a good thing	**0.888**	
… I'm favorable	**0.851**	
… I like advertising	**0.815**	
… is useful to me	**0.647**	0.619
… is valuable to me		0.903
… is important to me		0.833
Eigenvalue	**4.759**	0.533
Cumulative explained variance	79.32%	88.20%

KMO = 0,892; Bartlett's test of sphericity: $x^2 (15) = 2468,312$; p = 0,000.

weight in the two components, and so it was included in the perceived value component as in the theoretical model.

In general, it can be concluded that the PCA confirms the structure of the theoretical model's measurement scales.

Internal consistency of the indexes

In order to assess the internal consistency of each component, indexes based on the conceptual model were created and their internal consistency was evaluated by Cronbach's alpha. It can be seen in Table 6 that the indexes have a satisfactory internal consistency, with a Cronbach's alpha above 0.6 (Malhotra 2004).

Table 4. Principal components analysis with Varimax rotation of the determinants of advertising on search engines.

	Factor I ENT	Factor II IRR	Factor III INT	Factor IV CRE	Factor V INF
… is fun to me	0.890				
… is entertaining to me	0.864				
… is pleasant to me	0.790				
… gives me pleasure to remember	0.772				
… is irritating to me		0.854			
… is boring to me		0.849			
… is intrusive to me		0.842			
… is deceiving to me		0.669			
… provides an interactive experience			0.780		
… gives me control over the adverts			0.777		
… facilitates a two-way communication			0.771		
… is personalized			0.650		
… is reliable to me				0.862	
… is trustworthy to me				0.859	
… is credible to me				0.820	
… is a good source of information					0.834
… offers updated information					0.818
… provides relevant information					0.648
… is convenient for me					0.592
Eigenvalue	9.626	1.810	1.658	1.212	1.049
Cumulative explained variance	50.70%	60.19%	68.92%	75.30%	80.82%

ENT: Entertainment; IRR: Irritation; INT: Interactivity; CRE: Credibility; INF: Informativeness.
KMO = 0,916; Bartlett's test of sphericity: X^2 (171) = 7003,768; p = 0,000.

Table 5. Principal components analysis with Varimax rotation of the dependent variables of advertising on search engines.

	Factor I Attitude	Factor II Value
… is a good thing	0.861	
… I'm favorable	0.857	
… I like advertising	0.831	
… is valuable to me		0.886
… is important to me		0.865
… is useful to me		0.766
Eigenvalue	4.836	0.541
Cumulative explained variance	80.60%	89.61%

KMO = 0,883; Bartlett's test of sphericity: X^2 (15) = 2725,645; p = 0,000.

Correlations between variables

The correlations between each of the variables – the determinants, the perceived value and the attitude – are examined for both media: social networks (Table 7) and search engines (Table 8).

It is possible to observe that the determinants perceived entertainment, informativeness, credibility and interactivity present a moderate to strong positive relationship with the perceived value and with the attitude in both media. In other words, the higher the perception of each of these attributes is, the higher the perceived value of advertising and the more favorable the attitude toward advertising will be in both media.

Table 6. Synthetic indexes of scales.

Component	Social networks	Search engines
Entertainment		
α	0.906	0.930
M	2.23	2.03
SD	0.913	0.800
Informativeness		
α	0.885	0.908
M	3.02	2.84
SD	0.896	0.924
Irritation		
α	0.882	0.908
M	3.40	3.41
SD	0.888	0.895
Credibility		
α	0.946	0.946
M	2.78	2.73
SD	0.759	0.802
Interactivity		
α	0.747	0.846
M	2.85	2.63
SD	0.761	0.807
Value		
α	0.915	0.935
M	2.38	2.44
SD	0.903	0.911
Attitude		
α	0.937	0.944
M	2.57	2.47
SD	1.019	0.992

Note: 1 = totally disagree; 5 = totally agree; α: Cronbach's alpha; *M*: Mean; SD: standard deviation.

