EFFECTS OF SOURCE OF CUSTOMIZED RECOMMENDATIONS,
TYPE OF PRODUCT, AND AMOUNT OF CHOICE
ON CONSUMERS' ATTITUDES

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ABSTRACT

YEUSEUNG KIM: Effects of Source of Customized Recommendations, Type of Product, and Amount of Choice on Consumers' Attitudes
(Under the direction of Sriram Kalyanaraman)

Online shopping has gained tremendous popularity in the past decade, yet research is still needed on the psychological effects of the various elements that may affect consumers' attitudes toward online shopping websites. This dissertation examined the effects of customized recommendation sources, type of product, and amount of choice on consumers' attitudes toward a website. The interplay among the three variables was explored by asking participants to browse a shopping website and to report their perceptions of the site.

Using a 2 (Product type: identity-signaling, non-identity-signaling products) x 2 (Recommendation source cue: experts, other consumers) between-subjects experimental design, study one showed that people have a more positive attitude toward a customized website with customized recommendations for identity-signaling products than for non-identity-signaling products. While the source of recommendations (experts and other consumers) did not affect attitudes toward the website, perceived website credibility was found to mediate the relationship between the source and attitude toward the website.

In a 2 (Recommendation source: present, absent) x 2 (Amount of choice: high, low) between-subjects design, study two examined the main effects of the presence of explanation about the source of recommendations and amount of choice on attitude toward the website. As predicted, people had more positive attitudes toward the website

when the source of recommendations was provided than when there was a lack of explanation as to how the recommendations were made. Contrary to the proposed hypothesis, greater number of choices did not have the expected positive effect on attitude toward the website. However, as predicted, when the source of recommendations was provided, people found recommendations more useful when asked to choose a product from a greater number of options but not when only a limited number of choices was provided.

Overall, the findings of this dissertation add to the studies of customization and source of information. The results showed that the effect of providing customized service is not uniform and may be moderated by the type of product sold on an e-commerce site. While the source of recommendations did not have a direct effect on attitude toward the website, it influenced the overall credibility of the website, which is an important criterion for people when choosing a website to purchase products. Although study one did not show that different sources of recommendations have a varying effect on attitudes toward the website, study two showed that the presence of the source of recommendations has a positive effect on attitudes than the absence of one. Furthermore, making the source of recommendations clear to people had a positive effect on perceived usefulness of the recommendations when they were faced with a greater number of alternatives from which to choose.

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CHAPTER ONE

INTRODUCTION AND LITERATURE REVIEW

The Internet has influenced society in many ways. It provides individuals easy access to a wealth of information on a variety of topics, and serves as a tool to navigate such information (Alba et al., 1997; Dabholkar & Sheng, 2012; Häubl & Trifts, 2000). One area that has benefited greatly from the versatility of the Internet is that of online shopping. Indeed, Web-based shopping has gained tremendous growth in the past 10 years and has become one of the most popular online activities (Zickuhr, 2010). According to a Pew Internet survey, 66 percent of Internet users have made online purchases (Zickuhr, 2010), with this figure expected to rise even more as broadband connections and mobile devices permeate society (Enright, 2010; Rigby, 2011; Young, 2012).

One prominent feature of an online shopping website (compared to a bricks-and-mortar store) is its ability to provide recommendations to an individual almost instantaneously as soon as any piece of information about the customer is collected. Industry experts posit that improvement of this service is the key factor for continued success of e-commerce (Labenz, 2011). In a way, this is initiating a two-way dialogue, which taps into the interactive nature of the Internet (Liu & Shrum, 2002; Song & Zinkhan, 2008; Wu, 2006) and presumably allows consumers to navigate through the

overwhelming number of products and make better purchasing decisions (Alba et al., 1997; Gershoff, Mukherjee, & Mukhopadhyay, 2003; Häubl & Trifts, 2000).

In general, product recommendations are provided to match an individual's preferences and interests (Kramer, Spolter-Weisfeld, & Thakkar, 2007; Xiao & Bebasat, 2007). This is akin to principles of Web-based customization. In essence, Web-based customization is defined as any action that adapts information or services provided by a website to the needs of a particular user (Kalyanaraman & Sundar, 2006; Tam & Ho, 2005). The psychological appeal of offering personalized messages has been examined extensively from various perspectives ranging from health brochures to websites. For example, studies have shown that compared to generic messages, information that matches one's needs is more likely to be read and remembered, rated as attention-catching, discussed with others, perceived as personally relevant (Kreuter & Wray, 2003; Skinner, Strecher, & Hospers, 1994), and enhance individuals' attitudes and loyalty to a website (Kalyanaraman & Sundar, 2006; Srinivasan, Anderson, & Ponnavolu, 2002; Tam & Ho, 2005).

The substantial growth in e-commerce has garnered attention from scholars. Research in this area has evolved from simply examining consumers' general attitudes toward online shopping and compiling demographics and personal characteristics of online shoppers (e.g., Jarvenpaa, Tractinsky, & Vitale, 2000; Li, Kuo, & Russell, 1999) to uncovering consumers' psychological processes and the effects of elements unique to the online shopping environment (e.g., Dellaert & Häubl, 2012; Häubl &Trifts, 2000; Kumar & Benbasat, 2006; Li & Zhang, 2002). Theoretically, the mere presence of an interactive feature such as recommendations can act as a cue and has a persuasive appeal

to customers (Sundar, 2008; Sundar, Oh, Kang, & Sreenivasan, 2012). While the positive effects of providing product recommendations has been consistently shown in the literature (e.g., Diehl, 2005; Häubl &Trifts, 2000; Kumar & Benbasat, 2006), the notion of product recommendations offers a promising direction for further research for the following reasons.

First, while most research on recommendation tools has treated recommendations as "cues" that affect an individual's decision making process (e.g., Senecal & Nantel, 2004; Smith, Menon, & Sivakumar, 2005), few studies have explained *which* particular source cue would engender more positive attitude toward the interface (Sundar, Xu, & Oeldorf-Hirsch, 2009). The two source cues that are visible on the interface of a website are what Sundar (2008) calls "bandwagon heuristic" and "authority or expert heuristic." These source cues have been examined extensively in the communication technology literature (e.g., Sundar & Nass, 2001; Sundar, Knobloch-Westerwick, & Hastall, 2007; Sundar, Oeldorf-Hirsch, & Xu, 2008; Sundar et al., 2009), and the current practice of e-commerce generally employs one of the two source to recommend products. To provide a bandwagon cue, collaborative filtering is used to collect information about other users of a website and recommendations are made generally based on "what other consumers have bought." To provide an authority cue, recommendations are typically made based on experts' judgments about similarities of attributes among products. For example, depending on the particular artist or song that a user is listening to, Pandora.com recommends music based on experts' reviews of musical attributes including rhythm, genre, and other classifications. In contrast, Last.fm relies on collaborative filtering based on users' similarity to other users to suggest music.

A second question pertinent to the study of customized recommendations—one that has not drawn much attention thus far—is comparing the effects of recommendation source cues on different product types. Currently, e-commerce websites typically use one of the two source cues mentioned above without consideration of the type of products that are displayed for sale. However, this "one-size-fits-all" model may not be efficacious as there are theoretical reasons why the effects of different sources of recommendations might vary depending on product type. For example, while some products are purchased solely for functional purposes, some are selected to communicate desired identities (e.g., Berger & Heath, 2007; Berger & Heath, 2008). Berger and Heath (2007) showed that consumers opt to deviate from what others select when making purchasing decisions on music or hairstyles, compared to products such as toothpaste or dish soap. The effect of different source of recommendation cues can be explained under the rubric of this identity-signaling framework (Berger & Heath, 2007). Specifically, for a product associated with identity, consumers may opt not to rely on a bandwagon cue because they want to differentiate themselves from others. On the other hand, consumers may find the same cue useful for a non-identity-signaling product.

Another question that warrants further exploration is the effect of amount of choice. Although one of the advantages of online shopping is that users can search for a wide variety of products, some scholars suggest that consumers may be reluctant to make a purchase in situations where they are faced with too many choices (e.g., Iyengar & Lepper, 2000; Malhotra, 1982). This is because with limited cognitive resources, we cannot evaluate all the alternatives by ourselves and it becomes a cognitively taxing task (Johnson, 2008). Thus, an effective decision aid should advocate a comparatively

smaller number of alternatives (Bechwati & Lan, 2003; Diehl, Kornish, & Lynch, 2003; Häubl & Trifts, 2000) to allow consumers greater product scrutiny (Demangeot & Broderick, 2010). However, in many cases, consumers are still faced with many alternatives to compare and not necessarily provided a single best match. Given that the goal of customized recommendations is to help improve making purchasing decisions (Diehl et al., 2003; Häubl & Trifts, 2000), consumers may appreciate recommendations more when they are faced with a larger, rather than a smaller, number of options to choose from.

This dissertation attempted to make a modest contribution to the literature by examining the interplay between the type of recommendation source cue, product type, and amount of choice by asking participants to browse a shopping website and then measuring their attitudes toward the website. Specifically, study one tested the interplay between source of recommendations and product type, and study two tested whether the effect of the recommendation source cue is moderated by the amount of (product) choice.

The literature review begins by describing Web-based customization and customized recommendations and how they are defined and operationalized in the literature. Different sources of customized recommendations are discussed in this section. Next, a framework for how people use products to communicate desired identities is provided in the identity-signaling perspective section. Chapter Two describes hypotheses, method, and results for study one. Chapter Three describes the literature on the amount of choice and hypotheses, method, and results for study two. Chapter Four presents an overall summary of the findings of the two studies and provides theoretical and practical implications. Finally, limitations and directions for future research are provided.

Web-Based Customization

Customization Defined

The term *customization* refers to any effort to create products or services for an individual or to provide a unique piece of information or message to an individual. Scholars from different disciplines use terms such as *matching* (Petty & Wegener, 1998), *personalization* (Kreuter, Bull, Clark, & Oswald, 1999; Montgomery & Smith, 2009), and *tailoring* (Kreuter & Skinner, 2000; Kreuter & Wray, 2003) to refer to the concept of customization. Thus, *customized messages* can be defined as "matching messages to some aspect of the self" (Kalyanaraman & Sundar, 2006, p. 112; Petty & Wegener, 1998). Although exactly what can be customized differs across disciplines, the fundamental idea behind customization is that every individual receives a unique piece of content specially created for him or her (Pine, 1999) (for a review, see Kalyanaraman & Sundar, 2006).

Customization has received considerable attention from researchers in various fields. For example, scholars have examined how creating messages that match audiences' characteristics increase persuasion (e.g., Briñol & Petty, 2006; Petty & Wegener, 1998); in health communication, researchers often use tailored interventions based on individuals' characteristics to create individualized self-help materials in order to increase persuasion (Kreuter et al., 1999; Webb, Hendricks, & Brandon, 2007). Marketing researchers have discussed the movement from mass and targeted marketing to one-to-one marketing through customization (Piller & Tseng, 2010; Pine, 1999). In the context of an e-commerce environment, customization refers to the ability of an e-

retailer to tailor products, services, and transactional environments to individual

customers (Srinivasan et al., 2002). Applying this to practice, Dell and Nike are

examples of companies that have successfully promoted product customization by

providing a Web-based user tool that allows individual customers to select products that

suit their preferences.

Effects of Customization

The positive effects of customization are well established in the literature. In a

study on tailoring weight-loss materials, Kreuter et al. (1999) showed that participants

who received tailored materials listed more positive thoughts about them, felt a personal

connection to them, had more positive self-assessment thoughts, and intended to make

more behavioral changes compared to participants who received generic materials. Other

studies have also shown that when compared to non-tailored, or generic messages,

tailored messages are more likely to be read and remembered, rated as attention catching,

saved and discussed with others, and perceived as personally relevant (e.g., Kreuter &

Wray, 2003; Skinner et al., 1994). Moreover, the degree to which a company's product

offerings are customized to meet individuals' diverse needs has been found to be more

important than reliability of products in determining consumers' satisfaction (Fornell,

Johnson, Anderson, Cha, & Bryant, 1996).

In an online context, customized messages are known to promote attitudes that are

more favorable toward the website than non-customized messages (Beier &

Kalyanaraman, 2008; Kalyanaraman & Sundar, 2006), as well as generate stronger

memory for news content (Beier & Kalyanaraman, 2008). In a study by Tam and Ho

(2005), participants were provided with recommendations of ring tones for mobile phones that came from their favorite singers and preferred rhythms, as well as some randomly extracted from the ring tone pool. They found that providing personalized offers increased elaboration (i.e., participants showed a greater amount of cognitive activity) and acceptance of the recommended offers.

In addition to cognitive and affective outcomes, customization has positive effects on behavioral intentions and actual behaviors as well. For example, research has shown that providing personalized products and giving consumers some control to design their own products generate a higher willingness to pay for the product (Franke, Schreier, & Kaiser, 2010). Kalyanaraman and Sundar (2006) found that when exposed to highly customized content, versus less customized content, users clicked on fewer links and returned to the customized main page more often. In another study, researchers found that personalized e-mails generated higher click-through rates compared to generic messages (Ansari & Mela, 2003; Postma & Brokke, 2002). Similarly, using a field experiment, Malthouse and Elsner (2006) showed that customizing a cover letter significantly increased response rates to a catalogue that sells overstock books, music, and movies. For e-retailers, customized promotions can help increase store visits and shopping basket sizes and build consumer loyalty (Zhang & Wedel, 2009). Furthermore, since the cost of switching websites increases when users have invested time into providing personal data to receive customized information, they tend to be more loyal to a customized website than a non-customized one (Ansari & Mela, 2003).

In summary, studies on customization have unanimously demonstrated that customized or tailored information is more effective than generic information.

Customization has been positively related to favorable attitudes and increased

elaboration; moreover, it has positive effects on behavioral intentions and actual

behaviors.

Customized Recommendations

Although consumers are bombarded with a plethora of choices in an online

environment, most do not have the cognitive resources to evaluate all the alternatives

available to them (Johnson, 2008). In many cases, there is too much information—rather

than a lack of—which may leave consumers feeling overwhelmed (Aggarwal &

Vaidyanathan, 2003; Cho, Kim, & Kim, 2002). "Cognitive miser" is a metaphor often

used to describe the state of lack of cognitive capacity and the tendency to rely on cues or

heuristics that can simplify people's decisions (Bargh, 1999). In response to information

overload, websites provide recommendations to simplify the search and assist users in

making purchasing decisions among the vast array of choices (Alba et al., 1997; Häubl &

Trifts, 2000; Kumar & Benbasat, 2006; Nikolaeva & Sriram, 2008; Smith et al., 2005;

Wang & Benbasat, 2007).

Häubl and Trifts (2000) defined electronic, or interactive, decision aids as

software tools that make recommendations based on consumers' preferences in order to

assist the initial screening of product options. According to their definition, a decision

aid calibrates a model based on preference information provided by consumers to make

personalized product recommendations (Häubl & Trifts, 2000). In the literature, different

terminologies, such as "electronic recommendation agents" (e.g., Ariely, Lynch, &

Aparicio, 2004; Häubl & Murray, 2003; Wang & Benbasat, 2007), "recommender

systems" (e.g., Cho et al., 2002; Nikolaeva & Sriram, 2006), "shopping agents" (e.g., Aggarwal & Vaidyanathan, 2003; Häubl & Murray, 2003), and "shopping bots" (e.g., Rowley, 2000), are used interchangeably to refer to electronic decisions aids. While they may be labeled differently, the central goal of these aids is to generate personalized recommendations such that alternatives are sorted by their value to an individual consumer (Häubl & Trifts, 2000).

In addition to providing alternatives that match one's preferences, an effective recommendation tool provides a smaller number of alternatives to customers (Alba et al., 1997; Häubl & Trifts, 2000). In this dissertation, the term *recommendation* essentially refers to *customized recommendation* that is provided when an individual searches for a particular product (Kumar & Benbasat, 2006). For example, customized recommendations are made when users listen to a song and then other songs are recommended based on that first tune. Strictly speaking, the distinction between customized recommendation and recommendation could be made since the latter can be provided without any prior information about a user's interests. For example, when a user visits Amazon.com, he or she may see recommended products under the heading "What Other Customers Are Looking At Right Now" even when not logged in. Thus, sometimes recommendations do not necessarily have to be based on users' navigational behaviors or interests related to a particular product category.

Effects of Product Recommendations

Researchers have argued that the greatest benefit of purchasing products online is the availability of tools for searching through product options and listing them in the order of consumers' preferences (see Alba et al., 1997). It is now common to see shopping websites offer a set of products that are likely to be attractive to a particular user. Although these recommendation tools only make predictions about the fit of an option to consumers' preferences, they can enhance the shopping experience by enabling shoppers to focus on a limited number of products instead of overwhelming them with things that do not interest them (Diehl et al., 2003; Häubl & Trifts, 2000). For example, Bechwati and Lan (2003) demonstrated that consumers believe they expend less effort when decision aids are provided because without decision aids, they would have to compare and evaluate all the alternatives themselves.

