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Websites in brand communication: interactivity and cross-media effects

Voorveld, H.A.M.

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Consumers' Responses to Brand Websites: An Interdisciplinary Review¹

Abstract

The aims of this study are (a) to provide an integrated literature review of factors influencing consumers' responses to brand websites, (b) to describe the state of research in the past ten years and, (c) to give an overview of the theories used in brand website studies. Using a vote-counting procedure, more than 700 findings from 50 empirical studies were synthesized. The analysis revealed which individual-specific factors (e.g., involvement or flow) and execution factors (e.g., usability or interactivity) influenced responses to websites and brands. To explain such responses many studies integrated new theoretical concepts (e.g., interactivity or telepresence) into traditional theories. Furthermore, the review showed that the current state of research is limited by the use of forced exposure, student samples and the measurement of affective responses.

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Introduction

The media landscape has changed considerably since the development of the internet, which is also visible in the field of marketing communication. In particular, brand websites have become an important tool for advertisers (Song & Zinkhan, 2008). Brand websites provide various functionalities. Consumers can read product or brand information, watch TV commercials, customize virtual products, download music, chat with other visitors, or have a direct dialogue with the organization behind the brand. By supplying a broad range of functionalities, these websites provide the brand with a platform to foster relationships with potential and actual customers, based on a continuous dialogue (Florès, 2004; Christodoulides & De Chernatony, 2004; Dou & Krishnamurthy, 2007; Holland & Baker, 2001).

Given the popularity of brand websites, it is important to know how consumers respond to these websites and which factors influence such responses. To address this, in the past ten years an increasing number of academic studies from various fields (e.g., marketing, communication, advertising, and information systems) have shed light on this subject. To make optimal use of the findings of these studies, it is necessary to make an interdisciplinary, state-of-the-art overview of the findings. The aim of our study is to do this and to provide an integrated overview of the literature on consumers' responses to brand websites.

Our study will not only give a thorough overview of factors influencing consumers' responses to brand websites, but will also give insight in the (methodological) state of research. Knowledge about the state of research is important, because it helps us to assess the validity of the findings up to now and to improve the quality of future research. Furthermore, the review gives an overview of the theories used in the past to explain consumers' responses to brand websites. Knowledge of the theories that were used or ignored can guide future researchers in their work. Describing the applied theories is especially interesting because of the interdisciplinary nature of the review which provides a chance to look over the borders of each discipline to see which theoretical principles are used in other fields. Thereby the review substantively improves our knowledge of the topic.

In sum, our literature review is important for three reasons. First, it will show which factors and theories have been studied in the past and which have been ignored. Second, by accumulating earlier findings the review will give insight in the factors influencing effectiveness of brand websites. Third, the review will help us assessing the quality of earlier research to assess the validity

of the findings up to now. Obviously, our literature review will help both researchers and managers in the future.

The following research questions guide our research synthesis:

RQ1: What is the current state of research in the area of brand websites?

RQ2: Which factors influence consumers' responses to brand websites?

RQ3: Which theories are used in articles about consumers' responses to brand websites?

To date, no earlier review of brand website studies has been conducted. Some other reviews (e.g., Cho & Kang, 2006; Kim & McMillan, 2008) only provided reviews of internet research in general. Others provided a review of online advertising research but excluded marketers' own websites while recognizing its importance (Ha, 2008).

A first contribution to the field is made by Constantinides (2004). He gave a significant review of the factors which influence consumers' online shopping experiences. However, Constantinides (2004) only described the different factors but did not address the relative importance of each factor; our review goes one step further and will also judge the relative strength of each factor. Another difference is that Constantinides (2004) investigated online shopping websites while our review investigates brand websites. Thereby our review acknowledges that marketers' websites are not only used for e-commerce but also for communicating, entertaining, and interacting with customers and other stakeholders (Chakraborty, Lala, & Warren, 2002).

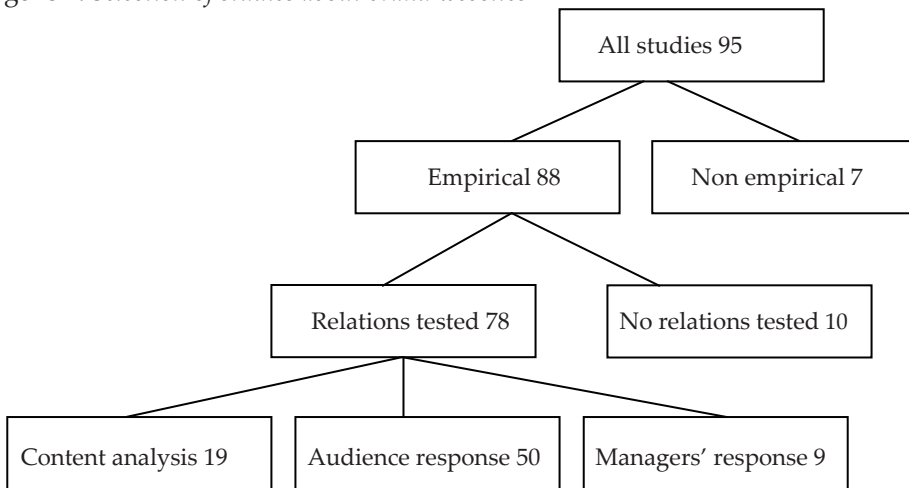
There is no common accepted definition of "brand website" in the literature, though the term is used more and more often (e.g., Müller, Florès, Agrebi, & Chandon, 2008; Dou & Krishnamurthy, 2007; Florès, 2004; Macias, 2003; Thorbjornson & Supphellen, 2004; Müller & Chandon, 2003). Dou and Krishnamurthy (2007, p. 193) simply described brand websites as: "websites that are dedicated to brands." Tung, Moore, and Engelland (2006, p. 94) provided a more detailed description, defining brand websites as "web sites that are designed to be an integral part of the firm's overall advertising campaign, with the objective of brand building." To focus our analysis, this review is restricted to studies on business to consumer (B to C) websites that have persuasion as the most important goal. Thus, we excluded studies on e-commerce websites, user generated content websites, and search engines.

Method

Literature Search

To acquire the studies for our review, a keyword search was used to identify as many relevant studies from peer-reviewed journals as possible. Several databases (Academic Search Premier, Business Search Premier, Communication and Mass Media Complete, PsychInfo and Web of Science) were searched using the keywords “web site(s)” or “website(s)” in combination with the keywords “advertising” or “marketing”. In addition to this keyword search, a reference search was conducted by reviewing the references of the collected studies. The literature search was finished in March 2008. Only empirical studies that used significance tests to analyze relationships between independent variables and consumers’ responses to brand websites were included. As shown in Figure 1, this selection resulted in 50 studies.

Figure 1. *Selection of studies about brand websites*



The review examines both consumers’ responses to the website (e.g., attitude toward the website or clicking behavior on the website) and responses to the brand (i.e., brand effects, such as memory of the brand name, attitude toward the brand, and purchase intention). The distinction between responses to the ad (in this case the website) and responses to the brand is often made in traditional advertising effect research (Vakratsas & Ambler, 1999).

Coding

The fifty studies tested a total of 730 relations. All these statistically tested relationships were coded and included in a database. For each relationship, the following characteristics were coded: independent variable, dependent variable and direction and significance of the relationship ($p < .05$). If present, control variables, moderators and mediators were included. For each study we also coded the method that was used and the type and number of respondents. We also coded which theory was applied or tested to explain consumers' responses.