Table 7. Simple linear correlation (Pearson's *r*) between the variables of advertising on social networks.

	ENT	INF	IRR	CRE	INT	VAL
INF	0.645**					
IRR	−0.721**	−0.652**				
CRE	0.408**	0.582**	−0.538**			
INT	0.566**	0.649**	−0.597**	0.507**		
VAL	0.730**	0.749**	−0.719**	0.578**	0.629**	
ATT	0.758**	0.703**	−0.800**	0.545**	0.631**	0.819**

ENT: entertainment; INF: informativeness; IRR: irritation; CRE: credibility; INT: interactivity; VAL: value; ATT: attitude; $**p < 0.01$.

Table 8. Simple linear correlation (Pearson's *r*) between the variables of advertising on search engines.

	ENT	INF	IRR	CRE	INT	VAL
INF	0.635**					
IRR	−0.517**	−0.558**				
CRE	0.447**	0.605**	−0.518**			
INT	0.535**	0.611**	−0.468**	0.554**		
VAL	0.652**	0.739**	−0.649**	0.643**	0.683**	
ATI	0.692**	0.737**	−0.693**	0.603**	0.635**	0.802**

ENT: entertainment; INF: informativeness; IRR: irritation; CRE: credibility; INT: interactivity; VAL: value; ATT: attitude; $**p < 0.01$.

The determinant perceived irritation presents a strong negative correlation with the perceived value and the attitude toward advertising in both media. That is, the more advertising is perceived as irritating, the lower its

Table 9. Linear regressions (standardized beta and adjusted R^2): determinant's effects on perceived value.

	Social networks	Search engines
Entertainment	0.302**	0.172**
Informativeness	0.300**	0.266**
Irritation	−0.180**	−0.217**
Credibility	0.141**	0.160**
Interactivity	0.084*	0.236**
F	194.948**	201.055**
Adjusted R^2	0.705	0.712

$*p < 0.5$; $**p < 0.01$.

Table 10. Hypothesis of determinant's effects on perceived value.

H#	Hypothesis Testing	Medium	Result
H1a)	Entertainment → Value	Social Networks	Supported
H1b)	Entertainment → Value	Search engines	Supported
H2a)	Informativeness → Value	Social networks	Supported
H2b)	Informativeness → Value	Search engines	Supported
H3a)	Irritation → Value	Social networks	Supported
H3b)	Irritation → Value	Search engines	Supported
H4a)	Credibility → Value	Social networks	Supported
H4b)	Credibility → Value	Search engines	Supported
H5a)	Interactivity → Value	Social networks	Supported
H5b)	Interactivity → Value	Search engines	Supported

perceived value and the more negative is the attitude toward advertising will be in both media. The relationship between perceived value and attitude is positive and strong in both media. This means that the greater the perceived value is, the more favorable the attitude toward advertising will be in both media.

Effects of the determinants on the perceived value of advertising in both media

In order to assess H1a) to H5a) and H1b) to H5b), two multiple linear regressions were conducted to model the relationship between the perceived value (dependent variable) and perceived entertainment, informativeness, irritation, credibility and interactivity (independent variables) in both media. Tables 9 and 10 presents the results of the regressions. It was found that the two regressions are globally significant. Through the adjusted R^2 analysis it was concluded that 71% of the total variability in the perceived value in the two media is explained by the five determinants: perceived entertainment, informativeness, irritation, credibility and interactivity. It can be observed that the determinants perceived entertainment, informativeness, credibility and interactivity have a direct positive effect on the perceived value. In turn, perceived irritation has a direct and negative effect on that same variable. Thus, all the hypotheses are supported.

Table 11. Linear regressions (standardized beta and adjusted R^2): The effects of the determinants and the perceived value on attitude toward advertising.