When recommendations are provided, consumers are more likely to consider those products within the recommended set for purchase. That is, online shoppers are usually willing to rely on product recommendations made by websites (Häubl & Trifts, 2000). For example, by examining consumers' usage of online recommendations and their influence on online product choices, Senecal and Nantel (2004) empirically showed that consumers who consulted recommendations selected recommended products twice as often as those who did not consult recommendations. As a result, providing recommendations plays an important role in forming a positive relationship between an e-commerce site and a consumer, and subsequently, helps consumers stay loyal to the website (Kumar & Benbasat, 2006; Labenz, 2011).

The positive effect of providing recommendations can be explained by the MAIN model proposed by Sundar (2008). The MAIN model suggests that there are four technological *affordances*, or Web interface qualities, that are common to digital media: Modality (M), Agency (A), Interactivity (I), and Navigability (N). In essence, the model suggests that each of these qualities contains *cues* that trigger cognitive *heuristics*, or mental shortcuts, that influence an individual's attitudes and credibility (of a website) (Sundar, 2008; Sundar et al., 2012). Among these qualities, of particular interest in this dissertation are interactivity and agency affordances. Customization or providing customized recommendations is a technological feature that visibly shows that a website is interactive (Sundar labels this "contingency cue"). Merely having a feature such as this can trigger "own-ness" heuristic (Sundar, 2008; Sundar et al., 2012), and this can have a strong psychological appeal to users as discussed previously (e.g., Kalyanaraman & Sundar, 2006).

Furthermore, according to this model, explicitly revealing the source of recommendations can act as an agency cue. Depending on the identified source (or perceived source because sometimes the source may not visible—e.g., "the machine" or "the system" behind the interface of a website), certain cognitive heuristics can be triggered. This in turn can influence credibility of the information (Sundar, 2008; Sundar et al., 2012). In some cases, the source of information is unclear to a site user and difficult to identify (and sometimes users can misattribute to a different source). In terms of recommendation aids, some websites do not reveal how the recommendations are provided. In this case, users may think that "the machine" or the website somehow came up with recommendations. At other times, the sources of recommendations are clearly

communicated on the interface of a website and users can use that information as a cue to apply judgment rules they have about the sources (Sundar, 2008). Different operations of the source heuristics are discussed next.

Source of Recommendation Cues

Much research on online decision aids and product recommendations has been carried out in the fields of information systems and computer science. Many of these studies are focused on the technical aspects of recommendation aids and on generating and evaluating algorithms of recommender systems (Xiao & Benbasat, 2007). The central goal of these studies is to find a method that best predicts consumers' preferences to recommend products and as a result, maximizes satisfaction (e.g., Cho et al., 2002; Jiang, Shang, & Liu, 2010). However, some suggest that regardless of the quality of the recommendations, the process of *how* recommendations are made makes a difference in consumers' evaluations of the recommendations (Aggarwal & Vaidyanathan, 2003; Kumar & Benbasat, 2006). For example, according to Aggarwal and Vaidyanathan (2003), participants evaluated recommendations more favorably when they were told the recommendations were based on attributes of the products than when they were told the same recommendations were based on the evaluations of other similar users.

Therefore, in addition to developing sophisticated algorithms, research that can examine the effects of product recommendations from a psychological standpoint is called for. Information sources have been an important area of research in the study of communication (Sundar & Nass, 2001) and have attracted considerable attention due to the growth of digital media (Flanagin & Metzger, 2007; Schweiger, 2000; Sundar & Nass,

2001). Sources of recommendations can matter because for recommendations to be

effective, customers must place some confidence or trust in the source in order to accept

the recommended products. Also, it is important to tell customers why a set of

recommendations is provided because, scholars have suggested, they rely on the

recommendation more heavily when a strong rationale for why certain products are

recommended is provided than when no rationale is given (Häubl & Murray, 2003).

To seek a systematic way to organize different information sources, Sundar and

Nass (2001) explicated the concept of *source* and suggested a typology of sources that

applied to online news communications: the gatekeeper (the visible source), the

technology (the medium), the audience (other users), and the self. The *gatekeeper* is the

source that filters and delivers information to consumers. Examples of the gatekeeper as

a source are visible and self-evident media channels such as the *New York Times* website

or authors of news articles. The *technology* carries the information and can be a source

of information. In an online environment, the sender and the receiver may be

interchangeable, and the sender does not have to be the source of the message. In other

words, the user, who is typically regarded as the receiver of the message, may become the

source of information. Sundar and Nass (2001) explained that there are two levels of

receiver sources: the individual user, who is labeled as the self-as-source, and the

audience or other users, who are conceptualized as receivers on a collective level.

Sundar and Nass's (2001) findings showed that when other users were perceived

to be the source of online news, people liked the stories more and perceived them to be

higher in quality than when news editors or receivers themselves were perceived as the

source. Additionally, when the source was perceived to be other users, the stories were

considered more representative of the news. When the computer was perceived to be the source, the news stories were rated higher in quality than when news editors or receivers themselves were perceived to be the source (Sundar & Nass, 2001). Sundar and Nass concluded that different recommendation sources result in psychological differences in users' reactions.

In an e-commerce context, Senecal and Nantel (2004) identified three broad categories of popular information sources that aid consumers' decision making: recommendation agents, human experts, and other online consumers. Applying Sundar and Nass's (2001) conceptualization of source, the recommender system is the technology, a team of experts is the gatekeeper, and other consumers are the audience. To provide customized recommendations, shopping websites often use users' browsing behaviors or their explicitly stated preferences. With this information, each website can provide recommendations to match users' preferences. In this case, technology is the visible source of the recommendations.

According to Senecal and Nantel (2004), only recommendations provided by recommendation agents are considered customized recommendations. However, if employing the current research's definition of customization recommendation (see p. 10), recommendations made based on experts' opinions and other consumers can be considered as customized as well because they will be contingent on what an individual is browsing and will be unique to that individual. For example, instead of asking users to specify attributes that they prefer (and then use an algorithm each website has), websites can make recommendations based on other similar consumers' purchasing behaviors.

Such technology is called collaborative filtering and it involves aggregating data across customers to generate recommendations (Xiao & Benbasat, 2007).

This dissertation examines the two competing recommendation source cues that are currently widely used in online shopping websites: experts and other consumers. These are different from technology as the source because in order to use the technology as the source of recommendation, the website would need to have accrued data on users' behavioral patterns whereas the website might only need to know one product a user has looked at to recommend products based on experts or other consumers. Despite the proliferation of recommendations on e-commerce sites, little research explains which recommendation source cue is considered more persuasive.

Often, retail websites such as Amazon and Netflix provide information about what other customers who shopped for a particular product bought. The products are recommended based on collaborative filtering—that is, past purchase histories of similar consumers (Xiao & Benbasat, 2007). Such recommendations are typically labeled as "Other consumers who have bought this also bought . . ." or "Customers who viewed this also viewed . . ." Although information from other consumers is perceived as lower in expertise than information based on experts' opinions, some studies show that it is considered more trustworthy than recommendations made by recommender systems and human experts (Senecal & Nantel, 2004). That is, when people do not know which option to choose from, they tend to conform to the option chosen by the majority of others. This is so-called *bandwagon heuristic* (Sundar, 2008; Sundar & Nass, 2001). Studies on source cues have suggested that when bandwagon heuristic is triggered, it overshadows the expert or authority heuristic (Sundar & Nass, 2001; Sundar, Knobloch-

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Westerwick, & Hastall, 2007). People tend to follow other similar users rather than rely on experts in evaluating content such as news stories (Sundar & Nass, 2001; Sundar et al., 2007). Similarly, in a marketing context, a study has shown that peer consumers are highly preferred recommendation sources, especially for hedonic purchases (e.g., choosing a restaurant for a birthday party), even when the peer is described as low in rapport and expertise (Smith et al., 2005). In another study, other consumers were considered more influential than movie critics in increasing behavioral intentions to watch a movie (Wang, 2005).

According to this bandwagon effect, consumers are more likely to follow recommendations based on other consumers (Sundar & Nass, 2001). However, there are theoretical reasons why the bandwagon heuristic may not always dominate consumers' decision making. In other words, instead of conforming to what others have bought, consumers may seek to exhibit their identity and diverge from the majority to show their uniqueness (Berger & Heath, 2007). Thus, the following sections introduce different categorization of products and the identity-signaling perspective.

Effects of Product Type

Scholars have pointed out that research on comparing product types is lacking in e-commerce literature (e.g., Verhagen, Boter, & Adelaar, 2010). Indeed, only a handful of empirical studies on customization and product recommendations compare the effect of type of product. For example, Moon and colleagues (2008) showed that individuals are more likely to buy personalized products for search goods (e.g., desktop computer)

than for experience products (e.g., sunglasses). However, most studies only examined a single type of product (e.g., Adelaar, Chang, Lanchndorfer, Lee, & Morimoto, 2003; Senecal & Nantel, 2004; Tam & Ho, 2005).

There are a number of different ways to classify product types. Products may be categorized into goods and services (e.g., Verhagen et al., 2010), search goods and experience goods (e.g., Huang, Lurie, & Mitra, 2009; Moon, Chadee, & Tikoo, 2008), or utilitarian and hedonic products (e.g., Sen & Lerman, 2007; Strahilevitz, 1999). For tangible or search goods, it is easy to verify and inspect product attributes before making a purchase. For intangible or experience goods, it is generally infeasible to verify or inspect the attributes without purchasing and consuming the product (Aggarwal & Vaidyanathan, 2003). Utilitarian or necessity products are bought mainly to accomplish a functional task while hedonic or luxury products are mainly consumed to satisfy emotional wants (Strahilevitz, 1999). How scholars categorize and use various types of products largely depends on the central focus of the study. Since the central focus of this dissertation is customized recommendations, or relating information to one's self, the identity-signaling perspective is used to categorize product types.

Identity-signaling Perspective

Consumers purchase products not only for their functional purposes, but also for what they symbolize. As consumers' form relationships with brands and project meanings onto products, they use purchases to define one's self-concept based on brand–user associations (e.g., Escalas & Bettman, 2003; Escalas & Bettman, 2005). Therefore, when people make a choice, it can act as markers or signals of one's identity, and in fact,

many consumer choices are made, in part, to communicate personal identity (Berger & Heath, 2007; Berger & Rand, 2008; Chernev, Hamilton, & Gal, 2011; Oyserman, 2009). Thus, in the context of current study, the assumption is that choosing a specific product for an identity-signaling product category is a way to express one's identity. Whether a certain product category is used as a way to signal one's identity or not might vary by culture, however, this issue will not be examined in this dissertation research. Therefore, the following literature and predictions are based on western culture.

The identity-signaling model proposed by Berger and Heath (2007) demonstrates that people are more likely to diverge in domains that others use to infer identity. That is, across individuals and independent of temporary situational pressures, the number of other people interested in a certain product has a significant impact when people diverge from popular options in identity-relevant domains (Berger & Heath, 2007). For example, when asked to choose a product that is an option preferred by 65% of others, 25% of others, or 10% of others, people were more likely to choose the 10% option when the product domain was identity relevant, such as music genre, hairstyle, and favorite music artist. In domains that were publicly visible, people were more likely to choose the middle group (25%). In functional and non-identity domains such as bike lights and laundry detergent, people converged with the majority (i.e., they chose the 65% option). In another study, Berger and Rand (2008) found that consumers made healthier choices by consuming less alcohol and selecting less fattening foods when consumption of alcohol and fattening foods was associated with a group that participants did not want to belong to.

Sometimes people have the urge to engage in identity-based actions (Oyserman, 2009) and sometimes they want to show their uniqueness, in which case being too similar to others may generate a negative emotional reaction (Snyder & Fromkin, 1977). The identity-signaling model suggests that people diverge to avoid being associated with undesired identities—it could be a specific group of people or just a majority of other consumers.

In the following studies, the product classification suggested by Berger and Heath (2007) is used. Because an individual's unique self-identity is prominent in customized websites, an individual's self-concept could become apparent and important when browsing a customized website and purchasing a product from a list of customized recommendations. Thus, the need to diverge from others may be pronounced for identity-signaling products. The goal of the first study is to examine whether type of products (i.e., identity-signaling or non-identity-signaling products) influences how users of a shopping website respond to the sources of product recommendations.

CHAPTER TWO

STUDY ONE

Hypotheses

Chapter one provided a review of literature on customization, source of recommendation as a cue for evaluating a website, and type of products. Based on the discussion thus far, formal hypotheses are presented in this chapter. (See Table 1 for a summary of all hypotheses for studies one and two.) Overall, study one involved testing whether identity-signaling is activated in a situation in which consumers are asked to make a purchase from a list of customized recommendations. Using the identity-signaling framework, it is proposed that consumers will respond differently to customized websites and the source of recommendations depending on the type of product involved.

Effect of Product Type on Attitude Toward Customized Website

While the main effects of customization are well established, scholars have now begun to investigate moderators of customization effect. For example, preference insight is known to moderate the benefits of customization (e.g., Franke, Keinz, & Steger, 2009; Kramer et al., 2007). Although the basis for customization is providing content that matches one's preference, it can only be effective if a user has well-defined preferences and is aware of them (Kramer et al., 2007; Simonson, 2005). Consumers high on the

individualism dimension are more likely to purchase customized products online than those from a collectivistic culture (Moon et al., 2008), and consumers who are interdependent or have collectivistic tendencies are more receptive to recommendations that are not individually personalized but are made toward relevant in-groups, or targeted recommendations (Kramer et al., 2007). Another line of research showed that consumers with independent self-construal prefer exclusive deals that are available only to them rather than inclusive offers that are available to other consumers as well (Barone & Roy, 2010). All of these studies suggest that the effects of customization may not be uniform across individuals and context.

As examined in the literature review, customization is effective essentially because it increases personal relevance by providing information that matches consumers' individual preferences (Moon et al., 2008; Kalyanaraman & Sundar, 2006; Petty & Wegener, 1998), and thus, creates a sense of uniqueness for an individual. Since an individual's desire to be a unique self is at the center of what makes a product an identity-signaling product, it can be predicted that consumers will appreciate and exhibit more positive attitudes toward customization when browsing a website for an identity-signaling product than for a non-identity-signaling product.

H1: Individuals will have a more positive attitude toward a customized website for identity-signaling products than for non-identity-signaling products.

Effect of Source of Recommendation on Attitude Toward Customized Website

Predicting the effect of different recommendation source cues on attitude toward the website is a complex question. The impact of cues in a persuasion context has been studied extensively under dual-process theories of persuasion. Evidence shows that individuals can use a cue (e.g., source of information) as a heuristic, or a mental shortcut, to form an attitude about a message (e.g., Bargh, 1999; Chen & Chaiken, 1999; Petty & Cacioppo, 1981; 1986; Sundar, 2008). For example, when an expert endorses an ad, the heuristic that expertise implies accuracy and trust is invoked, which can lead to positive evaluation about the overall ad.

The effects of both "bandwagon heuristics" and "authority heuristics" on attitude change are well document in the literature (e.g., Metzger, Flanagin, & Medders, 2010; Sundar & Nass, 2001; Petty & Cacioppo, 1981). While scholars agree that recommendation source acts as a cue for assessing quality of products or websites (e.g., Smith et al., 2005; Sundar, 2008), it is not clear which source cue is considered more credible (Sundar et al., 2009). Therefore, identity-signaling perspective is applied to explain why source effect may be qualified by the category of product sold on the website.

Interaction Between Product Type and Recommendation Source on Attitude Toward Customized Website

When people do not know which option to choose from, they tend to conform to the option chosen by the majority (e.g., Metzger et al., 2010). Especially under conditions of uncertainty, consumers have a tendency to rely on others for information

about whether or not they will like a product (Metzger et al., 2010). Studies have shown that this bandwagon heuristic, or following the majority others, plays an important role in evaluating content such as news stories (e.g., Sundar & Nass, 2001; Sundar et al., 2007) as well as in product purchasing situations (e.g., Smith et al., 2005; Wang, 2005).

However, the identity-signaling perspective and literature on uniqueness suggest otherwise. In some instances, consumers may choose not to follow what the majority of other consumers bought because people have the desire to differentiate themselves with certain types of products (Berger & Heath, 2007). In these product domains, rather than relying on others, the information about what other consumers bought may signal them to diverge from it (Berger & Heath, 2007; Berger & Rand, 2008). For a non-identity-signaling product, however, consumers are expected to find information about other consumers useful, and thus, conform to what others have bought. Therefore, the following hypothesis about the interaction effects of product type and recommendation sources is presented:

> **H2:** There will be an interaction effect between product type and source of recommendation on the attitudes of individuals toward the website. For products that do not signal identity, individuals will have more positive attitude toward the website when recommendations are made based on other consumers than experts. However, for products that signal identity, individuals will have more positive attitude toward the website when recommendations are made by experts than when recommendations are made based on other consumers.