Vote-Counting

We used a formal vote-counting analysis to synthesize the literature. This is a formalized quantitative technique used for integrating research studies (Hedges & Olkin, 1980). A vote-counting analysis is believed to be the most appropriate and accepted method of research synthesis when a literature is heterogeneous, as in the case of empirical literature about consumers' responses to brand websites (Bushman, 1994). In a vote-counting analysis the number of positive and negative significant relations between the same two variables is compared to the number of non-significant relationships. We did not perform a meta-analysis for two reasons. First, the literature on brand websites is very heterogeneous, only a small number of studies tested exactly the same relationships. Second, not all studies provided all information that is needed to perform a meta-analysis. For these methodological reasons it was not possible to perform a meta-analysis.

Results

Characterization of the Studies

The studies included in our vote-counting analysis were published in 27 academic journals. The journals can be divided into three types: marketing journals, advertising journals, and other journals, like the *Journal of Human-Computer Interaction* or *Internet Research*, mainly journals on information systems. Most of the studies were published in the *Journal of Advertising* ($n = 6$), followed by the *Journal of Interactive Marketing* ($n = 5$), the *Journal of Interactive Advertising* ($n = 5$) and the *Journal of Current Issues and Research in Advertising* ($n = 5$). The number of studies published in ISI-ranked journals was relatively high: 62%. The oldest study included in our analysis was published in 1999, so our paper reviews the past decade of research.

State of Research

Three observations can be made from the present studies into brand website effects. First, the respondents were forcefully exposed to the websites in about 80% of the studies. Involuntary exposure was used both in experiments and in surveys. The majority of the studies applied an experimental method, in which independent variables were manipulated to study consumers' responses to brand websites ($n = 32$). Only 16 studies utilized a survey, in half of these cases in combination with forced exposure. In addition, two-thirds of the studies utilized a student sample. The use of forced exposure and the use of student samples might have implications for the validity of the conclusions about the effects of brand websites. We will come back to this in the discussion.

Second, by far the largest part of the studies in the field of brand websites examined affective responses towards websites or brands. Only a few studies explored behavioral effects such as purchase intention in addition to these affective responses. In addition, most researchers (with the exception of Keng & Lin, 2006; Goldsmith & Lafferty, 2002; Sicilia, Ruiz, & Reynolds, 2006; and Karson & Fisher, 2006), overlooked measuring cognitive dependent variables, such as memory or attention. The lack of studies considering cognitive reactions is probably related to the use of forced exposure, because measuring responses like recall of recognition is probably of less value when participants were forcefully exposed to a website only a few of minutes before. Nonetheless, the limited number of dependent variables has implications for the conclusions that can be drawn about the effects of brand websites

Third, the literature review revealed many contradictory results. For example, interactivity led to a positive effect on affective responses to the website in some studies (e.g., Ko, Cho, & Roberts, 2005; Sicilia, Ruiz, & Munuera, 2005), while in other studies this effect was absent or even negative (e.g., Nysveen & Pedersen, 2004; Coyle & Thorson, 2001; Chung & Zhao, 2004). While this observation is not in itself special, our review showed that almost no factor led to univocal results. The contradictory results could be caused by several factors like the use of different product categories or different types of participants (e.g., students versus a random sample of the whole population) or other background variables that varied between different studies. We will come back to this in the discussion section of our article. The next section describes the factors that affect consumers' responses to brand websites.

Synthesizing the Results of the Original Studies

The second aim of this study is to give an integrated and comprehensive overview of factors influencing consumers' responses to brand

websites. To give an integrated overview of the 730 relations we need to group the variables of the original studies into a smaller amount of factors. The independent variables were structured into person-related factors (e.g., demographics and need for cognition) and website-related factors (e.g., interactivity and design) (Balasubramanian, Karrh, & Patwardhan, 2006).

The person-related factors, or individual differences are factors that cannot be changed by marketers. We can make a further distinction into general user characteristics and psychological user characteristics. Website-related factors are factors on which marketers can exercise influence (Constantinides, 2004). These factors were further structured into website characteristics, message characteristics and exposure characteristics.

The dependent variables are organized into three categories proposed by the hierarchy of effects model (Barry, 1987): cognitive responses (e.g., recall), affective responses (e.g., attitudes), and behavioral responses (e.g., purchase intention or clicking behavior). Relations described in the 50 studies that could not be categorized under these types of independent and dependent variables were left out of the analysis (i.e. Chen & Rodgers, 2006; Wu, 2006). All specific relations between the factors and consumers' responses can be found in the appendixes, accompanied by the references to the articles that addressed the specific relation.

Factors that Influenced Consumers' Responses

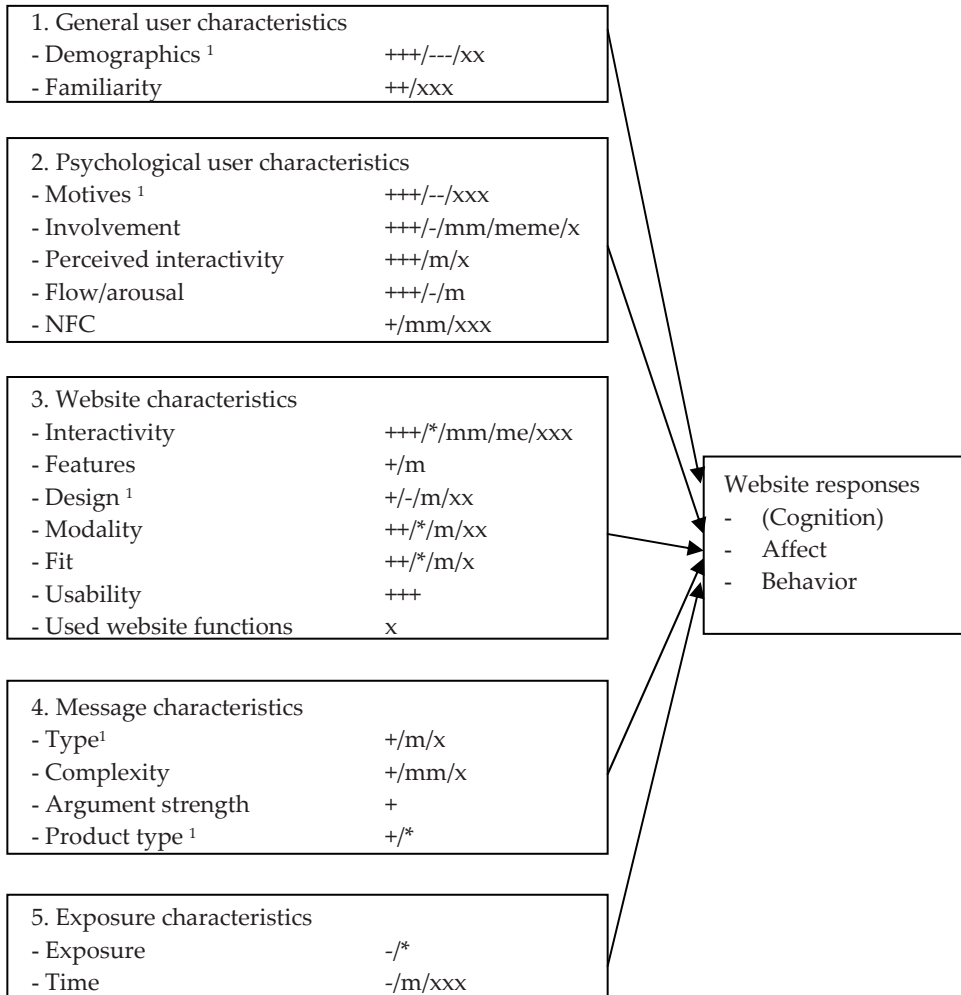
Figure 2 gives an overview of factors that influenced consumers' responses by portraying the direction and frequency of the relations found. Figure 2 portrays the relations between the various factors and responses to the website (e.g., attitude toward the website and clicking behavior on the website).