	Social networks	Search engines
Entertainment	0.182**	0.194**
Informativeness	0.045	0.182**
Irritation	−0.327**	−0.232**
Credibility	0.029	0.044
Interactivity	0.061	0.037*
Value	0.361**	0.312**
F	237.955**	202.616**
Adjusted R^2	0.778	0.749

$*p < 0.5$; $**p < 0.01$.

Table 12. Hypothesis of the determinants and perceived value effects on attitude toward advertising.

H#	Hypothesis Testing	Media	Result
H6a)	Entertainment → Attitude	Social networks	Supported
H6b)	Entertainment → Attitude	Search engines	Supported
H7a)	Informativeness → Attitude	Social networks	Not supported
H7b)	Informativeness → Attitude	Search engines	Supported
H8a)	Irritation → Attitude	Social networks	Supported
H8b)	Irritation → Attitude	Search engines	Supported
H9a)	Credibility → Attitude	Social networks	Not supported
H9b)	Credibility → Attitude	Search engines	Not supported
H10a)	Interactivity → Attitude	Social networks	Not supported
H10b)	Interactivity → Attitude	Search engines	Supported
H11a)	Value → Attitude	Social networks	Supported
H11b)	Value → Attitude	Search engines	Supported

Effects of the determinants and the perceived value on the attitude towards advertising in both media

In order to evaluate H6a) to H11a), and H6b) to H11b) two multiple linear regressions were made to model the relationship between attitude toward advertising (dependent variable) and perceived entertainment, informativeness, irritation, credibility, interactivity and value (independent variables) in both media. Tables 11 and 12 shows the results of the regressions.

It was concluded that the two regressions are globally significant. Through the adjusted R^2 analysis it was found that in social networks 78% of the total variability of the attitude toward advertising is explained by three variables: perceived entertainment, irritation and value. In the search engines, on the other hand, 75% of the total variability of the attitude toward advertising is explained by five variables: perceived entertainment, informativeness, irritation, interactivity and value.

In both media, the determinants perceived entertainment and value have a direct and positive effect on attitude toward advertising, while perceived irritation has a direct and negative effect. Perceived credibility doesn't present a statistically significant effect. In the social networks, perceived informativeness and interactivity have no statistically significant effect, while in the search engines these variables have a direct and positive effect.

Table 13. Relative effects of the determinants on perceived value (standardized beta).

Rank	Social networks		Search engines	
1st	Entertainment	0.302**	Informativeness	0.266**
2nd	Informativeness	0.300**	Interactivity	0.239**
3rd	Irritation	−0.180**	Irritation	−0.217**
4th	Credibility	0.141**	Entertainment	0.172**
5th	Interactivity	0.084*	Credibility	0.160**

*$p < 0.5$; **$p < 0.01$.

Table 14. Hypothesis of the comparison of the relative effects of the determinants on perceived value between the two medium.

H#	Hypothesis testing	Result
H12a)	Entertainment → Value	Supported
H12b)	Informativeness → Value	Supported
H12c)	Irritation → Value	Not supported
H12d)	Credibility → Value	Supported
H12e)	Interactivity → Value	Supported

Consequently, H7a), H9a), H9b), and H10a) are not supported. All the other hypotheses are supported.

Comparison of the relative effects of the determinants on perceived value between both media

In order to assess H12a) to H12e), the relative effects of determinants on perceived value between both media was compared. In Table 13 it is possible to observe that in the advertising of social networks the most influential determinant of the perceived value is perceived entertainment, followed by perceived informativeness. The least influential is perceived interactivity. In terms of the search engines, the main determinant of the perceived value is perceived informativeness, followed by perceived interactivity, while perceived entertainment is only the fourth most influential. Perceived credibility is the fourth most influential determinant of the perceived value of advertising on social networks, and is the least influential on search engines. Perceived irritation is the only determining factor that represents the same relative effect on both media, being the third most important in social networks and in search engines. Thus, H12c) is not supported. All the other hypotheses are supported. Table 14 summarizes the results of the hypotheses.