Perceived Website Credibility

Several research has consistently shown that perceived credibility influences attitudes and persuasion (e.g., Flanagin & Metzger, 2007; Kalyanaraman & Ivory, 2009; Lafferty & Goldsmith, 1999; Lafferty & Goldsmith, 2004; Metzger, Flanagin, Eyal, Lemus, & McCann, 2003; Ohanian, 1990; Schweiger, 2000; Sternthal, Dholakia, & Leavitt, 1978). A study by Flanagin and Metzger (2003) is one of the first studies that showed there are different layers of credibility issues in an online environment. In addition to the source of information and message credibility, they showed that the credibility of the website as a whole can be distinctly evaluated by a user.

Guided by the MAIN model (Sundar, 2008), it is predicted that the recommendation source will act as an indicator of quality of the website. Sundar (2008) suggests that because showcasing the source of recommendations is associated with the design feature of a website, it affects first impression of the website, and in effect, affects an individual's judgment about website credibility. Therefore, in the context of the current study, the source of recommendation will likely affect the overall perceptions of website credibility, which in turn will affect attitudes toward the website. Accordingly, the following hypothesis is proposed:

H3: The effects of the source of recommendation on attitude toward the website will be mediated by perceived website credibility.

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Method

The main purpose of study one was to test the interplay between product type and source of recommendation. This was examined using a 2 (Product type: identity-signaling, non-identity-signaling products) x 2 (Recommendation source: experts, other consumers) fully crossed, between-subjects design. To conduct the experiment, the study required two contacts with each participant. When participants signed up for the study, they were told that this was a two-part study where they first had to take a pre-experiment online survey (Appendix A). After approximately one week, they were asked to come to a computer lab and complete the second part of the study. Informed consent was obtained according to Institutional Review Board (IRB) guidelines, and all participants signed a consent form (Appendix B) prior to their participation in the lab session.

Participants

A total of 96 male and female students were randomly assigned to the four conditions, which resulted in 24 participants per condition (this excluded a few participants who only participated in the first part of the study). Participants were recruited from the undergraduate research pool in the School of Journalism and Mass Communication at the University of North Carolina at Chapel Hill. Participation was completely voluntary, and all participants received extra credit in exchange for their time. Of the 96 participants, 69% were female (n = 66) and 31% were male (n = 30). Mean participant age was 21.04 years (SD = 1.05), ranging from 18 to 25 years.

Pre-experiment Questionnaire

Prior to conducting the main study, an e-mail was sent to students who signed up to participate in the study. In the e-mail, they were thanked for volunteering to participate in a research study. They were told that this is a study that looked at university students' views on different issues and students' preferences. Then they were directed to an online survey. In the questionnaire, participants were asked to rate their views on various topics and give information about their preferences for different product categories (e.g., favorite music genre, artist, computer, automobile, shampoo, toothpaste, etc.) to disguise the purpose of the study. To find out their favorite products, they were asked to list likes and dislikes of various product categories (e.g., artists, brand of products). Following Kalyanaraman and Sundar (2006) and Beier and Kalyanaraman (2008), the purpose of this procedure was to construct a customized website and offer personalized recommendations for each participant based on his or her responses. At this stage, participants were randomly assigned to one of the four experimental conditions.

Independent Variables

Two independent variables—source of recommendations and product type—were manipulated as described below.

Source of Recommendations. Source manipulation followed the procedures described by Senecal and Nantel (2004). Participants were told that recommendations were either based on an evaluation of the participant's favorite product by experts or what other consumers who like the participant's favorite product also bought. As reviewed in the literature, these recommendation source cues are those most often utilized for

providing recommendations to users. This manipulation was contained in the instructions for the study that participants read on their individual screens and was clearly stated in the shopping website as well.

Product type. Based on the study by Berger and Heath (2007), music was used as an identity-signaling product and toothpaste was used as a non-identity-signaling product. To ensure that each represents identity-signaling and non-identity-signaling product domain, participants were asked to rate their opinions about several product categories in the pre-experiment questionnaire. They were asked to rate to what degree a product category contributes to self-expression, to what extent people use it to make inferences about others, and to what degree it expresses one's identity on a 7-point Likert scale from $1 = not\ at\ all$ to $7 = a\ great\ deal$ (adapted from Berger & Heath, 2007). The mean identity-signaling index for musical preference ($M = 5.16$, $SD = 1.23$) was statistically significantly higher than that of toothpaste ($M = 1.44$, $SD = .71$) ($t = -28.12$, $p < .001$). Therefore, musical preference was used as an identity-signaling product and toothpaste was used as a non-identity-signaling product.

Stimulus Materials

The stimuli created for each individual in this study was a fictitious online shopping website. The stimulus materials were created based on each participant's responses to the pre-experiment questionnaire. (See Appendix C for sample stimulus materials.)

The first page of the website provided participants with study instructions. Participants were told that the purpose of this study was to assess their perceptions of an

online shopping website called *My-Favorite-Shop.com*, which is a startup company with an aim to provide personalized shopping services. They were asked to try out this website and provide feedback about its appeal and functionality.

The second page took participants to the mock online shopping website. Since the website and the recommended products were personalized to each individual, each participant was greeted with his or her name on the top of the website. The main product shown on the website was one of his or her favorite products based on the pre-experiment questionnaire they filled out. Depending on the experimental condition that they were assigned to, participants saw products and related information about either toothpastes or musical artists. Below the picture and description of the product, participants were recommended five products either based on experts' evaluation of the product or what other consumers who were interested in the product also bought, depending on the experimental condition. For each product, participants were able to click on the pictures or links below them to read a short description about the recommended products.

Since some websites already provide a list of recommendations when a user searches for a specific product, existing websites were used to select recommended products for the study stimuli. Specifically, Amazon.com (for toothpastes) and Last.fm (for musical artists) were used to provide recommendations. Participants' pre-experiment questionnaire was carefully examined to make sure products that were listed as their dislikes were not included in the recommended products. In total, 96 unique fictitious online shopping websites were created.

Main Study Procedure

The main study was conducted in a computer lab, where the experiment was administered to groups of about 10 students at a time. When participants arrived at the lab, they were individually assigned to a computer station pre-loaded with personalized test materials. They were told not to touch anything before they were given further instructions. After all participants settled down in front of a computer station, first, they were asked to read and sign an informed consent form. When everyone agreed to participate, they were told by the facilitator that the website they were about to view was a startup online shopping website still in development. Participants were told that the website provided a customized shopping experience for each individual and that they were being asked to try out the website and provide feedback about its appeal and functionality. They were also told that when the website is complete and publicly available, they will be able to add more of their favorite products and make purchases, as well. Finally, participants were told that after they were done browsing the website at their own pace, they would be asked about the features of the website and asked to choose a product they were interested in purchasing. This instruction was provided so that participants would be encouraged to pay full attention to the content of the website.

After that, they were given instructions on how to proceed on their individual computer screens. Depending on the source condition, participants read one of the following statements in the instructions: "The products are recommended based on an evaluation of the attributes of your favorite product by experts," or "The products are recommended based on purchases of other consumers who also like your favorite product." To ensure that participants were exposed to the *source* of recommendations,

the way in which recommendations were made was explained before the participants

were taken to the shopping website; this was also explicitly described above the

recommended products.

Immediately after participants finished browsing the website, they were asked to

select one of the recommended products that they would like to purchase.[1] They then

completed a Web-based questionnaire. The questionnaire contained a set of manipulation

check questions, dependent variables, and control variables. After completing the

questionnaire, participants received a debriefing message and were dismissed.

Dependent Variables

Attitude toward the website. Attitude toward the website scale was adapted

from Kalyanaraman and Sundar (2006). Participants were asked to rate how well the

following adjectives described the website that they just reviewed on a 7-point Likert

scale from 1 = *describes very poorly* to 7 = *describes very well*: appealing, useful,

positive, good, favorable, attractive, exciting, pleasant, likeable, high-quality, and

interesting. These items formed the attitude toward the website index ($\alpha = .95$).

Website credibility. The Website credibility measure was adapted from Flanagin

and Metzger (2003) and Trifts and Häubl (2003). Participants were asked to rate their

perceptions of the website on six items measuring the extent to which: they trusted the

information, believed the information credible, found the information of high quality,

found the information accurate, found the information reliable, found the information

believable, and found the information presented on the website dependable on a 7-point

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[1] In the identity-signaling product condition, participants were asked to select an artist whose album they
were interested in purchasing.

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scale from 1 = *strongly disagree* to 7 = *strongly agree*. These items were used to form an

index for website credibility (α = .93).

Manipulation Checks

      Recommendation source. Following Senecal and Nantel (2004), the

manipulation check for the source condition was performed by asking participants to

identify which type of recommendation source they viewed. They were asked to rate

their level of agreement with the following statements: "Recommendations were made

based on experts' evaluations of my favorite product and" and "Recommendations were

made based on other consumers who also like my favorite product" on a 7-point Likert

scale from 1 = *strongly disagree* to 7 = *strongly agree*.

      Product type. Participants were asked to rate to what degree music (or

toothpaste) contributes to self-expression (i.e., a person's ability to express his or her

identity), to what extent people use music (or toothpaste) to make inferences about others

(i.e., to know information about a person based on his or her choice), and to what degree

music (or toothpaste) expresses one's identity on a 7-point Likert scale from 1 = *not at all*

to 7 = *a great deal* (adapted from Berger & Heath, 2007). The three statements were

used to form a "domain identity relevance" index (α = .96).

      Perceived website customization. To check whether participants in all

conditions indeed felt that the shopping website was customized, perceived website

customization was measured. Participants were asked to respond to the following

prompts on a 7-point Likert scale from 1 = *strongly disagree* to 7 = *strongly agree*: "The

website was customized according to my interests" and "The website targeted me as a unique individual" (adapted from Kalyanaraman & Sundar, 2006) ($r = .78, p < .001$).

Control Measures

Considering the independent variables of the study, several potential covariates were identified based on the literature. To eliminate potential confounding effects, a series of questions was asked to measure product involvement, need for uniqueness, subjective knowledge, and concern for privacy.

Product involvement. When people are involved with a product category, their preexisting cognitive structure may guide the interpretation of any new information (Zaichkowsky, 1994). For example, when consumers have a strong sense of personal importance and relevance about a product category, they may pay more attention to the information related to the product category while consumers who have lower personal involvement may disregard the information (Laczniak, Kempf, & Muehling, 1993). Therefore, general product category involvement was measured using a 10-item scale composed of unimportant/important, boring/interesting, irrelevant/relevant, unexciting/exciting, means nothing/means a lot to me, unappealing/appealing, mundane/fascinating, worthless/valuable, uninvolving/involving, and not needed/needed (Zaichkowsky, 1994). These items were used to form an index for product involvement ($\alpha = .93$).

Need for uniqueness. Need for uniqueness is the internal drive to be different. Research on uniqueness has shown that people differ regarding their desire to be unique (Snyder & Fromkin, 1977). People with higher needs for uniqueness prefer products that

are more scarce or unique, whereas those with a low need for uniqueness may make their choices in line with others (Tian, Bearden, & Hunter, 2001). Because some individuals may diverge more than others in the specific domains they find personally important, need for uniqueness was measured and controlled. (See Appendix D, Questions 23-25 for a list of items.) These items were used to form an index for need for uniqueness (α = .97).

Subjective knowledge. When people are knowledgeable about a certain product category, information processing becomes easier, and the expected effects of providing recommendations may lessen. For example, people who are knowledgeable and have expertise may not rely on recommendation cues, and having too many choices may not be overwhelming (Scheibehenne, Greifeneder, & Todd, 2009). Thus, subjective knowledge was measured and controlled. Participants were asked to rate the following statements on a 7-point Likert scale: "I know a lot about music (toothpaste)," "I don't feel very knowledgeable about music (toothpaste)," "Among my circle of friends, I'm one of the 'experts' about music (toothpaste)," "Compared to most other people, I know less about music (toothpaste)," and "When it comes to music (toothpaste), I really don't know a lot" (Flynn & Goldsmith, 1999). These items were used to form an index for subjective knowledge (α = .92).

Concern for privacy. Privacy concerns have been identified as key antecedents to online behavior and online transactions, especially when personal information is used (e.g., Chellappa & Sin, 2005; Taylor, Davis, & Jillapalli, 2009). On a 7-point Likert scale, participants were asked to rate the following statements: "I am sensitive about giving out information regarding my preferences," "I am concerned about anonymous

information that is collected about me," "I am concerned about how my non-personally identifiable information will be used by the firm," and "I am concerned about how my personally identifiable information will be used by the firm" (Chellappa & Sin, 2005). These items were used to form an index for concern for privacy ($\alpha = .78$).

Results

First, continuous measures were examined for any outliers and bivariate correlations were examined to assess whether there were any significant correlations between attitude toward the website (the main dependent variable) and the control variables.

Descriptive Statistics

The data were screened for missing values, outliers, and normality. There were no missing values in all 96 cases. Standardized scores and the Mahalanobis distance were checked to screen for outliers, and the scores were within acceptable limits. For all continuous variables, skewness and kurtosis were tested to check normality of distribution. There were no variables that had a severely high z score for skewness and kurtosis that required transformation (see Table 2). Correlations between the dependent variable and other continuous variables are found in Table 3.

Scale Assessment

All multi-item scales were averaged to form indices, and reliability of the measures was assessed via Cronbach's α (or Pearson's *r* for scales with only two items).

Manipulation Checks

A series of ANOVAs was performed to check the manipulation of product types and recommendation sources. The results confirmed that the manipulations were successful. (Results for manipulation check analyses are shown in Table 4.)

Recommendation source. Recommendation source manipulation was checked by asking participants to indicate their agreement to the two statements to measure their perceived source of recommendation. A series of ANOVAs were conducted, and results confirmed that the manipulation was successful. Participants in the "expert as source" condition scored significantly higher ($M = 5.77$, $SE = 1.40$) on the expert item ("The recommendations were made by experts") than participants in the other consumer conditions ($M = 2.27$, $SE = 1.40$), $F(1, 94) = 150.23$, $p < .001$. Conversely, participants in the "other consumer" conditions scored significantly higher ($M = 6.04$, $SE = 1.07$) on the other consumer item ("The recommendations were made by other consumers") than participants in the "experts" condition ($M = 3.42$, $SE = 2.04$), $F(1, 94) = 62.29$, $p < .001$.

Product type. An ANOVA was conducted to ensure that music and toothpaste each represented an identity-signaling and a non-identity-signaling product. The results revealed a statistically significant main effect for the domain identity relevance index. Participants rated music significantly higher ($M = 5.56$, $SE = .75$) than toothpaste ($M = 2.15$, $SE = 1.19$) on the domain identity relevance index, $F(1, 94) = 279.02$, $p < .001$.

The effect of source of recommendation was not statistically significant nor was an interaction effect between the source of recommendation and type of product.

Perceived customization. Lastly, an ANOVA was used to check participants' perceptions of website customization for each condition. While the main effect of source of recommendation and an interaction effect between the source of recommendation and product type did not attain statistical significance, the main effect of type of product was statistically significant. Specifically, the mean score for the perceived customization index for identity-signaling product was higher ($M = 5.48$, $SE = .96$) than that for non-identity-signaling product ($M = 5.00$, $SE = 1.36$), $F(1, 94) = 3.98$, $p < .05$. This seems to suggest that participants in the identity-signaling product condition perceived the online shopping website to be more customized than those in the non-identity-signaling condition. Nevertheless, since both groups scored high on a 7-point scale, it was regarded that they all perceived the website to be customized. While this result was not foreseen, it evokes an interesting conceptual question that will be discussed in the general discussion chapter.

Analysis of Potential Control Variables

The control measures were analyzed to see if they had any effect on the dependent measures.

Product involvement. The 10-item product involvement scale was reliable (α = .93), and the items were averaged to form a single score ($M = 5.19$, $SD = 1.38$). Bivariate correlation showed significant relationship between product involvement and

attitude toward the website ($r = .44$, $p < .01$). Thus, product involvement was controlled

for in the following analyses.

Need for uniqueness. The 31-item scale was reliable ($\alpha = .97$), and the items were

averaged to form a single score ($M = 3.21$, $SD = 1.14$). Bivariate correlation showed no

significant relationship between need for uniqueness and the dependent measure.

Therefore, this measure was not included in further analyses.

Subjective knowledge. The 6-item subjective knowledge scale was reliable (α

$= .92$), and the items were averaged to form a single score ($M = 4.25$, $SD = 1.51$).

Bivariate correlation showed a significant positive relationship between subjective

knowledge and attitude toward the website ($r = .28$, $p < .01$). Thus, subjective

knowledge was included as a covariate in the subsequent analyses.

Concern for privacy. The 4-item scale was reliable ($\alpha = .78$), and the items were

averaged to form a single score ($M = 3.59$, $SD = 1.38$). However, bivariate correlation

between concern for privacy and the dependent measure showed no significant

relationship. Thus, this variable was not included in further analyses.

Tests of Hypotheses

H1: Main effect of product type on attitude toward customized website.