Responses to the Website as a Dependent Variable

Figure 2 shows that responses to the website were influenced by both person-related factors and website-related factors. When we explore the general tendencies by looking at the number of symbols in Figure 2, we find a number of factors that clearly affect responses to the website.

Chapter 2

Figure 2. Overview of factors influencing responses to the website



Note. + = positive relation; - = negative relation; m = moderated relation; me = mediated relation; * non linear relation; x = not significant relation; . = not studied. The number of symbols indicates the frequency of the relations with that outcome: one symbol (+) = 1-3 relations, two symbols (++) = 4-8 relations, three symbols (+++) = more than eight relations. Factors 1 and 2 are person-related variables; factors 3, 4 and 5 are website-related variables. ¹ These variables are composites of several nominal variables; since our analysis did not find any univocal results for these variables, we do not describe them.

Person-related factors. The first factor that clearly affected consumers' responses to websites was involvement. The higher the level of involvement, the more positively consumers responded to the website (Karson & Kargaonkar, 2001; McMillian, Hwang, & Lee, 2003; Fortin & Dholakia, 2005; Dahlén, Rasch, & Rosengren, 2003; Wu, 2007). Consumer involvement is widely recognized as a major variable relevant to the effectiveness of commercial communication (Dahlén et al., 2003; Zaichkowsky, 1985). Consumers devote more cognitive effort to processing information when they are highly involved, for example in the product category. Dahlén et al. (2003) state that this effect is less prevalent in traditional advertising media, such as TV commercials, because consumers have no control over exposure to the message. On websites, however, consumers are in control because websites are internally paced. Consumers decide which information they want to access and how long they want to expose themselves to the message (Dahlén et al., 2003). Therefore, Dahlén et al. (2003) expected that "visits to high-involvement-product websites are longer and generate more clicks than visits to low-involvement-product websites". This line of reasoning seems to be right because our review showed that the level of involvement with the website or the brand was positively related to both affective and behavioral responses to the website.

A second important factor was the perceived interactivity of the website. Perceived interactivity is defined as "a psychological state experienced by a site-visitor during the interaction process" (Wu, 2005, p 48). Perceived interactivity is subjectively experienced by users and is therefore measured by asking consumers about their feelings or experiences during their website visit. Perceived interactivity is not the same as actual (i.e., objectively assessed) interactivity. The results for actual interactivity will be described later. The review showed that the perceived interactivity of the website positively influenced affective responses to the website. When consumers perceived a website as more interactive, they also had a more positive impression of that website (McMillian et al., 2003; Jee & Lee, 2002; Chung & Zhao, 2004; Wu, 2005).

The third factor that influenced website responses was the amount of flow felt by the participants. Our review showed that a higher level of flow was positively related to affective responses and to the number of return visits to the website (Raney, Arpan, Passhupati, & Brill, 2003; Tung, et al., 2006; Sicilia, et al., 2005; Sicilia & Ruiz, 2007; Fortin & Dholakia, 2005; Nel, Van Niekerk, Berthon, & Davies, 1999). Flow refers to the degree to which a person is fully immersed in what he or she is doing (Csíkszentmihályi, 1975). Flow could have a positive influence on the information processing of a website because it is associated with high levels of attention and concentration. Flow also enhances the feelings

of control over a website experience. "Having control over the information exchanged increases the pleasure of the event itself" (Sicilia & Ruiz, 2007, p. 2) and it is likely that the pleasant feeling influences the attitude toward the website (Sicilia & Ruiz, 2007).

Website-related factors. Four website-related factors influenced consumers' responses to the website. The first factor was actual interactivity. Actual interactivity is objectively assessed interactivity which can be measured by observing the number and type of interactive features on a website. Interactivity is often seen as the defining difference between traditional and new media (Chung & Zhao, 2004) and as a crucial element of successful online marketing or advertising (Thorbjornson, Supphellen, Nysveen, & Pedersen, 2002). Although there is a large amount of research into interactivity, there is still no consensus about the definition and dimensions of interactivity (e.g., Liu & Shrum, 2002, Raney et al., 2003; Thorbjornson et al., 2002). Our review also showed some ambiguous results, but in general, our review showed a positive relationship between the actual (i.e., objectively assessed) interactivity and the affective and cognitive reactions to the website (measured by the number of thoughts about the site and the number of thoughts in general) (Sicilia et al. 2005; Ko et al., 2005; Wu, 2005). However, the actual interactivity of a website did not affect behavioral responses (Coyle & Thorson, 2001; Chung & Zhao, 2004; Amichai-Hamburger, Fine, & Goldstein 2004; Amichai-Hamburger, Kaynar, & Fine, 2006). One explanation for this unexpected finding could be the fact that, surprisingly, in all studies interactivity was manipulated by the absence or presence of hyperlinks. According to Liu and Shrum (2002) hyperlinks belong to the "Active control" dimension of interactivity. Other dimensions of interactivity are "Two way communication" and "Synchronicity". It could be that these other dimensions of interactivity will have an influence on behavioral responses. A second explanation could be that the presence of hyperlinks does not influence the perceived interactivity of a website anymore, because nowadays all websites use hyperlinks.

A second website-related factor that clearly influenced responses to the website was its usability. Our review showed that a high usability was positively related to affective responses to the website (Steenkamp & Geyskens, 2006; Singh, Fassorr, Chao, & Hoffman, 2006; Supphellen & Nysveen, 2001). Usability is defined as "the ability to find one's way around the Web, to locate desired information, to know what to do next, and, very importantly, to do so with minimal effort" (Nah and Davis, 2002, p. 99). Usability is considered an important quality criterion for websites (Constantinides, 2004). Therefore, it is

not very surprising that our review showed that usability had a positive impact on consumers' responses.

A third website-related factor influencing website responses was the type of modality used on the website. The review showed that vivid websites with moving images evoked more positive affective responses than static websites (Coyle & Thorson, 2001; Yates & Noyes, 2007; Philips & Lee, 2005). An explanation could be that websites which apply animation, audio or video appeal to multiple senses. As a result, these websites attract attention (Yates & Noyes, 2007) and vividness is improved (Coyle & Thorson, 2001). Consequently, the persuasive power of the website could be enhanced (Yates & Noyes, 2007).

A last website-related factor that was found to influence website responses was "degree of fit" between the brand image and the website. Degree of fit is related to the concept of consistency. Consistency plays an important role in how people respond to advertising or marketing. People prefer consistency and try to avoid inconsistencies (Newman et al., 2004), therefore, one could argue that congruity or fit between the brand image and the website image is an important factor in determining responses to websites. In agreement with this line of reasoning our review showed that a good fit between the brand image and the website resulted in a positive attitude toward the site (Müller & Chandon, 2004), though fit between the content of a banner and the website seemed less important (Newman, Stem, & Sprott, 2004).