Comparison of the relative effects of the determinants and the perceived value on attitude toward advertising between both media

In order to evaluate H13a) to H13f), the relative effects of the determinants and the perceived value on attitude toward advertising was compared between both media. In Table 15, it can be seen that the main difference lies in the influence of perceived informativeness and interactivity. In social

Table 15. Relative effects of the determinants and the perceived value on the attitude (standardised beta).

Rank	Social networks		Rank	Search engines	
1st	Value	0.361**	1st	Value	0.312**
2nd	Irritation	−0.327**	2nd	Irritation	−0.232**
3rd	Entertainment	0.182**	3rd	Entertainment	0.194**
	Informativeness	0.045	4th	Informativeness	0.182**
	Interactivity	0.061	5th	Interactivity	0.037*
	Credibility	0.029		Credibility	0.044

$*p < 0.5$; $**p < 0.01$.

Table 16. Hypothesis of the comparison of the relative effects of the determinants and perceived value on the attitude between the two medium.

H#	Hypothesis testing	Result
H13a)	Entertainment → Attitude	Not supported
H13b)	Informativeness → Attitude	Supported
H13c)	Irritation → Attitude	Not supported
H13d)	Credibility → Attitude	Not supported
H13e)	Interactivity → Attitude	Supported
H13f)	Value → Attitude	Not Supported

networks the influence of these determinants on attitude occurs in an indirect manner, through perceived value, whereas in the context of search engines it occurs in both direct and indirect manners. The most influential perceptions – value, irritation and entertainment – have both direct and indirect influences in both media. Perceived credibility does not have a direct influence on the attitude toward advertising in either media. Thus, H13b) and H13e) are supported. H13a), H13c), H13d) and H13f) are not supported. The summary of these results can be seen in Table 16.

Differences between the means

In order to address H14a) to H14f) and H15, it was performed a test of the differences between the means of perceived entertainment, informativeness, irritation, credibility, interactivity and value, as well as of the attitude toward advertising on social networks and search engines. To this end, a *t*-test was applied to two paired samples. Tables 17 and 18 presents the results.

The results show that there are statistically significant differences in the means of perceived entertainment, informativeness and interactivity. In fact, the means of these perceptions are higher for advertising on social networks than on search engines. Thus, H14a), H14b), H14e) are supported. The means of perceived irritation, credibility and value had no statistically significant differences.

Attitude toward advertising has statistically significant differences between the means of social networks and of search engines. In fact, the

Table 17. Differences of means between the variables (*t*-test).

	Social networks		Search engines		
	M	SD	M	SD	t
Entertainment	2.23	0.913	2.03	0.799	5.407**
Informativeness	3.02	0.896	2.84	0.924	4.031**
Irritation	3.40	0.888	3.41	0.888	−0.414
Credibility	2.78	0.759	2.73	0.802	1.473
Interactivity	2.85	0.761	2.63	0.807	6.214**
Value	2.38	0.903	2.44	0.911	−1.165
Attitude	2.57	1.019	2.47	0.992	2.168*

*$p < 0.5$; **$p < 0.01$; M: Mean; SD: standard deviation.

Table 18. Hypothesis of differences of means between the variables.

H#	Hypothesis testing	Result
H14a)	Entertainment	Supported
H14b)	Informativeness	Supported
H14c)	Irritation	Not supported
H14d)	Credibility	Not supported
H14e)	Interactivity	Supported
H14f)	Value	Not supported
H15	Attitude	Supported

mean of attitude toward advertising is higher on social networks than on search engines. Thus, H15 is supported.

Conclusions

This study intended to understand how consumers perceive and assess advertising in social networks and in search engines and identify the differences between the two media. This general goal is based on three specific objectives. The first objective consists in comparing the relative effects of five key determinants on the perceived value of the advertising between the two media. The results show significant differences in the effects of the determinants depending on the media. Within social networks, the determinants on the perceived value in descending order of effects are perceived entertainment, informativeness, irritation, credibility and interactivity. In the search engines the determinants on the perceived value in descending order of effects are perceived informativeness, interactivity, irritation, entertainment and credibility.