Product type effect was hypothesized such that individuals would have a more positive

attitude toward a website for identity-signaling products than for non-identity-signaling

products. This hypothesis was tested by means of an ANCOVA. Results revealed that a

main effect for product type on attitude toward the website was statistically significant,

$F(1, 92) = 4.15$, $p < .05$, $\eta^2 = .04$ (see Table 5). Follow-up analysis of the means showed that participants who reviewed the website with musical artists ($M = 5.07$, $SE = 1.12$) had more positive attitudes toward the website than participants who shopped for toothpastes ($M = 4.59$, $SE = .96$). Therefore, H1 was supported.

H2: Interaction effect of product type and recommendation source on attitude toward the website. H2 predicted that there would be an interaction effect between product type and source of recommendations on attitude toward the website. It was predicted that for products that do not signal identity, individuals would have more positive attitudes toward the website when recommendations from other consumers rather than experts are provided. For products that signal identity, individuals were expected to exhibit more positive attitudes toward the website when products recommendations come from experts than other consumers. An ANCOVA indicated the two-way interaction between product type and recommendation source for attitude toward the website was not significant, $F(1, 90) = 2.19$, $p > .05$, $\eta^2 = .024$ (see Table 6). Therefore, H2 was not supported. When shopping for a music album, the means were in the predicted direction. Participants had more positive attitude toward the website when recommendations were from experts ($M = 5.28$, $SE = .91$) than when they were from other consumers ($M = 4.86$, $SE = 1.27$). However, when shopping for a toothpaste, the mean attitude toward the website was almost the same for both experts ($M = 4.66$, $SE = 1.09$) and other consumers ($M = 4.50$, $SE = .82$) (see Table 7). A plot of attitude toward the website by source of recommendation and product type is shown in Figure 1.

H3: Perceived website credibility as a mediator between source of recommendation and attitude toward the website. H3 predicted that the relationship

between the source of recommendations and attitude toward the website would be mediated by perceived website credibility. A mediation analysis following Preacher and Hayes (2004) was performed. Using the bootstrapping method, the estimate of the indirect effect of the source on attitude toward the website through website credibility was significant, controlling for subjective knowledge and product involvement.

As Hayes (2009) noted, while the relationship between an independent variable (X) and a dependent variable (Y) was not significant, the effect of X of on Y was carried in part through a mediating variable. This relationship would not have been detected if the causal steps approach by Baron and Kenny was used (see Zhao, Lynch, & Chen, 2010). The mediation analysis revealed no significant total effect of source of recommendation on attitude toward the website ($\beta = -.12$, $t = -.55$, $p > .10$). However, the path from source to website credibility was significant ($\beta = -.40$, $t = -2.23$, $p < .05$), as was the path from website credibility to attitude toward the website ($\beta = -.66$, $t = -6.17$, $p < .01$). This indicates that there is an indirect-only relationship between the source of recommendations and attitude toward the website mediated by perceived website credibility (Figure 2). Therefore, H3 was supported.

Additional analysis was conducted to observe the direction of the means for recommendation source cue effect on website credibility. The results revealed that participants who viewed the shopping website with recommendations by experts ($M = 5.36$, $SE = .94$) found the website to be more credible than participants who viewed websites with recommendations by other consumers ($M = 4.92$, $SE = .82$), $F(1, 90) = 4.97$, $p < .05$, $\eta^2 = .60$ (see Tables 8 and 9).

Summary of Results

As predicted, study one showed that customization may not be equally effective for all types of products. Participants had more positive attitude toward the customized shopping website when shopping for an identity-signaling product (music) than for a non-identity-signaling product (toothpaste) controlling for product involvement and subjective knowledge. This confirmed that because the central focus of customization is matching and providing information unique to one's self (Kalyanaraman & Sundar, 2006; Petty & Wegener, 1998), providing a website that contains customized information and thus related to one's unique identity has more positive effects for an identity-signaling product than a non-identity-signaling product.

Also as expected, perceived website credibility mediated the influence of recommendation source on attitude toward the website. The effect of recommendation source on attitude toward the website was fully mediated by website credibility, or in other words, recommendation source cue only indirectly affected attitude toward the website. This suggests that attitude toward the website is formed largely through perceived credibility of the website, and source of recommendation, in part, contributes to website credibility.

Interestingly, participants found the website to be more credible when recommendations came from experts rather than other consumers, regardless of the type of product they were shopping for. In addition, attitude toward the website was higher for expert condition when participants shopped for music albums. Thus, the bandwagon heuristic did not seem to occur in the current context.

The results of study one did not support the prediction that there will be an interaction effect between the type of product and the recommendations source cue on attitude toward the website. A possible explanation for this non-significant finding is that the source of recommendations was not deemed an important factor because the website was already customized for each individual, and thus, how the recommendations were made had little influence on attitude toward the website. It is possible that regardless of who made the recommendations, participants simply made an assumption that recommendations would be relevant to their favorite product. As a post-hoc analysis, the means for recommendation credibility of the two sources were compared, and the results showed that the difference between the means was not statistically significant for the two source cues. Further supporting this speculation, mediation analysis showed that the source of recommendation did not have a direct effect on attitude toward the website. However, the finding that source of recommendations influenced website credibility supports the MAIN model's proposition that a technological feature (in this case, recommendations) can serve as a persuasive message and users do make some credibility judgment based on it (Sundar, 2008), although it did not transfer to overall attitude toward the website.

In a way, these results seem to suggest that participants may not have perceived the source of recommendation to be an important factor, or did not use it as a cue to evaluate the website. Therefore, study two is conducted to test whether the absence of the source of recommendation deters people from having a positive attitude toward the website.

Since the results of study one showed that customization of a website matters more for an identity-signaling product, study two used a shopping website that sells music albums only. Study one also revealed that both website credibility and attitude toward the website were higher when recommendations were made based on experts' evaluations of the products than when "other consumers" cue was used. Therefore, only "expert" as the source of recommendations was used in study two to compare it to the "absence of source of recommendation cue" condition.

One limitation of study one was that participants had only five options to choose from. This means that while the participants could have looked at the source of recommendations as a cue to make judgments about the recommendations, participants also had enough time as well as cognitive resources to read the descriptions of each product and then make a purchasing decision. To examine the possibility that the source of recommendation information may be perceived important only in certain situations, study two tested whether the presence of information about the source of recommendation mattered only when consumers were faced with more options to choose from.

CHAPTER THREE

STUDY TWO

Introduction

As study one did not provide evidence for varying effect of different sources of recommendations on consumers' attitude toward the website, this poses a question about the effect of providing information about the source in an online shopping environment. One potential explanation is that perhaps people were not paying enough attention to the source cue, especially in a customized environment. To test this, study two examined if this is the case by comparing one of the current practices of recommending a product (i.e., using expert cue) to a situation where consumers are not told how the recommendations are made.

In addition, study two was conducted to further examine the possibility that information about the source of recommendation may be perceived useful only in certain situations. Specifically, a limitation noted in study one was that participants only had five options to choose from. Therefore, it may have been that participants were able to examine all the products themselves rather than turn their attention towards to who recommended the products. Thus, study two tested whether the presence of information about the source of recommendation matters when consumers were faced with a greater number of options to choose from.

Amount of Choice

The Internet has given consumers increased freedom to search for product information and compare many stores simultaneously. Consumers are faced with vast amounts of information and product alternatives in an online environment compared to an offline store where time and space barriers exist in far greater quantity (Srinivasan et al., 2002). Perhaps consumers are also more likely to find products that meet their needs when shopping online than when buying from a traditional retailer simply because of the variety of products that can be searched for.

However, when consumers have to make actual purchasing decisions, more choice does not necessarily work for their benefit. Current literature on consumer choice has shown that simply having more choices does not necessarily improve consumer post-purchase satisfaction and it can be demotivating (Diehl & Poynor, 2010; Iyengar & Lepper, 2000; Markus & Schwartz, 2010; Scheibehenne et al., 2009). When it comes to an actual purchasing situation, having more choices might become a burden for them. When consumers are faced with too many choices, or a high level of *cognitive overload*, they can lose focus and find it difficult to process all the information. As a result, consumers may suffer from inaccuracy in situations in which too many alternatives or too much information must be considered (Iyengar & Lepper, 2000; Malhotra, 1982). Under these circumstances, individuals are likely to adopt simplifying strategies, relying on factors such as information format (Bettman, 1979) or available cues (Bargh, 1999; Petty & Cacioppo, 1986). Thus, the number of available options can influence how people respond to choices. For example, Iyengar and Lepper (2000) found that consumers were

less likely to purchase jam when they were given an extensive array of 30 flavors to choose from as opposed to a more limited array of six flavors. In another study, consumers showed a tendency to select options that were easier to justify when choosing from a larger assortment (Sela, Berger, & Liu, 2009).

General findings in this area suggest that too many choices can be overwhelming and can generate confusion, stress, and anxiety, thus discouraging consumers from making purchasing decisions (Iyengar & Lepper, 2000; Scheibehenne et al., 2009). Research has also shown that more choices do not always lead to greater satisfaction when consumers are asked to make a selection (Diehl & Poynor, 2010; Markus & Schwartz, 2010). This is because when consumers are aware that they have more options to choose from, they have a higher expectation of finding the best product. For example, if consumers are given an option to choose a product from 100 alternatives or 10, consumers expect that they will find a better product from the 100 alternatives. However, this heightened expectation is likely to result in greater disconfirmation and lead to lower satisfaction with the final choice.

Despite these study findings, consumers still seem to value a wider variety of choices. In fact, when asked to choose a product, consumers seem to prefer having a large assortment of options to a small one because they expect that having more options will allow them to find a product that better matches their preferences (Diehl & Poynor, 2010). Similarly, Iyengar and Lepper (2000) found that participants in their study were initially more attracted to large assortments than small ones. Based on previous literature, while their post-decision satisfaction might not be as high, consumers prefer to be given

an extensive list of alternatives to choose from before making the purchase. Therefore,

when consumers visit an online store, it is hypothesized that:

> **H4:** Attitude toward the website will be more positive when in a high-choice
>
> condition than in a low-choice condition.

Research has shown that *who* communicates can also affect attitudes and

persuasion. In other words, a highly credible source is more persuasive than a less

credible source (Metzger et al., 2003; Yoon, Kim, & Kim, 1998; Wang, 2005). As

reviewed previously, in an online environment, credibility or trustworthiness becomes an

especially important heuristic (Schweiger, 2000). However, in study one, there was lack

of clear evidence that different sources of recommendations matter when consumers shop

online. Therefore, in study two, the effect of source of recommendations was examined

by either revealing or disguising how the recommendations were made.

In the customization literature, two issues often raised are how a product, content,

or a website is customized (i.e., how to collect consumer data) (e.g., Chellappa & Sin,

2005) and how this customization is communicated to the consumer (e.g., Kumar &

Benbasat, 2006; White, Zahay, Thorbjørnsen, & Shavitt, 2008). The latter is specifically

related to the issue of revealing or disguising the source of recommendations.

In general, consumers are willing to pay higher costs to acquire something better.

However, one line of research showed that highly distinctive personalization without

rationale might result in personalization reactance. That is, a high level of customization

can reduce effectiveness when the customer is given no reason for why it is personalized.

For example, at least one study has shown that consumers experienced reactance to

highly personalized e-mails when the fit between the offer in the message and

consumers' personal characteristics was not justified, and as a result, consumers were less

willing to click-through the e-mails (White et al., 2008).

Therefore, it is predicted that providing customized product recommendations

will be more effective when the website explains the source of recommendations to

provide a reason why those products were recommended. It is hypothesized that:

H5: Attitude toward the website will be more positive when the source of

recommendation is present than when the source cue is absent.

Research has shown that perceived usefulness is one of the most influential

variables when studying technological features (Karahanna & Straub, 1999; Venkatesh,

Morris, Davis, & Davis, 2003). Especially in the shopping context, perceived usefulness

is identified as an important outcome variable of providing recommendations (Kumar &

Benbasat, 2006). This is because the purpose of providing recommendations is to aid

consumers by reducing the number of options so that comparing products becomes more

manageable. In the current context, perceived usefulness of a website can be defined as

"the extent to which an individual perceives a website to be useful in performing

shopping tasks" (Kumar & Benbasat, 2006, p. 428). Before making a judgment about the

entire site, consumers are likely to evaluate the decision aid first and judge whether or not

it is useful for their purchasing decision. This proposition stems from the findings in

study one that did not show a significant effect of the source variable on attitude toward the website. Therefore, here, perceived usefulness was used as a dependent measure.

Bounded rationality is the concept that consumers have limited cognitive capacity to rationally process and evaluate all the information given to them (Kahneman, 2003). Satisficing occurs when a consumer does not want to act as a rational decision maker by trying to maximize his or her values (Bettman, Luce, & Payne, 1998), but simply wants to complete the purchase with ease. As *cognitive misers* (Bargh, 1999; Chen & Chaiken, 1999), consumers welcome someone else to do the work for them and save them the effort. This is especially applicable to the online shopping environment because studies have shown that consumers believe their efforts are saved when decision aids are provided (Bechwati & Lan, 2003). Furthermore, consumers who are shopping for products online usually are willing to rely on product recommendations made to them by decision aids (Häubl & Trifts, 2000).

When consumers have enough cognitive resources to evaluate all the products at hand, they do not need to rely on decisions aids. It is under certain circumstance (i.e., when they are faced with too many options) consumers tend to turn to effort-reducing strategies (Metzger et al., 2010) and appreciate technological features such as recommendation tools. Therefore, an interaction effect between absence and presence of source cue and the number of choice is predicted. Specifically, it is predicted that consumers will find recommendation source cues more useful under high-choice circumstance. Therefore, it is hypothesized that:

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H6: The presence of the source of recommendation cue will be considered more

useful in a high-choice condition than in a low-choice condition.

Method

The purpose of study two was to examine whether people are more likely to value

the source of recommendation cue when they are asked to make a decision in a high-

choice environment, or in an environment with a large number of options to choose from.

The interplay between recommendation source cue and amount of choice was examined

using a 2 (Recommendation source: present, absent) x 2 (Amount of choice: high, low)

between-subjects design intended to evaluate the effects of the two variables on

consumers' attitude toward an online shopping website. Participants were told that this

was a two-part study where they first had to take a pre-experiment online survey. After

approximately one week, they were asked to come to a computer lab and complete the

second part of the study. Informed consent was obtained according to UNC Institutional

Review Board (IRB) guidelines, and all participants signed a consent form prior to their

participation in the study.

Participants

A total of 91 male and female students were randomly assigned to one of the four

conditions. Participants were recruited from several undergraduate classes in the School

of Journalism and Mass Communication at the University of North Carolina at Chapel

Hill. Participation was completely voluntary, and all participants received a course credit

for their time. Of the 91 participants, 77% were female ($N = 70$) and 23% were male ($N = 21$). Mean participant age was 20.63 years ($SD = 1.83$), ranging between 18 and 32.

Pre-experiment Questionnaire

Prior to conducting the main study, a pre-experiment questionnaire was sent to the students who had signed up to participate in the study. The procedure was the same as study one, and participants were randomly assigned to one of the four conditions at this stage.

Independent Variables

Amount of choice. Amount of choice was manipulated by varying the number of recommended products provided to each individual. The literature on consumer choice generally uses less than six alternatives to represent a small assortment and more than 15 to represent a large assortment (e.g., Iyengar & Lepper, 2000; Scheibehenne et al., 2009). The research on cognitive overload demonstrates that individuals can process up to six alternatives (Bettman, 1979). Therefore, in the low-choice condition, participants received five product recommendations and in the high-choice condition, participants received 15 recommendations.

Recommendation cue. Participants who received recommendations with an explanation of why the recommendations were made (recommendation source present condition) viewed a website that was similar to the one used in study one and they were told that the recommendations were based on an evaluation of their favorite artist by experts. Participants who did not receive a recommendation cue only saw a list of

products without any information on how the recommendations were made

(recommendation source absent condition).

Stimulus Materials

Similar to study one, the stimulus created for each individual in this study was a

mock online shopping website based on a pre-experiment questionnaire filled out by

participants prior to the main experiment. (See Appendix E for sample stimulus

materials.)

Main Study Procedure

The main study was conducted in a computer lab, and the verbal instructions

given to the participants were the same as study one. Their on-screen instructions

differed depending on their condition. Participants in the "recommendation source cue

condition" read in the instructions that: "The products are recommended based on an

evaluation of your favorite product by experts." Similar to study one, to ensure that

participants were exposed to the recommendation source, the source of recommendation

was explained in the instructions before the participants began browsing the website and

was explicitly described on the website itself as participants browsed the website. In the

"no source cue condition," participants simply saw a list of products recommended to

them without any guidance as to how the recommendations were made.

Immediately after participants finished browsing the website, they completed a

Web-based questionnaire. The questionnaire contained a set of manipulation check

questions, dependent variables, and control variables. After completing the questionnaire, participants received a debriefing message and were dismissed.

Dependent Variables

Attitude toward the website. Attitude toward the website ($\alpha = .95$) was measured with the same items used in study one.