Responses to the Brand as a Dependent Variable

Figure 3 shows the relations between the independent variables in our database and responses to the brand (e.g., attitude toward the brand and purchase intention). The figure shows that responses to the brand were influenced by website-related factors, but not by person-related factors. Furthermore, responses to the website (the outcome measures in Figure 2) also strongly affected responses to the brand. Again, when we ignore subtle differences by looking at the number of symbols in Figure 3, we observe some factors that clearly affect responses to the website.

Website-related factors. The first factor that influenced responses to the brand was the actual interactivity of the website. The review showed that interactive websites resulted in higher recall and recognition of the brand name, as well as of the information presented on the website, compared to non-interactive websites (Keng & Lin, 2006). In contrast, interactivity did not influence affective and behavioral measures (Coyle & Thorson, 2001; Jo & Kim, 2003). The original authors did not give an explanation for this absence but it could be that the impact of interactivity is not strong enough to influence such

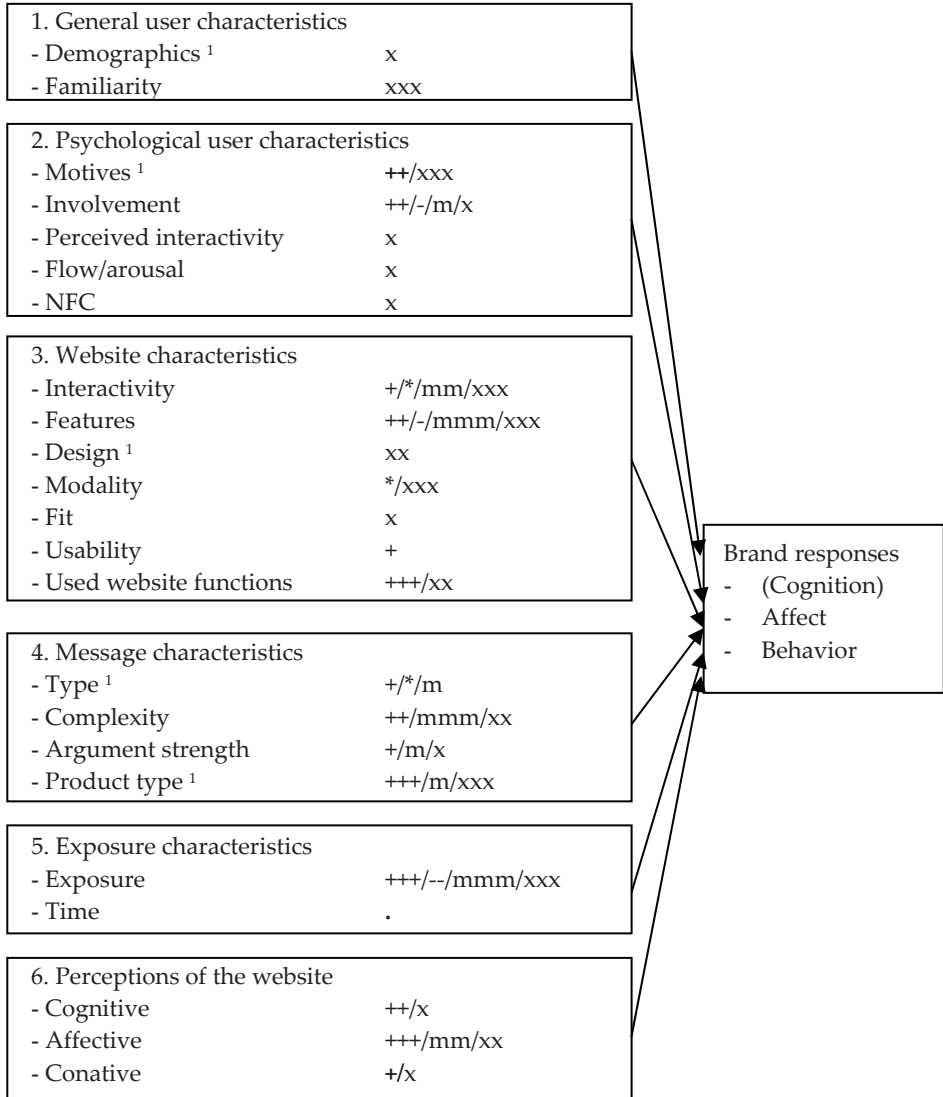
responses directly. Despite the absence of a direct brand impact of interactivity on affective and behavioral responses to the brand, there could be an indirect influence of interactivity via the responses to the website itself. The reason is that, as described earlier, interactivity did influence cognitive and affective responses to the website; these responses could influence affective and behavioral responses to the brand as well.

In the introduction of our article we already mentioned that brand websites can offer various functionalities. Consumers can, for instance, read information, watch video's or download music. Only one study investigated whether offering such functionalities also resulted in more positive responses to the brand and this study showed clear results. The number of functions that were offered on a website did indeed influence responses to the brand. The more functions participants used, such as the use of several information sections, or the option to participate in a contest, the more positive their affective responses to the brand (Ha & Chan-Olmsted, 2004).

Our analysis also showed that even a single exposure to a website was able to change attitudes toward the brand or brand images (Müller & Chandon, 2003, 2004). This effect was moderated by the type of product that was promoted on the website. The change in brand image and attitude toward the brand was larger for functional products (e.g., mobile phones and household electrical appliances) than for value-expressive products, such as luxury clothes and food, which are defined by their social and emotional values (Müller & Chandon, 2003). The reason could be that value-expressive products are more difficult to evaluate online than functional products for which much information on the product's features is available (Müller & Chandon, 2003). Unfortunately, no studies investigated whether repeated exposure resulted in more positive effects than a single exposure, while it is generally acknowledged that repetition affects recall, comprehension, attitudes, and purchase intentions in traditional advertising (Pechmann & Stewart, 1989).

Responses to the website. In the past, researchers have suggested that consumers' responses to advertisements are good indicators of the ad's success in strengthening responses to brands like attitudes towards the brand and purchase intentions (Raney et al., 2003, Brown & Stayman, 1992). Researchers in the field of brand websites have suggested that websites can also be seen as advertisements and that responses to websites will influence responses to brands in a similar way as in traditional advertising contexts. Our review did indeed show that responses to the brand were strongly affected by the responses to the website (the dependent variables in Figure 1). This influence was very strong. When people had a positive attitude or other affective reaction

Figure 3. Overview of factors influencing responses to the brand



Note. + = positive relation; - = negative relation; m = moderated relation; * non linear relation; x = not significant relation; . = not studied. The number of symbols indicates the frequency of the relations with that outcome: one symbol (+) = 1-3 relations, two symbols (++) = 4-8 relations, three symbols (+++) = more than eight relations. Factors 1 and 2 are person-related variables. Factors 3, 4 and 5 are website-related variables. ¹These variables are composites of several nominal variables; since our analysis did not find any univocal results for these variables, we do not describe them in detail.

to the website, this almost inevitably resulted in more positive cognitive, affective, or behavioral responses to the brand (Goldsmith & Lafferty, 2002; Karson & Fisher, 2006; Ko et al., 2005; Müller & Chandon, 2003, 2004; Raney et al., 2003; Sicilia et al., 2006; Jo & Kim, 2003; Fortin & Dholakia, 2005; Chiou & Cheng, 2003; Lee, Hong, & Lee, 2004; Singh et al., 2006; Sicilia & Ruiz, 2007; Sicilia et al., 2005).