The difference that was observed in the effects of the determinants on the perceived value of advertising between social networks and search engines can be explained by the expectations of individuals as to the usefulness of these media in satisfying certain needs. The pursuit of entertainment and informativeness are among the main reasons for using social networks (Kelly, Kerr, and Drennan 2010; Taylor, Lewin, and Strutton 2011; Shao 2009; Whiting and Williams 2013); hence, perceived entertainment and informativeness having the greatest effect. Whereas the demand for informativeness is the main reason for the use of search engines (Jansen, Brown, and Resnick 2007; Kink and Hess 2008; Li and Leckenby

2004; Lo, Hsieh, and Chiu 2014). In addition, the advertising formats in the search engine medium have many limitations at the level of entertainment (e.g. low capacity to transmit messages with image and sound) (Li and Leckenby 2004; Lu, Chau, and Chau 2017). On the other hand, these formats are links that provide access to a variety of information searched by the consumers, which allows to increase the perception of the control they have over advertising. Thus, it is no coincidence that the results demonstrate that the most influential determinant on the perceived value of advertising on this medium is informativeness, followed by interactivity. Entertainment only arises as the fourth most influential.

It is important to underline that, despite irritation having the same relative effect in perceived value, it exerts a very different force in the perceived value and attitude in the two media. In fact, irritation has less influence in the perceived value in social networks than in search engines, but it has more influence in attitude. This evidence is in line with some of the literature that argues that there is less engagement with the medium in social networks (Kelly, Kerr, and Drennan 2010; Taylor, Lewin, and Strutton 2011), and as such, the intrusive effect of advertising is less noticeable. Additionally, consumers recognize the need for advertising on social networks in order to maintain a free service (Hadija, Barnes, and Hair 2012), which demonstrates the utilitarian nature of advertising and explains a less pronounced negative effect in the perceived value comparatively to search engines. However, consumers do not appreciate advertising in general in this medium, because they consider it excessive or boring (Kelly, Kerr, and Drennan 2010). For this reason, irritation has such a huge influence on attitude. In contrast, in search engines the negative effect in perceived value is very pronounced due to the intrusive effect that advertising can cause in a context that is characterized by target-oriented behaviors (Cho and Cheon 2004; Lo, Hsieh, and Chiu 2014; Wang, Wang, and Farn 2009). Hence, it has a stronger negative evaluation from a cognitive perspective.

The second aspect examined by this study is the relative effects of both the determinants and the perceived value of advertising on the attitude toward advertising. The results of this study show that there are significant differences between the two media in the level of influence of the determinants perceived informativeness and interactivity on the attitude toward advertising. In social networks the influence of these variables on attitude occurs in an indirect manner, through the variable perceived value. However, in the context of search engines the influence of these variables occurs in both direct and indirect manners. At the level of the most influential perceptions – value, irritation, and entertainment – there are no significant differences in the impact between the two media. There are also no significant differences in perceived credibility, as it does not have a direct

influence on the attitude toward advertising in either media. Thus, the mediating role of perceived value in the relationship between certain perceptions and the attitude varies according to the medium.

The third aspect of this study is to assess whether there are differences in the perceptions of and the attitude toward advertising between the two media. The results show statistically significant differences in the perceptions of entertainment, informativeness and interactivity, which have higher means in advertising on social networks. As for the attitude, it is more favorable to advertising in social networks than in the search engines.

As a corollary of all the analyses, it was concluded that a more accurate study of the determinants of perceived value and attitude toward online advertising requires a separate analysis of the social networks and search engines media.