Perceived recommendation usefulness. Perceived usefulness of recommendations was measured by asking participants to rate the following statements on a 7-point Likert scale from 1 = *strongly disagree* to 7 = *strongly agree*: "The recommendations are very useful in my decision making" and "I find the recommendations very helpful" (Kumar & Benbasat, 2006). These items were combined to form an index ($r = .85$).

Manipulation Checks

Recommendation source. Similar to study one, participants were asked to rate the level of their agreement with the statement: "The recommendations came from a team of experts." This was measured on a 7-point Likert scale from 1 = *strongly disagree* to 7 = *strongly agree*.

Amount of choice. To evaluate participants' perceptions about the amount of choice provided, participants were asked to rate the extent to which they felt the amount of choices available was too few or too many. Specifically, participants responded to the following question: "When given the task of picking a product from the recommended product list, do you think the selection should have included more choices?" Their

responses were measured on a 7-point Likert scale from 1 = *I felt that I had too few choices* to 4 = *I had the right number of choices* to 7 = *I had too many choices* (adopted from Iyengar & Lepper, 2000).

Perceived customization. To check whether participants in all conditions indeed felt that the shopping website was customized, perceived website customization was measured. Participants were asked to respond to the following prompts on a 7-point Likert scale from 1 = *strongly disagree* to 7 = *strongly agree*: "The website was customized according to my interests" and "The website targeted me as a unique individual" (adapted from Kalyanaraman & Sundar, 2006) ($r = .71$, $p < .001$).

Control Measures

All the control measures from study one were measured in study two including product involvement, need for uniqueness, subjective knowledge, and concern for privacy.

Results

Descriptive Statistics

Following the same procedures as in study one, the data were screened for missing values, outliers, and normality. There were no missing values in all 91 cases. Standardized scores and Mahalanobis distance were checked to screen for outliers. The scores were within acceptable limits. To determine that all dependent variables had normal distributions, skewness and kurtosis were evaluated. There were no variables that

had severely high z scores for skewness and kurtosis that required transformation (see Table 10). Correlations of the dependent variables are found in Table 11.

Scale Assessment

All multi-item scales were averaged to form indices and the reliability of the measures was assessed via Cronbach's α (or r for scales with only two items). All scales used in the following analyses were reliable.

Manipulation Checks

A series of ANOVAs were performed to check the manipulation of recommendation source cue and amount of choice. The results confirmed that the manipulations were successful. (Results for manipulation check analyses are shown in Table 12.)

Recommendation source cue. Recommendation source manipulation was checked by asking participants to indicate their agreement to the statement, "Recommendations were made based on experts' evaluations of my favorite product." Results confirmed that the manipulation was successful. Participants in the "expert as source" condition scored significantly higher ($M = 5.07$, $SE = 1.42$) on the item than participants in the "no source of recommendation" condition ($M = 4.36$, $SE = 1.63$), $F(1, 86) = 4.67$, $p < .05$.

Amount of choice. An ANOVA was conducted to ensure participants in the "high choice" condition felt they had more options to choose from than those in the "low choice" condition. The results showed that participants in the "high choice" condition

scored higher ($M = 3.55$, $SE = 1.07$) than in the "low choice" condition ($M = 2.34$, $SE = .99$) on the scale 1 "I felt that I had too few to choose from" to 7 "I had too many to choose from" $F(1, 86) = 29.01$, $p < .05$.

Perceived customization. An ANOVA was conducted to check participants' perceived customization of the website. There were no main effects of the recommendation source or amount of choice, nor an interaction effect of the two on perceived customization. The means for all conditions were above 5 on a 7-point scale, which showed that participants in all conditions perceived the website to be customized.

Analysis of Potential Control Variables

The control measures were analyzed to see if they had any effects on the dependent measures.

Product involvement. The 10-item product involvement scale was reliable ($\alpha = .93$), and the items were averaged to form a single score ($M = 6.41$, $SD = .70$). Bivariate correlations did not show any significant relationships between product involvement and both of the dependent measures.

Need for uniqueness. The 31-item scale was reliable ($\alpha = .97$), and the items were averaged to form a single score ($M = 3.10$, $SD = .93$). Bivariate correlations showed no significant relationships between need for uniqueness and both dependent measures.

Subjective knowledge. The six-item subjective knowledge scale was reliable ($\alpha = .92$), and the items were averaged to form a single score ($M = 5.19$, $SD = 1.29$). Bivariate correlations showed no significant relationships with other variables in the study.

Concern for privacy. The four-item scale was reliable ($\alpha = .78$), and the items were averaged to form a single score ($M = 3.88$, $SD = 1.54$). However, bivariate correlations between concern for privacy and the dependent measures showed no significant relationships.

While product involvement and subjective knowledge did not show any correlations with the dependent measures, the following analyses were first conducted with both variables as control measures since these were the two control variables included in study one. However, the results indicated that the inclusion of these two control variables did not change the direction of the relationship, nor did it alter the significance of the relationships found in the following test of hypotheses. Furthermore, it is speculated that one of the reasons why they were significant in study one but not in study two is that both product involvement and subjective knowledge vary largely by product type; participants exhibited significantly higher product involvement and subjective knowledge for music than toothpaste. Therefore, none of the potential control measures was included in the analyses.

Test of Hypotheses

H4: Main effect of amount of choice on attitude toward the website. H4 concerned the effect of amount of choice on attitude toward the website and perceptions on decision making. An ANOVA revealed that a main effect was not detected for amount of choice (see Table 13).

The results showed that attitudes toward the website were not more positive in a high-choice condition ($M = 4.70$, $SE = 1.18$) than in a low-choice condition ($M = 4.76$, $SE = .91$), $F(1, 89) = .08$, $p = .77$, $\eta^2 = .00$. Therefore, H4 was not supported.

H5: Main effect of recommendation source cue on attitude toward the website. H5 concerned the effect of presence of a recommendation source cue on attitude toward the website. To test the hypothesis, a one-way ANOVA was again applied (see Table 14).

The results showed that as predicted, attitude toward the website was more positive when the source of recommendation was present ($M = 4.95$, $SE = .94$) than when the source cue was absent ($M = 4.51$, $SE = 1.11$), $F(1, 89) = 4.12$, $p < .05$, $\eta^2 = .04$. Therefore, H5 was supported.

H6: Interaction effect of recommendation source cue and amount of choice on perceived usefulness. H6 predicted that individuals will find the recommendation source cue more useful in a high-choice condition than in a low-choice condition. The results of the relationship among the means were as expected (see Tables 15 and 16). The recommendation source cue and amount of choice interaction was significant, $F(1, 89) = 4.78$, $p < .05$, $\eta^2 = .05$. Thus, H6 was supported. Participants in the high-choice condition with the expert cue found recommendations more useful ($M = 5.57$, $SD = 1.18$) than those in the low-choice condition ($M = 4.56$, $SD = 1.35$). On the other hand, participants in the high-choice condition without a recommendation source cue found recommendations less useful ($M = 4.75$, $SD = 1.63$) than those in the low-choice condition ($M = 5.07$, $SD = 1.35$). The mean difference patterns are shown in Figure 3.

Further examining the simple effects revealed that when participants were told that experts were the source of recommendations, those in the high-choice condition perceived the recommendations to be more useful than those in the low-choice condition ($F(1, 87) = 5.60$, $p < .05$). However, when the source of recommendations was not provided, the mean difference between high-choice and low-choice groups was not significant ($F(1, 87) = .54$, $p > .05$).

Summary of Results

With study two, it was predicted that attitude toward the website would be more positive when participants view a website with a larger number of options (15) than a website with a smaller number of options (5) and when the source of recommendation is present than when the source cue is absent. It was also predicted that when asked to choose a product from a website, the presence of source of recommendation would be considered more useful in a high-choice condition than in a low-choice condition.

Study two showed that providing information about the source of recommendations (i.e., "expert cue" in current study) does have a positive effect on attitude toward the website. Also as predicted, when the source of recommendations was provided, those who were given 15 options to choose from found the recommendations more useful than those who were only given five options to choose from. Thus, when faced with a high-choice condition, having the information about the source of recommendations seemed to be perceived more useful than in a low-choice condition. However, when the source of recommendation was not provided, there was no significant

difference between high- and low-choice conditions in regards to perceived usefulness of the recommendations.

The non-significant finding for the main effect of amount of choice suggests that perhaps the number of options was not overwhelming for participants in the study. While the manipulation check was successful, and participants in the low-choice condition felt that they had too few options to choose from than participants in the high-choice condition, the means revealed that participants in both conditions were below the midpoint on a 7-point scale.

CHAPTER FOUR

GENERAL DISCUSSION

Purpose and Goals

The overall purpose of this dissertation was to add to the study of online shopping by examining the effects of sources of customized recommendations on attitudes toward a website with different types of products and varying amounts of choice. Customization is a prominent online marketing strategy that provides benefits to both parties of a transaction. From a marketer's perspective, customizing a website delivers relevant content to consumers, which has a higher likelihood of being noticed. From a consumer's perspective, customized content represents the convenience of highly relevant information as consumers struggle to sift through information overload. Concomitantly, extensive research has been conducted on the influence of personalized recommendations on consumers' attitudes toward websites and product choices. As the information available in online environments increases, consumers will likely turn to websites that can filter and reduce alternatives for them. Therefore, increasing the usefulness of recommendations to consumers is expected to help companies build better relationships with their customers, and offering customized recommendations may turn out to be one of the most important areas of differentiation among Internet retailers (Alba et al., 1997; Nikolaeva & Sriram, 2006).

The two studies presented here examined the interplay between the source of customized recommendations, type of product, and the number of recommendations in the context of an online shopping website. By conducting a factorial experiment, study one examined the prediction that the effects of customized recommendations as well as the source of recommendations would vary depending on the type of product sold on the website. The results showed that the participants did have more positive attitudes toward customized websites for an identity-signaling product than for a non-identity-signaling product. On the other hand, the source of customized recommendations did not reveal any varying effect on attitude toward the website. However, study one showed that perceived website credibility is a mediator of the source of recommendations and attitude toward the website.

Study two examined how providing the information about the source of recommendations makes recommendations useful based on the number of products recommended. It was predicted that attitude toward the website would be more positive when in a high-choice condition than in a low-choice condition, and when the source of recommendations is present than when the source cue is absent. The results showed that participants indeed exhibited more positive attitudes toward the website when the information about the source of recommendations was provided than when it was absent. Mostly importantly, it was predicted that individuals will find the source of recommendation cue more useful in a high-choice condition than in a low-choice condition, and this hypothesis was supported. However, the amount of choice did not have a significant effect on attitudes toward the website.

The findings from this dissertation may provide useful insights on the effects of the source of customized recommendations and how customization strategies may be perceived depending on the product type. In addition, this dissertation also sought to shed light on how the amount of choice affects people's perceptions of recommendation source cues. (See Table 1 for a summary of the hypotheses and findings.)

Interpretation of Findings

Because consumers generally cannot process all of the information available to them, they apply various decision heuristics (Bargh, 1999; Chen & Chaiken, 1999). These decision heuristics are simplified decision strategies or rules of thumb (Bettman, 1979). In the context of product recommendations in an online shopping website, one such piece of information provided (or sometimes not provided) to users is how the recommendations were made. As this feature is often one of the cues that websites users rely on to make a judgment about credibility of a website (e.g., Sundar, 2008; Sundar & Nass, 2001; Sundar et al., 2012), the first study examined the effect of this "source" of recommendations on attitude toward the website. Moreover, as the identity-signaling model suggests, because people want to diverge from other consumers to show their uniqueness for certain product categories, two different types of products were compared—music for an identity-signaling product and toothpaste for non-identity-signaling product.

As predicted, study one showed that customization may not be equally effective for all types of products. People had a more positive attitude about a customized

shopping website when shopping for an identity-signaling product (music album) than for a non-identity-signaling product (toothpaste). Product involvement and the individual's subjective knowledge about the product category were controlled. Since the central focus of customization is matching and providing unique information to an individual, providing a website containing customized information seems to be more important for identity-signaling products. However, it is worth mentioning here that because of this, I may have encountered an unforeseen finding: participants in the identity-signaling product condition perceived the online shopping website to be more customized than those in the non-identity-signaling condition.

Based on previous research on source credibility, it was predicted in study one that consumers will have different psychological responses to different sources of recommendations and that what people choose from a ranking of products will vary as a function of the source. However, this hypothesis was not supported with the current study. Study one showed that different recommendation sources (i.e., other consumers and experts) did not have a significant effect on attitudes. There are several possible reasons for this non-significant finding. First, the recommendations in both studies were personalized and made based on an individual's favorite product; thus, they were made based on product-specific reasons. Therefore, when a list of recommendations were made, participants might have simply made an assumption that the products on the top of the list are more relevant to themselves (regardless of how the recommendations were made) than the products listed near the bottom of the list, and thus, it did not matter to them who recommended them.

Secondly, the two sources of recommendations examined in study one can be generally considered to lack the motivation to sell or to persuade people into purchasing things. In other words, products were recommended because they are relevant to an individual's interest in some way and not because they are simply *promoted* by a website or a company.

Another explanation for this non-significant finding is that, since the online shopping website was customized for individual participants, these participants may not have used the source of recommendation as a cue to make their decisions. It is speculated that, perhaps, the customization of the website itself acted as a cue or a heuristic (Sundar, 2008; Sundar et al., 2012), and thus, people did not rely on the information about the source of recommendations. It could also be argued that, customization increased the participant's involvement with the website, which has been shown in several under the framework dual-process theories of persuasion (e.g., Beier & Kalyanaraman, 2008; Kalyanaraman & Sundar, 2006; Li & Kalyanaraman, 2009). With increased involvement with the website, it could be argued that participants did not use the source of recommendation as a useful piece of information; rather, they carefully read the information and relied on their own judgments.

Study one also did not provide evidence for the interaction effects of the source of recommendations and the product type on attitudes toward the website. While the means showed that participants did have more positive attitudes toward the website when recommendations were based on experts' rather than on other consumers' evaluations, the differences were not statistically significant. Again, a possible explanation for this non-significant finding is that the source of recommendations was not deemed an

important factor because the website was already customized for each individual; thus, how the recommendations were made had little influence in consumers' decision making.

One limitation of the first study was that participants had only five options to choose from. To examine the possibility that the source of recommendation information may be perceived as useful only in certain situations, study two was conducted. Building on study one, study two tested whether the presence of information about the source of recommendation mattered when consumers were faced with more options to choose from using identity-signaling products and product recommendations made based on experts. In study two, it was predicted that the attitude toward the website will be more positive when the source of recommendation is present than when the source cue is absent. It was also predicted that having a recommendation source cue will be more useful when people have to make a choice from a larger number of options (15) than from a smaller number of options (5).

Study two revealed that, as a variable, the amount of choices did not have much effect. Participants in high-choice conditions felt that the website gave them a larger set of options to choose from than participants in low-choice conditions; participants in low-choice conditions felt that the website gave them a smaller set of options to choose than those in high-choice conditions. However, in retrospect, the number of options in high-choice conditions might not have been overwhelming, which has some theoretical implications discussed below.

Overall, study two revealed that providing information about the source of recommendations (i.e., why products were recommended) has some positive effect on attitudes toward the website. Furthermore, the interaction effect between the number of

choices and the absence and presence of the source of recommendation revealed that this effect (i.e., presenting source of recommendation cue) is more pronounced when people have a larger number of choices than limited options to choose from.

Implications

One of the purposes of this research was to expand our understanding of online marketing by testing a consumer's reactions to recommendations in a customized environment. Specifically, the studies presented here examined the effects of the source of customized recommendations, types of product, and the number of choices on attitudes toward the website and recommended products. As companies continue to provide customized services and consumers have certain expectations of receiving that customized information, it is important to examine whether the positive effects of customization will hold for all types of products and when it will be considered more or less helpful. This work can potentially provide scholars with a better theoretical understanding of online consumers' psychological processes in regards to customization. Furthermore, this work can aid practitioners in improving the effectiveness of effective marketing strategies within customized environments.

Theoretical Implications

How people respond to different sources of information has been an ongoing concern in mass communication research (e.g., Flanagan & Metzger, 2003; Lafferty & Goldsmith, 2004; Ohanian, 1990; Sundar & Nass, 2001; Wang, 2005). However, little

attention has been given to examining their importance in the e-commerce context where different sources of information can be used to recommend products. This dissertation was conceived to address this issue and to contribute to its theoretical scope by introducing other variables, such as product type and amount of choices, which may affect the source effects.

First, this research sheds light on the effect of source of recommendation on forming attitude toward a website. Unlike previous studies on source of information, participants did not respond differently to the two different types of sources used in the current research. While the source of recommendations did not have a direct effect on attitudes toward the website, the mediation analysis revealed that it affected website credibility which affected attitudes toward the website. Therefore, the source of recommendations does play a part in forming attitude toward a website and should not be disregarded. Furthermore, while study one showed that the specifics about the source of recommendation did not matter, study two revealed that it is important to have the source of recommendation present when recommending products especially in a high-choice setting.