Theoretical Scope in Brand Website Studies

The third aim of our study is to learn which theories were used to explain consumers' responses to brand websites. In general, almost all studies used a theoretical background to investigate consumers' responses to brand websites. However, the theoretical bases of the studies were not very rigorous. Several studies only applied a few theoretical concepts (like involvement) to their studies without further explaining the theoretical frameworks behind these concepts. Using such concepts without a fundamental theoretical base can prevent further theoretical development or expansion. When summarizing the theories that were used in the past ten years, the 50 studies can be divided into two groups. In the first group, studies applied traditional theories to the new field of brand websites, in the second group, studies applied theoretical concepts that reflect the new nature of brand websites, for example its interactivity.

Application of classical theories in brand websites studies. Two theories prevailed in studies of consumers' responses to brand websites. The first theory is the Elaboration Likelihood Model (ELM) (Karson & Kargaonkar, 2001; Singh & Dalal, 1999; Sicilia et al., 2006; Dahlén et al., 2003; Karson & Fisher, 2005; Tung et al., 2006; McMillan et al., 2003; Sicilia et al., 2005; Chiou & Cheng, 2003; Sicilia & Ruiz, 2007; Chung & Zhao, 2004; Fortin & Dholakia, 2005; Martin, Sherrard, & Wentzel, 2005; Amichai-Hamburger et al., 2006; Supphellen & Nysveen, 2001). The ELM (Petty & Cacioppo, 1986) is a theory about attitude formation and change. The theory distinguishes a central and a peripheral route to persuasion. According to the ELM, a message will be processed through the central route when people have the ability and motivation to elaborate on the content of the message. Processing through the peripheral route of persuasion takes place when people are not motivated or able to elaborate on the content of the message. This route relies more on superficial characteristics of the message, like source credibility or likeability of the message. The theory states that attitudes formed through the central route of persuasion are stronger than attitudes formed through the peripheral route of persuasion. It is not surprising that many researchers used the ELM in their studies: the ELM is a theory about

attitude change and, as stated before, the majority of the studies measured affective consumers' responses to brand websites, mostly attitudes. Despite the widespread use of the model, one critical note about the application of the ELM should be made. The ELM is a very extensive model with a broad range of variables. Though many authors mention the ELM in their studies most authors only applied a few variables incorporated in the model to their work, like involvement, motivation, and need for cognition. Only one study applies the whole ELM (Karson & Kargaonkar, 2001).

The second cluster of theories that were used to explain consumers' responses to brand websites focus on the construct 'attitudes towards ads' (MacKenzie, Lutz, & Belch, 1986). The dual mediation hypothesis and the affect transfer hypothesis are well-known theories around this construct. For advertising in traditional media advertising there is evidence that attitudes toward ads do carry over to attitudes toward brands. Therefore, it is generally believed that attitude toward the ad is a strong mediator of advertising effectiveness (MacKenzie et al., 1986; Brown & Stayman, 1992). A majority of the studies in our database applied and adopted the mediating role of attitude toward the ad in their research. By substituting attitude toward the ad for attitude toward the website the studies tried to extend the applicability of the construct to an online context.

Some of the studies described and used the dual mediation framework or affect transfer hypothesis explicitly. The main goals of these studies were to test the extension of the models to an online context and to investigate the exact role of attitude toward the website (Karson & Fisher, 2005; Sicilia et al., 2006). However, most studies only mention and measure the construct of attitude toward the website, to test the process through which it influences brand attitudes and purchase intention (e.g., Ko et al., 2005; Dahlén et al., 2003; Lee et al., 2004; Goldsmith & Lafferty, 2002).

Application of contemporary constructs to brand websites studies. The studies in our review also applied some constructs that are more or less distinctive for communication in new media to investigate consumers' responses to brand websites. One of the unique characteristics of communication through brand websites as compared to communication through traditional media is the possibility for interactivity on websites (Pavlik, 1998). A large number of studies investigated the concept of interactivity, thereby participating in the ongoing debate (Liu & Shrum, 2002) about the topic (Ko et al., 2005; Raney et al., 2003; Thorbjornson et al., 2002; Macias, 2003; Tung et al., 2006; McMillan et al., 2003; Nysveen & Pedersen, 2002; Wu, 2005, 2006 and 2007; Sicilia et al., 2005; Jee & Lee, 2002; Coyle & Thorson, 2001; Keng & Lin,

2006; Chung & Zhao, 2004; Sohn, Ci, & Lee, 2007; Griffith & Chen, 2004; Jo & Kim, 2003; Fortin & Dholakia, 2005; Chung & Ahn, 2007, Philips & Lee, 2005; Amichai-Hamburger et al., 2006; Amichai-Hamburger et al., 2004).

Two theories dominated in the debate about interactivity: telepresence theory (Steuer, 1992) and interactivity theory (Rafaeli, 1998). Telepresence theory posits that information is not transmitted directly from sender to receiver but that mediated environments are created by both. According to this theory both characteristics of the medium and characteristics of the user affect interactivity perceptions (Song & Zinkhan, 2008). In other words, "the extent to which a person feels engaged in a mediated environment" (Steuer, 1992, p 76.) influences the perceived interactivity. On the other hand interactivity theory posits that interactivity is a process of message exchange. In this view the quality of the communication affects interactivity perceptions. The more reciprocal a message exchange is, the higher the level of perceived interactivity. Although both theories are mentioned in the studies in our database, interactivity theory is more popular. The two theories have been used to define or measure interactivity, but they have hardly been tested or validated (Song & Zinkhan, 2008), no study in our review compares the validity of both theories.

Related to the concept of interactivity and telepresence (Coyle & Thorson, 2001) is another construct that is applied to the field of brand websites: flow. Only a few studies used this theoretical notion (Tung et al., 2006; Sicilia et al., 2005; Coyle & Thorson, 2001; Sicilia & Ruiz, 2007; Yates & Noyes, 2007, Nel et al., 1999). Consumers who achieve flow when visiting websites are so intensely involved that they become so absorbed in the activity, in this case interaction with the website, that nothing else seems to matter (Novak, Hoffman, & Yung, 2000). Flow and interactivity are related because flow is probably enhanced by telepresence and interactivity (Novak et al., 2000). As stated before, in the studies in this review flow is positively related to affective responses to the website and to the number of return visits.

Strikingly, the Technology Acceptance Model (TAM) was only applied in two studies included in this review. The TAM gives insight in how users come to accept and use a new technology. The most important predictors of the use of the new technology are perceived ease of use and perceived usefulness (Davis, Bagozzi, & Warshaw, 1989). Despite the popularity of the application of the TAM to acceptance of various new technologies, the TAM is not a fundamentally new theory. TAM is an extension of the Theory of Planned Behavior (TPB) and the Theory of Reasoned Action (TRA) (Mathieson, 1991). The technology acceptance measures are grounded in the attitude variables of the TPB and TRA.

Conclusion and Discussion

State of Research

The aim of this literature review was to give a state-of-the-art overview of research on brand websites. Three characteristics of the studies, which hinder an adequate understanding of brand website effects, stand out. The first characteristic is that participants were forced to browse a website in 80% of the studies. This is far from realistic, as one of the most important characteristics of brand websites is its voluntary exposure. Consumers decide for themselves whether they want to visit the website, which pages they view, which functions they use, and how long they stay (Florès, 2004). This important characteristic of websites as compared to traditional media is neglected by using experiments or surveys with forced exposure. This artificial setting could have had a large impact on the results of the studies. Therefore, a first conclusion from our literature review is the need for more real-life studies.