Contributions and managerial implications

This study intends to make an important contribution, both academically and in terms of practice. From an academic point of view, it adopts an understudied perspective, by assessing the effectiveness of online advertising according to the experience of the consumers with two distinct online media – social networks and search engines. More specifically, it assesses the determinants of perceived value and attitude in these two media. It has demonstrated that the experience with the medium affects the relationship between the variables, bringing to light the important moderating role of the media in online advertising processed by consumers (Bruner and Kumar 2000; Burns and Lutz 2006; Logan, Bright, and Gangadharbatla 2012; Taylor, Lewin, and Strutton 2011; Tutaj and van Reijmersdal 2012).

Secondly, this study has an innovative approach, by including five determinants in the model (information, entertainment, irritation, credibility and interactivity), while other studies have only tested some. It is important to underline the contribution of this study by highlighting the role of interactivity as a predictor of perceived value and attitude toward advertising, especially in contexts of greater involvement such as search engines. Indeed, the literature that includes this predictor in the model is very scarce, so future investigations should consider this possibility. In addition, the applicability of the model was verified in two online advertising media as whole, by adding it to previous studies that considered only specific formats. Since the Internet is composed of a wide array of formats, examining different points of view and combinations may contribute to reveal differences between the media and formats, when it comes to advertising processing by the consumers. Thus, and in line with Stewart and Pavlou (2002) who state that the online marketing study refers to the understanding of the structure in which the interaction between the brand and the consumer

occurs, this study contributes to the confirmation of a model that evaluates the effectiveness of formats at a "macro" level, based on the experience that consumers have with the two types of platforms or structures (i.e. media) that, in turn, aggregate different formats.

Finally, this paper addressed the issue of perceptions and attitude toward online advertising within the Portuguese reality, complementing the majority of the studies that pertain to the North American and Asian reality.

From the point of view of marketing, this study contributed to the knowledge of the determinants of consumer behavior in the online advertising persuasion process, which allows advertisers and media the establishment of more effective advertising strategies to meet the needs of Internet users. On the one hand, this research has demonstrated that attributes such as information, entertainment, credibility and interactivity improve the perceived utility of advertising and consequently the attitude toward it, which has a positive effect in the attitude toward the brand and in the intention to purchase. On the other hand, for online advertising be effective, it should vary its content, form and tone, according to the medium. It should provide relevant and convenient information about brands and products in the two media. Notwithstanding, in the context of social networks advertising should equally have content of a hedonic character and it should be transmitted in an emotional tone as to involve the consumers. Additionally, advertising's perceived credibility in this medium should be reinforced by, for example, having a well-structured institutional page, incentives to exchange content about products and the brand with the contact network of the consumers. Within the search engines, it should seek to develop features that give consumers greater control by encouraging them to click by making links available with supplementary information about what consumers are searching, both in the results page and in the respective landing page.

The advertising tactics in social networks should mitigate the perception that it is excessive by reducing its intensity or conveying it in a more discreet manner; and in search engines to mitigate the perception that it is intrusive, by improving the relevance of the adverts.

Finally, it should be stressed that exists a greater consumer availability to receive advertising in social networks, as is considered to be entertaining, informative and interactive. Therefore, if the objective for communication is unrelated to utilitarian needs, but essentially hedonic, is what this medium should be preferred.

Limitations and future research

While this study shows a significant difference in perceptions and attitude toward online advertising between the examined media, it also highlights

that more detailed analysis would provide greater insight into this phenomenon. As mentioned above, social networks and search engines cover a wide range of advertising formats. This study does not distinguish between these formats. Thus, the inclusion of specific formats of social networks (e.g. sponsored ads, shares and comments, page profiles) and of search engines (e.g. paid and unpaid links) in future research would allow an evaluation of the possible differences between intra-media formats.

On the other hand, this study does not examine demographic variables (e.g. gender, age, level of education, level of Internet usage experience) and motivations for using the media (e.g. search for information, shopping, hedonic, communication, socialization). These are important research aspects to consider and future research should assess their effects on the relationship between perceptions and attitude toward advertising.

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