Second, as reviewed previously, the positive effects of customization are well established in the literature. To better understand the notion of customization and to further extend the studies in customization, several scholars have already investigated moderators and mediators of customization effect (e.g., Li & Kalyanaraman, 2009; Moon et al., 2008). This dissertation also contributes to the customization literature by revealing that the type of product sold on a website may diminish or enhance perceived customization of a website. Using identity-signaling framework, study one showed that

because both identity-signaling and customization implicate the self, participants had more positive attitude toward the website with music than toothpaste.

Third, the results of study two adds to the literature on choice overload. To seek an explanation for the non-significant result of the main effect of choice, a further analysis was conducted to examine how the participants responded to each condition. Interestingly, the results revealed that participants in low-choice conditions felt more frustrated than those in high-choice conditions and participants in high-choice conditions were more satisfied with their choice. Although the manipulation of high-choice condition was based on previous research, those studies used products that are not necessarily identity-signaling products. This suggests that depending on the type of product, perhaps there is a different boundary condition as to what is considered overwhelming amount of choice. Perhaps this was because participants were already familiar with choosing from a wide array of products especially for a product such as music album. In a real online shopping environment, merely a list of different genres can easily exceed 15 items and thus, presenting 15 options may not have been enough to result in choice overload as it might with for example, jam (e.g., Iyengar & Lepper, 2000).

Fourth, methodologically, this dissertation took careful measures and provided an actual customized website for each participant. Instead of actually customizing content, many of the previous studies had employed a priming technique to activate the notion of customization (e.g., Bright & Daugherty, 2012). While previous studies have successfully shown that the concept of customization is so compelling to people that merely informing them that content is customized has a positive effect, participants were not truly exposed to individualized content.

Practical Implications

The media landscape is ever-changing and the most exciting part about the
Internet and Web 2.0 for marketers is the massive amount of consumer data aggregated
every second. With these data, marketers are developing more and more precise
audience measurements, and consumers now have a plethora of opportunities to locate
and purchase products and services that they are interested in, with merely a click. To
accommodate this change, marketers are continually searching for tools that will allow
them to connect with online consumers in a meaningful way. Customization is one way
marketers can engage with their consumers by providing "consumer-centric" content, and
this is projected to grow in popularity.

In this regard, this dissertation has several implications for practitioners of online
shopping websites. First, there are different ways how recommendations are provided,
and, as such, it would seem logical to assume that they would have to be seen as credible
sources. However, this has been an untested assumption. While who communicates has
been deemed an important factor on how people judge the content, this study shows that
it may no longer be a decision factor if the website is customized to an individual.
Different sources tested in the current study (experts and other consumers) did not vary
on their effects on website credibility or attitude toward the website. Nevertheless, it was
found that providing an explanation as to how the recommendations are made is
important and the source of recommendations do have an indirect effect on attitude
toward the website.

Second, while the previous literature has shown that customization has positive effects on attitudes toward the website and can increase customer loyalty, it was not known whether this effect will hold for all types of products. To provide insight into this matter, the results of study one showed that a customization strategy has a more positive effect on identity-signaling products than non-identity-signaling products.

Lastly, while the number of choices tested in the current dissertation does not by any means meet the number of choices a typical consumer would face in an actual online shopping environment, the results of study two provide some support that as the number of options increases, people find recommendations more useful when the source of recommendations is provided. This suggests that perhaps people look for further information or more concrete rationale for making a purchase when they experience limited cognitive capacity.

Limitations and Suggestions for Future Research

Limitations

Some limitations should be taken into account when generalizing the findings of this study. First and foremost, several factors may pose threats to external validity. For example, the sample used to conduct this research was a convenience sample of undergraduate college students, predominantly those studying journalism and mass communication. It is likely that this population of students includes more experienced Web users and so is more familiar with using shopping websites than other general population. This would limit generalizing the results to other populations.

Second, as the experiments were conducted in a laboratory setting, there is a threat to ecological validity. To customize the websites, students were emailed in advance to find out about their interests in several different areas. Although the pre-experiment questionnaire was developed carefully so that it was not too obvious for the students to speculate the exact purpose of the study beforehand, this was an artificial way of customizing a website that is not likely to happen on an actual shopping website. Rather, current online shopping websites will most likely track and rely on behavioral measures that Internet users leave as they browse the website.

While the results did support the prediction that users will have more positive attitudes toward the website for identity-signaling product than non-identity-signaling product, because of the inherent difference between music and toothpaste (other than identity-signaling vs. non-identity-signaling perspective), it is possible that even if the website was not customized, people might show a tendency to prefer an e-commerce site with music albums than toothpastes.

Another limitation is that the amount of choice manipulation did not accurately reflect the intended high- and low-choice conditions. In particular, the mean for high-choice conditions was not drastically different from low-choice conditions, although they were statistically significantly different. Therefore, the relationship predicted in the studies likely could be stronger if the manipulations were more clearly different. Future research could replicate study two of this dissertation with a great number of choices for a high-choice condition, taking into account that what is considered a high number of choices in an offline setting is likely to be not high enough in an online setting. This

could provide a clearer picture of the effect of the amount of choices on attitude toward the website and the perceived usefulness of recommendations.

Lastly, while all websites were customized to enhance the external validity of the research, customizing websites and recommendations to match every participant's interest was a challenge. Although great care was taken to customize individual stimulus, it is possible that the recommendations were not a perfect fit with individuals' interests. However, this is a limitation for any current customization algorithm. While some might be better and more accurate than others, they are all merely predictions of users' interests.

Despite these limitations, the studies presented in this dissertation showed an important look at how customized recommendations affect consumers' perceptions about the website in different environments.

Suggestions for Future Research

The findings of the two studies raise several interesting questions that could be explored further with future research. Prior research on customization has shown that merely telling people that something is customized or personalized has a positive effect— even when the information is not actually personalized (e.g., Bright & Daugherty, 2012; Webb et al., 2007). A follow-up study can test if it is indeed the customization of a website that allowed people to rely on the recommendations. For example, participants can view a shopping website that is customized to each individual as in studies one and two, but recommendations may not be personalized. Instead, they might see a list of artists not particularly formulated for each individual (e.g., today's popular musical artists selected by experts). A second way to do this is to recommend artists who are least

similar to participants' favorite artists (this would be considered "anti-customization"). If people still select the most recommended product even if it does not match one's preferences, this may reveal that when websites are customized, its effect can be transferred to other information on the website (i.e., recommended products). If so, it may be argued that the customization of a website (something simple as seeing one's name and one's favorite artist on a website) can act as a cue to trust the recommendations.

From findings of study one, it was speculated that perhaps customization of the website acted as a cue, and thus, people did not rely on the information about the source of recommendations. Further exploring this line of research, a future research is suggested to test if the source of recommendation affects people's evaluations of the recommendations and the website when it is not customized to match one's preference. It may reveal that providing an explanation about source of recommendation may have an effect on attitude towards the recommendations and the website when the website is not customized. In a related study, Beier and Kalyanaraman (2008) found that in the non-customized condition, individuals did not use the recommendation source as a cue, which is not supported by the elaboration likelihood model (ELM). The ELM predicts that in less personally relevant situations, individuals will base their decisions on cues. One post-hoc explanation Beier and Kalyanaraman (2008) provided was that although the information was personally irrelevant, because they were only presented one news article, the participants had enough cognitive resources to evaluate the pros and cons of the article, and thus did not need to rely on the source cue. Since the results of study two revealed that people did find having the source cue useful when they had a great number

of options to choose from, this effect might be more pronounced when they lack the customization cue as well as the cognitive resources to evaluate all the options.

It was recognized that it is possible that even if the website was not customized, people might prefer an e-commerce site with music albums than toothpastes. To address this shortcoming, future research can use a single type of product and frame it as identity-signaling or non-identity-signaling product. For example, depending on the situation, a pair of jeans can be considered as identity-signaling product or merely a necessity product (i.e., non-identity-signaling). Another suggestion would be to use multiple products of different product types and examine whether the pattern observed in current research is consistent across products.

Lastly, to extend both studies in the dissertation, a line of research can examine the moderating effect of regulatory focus on attitudes toward the website and recommendations. For example, with regard to the effect of amount of choice, a study has found that response to choice overload varies based on one's regulatory focus and whom they shop for. Specifically, when purchasing for the self, individuals show prevention focus and thus prefer less options; when purchasing for others, individuals show promotion orientation and prefer more options than less (Polman, 2012). Future study can add this measure to examine if the prevention focus more likely to be activated when purchasing identity-signaling products compared to non-identity-signaling products.

Conclusion

Given that the elements examined in this dissertation are the ones we often see in a typical shopping website, this dissertation had important practical implications for e-retailers. The findings demonstrated that even when the customized recommendations are provided, attitude toward the website could depend on the type of product consumers are seeking for. Also, the study identified that when the source cue is exhibited, the perceived usefulness of recommendations is magnified under high-choice environment.

Methodologically, this study adds to the literature by attempting to provide a real set of customized recommendations for each participant. The two studies carefully manipulated this by asking participants to name specific items they like as well as their general preferences and interests and made recommendations based on their responses using recommender systems available from current websites.

Most importantly, this dissertation has advanced our understandings of how customized recommendations affect consumers' attitudes with a focus on examining the source of recommendations as a cue, the effects of product type on customization, and exploring the effect of amount of choice and the source of recommendations. The source cue was tested to shed some light on how source cue may (or may not) be used as a heuristic to evaluate a customized website. Applying the identity-signaling theory, findings revealed that consumers have varying responses to customized websites as they search for different types of products. The findings also extend the persuasion literature by demonstrating how the psychological influences of the source of recommendations might be more prominent when faced with an extensive than a limited number of options.

Table 1.

Summary of Hypotheses and Findings

No.	Hypothesis	Rationale	Supported
H1	Individuals will have a more positive attitude toward a customized website for identity-signaling products than for non-identity-signaling products.	Main effect of product type	Supported
H2	For products that do not signal identity, individuals will have more positive attitude toward the website when recommendations are made based on other consumers than experts. However, for products that signal identity, individuals will have more positive attitude toward the website when recommendations are made by experts than when recommendations are made based on other consumers.	Interaction effect of product types and recommendation approach based on identity signaling theory	Not supported
H3	The effects of the source of recommendation on attitude toward the website will be mediated by perceived website credibility.	Mediation effect of perceived website credibility	Supported (full mediation)
H4	Attitude toward the website will be more positive when in a high-choice condition than in a low-choice condition.	Main effect of amount of choice	Not supported
H5	Attitude toward the website will be more positive when the source of recommendation is present than when the source cue is absent.	Main effect of source of recommendation	Supported
H6	Individuals will find the source of recommendation cue more useful in a high-choice condition than in a low-choice condition.	Interaction effect of amount of choice and recommendation source cue	Supported

Table 2.

Descriptive Statistics for Continuous Measures (Study one)

	M	*SD*	Min	Max	Skewness	*SE* of Skewness	Kurtosis	*SE* of Kurtosis	Alpha
Attitude toward the website	4.79	1.13	1.00	7.00	-.784	.246	.747	.488	.95
Need for uniqueness	3.21	1.14	1.00	5.84	.287	.246	-.471	.488	.97
Subjective knowledge	4.25	1.51	1.20	7.00	.152	.246	-1.00	.488	.92
Concern for privacy	3.59	1.38	1.00	7.00	-.032	.246	-.568	.488	.78
Product involvement	5.19	1.38	2.10	7.00	-.299	.246	-.948	.488	.93
Perceived website credibility	5.14	.91	2.33	7.00	-.315	.246	.738	.488	.91

N = 96

78

Table 3.

Matrix of Pearson Correlations Between Continuous Measures (Study one)

		1	2	3	4	5	6
1. Attitude toward the Website (1-7)	Corr (Sig. 2-tailed)	1					
2. Need for uniqueness (1-7)	Corr (Sig. 2-tailed)	.052	1				
3. Subjective knowledge (1-7)	Corr (Sig. 2-tailed)	.275**	.161	1			
4. Concern for privacy (1-7)	Corr (Sig. 2-tailed)	-.069	.127	.064	1		
5. Product involvement (1-7)	Corr (Sig. 2-tailed)	.442**	.029	.653**	-.029	1	
6. Perceived website credibility (1-7)	Corr (Sig. 2-tailed)	.649**	.100	.142	-.021	.247*	1

$N = 96$

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Table 4.

Summary of Means and F Values for Manipulation Checks (Study one)

	M		F
Product Type	Identity signaling	Non-identity signaling	
"Domain identity relevance" index (1-7)	5.56	2.15	279.02***
Source	Expert	Other Consumers	
"Recommendations were made by experts" (1-7)	5.77	2.27	150.23***
"Recommendations were made by other consumers" (1-7)	3.41	6.04	62.28***

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

Table 5.

ANCOVA for Product Type on Attitude Toward the Website (Study one)

Dependent Variable: Attitude Toward the Website

Source	Type II Sum of Squares	df	Mean Square	F	p	η^2
Corrected Model	23.509 [a]	3	7.836	8.603	.000	.219
Intercept	10.375	1	10.375	11.391	.001	.110
Product involvement	14.562	1	14.562	15.987	.000	.148
Subjective knowledge	.001	1	.001	.001	.980	.000
Product type	3.777	1	3.777	4.147	.045	.043
Error	83.799	92	.911			
Total	2345.908	96				
Corrected Total	107.308	95				

a. R^2 = .219 (Adjusted R^2 = .194)

Table 6.

ANCOVA for Source X Product Type Effect on Attitude Toward the Website (Study one)

Dependent Variable: Attitude Toward the Website

Source	Type II Sum of Squares	df	Mean Square	F	p	η^2
Corrected Model	25.224 [a]	5	5.045	5.531	.000	.235
Intercept	10.018	1	10.018	10.984	.001	.109
Product involvement	14.184	1	14.184	15.551	.000	.147
Subjective knowledge	.000	1	.000	.000	.983	.000
Source	.516	1	.516	.566	.454	.006
Product type	3.677	1	3.677	4.031	.048	.043
Source*Product type	1.170	1	1.170	1.282	.260	.014
Error	82.084	90	.912			
Total	2345.908	96				
Corrected Total	107.308	95				

a. R^2 = .235 (Adjusted R^2 = .193)

Table 7.

Summary of Means for Attitude Toward the Website (Study one)

	Music		Toothpaste	
	M	*SD*	*M*	*SD*
Expert	5.28	.91	4.66	1.09
Other consumers	4.86	1.27	4.50	.82

Table 8.

ANCOVA on Website Credibility (Study one)

Dependent Variable: Website Credibility

Source	Type II Sum of Squares	df	Mean Square	F	p	η^2
Corrected Model	9.527 [a]	5	1.905	2.509	.036	.122
Intercept	39.105	1	39.105	51.496	.000	.364
Product involvement	2.106	1	2.106	2.774	.099	.030
Subjective knowledge	.054	1	.054	.071	.790	.001
Source	3.485	1	3.485	4.589	.035	.049
Product type	.115	1	.115	.151	.698	.002
Source*Product type	.911	1	.911	1.200	.276	.013
Error	68.344	90	.759			
Total	2613.056	96				
Corrected Total	77.8710	95				

a. $R^2 = .122$ (Adjusted $R^2 = .074$)

Table 9.

Summary of Means for Website Credibility (Study one)

	Music		Toothpaste		Total	
	M	SD	M	SD	M	SD
Expert	5.58	.77	5.13	1.05	5.36	.94
Other consumers	4.99	.89	4.85	.77	4.92	.82
Total	5.28	.88	4.99	.92		

Table 10.

Descriptive Statistics for Continuous Measures (Study two)

	M	*SD*	Min	Max	Skewness	*SE* of Skewness	Kurtosis	*SE* of Kurtosis	Alpha
Perceived usefulness	4.97	1.47	1.00	7.00	-.783	.253	-.191	.500	.93
Attitude toward the website	4.73	1.05	1.64	7.00	-.550	.253	-.031	.500	.95
Need for uniqueness	3.18	.95	1.35	5.19	-.113	.253	-.750	.500	.95
Subjective knowledge	5.22	1.28	2.00	7.00	-.489	.253	-.410	.500	.92
Concern for privacy	3.92	1.56	1.00	7.00	-.132	.253	-.913	.500	.83
Product involvement	6.41	.690	4.10	7.00	-1.176	.253	.766	.500	.93

N = 91

Table 11.

Matrix of Pearson Correlations Between Dependent Measures (Study two)

		1	2	3	4	5	6
1. Perceived usefulness (1-7)	Corr (Sig. 2-tailed)	1					
2. Attitude toward the Website (1-7)	Corr (Sig. 2-tailed)	.542**	1				
3. Need for uniqueness (1-7)	Corr (Sig. 2-tailed)	-.042	.074	1			
4. Subjective knowledge (1-7)	Corr (Sig. 2-tailed)	.133	131	.056	1		
5. Concern for privacy (1-7)	Corr (Sig. 2-tailed)	.019	-.056	.046	.051	1	
6. Product involvement (1-7)	Corr (Sig. 2-tailed)	.035	.158	.053	.647**	.046	1

N = 91

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Table 12.