A second characteristic of the brand website studies is that most studies have been conducted using a homogeneous sample, usually composed of students. These samples are mainly young, highly educated and have high levels of experience using internet, computers and websites (Odell, Korgen, Schumacher, & Delucchi, 2000). Probably, this could influence the valence and strength of the effects. Although convenience samples are useful to get an preliminary idea of relationships between variables (Bogaert, 1996), it might be advisable to use more varied samples when studying consumers' responses to brand websites to uncover which consumers are most attracted by brand websites and why these people are more persuaded.

Third, brand website studies have examined a rather narrow scope of outcome measures. Up to now, most researchers have almost neglected to study effects on cognitive dependent variables. Affective brand effects were investigated more often with a focus on attitudes. Although some researchers mentioned brand building and image change as an important advantage of the web (Dou & Krishnamurthy, 2007; Florès, 2004), only two studies have investigated brand image change (Müller & Chandon, 2003; 2004). Therefore, a third recommendation for future research is that researchers extend the scope of the outcome measures to get a more profound understanding of brand websites.

Factors Influencing Consumers' Responses

Our study also aimed to integrate the findings of earlier research to better understand the factors influencing consumers' responses to brand websites. The vote-counting analysis shows that responses to the website are

influenced both by person-related factors and website-related factors. Person-related factors, or individual differences that affect responses to the websites include the level of involvement with the website or the brand, the perceived interactivity of a website, and the level of flow that was felt. Website-related factors that affect consumers' responses include the actual interactivity of a website, the usability of the website, the type of modality used on the site, and the degree of fit between the brand image and the website.

Responses to the brand are predominantly influenced by website-related factors, while person-related factors do not have a direct effect on these brand effects. Important website-related factors are the actual interactivity of a site and the number of functionalities used on the site. In addition, responses to the brand are also clearly affected by responses to the website. Because these responses to the website are also influenced by person-related factors, these person-related factors also affect responses to the brand indirectly.

Theoretical Focus in the Past Decade

The third aim of our study was to give an overview of the theories used in the past ten years to study consumers' responses to brand websites. Looking at the theories mentioned in the 50 studies we notice that most studies applied traditional theories to the field of brand websites. Common traditional theories that were used frequently were the Elaboration Likelihood Model and theories relating to the construct of attitude toward the ad. Our review shows that no new theories had been developed to explain consumers' responses to brand websites. With this conclusion our study shares the findings of other reviews, both on the field of internet in general (Cho & Khang, 2006) and internet advertising (Ha, 2008) in particular. Despite the fact that no completely new theories were developed, several studies integrated new theoretical concepts in their studies, like interactivity, telepresence and flow. Thus, brand website studies successfully incorporated websites in established theoretical frameworks. Despite the interdisciplinary nature of our review, the study shows no large differences between the theories used in the field of marketing, advertising and other.

When we relate the theories used to the findings concerning the factors influencing consumers' responses to brand websites, two conclusions can be drawn. The first conclusion is related to interactivity. The review showed mixed findings concerning the influence of interactivity on consumers' responses to brand websites. Some studies showed positive relations between interactivity and affective responses while other showed no significant or even negative relations. These mixed findings can probably be related to the way the

interactivity concept was operationalized. In some studies interactivity was operationalized on the basis of telepresence theory (e.g., the number of clickable items in the study of Coyle & Thorson, 2001) while other studies measured or manipulated interactivity on basis of interactivity theory (e.g., the presence of two way communication mechanisms in the study of Sicilia et al., 2005) which could have caused the mixed findings. Future research should further investigate the role of the two theories in determining consumers' responses to interactivity, as was done by Song and Zinkhan (2008).

The second conclusion is related to the theories around the concept 'attitude toward the ad'. From the studies that applied this construct to brand websites, it can be concluded that it is possible to extend the validity of the construct to an online context. As stated above the studies in our reviews showed a strong relationship between the affective responses to the website and the responses to the brand. With this finding our study stresses that 'attitude toward the ad' is applicable to brand website studies.

Issues for Future Research

Several avenues for future research have already been mentioned earlier in this conclusion in the section that discusses the current state of research. In this section we want to reveal some specific themes that need attention. Three interesting questions include:

How do the findings of this literature review extend to managerially important dependent variables such as brand loyalty, brand equity or brand image change?

How do the findings change if consumers self select to go to a website instead of being forcefully exposed, as is the case in the majority of previous research?

To what extent do the findings apply to other types of websites, for example e-commerce websites?

Limitations of our Study

Although the study improved our knowledge of consumers' responses to brand websites, some limitations need to be observed. The first is with respect to the vote-counting method. The main advantage of the method is that vote-counting procedures can be used for a larger group of studies, as compared to quantitative meta-analyses because a vote-counting procedure can also be used for studies for which effect size estimates cannot be calculated. However, the fact that it is impossible to report effect sizes is also the most important weakness of this method (Bushman, 1994).

The second limitation is related to the selection of the studies. By exclusively using the keywords advertising, marketing, and website(s), we

might not have selected all the available studies. However, we do not expect that including the studies that we probably missed would have resulted in different conclusions. A related issue is the definition of a brand website that we used for selecting the studies for our analysis. Because no definition existed in the literature we developed a definition ourselves. We carefully read all the studies to determine whether a study was about brand websites or other types of websites, but it was not always easy to use the definition unambiguously. Discussion between the authors resolved all difficulties.

A last issue to be taken into account is the fact that we combined slightly different variables by aggregating them under the same concept. Although this was necessary to get an overview of the literature, it may have done no justice to small differences.

Managerial Implications

The present study investigates an increasingly popular approach to promote brands at the internet: the use of brand websites. The study gives insight into factors influencing the effectiveness of these websites. Now we point to the most important managerial implications of these factors. Important person-related factors were: involvement, perceived interactivity, and flow. Despite practitioners' incapacity to exercise direct influence on individual differences influencing consumers' responses (Constantinides, 2004), marketers can try to act in response to such person-related factors. For example, when visitors are highly involved, marketers could adjust the information on the website to serve visitors' needs. Therefore, we recommend that managers closely monitor the characteristics, wants, and needs of their website visitors.

On the other hand marketers can easily control website-related factors. Website-related factors both influence website responses, such as likeability of a website, and brand responses, like attitude toward the brand. To improve responses to the website, like attitude toward the website, managers should build websites with a high level of interactivity, more than one modality and a high level of usability. Responses to the website strongly influence responses to the brand, which is important because the ultimate goal of a brand website is probably not to improve responses to the website itself, but to improve brand image, create brand loyalty and to change responses to the brand (Müller et al., 2008; Holland & Baker, 2004). Our study also uncovered factors that influenced these kinds of responses directly. To improve responses to the brand, managers should build interactive websites. They should also trigger website users to make use of a large number of functions on the website. Nevertheless, it also seems that some types of products (functional products) are better suited for

promotion via a brand website than other types of products (auto-expressive products) because in one study the change in brand image and attitude toward the brand after exposure to a website was larger for functional products (e.g., mobile phones and household electrical appliances) than for auto-expressive products. Managers should keep this in mind when deciding to give the brands' website a more central position in the marketing communication campaign. Finally, because our review showed that even a single exposure to a website was able to change attitudes toward the brand or brand images, we encourage managers to use brand websites as a central medium in the marketing mix.