Summary of Means and F Values for Manipulation Checks (Study two)

	Mean		F
Choice	Low	High	
"Too few to choose from" – "Too many to choose from" (1-7)	2.43	3.55	25.780***
Recommendation Source	Absent	Present (Expert)	
"Recommendations were made by experts" (1-7)	4.51	5.11	4.162*

*$p < .05$, **$p < .01$, ***$p < .001$

Table 13.

ANOVA for Choice Effect on Attitude toward the Website (Study two)

Independent Variable: Choice, Dependent Variable: Attitude Toward the Website

Source	Type II Sum of Squares	df	Mean Square	F	p	η^2
Corrected Model	.098[a]	1	.098	.089	.766	.001
Intercept	2033.020	1	2033.020	1838.409	.000	.954
Choice	.098	1	.098	.089	.766	.001
Error	98.421	89	1.106			
Total	2134.686	91				
Corrected Total	98.520	90				

a. R^2 = .001 (Adjusted R^2 = -.010)

Table 14.

ANOVA for Source Effect on Attitude toward the Website (Study two)

Independent Variable: Source, Dependent Variable: Attitude Toward the Website

Source	Type II Sum of Squares	df	Mean Square	F	p	η^2
Corrected Model	4.355[a]	1	4.355	4.116	.045	.044
Intercept	2033.851	1	2033.851	1922.296	.000	.953
Source	4.355	1	4.355	4.116	.045	.044
Error	94.165	89	1.058			
Total	2134.686	91				
Corrected Total	98.520	90				

a. R^2 = .044 (Adjusted R^2 = .033)

Table 15.

ANOVA for Choice X Source on Perceived Usefulness of Recommendations (Study two)

Dependent Variable: Perceived Usefulness of Recommendations

Source	Type II Sum of Squares	df	Mean Square	F	p	η^2
Corrected Model	13.125[a]	3	4.375	2.111	.105	.068
Intercept	2259.755	1	2259.755	1090.209	.000	.926
Choice	2.708	1	.565	.273	.603	.003
Source	.565	1	2.708	1.306	.256	.015
Choice*Source	9.910	1	9.910	4.781	.031	.052
Error	180.331	87	2.073			
Total	1448.500	91				
Corrected Total	193.456	90				

a. R^2 = .098 (Adjusted R^2 = .045)

Table 16.

Summary of Means for Perceived Usefulness of Recommendations (Study two)

		High-choice		Low-choice	
		M	*SD*	*M*	*SD*
Recommendation	Present (expert)	5.57	1.18	4.56	1.35
Source Cue	Absent	4.75	1.63	5.07	1.35

Figure 1.

Source X Product Type Effect on Attitude Toward the Website (Study one)
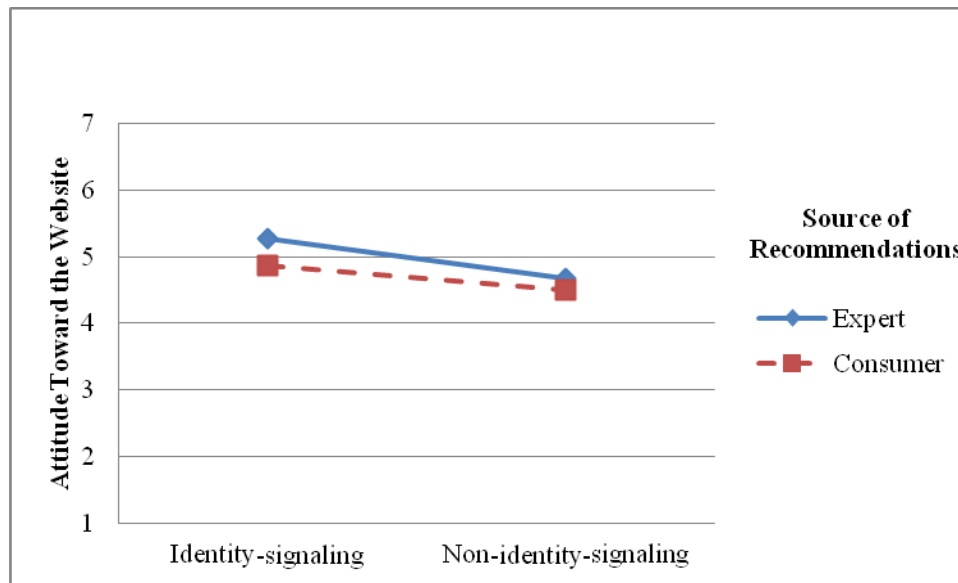
Figure 2.

Mediation of the Effect of Source of Recommendations on Attitude Toward the Website by Perceived Website Credibility (Study one)
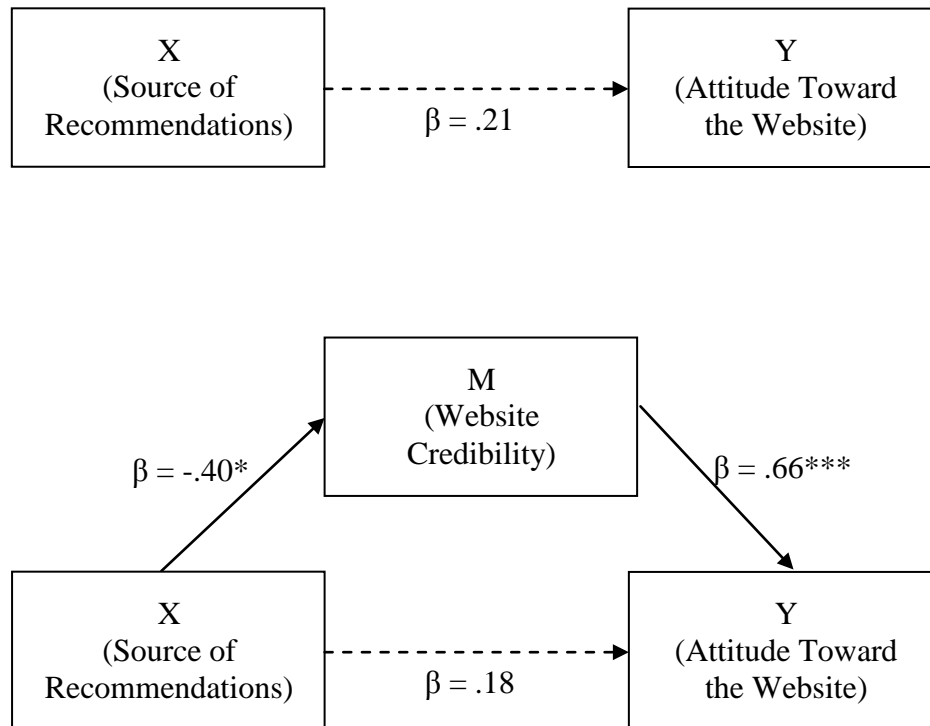
$*p < .05, **p < .01, ***p < .001$

Figure 3.

Source Cue X Amount of Choice on Perceived Usefulness of Recommendations (Study two)
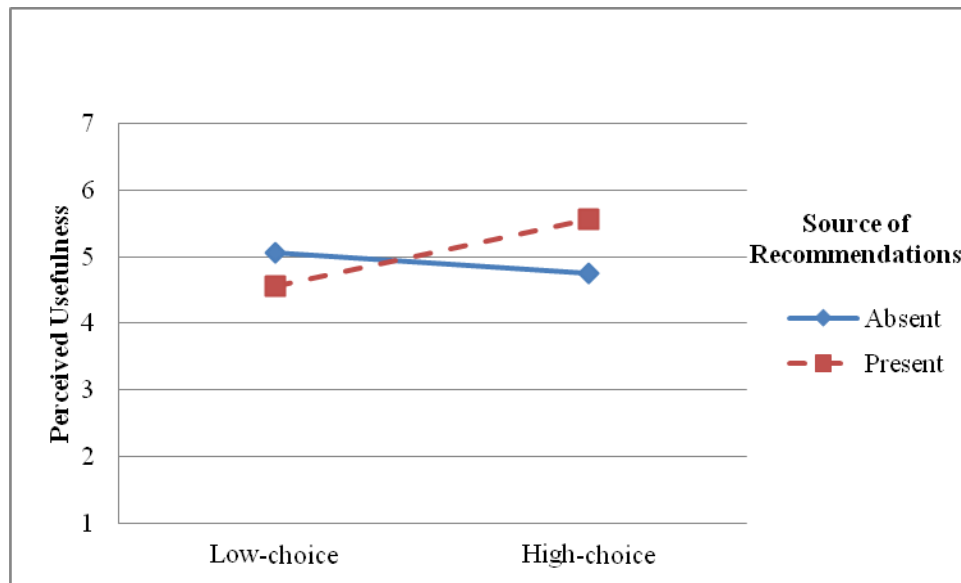
APPENDICES

Appendix A: Pre-Experiment Questionnaire

Thank you for participating in this research study. This is a study which looks at university students' views on different topics and students' preferences. There are no right or wrong answers to these questions. Please read the instructions carefully and provide your best response to each question.

Please complete this survey as soon as possible. **You must complete this survey before you come to the follow-up lab session in Carroll Hall**. If you have any questions about this study, please contact Yeuseung Kim at ykim@unc.edu.

1. On a 1-7 scale, with "1" representing "Not at all interested" and "7" representing "Extremely interested," please rate your level of interest in the following topics:

	Not at all interested						Extremely interested
Professional sports	1	2	3	4	5	6	7
College sports	1	2	3	4	5	6	7
Music	1	2	3	4	5	6	7
Movies	1	2	3	4	5	6	7
Travel	1	2	3	4	5	6	7
Online shopping	1	2	3	4	5	6	7
Technology	1	2	3	4	5	6	7
Health	1	2	3	4	5	6	7
News (Local and U.S.)	1	2	3	4	5	6	7
News (World)	1	2	3	4	5	6	7

2. What are your top three favorite clothing brands? Please list them IN ORDER OF PREFERENCE. Please list at least one.

   First: _____

   Second: _____

   Third: _____

3. Who/what are your top three favorite musical artists/groups/singers? Please list them IN ORDER OF PREFERENCE.

   First: _____

   Second: _____

   Third: _____

4. What is your favorite type of music? Please choose one from the following list.

□	Alternative rock
□	Blues
□	Classical music
□	Country
□	Electronic
□	Folk
□	Hard rock & metal
□	Hip hop
□	Indie
□	Jazz
□	Latin
□	Pop
□	Reggae
□	R&B
□	Rock
□	World
□	Other ( )

5. What is your favorite song? Please list at least one and you may list several songs.

_____

6. What is your favorite make of car/automobile? Please name ONE only. This may or may not be the same as the make of car/automobile you own.

_____

7. If you own a car, what is the make of your car/automobile? You may leave this response blank if you do not own a car.

_____

8. What is your favorite make of computers/laptops? Please name ONE only.

_____

9. How important is the make of computers/laptops when purchasing a computer/laptop?

Not at all important	1	2	3	4	5	6	7	Very important

10. What is your favorite shampoo brand? Please name ONE only.

_____

11. Is there a shampoo brand you do not like?
    1) Yes
    2) No

12. If yes, what is the name of the brand of shampoo you <u>do not like</u>? You may list more than one.

_____

13. What is your favorite toothpaste brand? Please name ONE only.

_____

14. Is there a toothpaste brand you do not like?
    1) Yes
    2) No

15. If yes, what is the name of the brand of toothpaste you <u>do not like</u>? You may list more than one.

_____

16. For toothpaste, what is the most important attribute to you? Please rank order the following choices:

	Whitening
	Fresh breath
	Prevent cavities
	Organic/natural ingredient
	Protection against acid erosion
	Anti-plaque and tartar control
	Other (Please specify:)

17. What is your favorite body wash brand? Please name ONE only.

_____

18. Is there a body wash brand you do not like?
    1) Yes
    2) No

19. If yes, what is the name of the brand of body wash you do not like? You may list more than one.

_____

20. Do you have a digital music player?
    1) Yes
    2) No

21. What brand of digital music player do you own? If you have several, please specify your favorite brand.

_____

22. If you know the model, please specify:

_____

23. What is your favorite news website? Please name ONE only.

_____

24. What is your favorite music website? (e.g., Internet radio, streaming music site) Please name ONE only.

_____

25. What is your favorite social networking site? Please name ONE only.

_____

26. What is your favorite search engine? Please name ONE only.

_____

27. What is your favorite shopping website? Please name ONE only.

_____

28. How much does clothing contribute to self-expression -- i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

29. How much do people use clothing to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

30. How much do you think your clothing expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

31. How much does a person's musical preference contribute to self-expression -- i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

32. How much do people use a person's musical preference to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

33. How much do you think your musical preference expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

34. How much does car/automobile contribute to self-expression -- i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

35. How much do people use car/automobile to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

36. How much do you think your car/automobile expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

37. How much do computers/laptops contribute to self-expression -- i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

38. How much do people use computers/laptops to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

39. How much do you think your computer/laptop expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

40. How much does shampoo contribute to self-expression -- i.e., a person's ability to express their identity?

Not at all	1	2	3	4	5	6	7	A great deal

41. How much do people use shampoo to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

42. How much do you think your shampoo expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

43. How much does toothpaste contribute to self-expression -- i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

44. How much do people use toothpaste to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

45. How much do you think your toothpaste expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

46. How much does body wash contribute to self-expression -- i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

47. How much do people use body wash to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

48. How much do you think your body wash expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

49. How much does digital music player contribute to self-expression -- i.e., a person's ability to express their identity?

Not at all	1	2	3	4	5	6	7	A great deal

50. How much do people use digital music player to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

51. How much do you think your digital music player expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

52. How much does sunglasses contribute to self-expression -- i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

53. How much do people use sunglasses to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

54. How much do you think your sunglasses expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

Thank you for participating in this research study. Based on these responses, we will be creating Web pages that reflect your responses. In order to do that, we need some information about yourself. In compliance with IRB requirement, this information will be kept confidential and used strictly for research purposes only.

Now please provide some information about yourself.

55. Your name is (First and last names):

_____

56. Your gender is:
   1) Male
   2) Female

57. Your age is:

_____

58. Your major is:

_____

59. Last 4 digits of your PID is:

_____

Appendix B: Study Consent Form

University of North Carolina-Chapel Hill
Consent to Participate in a Research Study
Adult Participants
Social Behavioral Form

_____

IRB Study # 11-0702
Consent Form Version Date: April 3, 2011
Title of Study: Effects of Approaches to Customized Recommendations, Type of Product, and Amount of Choice on Consumer Attitudes and Decision Making
Principal Investigator: Yeuseung Kim
UNC-Chapel Hill Department: Journalism and Mass Communication
UNC-Chapel Hill Phone number: 919-843-5858
Email Address: ykim@unc.edu

Faculty Advisor: Sri Kalyanaraman
UNC-Chapel Hill Phone number: 919-843-5858
Email Address: sri@unc.edu

_____

What are some general things you should know about research studies?
You are being asked to take part in a research study. To join the study is voluntary. You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty. Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study. You will be given a copy of this consent form. You should ask the researchers named above, or staff members who may assist them, any questions you have about this study at any time.

What is the purpose of this study?
The purpose of this research study is to learn about how internet users react to online shopping websites that recommend products. For the purposes of this study, you will be reviewing a website that resembles an online shopping mall. You will be asked to complete a self-administered questionnaire related to the Web site.

How many people will take part in this study?
If you decide to be in this study, you will be one of approximately 200 people in this research study.

How long will your part in this study last?
When you sign up to participate in the study, you will be asked to fill out a questionnaire. This should take you about 5 minutes. Approximately a week later, you will be invited to come to a computer lab in the School of Journalism and Mass Communication to participate in a study. The study will take approximately 30 minutes of your time. There will be no other follow-ups.

What will happen if you take part in the study?
When you come to a lab, you will view a website and then you will be asked to fill out a questionnaire to report your opinions related to what you have reviewed. We are interested in your response to the Web site presented. Please be assured that there are no "right" or "wrong" answers. Also, please be assured that you are free to not answer any questions or to end the study at any time.

What are the possible benefits from being in this study?
Research is designed to benefit society by gaining new knowledge. You may not benefit personally from being in this research study.

What are the possible risks or discomforts involved from being in this study?
There are no uncommon or previously known risks associated with this research. However, you should report any problems to the researcher during the study at any time.

How will your privacy be protected?
Only the principal investigator will have access to the collected data. Participants *will not* be identified in any report or publication about this study. Although every effort will be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. This is very unlikely, but if disclosure is ever required, UNC-Chapel Hill will take steps allowable by law to protect the privacy of personal information. In some cases, your information in this research study could be reviewed by representatives of the University, research sponsors, or government agencies for purposes such as quality control or safety.