Our last advice is related to the current state of research on brand websites. Our study showed that a large majority of the current studies used forced exposure and a homogeneous student sample. However, many managers also investigate consumers' responses to their websites, often in cooperation with market research companies. Such studies often make use of surveys that are placed on the brands' website. In this way, participants are voluntary exposed to the website and a more heterogeneous sample is reached. Thus, these studies overcome important weaknesses found in academic research. Therefore, such practitioner research provides unique opportunities for cooperation between academic researchers and practitioners. Collaboration can improve the quality of studies in the field.

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* References marked with an asterisk indicate studies included in the vote-count.

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Appendixes

Table 1. *Influence of general user characteristics on responses to the website*

Independent variable	Dependent variable	All	Significant					References		
			P	N	*	M	Me		NS	
Demographics	cognition	-	-	-	-	-	-	-		
	affect	31	10	14	0	0	0	0	7	Heldal, Sjøvold, & Heldal, 2004; Steenkamp & Geyskens, 2006; Sears, Jacko, & Dubach, 2000
	behavior	7	3	4	0	0	0	0	0	Sears et al., 2000; Ha & Chan-Olmsted, 2004
	cognition	2	0	0	0	0	0	0	2	Sicilia & Ruiz, 2007
Familiarity	affect	33	3	0	0	0	0	0	30	Nysveen & Pedersen, 2004; Sicilia & Ruiz, 2007; Newman et al., 2004; O'Keefe et al., 2000
	behavior	4	2	0	0	0	0	0	2	Ha & Chan-Olmsted, 2004; Thorbjorson & Supphellen, 2004;
Other	cognition	-	-	-	-	-	-	-	-	
	affect	10	7	0	0	0	0	0	3	Ha & Chan-Olmsted, 2004; Newman et al., 2004
	behavior	24	4	0	0	0	0	0	20	Ha & Chan-Olmsted, 2004

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.

Table 2. Influence of psychological user characteristics on responses to the website

Independent variable	Dependent variable	All	Significant							References	
			P	N	*	M	Me	NS			
Motives	cognition	-	-	-	-	-	-	-	-	-	
	affect	21	4	1	0	0	0	0	16	0	O'Keefe et al., 2000
	behavior	21	7	3	0	0	0	0	11	0	Ko et al., 2005; Thorbjornson & Supphellen, 2004
	cognition	1	1	0	0	0	0	0	0	0	Chung & Zhao, 2004
Involvement	affect	6	4	0	0	0	0	0	2	0	Karson & Kargaonkar, 2001; McMillan et al., 2003; Sohn et al., 2007; Fortin & Dholakia, 2005
	behavior	13	4	0	0	4	4	4	1	1	Dahlén et al., 2003; Chung & Zhao, 2004; Wu, 2007
Perceived interactivity	cognition	1	0	0	0	0	0	0	1	0	Chung and Zhao, 2004
	affect	13	11	0	0	1	0	1	0	1	McMillan et al., 2003; Jee & Lee, 2002; Chung & Zhao, 2004; Sohn et al., 2007; Wu, 2005
Flow/ arousal	behavior	-	-	-	-	-	-	-	-	-	
	cognition	1	1	0	0	0	0	0	0	0	Sicilia & Ruiz, 2007
NFC	affect	8	6	1	0	1	0	1	0	0	Raney et al., 2003; Tung et al., 2006; Sicilia et al., 2005; Steenkamp & Geyskens, 2006; Fortin & Dholakia, 2005
	behavior	5	5	0	0	0	0	0	0	0	Nel et al., 1999
	cognition	1	0	0	0	0	0	0	1	0	Sicilia et al., 2005
	affect	7	1	0	0	2	0	0	4	0	Amichai-Hamburger et al., 2006; Amichai-Hamburger et al., 2004; Martin et al., 2005;
Other	behavior	10	0	0	0	3	0	0	7	0	Amichai-Hamburger et al., 2006; Amichai-Hamburger et al., 2004
	cognition	-	-	-	-	-	-	-	-	-	
Other	affect	6	1	0	0	2	0	0	3	0	Tung et al., 2006; Steenkamp & Geyskens, 2006; Chung & Eujiin, 2007; Supphellen & Nysveen, 2001
	behavior	-	-	-	-	-	-	-	-	-	

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.

Table 3 (continued). *Influence of website characteristics on responses to the website*

Independent variable	Dependent variable	All	Significant						References	
			P	N	*	M	Me	NS		
Useability	cognition	-	-	-	-	-	-	-		
	affect	12	12	0	0	0	0	0	Steenkamp & Geyskens, 2006; Singh et al., 2006; Supphellen & Nysveen, 2001	
Used functions	behavior	-	-	-	-	-	-	-		
	cognition	-	-	-	-	-	-	-		
	affect	3	0	0	0	0	0	3	Ha & Chan-Olmsted, 2004	
Other	behavior	-	-	-	-	-	-	-		
	cognition	-	-	-	-	-	-	-		
	affect	12	7	1	0	2	0	2	Steenkamp & Geyskens, 2006; Singh et al., 2006; Weinberg, Berger, & Hanna, 2003; Sears et al., 2000; O'Keefe et al., 2000	
	behavior	1	0	0	0	0	0	0	1	Weinberg et al., 2003

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.

Table 4. *Influence of message characteristics on responses to the website*

Independent variable	Dependent variable	All	Significant					References
			P	N	*	M	Me	
Type	cognition	-	-	-	-	-	-	-
	affect	5	1	0	0	2	0	2
	behavior	3	1	0	0	1	0	1
	cognition	1	1	0	0	0	0	0
Complexity	affect	7	1	0	0	4	0	2
	behavior	-	-	-	-	-	-	-
Argument strength	cognition	-	-	-	-	-	-	-
	affect	2	2	0	0	0	0	0
Product type	behavior	-	-	-	-	-	-	-
	cognition	-	-	-	-	-	-	-
	affect	-	-	-	-	-	-	-
	behavior	6	3	0	1	2	0	0

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; NS = non-significant relation; - = not tested.

Table 5. *Influence of exposure characteristics on responses to the website*

Independent variable	Dependent variable	All	Significant						References
			P	N	*	M	Me	NS	
Exposure	cognition	-	-	-	-	-	-	-	
	affect	2	0	1	1	0	0	0	Goldsmith & Lafferty, 2002; Chung & Euijin, 2007
	behavior	-	-	-	-	-	-	-	
Time	cognition	-	-	-	-	-	-	-	
	affect	8	0	0	0	1	0	7	Ko et al., 2005; Coyle & Thorson, 2001; Sears et al., 2000; Amichai-Hamburger et al., 2004
	behavior	6	0	1	0	0	0	5	Ko et al., 2005; Amichai-Hamburger et al., 2006; Amichai-Hamburger et al., 2004

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.

Table 6. *Influence of general user characteristics on responses to the brand*

Independent variable	Dependent variable	All	Significant					References
			P	N	*	M	Me	
Demographics	cognition	-	-	-	-	-	-	
	affect	1	0	0	0	0	0	1 Goldsmith & Lafferty, 2002
Familiarity	behavior	-	-	-	-	-	-	
	cognition	7	0	0	0	0	0	7 Sicilia & Ruiz, 2007; O'Keefe et al., 2000
	affect	7	0	0	0	0	0	7 Sicilia & Ruiz, 2007; O'Keefe et al., 2000
	behavior	3	0	0	0	0	0	3 Sicilia & Ruiz, 2007; Lee et al., 2004
Other	cognition	-	-	-	-	-	-	
	affect	-	-	-	-	-	-	
	behavior	-	-	-	-	-	-	

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.

Table 7. Influence of psychological user characteristics on responses to the brand

Independent variable	Dependent variable	All	Significant						References	
			P	N	*	M	Me	NS		
Motives	cognition	7	2	0	0	0	0	0	5	O'Keefe et al., 2000
	affect	7	2	0	0	0	0	0	5	O'Keefe et al., 2000
	behavior	-	-	-	-	-	-	-	-	
	cognition	-	-	-	-	-	-	-	-	
Involvement	affect	7	5	1	0	0	0	0	1	Müller & Chandon, 2003; Dahlén et al., 2003; Karson & Kargaonkar, 2001; Fortin & Dholakia, 2005
	behavior	4	2	0	0	1	0	0	1	Karson & Kargaonkar, 2001; Fortin & Dholakia, 2005
Perceived interactivity	cognition	-	-	-	-	-	-	-	-	
	affect	-	-	-	-	-	-	-	-	
Flow/ arousal	behavior	3	0	0	0	0	0	0	3	Jee & Lee, 2002
	cognition	1	0	0	0	0	0	0	1	Sicilia et al., 2005
	affect	1	0	0	0	0	0	0	1	Sicilia et al., 2005
	behavior	1	0	0	0	0	0	0	1	Fortin & Dholakia, 2005
NFC	cognition	-	-	-	-	-	-	-	-	
	affect	1	0	0	0	0	0	0	1	Martin et al., 2005
Other	behavior	1	0	0	0	0	0	0	1	Martin et al., 2005
	cognition	1	0	0	0	0	0	0	1	Chung & Euijin, 2007
	affect	-	-	-	-	-	-	-	-	
	behavior	-	-	-	-	-	-	-	-	

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.

Table 8. *Influence of website characteristics on responses to the brand*

Independent variable	Dependent variable	All	Significant					References
			P	N	*	M	Me	
Interactivity	cognition	7	1	0	2	4	0	Chung & Euijin, 2007; Keng & Lin, 2006; Sicilia et al., 2005
Features	affect	12	2	0	0	2	0	Jo & Kim, 2003; Sicilia et al., 2005
	behavior	2	0	0	0	1	0	Coyle & Thorson, 2001
	cognition	-	-	-	-	-	-	
	affect	28	3	1	0	13	0	Thorbjornson et al., 2002; Griffith & Chen, 2004
Design	behavior	2	1	0	0	1	0	Griffith & Chen, 2004
	cognition	-	-	-	-	-	-	
	affect	2	0	0	0	0	0	Karson & Kargaonkar, 2001
Modality	behavior	2	0	0	0	0	0	Karson & Kargaonkar, 2001
	cognition	-	-	-	-	-	-	
	affect	10	0	0	2	0	0	Raney et al., 2003; Jo & Kim, 2003
Fit	behavior	1	0	0	0	0	0	Coyle & Thorson, 2001
	cognition	-	-	-	-	-	-	
Useability	affect	1	0	0	0	0	0	Müller & Chandon, 2004
	behavior	-	-	-	-	-	-	
	cognition	-	-	-	-	-	-	
	affect	-	-	-	-	-	-	
Used functions	behavior	3	3	0	0	0	0	Singh et al., 2006
	cognition	-	-	-	-	-	-	
	affect	14	9	0	0	0	0	Ha & Chan-Olmsted, 2004
Other	behavior	11	10	0	0	0	0	Ha & Chan-Olmsted, 2004
	cognition	1	0	0	1	0	0	O'Keefe et al., 2000
	affect	1	0	0	0	0	0	O'Keefe et al., 2000
	behavior	-	-	-	-	-	-	

. Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested

Table 9. *Influence of message characteristics on responses to the brand*

Independent variable	Dependent variable	All	Significant						References
			P	N	*	M	Me	NS	
Type	cognition	-	-	-	-	-	-	-	
	affect	5	1	0	3	1	0	0	Singh & Dalal, 1999; Chiou & Cheng, 2003
	behavior	-	-	-	-	-	-	-	
	cognition	-	-	-	-	-	-	-	
Complexity	affect	14	4	0	0	8	0	2	Geissler et al., 2006; Martin et al., 2005; Chiou & Cheng, 2003
	behavior	6	1	0	0	3	0	2	Geissler et al., 2006; Martin et al., 2005
Argument strength	cognition	-	-	-	-	-	-	-	
	affect	3	2	0	0	1	0	0	Karson & Kargaonkar, 2001
Product type	behavior	2	1	0	0	0	0	1	Karson & Kargaonkar, 2001
	cognition	-	-	-	-	-	-	-	
	affect	7	3	0	0	1	0	3	Müller & Chandon, 2003; Chiou & Cheng, 2003; Griffith & Chen, 2004
behavior	1	1	0	0	0	0	0	0	Griffith & Chen, 2004

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.

Table 10. *Influence of exposure characteristics on responses to the brand*

Independent variable	Dependent variable	All	Significant					References		
			P	N	*	M	Me			
Exposure ²	cognition	-	-	-	-	-	-	-		
	affect	111	18	4	0	0	49	0	40	Müller & Chandon, 2004; Müller & Chandon, 2003; Raney et al., 2003
Time	behavior	4	1	0	0	0	0	0	3	Raney et al., 2003
	cognition	-	-	-	-	-	-	-	-	-
	affect	-	-	-	-	-	-	-	-	-
	behavior	-	-	-	-	-	-	-	-	-

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.

² The large number of relationships is caused by Müller and Chandon (2003 & 2004) who tested all items of the dependent variable measures separately.

Table 11. *Influence of responses to the website on responses to the brand*

Independent variable	Dependent variable	All	Significant					References	
			P	N	*	M	Me		
Cognitive processing	cognition	-	-	-	-	-	-		
	affect	5	4	0	0	0	0	1	Sicilia et al., 2006; Karson & Fisher, 2006
	behavior	-	-	-	-	-	-	-	
Affective processing	cognition	7	5	0	0	1	0	1	Goldsmith & Lafferty, 2002; Sicilia et al., 2006; Karson & Fisher, 2006
	affect	23	19	0	0	0	0	4	Ko et al., 2005; Müller & Chandon, 2004; Müller & Chandon, 2003; Raney et al., 2003; Sicilia et al., 2006; Karson & Fisher, 2006; Jo & Kim, 2003; Singh et al., 2006; Fortin & Dholakia, 2005
Conative processing	behavior	16	12	0	0	2	0	2	Ko et al., 2005; Raney et al., 2003; Sicilia et al., 2006; Jee & Lee, 2002; Singh et al., 2006; Fortin & Dholakia, 2005
	cognition	3	2	0	0	0	0	1	Chung & Zhao, 2004
	affect	-	-	-	-	-	-	0	-
	behavior	-	-	-	-	-	-	0	-

Note. All numbers are frequencies. P = positive relation; N = negative relation; * = non linear relation; M = moderated relation; Me = mediated relation; NS = non-significant relation; - = not tested.