What if you want to stop before your part in the study is complete?
You can withdraw from this study at any time, without penalty. The investigators also have the right to stop your participation at any time. This could be because you have had an unexpected reaction, or have failed to follow instructions, or because the entire study has been stopped.

Will you receive anything for being in this study?
You will receive an hour of departmental research credit for participating in this study.

Will it cost you anything to be in this study?
There will be no costs for being in the study

What if you are a UNC student?
You may choose not to be in the study or to stop being in the study before it is over at any time. This will not affect your class standing or grades at UNC-Chapel Hill. You will not be offered or receive any special consideration if you take part in this research.

What if you have questions about this study?
You have the right to ask, and have answered, any questions you may have about this research. If you have questions, complaints, concerns, or if a research-related injury occurs, you should contact the researchers listed on the first page of this form.

What if you have questions about your rights as a research participant?
All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject, or if you would like to obtain information or offer input, you may contact the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

- -

Title of Study: Effects of Approaches to Customized Recommendations, Type of Product, and Amount of Choice on Consumer Attitudes and Decision Making

Principal Investigator: Yeuseung Kim

<u>Participant's Agreement:</u>

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.

_____   _____

Signature of Research Participant   Date

_____

Printed Name of Research Participant

Appendix C: Study One Sample Stimulus Materials

Study One: Sample Stimulus Materials

Source of Recommendation: Expert
Type of Product: Identity Signaling Product

My-Favorite-Shop.com

Hello Chelsea,

Cart | Wish List

Artist
Biography
Pictures
Videos
Albums
Tracks
Events
News
Charts

Death Cab for Cutie

Death Cab for Cutie is an American indie rock band formed in Bellingham, Washington in 1997. The band consists of Ben Gibbard (vocals, guitar, piano), Chris Walla (guitar), Nicholas Harmer (bass) and Jason McGerr (drums).

Death Cab began as a solo project of Ben Gibbard, now the band's vocalist and guitarist. Gibbard took the band name from the satirical song Death Cab for Cutie, performed by The Bonzo Dog Band in The Beatles' 1967 experimental film Magical Mystery Tour. As Death Cab for Cutie, Gibbard released a cassette titled

You Can Play These Songs With Chords; the release was surprisingly successful, and Gibbard decided to expand the band into a complete project. He recruited Chris Walla (who had also worked on the cassette) as an electric guitarist, Nick Harmer as bass guitarist, and Nathan Good to play drums. The four released the LP Something About Airplanes on August 18th 1998. The album was favorably reviewed in the independent music scene, and in 2000 the band released We Have the Facts and We're Voting Yes. Nathan Good left the band at some point during this album's production. His playing on "The Employment Pages" and "Company Calls Epilogue" were kept, but Gibbard played drums on all other songs.

Read more...

★ Recommended for you

Other Artists

Recommended based on *experts' evaluations* of your favorite artist.

Ask An Expert

The Postal Service
>>>Click for more info...<<<

The Shins
>>>Click for more info...<<<

Dashboard Confessional
>>>Click for more info...<<<

Motion City Soundtrack
>>>Click for more info...<<<

Metric
>>>Click for more info...<<<

SUPER SIMILARITY | VERY HIGH SIMILARITY | HIGH SIMILARITY | MEDIUM SIMILARITY | LOWER SIMILARITY

Study One: Sample Stimulus Materials

Source of Recommendation: Consumer
Type of Product: Identity Signaling Product

Study One: Sample Stimulus Materials

Source of Recommendation: Expert
Type of Product: Non-Identity Signaling Product

Study One: Sample Stimulus Materials

Source of Recommendation: Consumer
Type of Product: Non-Identity Signaling Product

Appendix D: Study One Main Experiment Questionnaire

Type of Product: Non-Identity Signaling Product

Now please answer the following questions. The following questionnaire asks you to indicate your opinion about the website you have just viewed. Please read the questions carefully, and check one choice from the scale that most closely reflects your opinion or feeling. There are no right or wrong answers. If you have any questions, please raise your hand.

1. Briefly, please explain why you chose the product.

   _____

2. Are you familiar with the product you chose?

Not at all familiar	1	2	3	4	5	6	7	Very familiar

3. How confident are you that the product you selected to purchase is really the best choice for you?

Not at all confident	1	2	3	4	5	6	7	Very confident

4. The website you just viewed had a list of recommended products. How were the recommendations made?
   1) Based on experts' evaluations of my favorite product
   2) Based on other consumers who also like my favorite product
   3) Unsure

5. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
The recommendations were very useful in my decision making.	1	2	3	4	5	6	7
I found the recommendations very helpful.	1	2	3	4	5	6	7
It was difficult to make a decision about which option to pick.	1	2	3	4	5	6	7

6. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
Recommendations were made based on experts' evaluations of my favorite product.	1	2	3	4	5	6	7
Recommendations were made based on other consumers who also like my favorite product.	1	2	3	4	5	6	7

7. Please indicate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I trust recommendations from this website.	1	2	3	4	5	6	7
I believe recommendations to be credible.	1	2	3	4	5	6	7
I found recommendations to be of high quality.	1	2	3	4	5	6	7
I found recommendations to be accurate.	1	2	3	4	5	6	7
I found recommendations to be reliable.	1	2	3	4	5	6	7
I found recommendations to be believable.	1	2	3	4	5	6	7
I found recommendations to be dependable.	1	2	3	4	5	6	7

8. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
The website was customized according to my interests.	1	2	3	4	5	6	7
The website targeted me as a unique individual.	1	2	3	4	5	6	7
This website made purchase recommendations that match my needs.	1	2	3	4	5	6	7

9. Please rate the level of your agreement with the following statement, ranging from "Strongly disagree" to "Strongly agree":

I am confident that the top-ranked recommendation was indeed the best fit for my preference.

Strongly disagree						Strongly agree
1	2	3	4	5	6	7

10. Please provide <u>an overall evaluation of the My-Favorite-Shop.com website</u> you have just viewed. Please rate how well the following adjectives describe your overall evaluation of the website where "Describes very poorly" means the term describes the website very poorly and "Describes very well" means the term describes the website very well:

	Describes very poorly						Describes very well
Appealing	1	2	3	4	5	6	7
Useful	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Good	1	2	3	4	5	6	7
Favorable	1	2	3	4	5	6	7
Attractive	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Pleasant	1	2	3	4	5	6	7
Likeable	1	2	3	4	5	6	7
High quality	1	2	3	4	5	6	7
Interesting	1	2	3	4	5	6	7

11. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
The content in the website said something important to me.	1	2	3	4	5	6	7
The content featured in the website was meaningful for me.	1	2	3	4	5	6	7
The website didn't have anything to do with me or my life.	1	2	3	4	5	6	7
The website talked about something that concerned me.	1	2	3	4	5	6	7
While being exposed to the website, I thought about how the content was useful to me.	1	2	3	4	5	6	7
The website did not show me anything that made me want to use it.	1	2	3	4	5	6	7

12. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I felt a great degree of affinity toward this website.	1	2	3	4	5	6	7

I felt a great degree of attachment toward this website.	1	2	3	4	5	6	7
I experienced a sense of kinship when going through this site.	1	2	3	4	5	6	7
This website made me feel that I was part of a community.	1	2	3	4	5	6	7
This website induced a feeling of belonging in me.	1	2	3	4	5	6	7
I could identify myself strongly with the content on this website.	1	2	3	4	5	6	7

13. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
This website was typical of most websites you see today.	1	2	3	4	5	6	7
You see websites like this all the time; it's the same old thing.	1	2	3	4	5	6	7
I've seen a lot of website like this before.	1	2	3	4	5	6	7
This website was just like other website.	1	2	3	4	5	6	7

14. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I got emotionally involved in this website.	1	2	3	4	5	6	7
I experienced emotion while going through this website.	1	2	3	4	5	6	7
I found myself responding strongly to this website.	1	2	3	4	5	6	7
I got involved with the information and content on this website.	1	2	3	4	5	6	7

15. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
The website created a sense of dialogue with me.	1	2	3	4	5	6	7
The content of the website was interactive.	1	2	3	4	5	6	7
The structure of the website was interactive.	1	2	3	4	5	6	7

16. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I trust the information presented on the website.	1	2	3	4	5	6	7
I believe the information presented on the website to be credible.	1	2	3	4	5	6	7
I found the information presented on the website to be of high quality.	1	2	3	4	5	6	7
I found the information presented on the website to be accurate.	1	2	3	4	5	6	7
I found the information presented on the website to be reliable.	1	2	3	4	5	6	7
I found the information presented on the website to be believable.	1	2	3	4	5	6	7

17. Please rate your attitudes toward toothpastes in general:

Unimportant	1	2	3	4	5	6	7	Important
Boring	1	2	3	4	5	6	7	Interesting
Irrelevant	1	2	3	4	5	6	7	Relevant
Unexciting	1	2	3	4	5	6	7	Exciting
Means nothing	1	2	3	4	5	6	7	Means a lot
Unappealing	1	2	3	4	5	6	7	Appealing
Mundane	1	2	3	4	5	6	7	Fascinating
Worthless	1	2	3	4	5	6	7	Valuable
Uninvolving	1	2	3	4	5	6	7	Involving
Not needed	1	2	3	4	5	6	7	Needed

18. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I know pretty much (a lot) about toothpastes.	1	2	3	4	5	6	7
I do not feel very knowledgeable about toothpastes.	1	2	3	4	5	6	7
Among my circle of friends, I'm one of the "experts" on toothpastes.	1	2	3	4	5	6	7
Compared to most other people, I know less about toothpastes.	1	2	3	4	5	6	7
When it comes to toothpastes, I really don't know a lot.	1	2	3	4	5	6	7

19. How much does a person's selection of a toothpaste contribute to self-expression --
i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

20. How much do people use a person's selection of a toothpaste to make inferences
about others -- i.e., people think they know a lot about a person based on their choice
in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

21. How much do you think your preference about toothpastes expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

22. How much do you think your preference about toothpastes expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

23. Please rate the level of your agreement with the following statements, ranging from
"Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I collect unusual products as a way of telling people I'm different.	1	2	3	4	5	6	7
I have sometimes purchased unusual products or brands as a way to create a more distinctive personal image.	1	2	3	4	5	6	7
I often look for one-of-a-kind products or brands so that I create a style that is all my own.	1	2	3	4	5	6	7
Often when buying merchandise, an important goal is to find something that communicates my uniqueness.	1	2	3	4	5	6	7
I often combine possessions in such a way that I create a personal image for myself that can't be duplicated.	1	2	3	4	5	6	7
I collect unusual products as a way of telling people I'm different.	1	2	3	4	5	6	7
I often try to find a more interesting version of run-of-the-mill products because I enjoy being original.	1	2	3	4	5	6	7

I actively seek to develop my personal uniqueness by buying special products or brands.	1	2	3	4	5	6	7
Having an eye for products that are interesting and unusual assists me in establishing a distinctive image.	1	2	3	4	5	6	7
The products and brands that I like best are the ones that express my individuality.	1	2	3	4	5	6	7
I often think of the things I buy and do in terms of how I can use them to shape a more unusual personal image.	1	2	3	4	5	6	7

24. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I'm often on the lookout for new products or brands that will add to my personal uniqueness.	1	2	3	4	5	6	7
When dressing, I have sometimes dared to be different in ways that others are likely to disapprove.	1	2	3	4	5	6	7
As far as I'm concerned, when it comes to the products I buy and the situations in which I use them, customs and rules are made to be broken.	1	2	3	4	5	6	7
I often dress unconventionally even when it's likely to offend others.	1	2	3	4	5	6	7
I rarely act in agreement with what others think are the right things to buy.	1	2	3	4	5	6	7
Concern for being out of place doesn't prevent me from wearing what I want to wear.	1	2	3	4	5	6	7
When it comes to the products I buy and the situations in which I use them, I have often broken customs and rules.	1	2	3	4	5	6	7
I have often violated the understood rules of my social group regarding what to buy or own.	1	2	3	4	5	6	7
I have often gone against the understood rules of my social group regarding when and how certain products are properly used.	1	2	3	4	5	6	7
I enjoy challenging the prevailing taste of people I know by buying something they wouldn't seem to accept.	1	2	3	4	5	6	7

25. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
If someone hinted that I had been dressing inappropriately for a social situation, I would continue dressing in the same manner.	1	2	3	4	5	6	7
When I dress differently, I'm often aware that others think I'm peculiar, but I don't care.	1	2	3	4	5	6	7
When products or brands I like become extremely popular, I lose interest in them.	1	2	3	4	5	6	7
I avoid products or brands that have already been accepted and purchased by the average consumer.	1	2	3	4	5	6	7
When a product I own becomes popular among the general population, I begin using it less.	1	2	3	4	5	6	7
I often try to avoid products or brands that I know are bought by the general population.	1	2	3	4	5	6	7
As a rule, I dislike products or brands that are customarily purchased by everyone.	1	2	3	4	5	6	7
I give up wearing fashions I've purchased once they become popular among the general public.	1	2	3	4	5	6	7
The more commonplace a product or brand is among the general population, the less interested I am in buying it.	1	2	3	4	5	6	7
Products don't seem to hold much value for me when they are purchased regularly by everyone.	1	2	3	4	5	6	7
When a style of clothing I own becomes too commonplace, I usually quit wearing it.	1	2	3	4	5	6	7

26. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I am sensitive about giving out information regarding my preferences.	1	2	3	4	5	6	7
I am concerned about anonymous information (information collected automatically but cannot be used to identify me, such as my computer, network information, operating system, etc.) that is collected about me.	1	2	3	4	5	6	7
I am concerned about how my personally unidentifiable information (information that I have voluntarily given out but cannot be used to identify me, e.g., Zip Code, age-range, sex, etc.) will be used by the firm.	1	2	3	4	5	6	7
I am concerned about how my personally identifiable information (information that I have voluntarily given out AND can be used to identify me as an individual, e.g., name, shipping address, credit card or bank account information, social security number, etc.) will be used by the firm.	1	2	3	4	5	6	7

27. Please write what you believe to be the purpose of this study:

_____

28. Please provide your participant number:

_____

Appendix E: Study Two Sample Stimulus Materials

Study Two: Sample Stimulus Materials

Recommendation Cue: Absent
Amount of Choice: High

My-Favorite-Shop.com

Hello Daniela,

Cart | Wish List

Artist
Biography
Pictures
Videos
Albums
Tracks
Events
News
Charts

Maroon 5

Maroon 5 is a Grammy Award-winning American pop rock band. Formed in Los Angeles, United States, the group comprises five members: Adam Levine (lead vocals, rhythm guitar), James Valentine (lead guitar, backing vocals), Jesse Carmichael (keyboards, rhythm guitar, backing vocals), Mickey Madden (bass guitar), and Matt Flynn (drums, percussion).

Maroon 5's third studio album Hands All Over was released in the U.S. on September 21, 2010. Maroon 5's third studio album was recorded in 2009 in Switzerland, where the band joined forces with record producer Robert "Mutt" Lange.

Valentine revealed in November 2009 that the new album had been titled Hands All Over.[37] In May 2010, they revealed that they had written 15 songs for Hands All Over. They are: "How", "Never Gonna Leave This Bed", "Last Chance", "Don't Know Nothing", "Out of Goodbyes" (featuring Lady Antebellum[38]), "I Can't Lie", "Give a Little More", "Misery", "Stutter", "Just A Feeling", "Runaway", "Get Back In My Life", "No Curtain Call" and "Hands All Over". Hands All Over was released on September 21, 2010. The album's first single, "Misery", was released on June 22.

Read more…

★ **Recommended for you**

Other Artists

The Script
>>>**Click for more info**…<<<

OneRepublic
>>>**Click for more info**…<<<

Sara Bareilles
>>>**Click for more info**…<<<

James Blunt
>>>**Click for more info**…<<<

Justin Timberlake
>>>**Click for more info**…<<<

(Continued on next page)

122

Lady Antebellum
>>>**Click for more info**...<<<

The All-American Rejects
>>>**Click for more info**...<<<

Glee Cast
>>>**Click for more info**...<<<
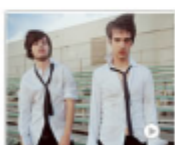
Panic! At the Disco
>>>**Click for more info**...<<<

Plain White T's
>>>**Click for more info**...<<<

Rob Thomas
>>>**Click for more info**...<<<

Neon Trees
>>>**Click for more info**...<<<

Destiny's Child
>>>**Click for more info**...<<<

Katharine McPhee
>>>**Click for more info**...<<<

David Guetta
>>>**Click for more info**...<<<

Study Two: Sample Stimulus Materials

Recommendation Cue: Absent
Amount of Choice: Low

My-Favorite-Shop.com

**Hello
Jonathan,**

🛒 Cart   Wish List 🔽

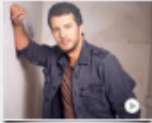| Artist |
| Biography |
| Pictures |
| Videos |
| Albums |
| Tracks |
| Events |
| News |
| Charts |

James Aldean

For anyone looking to brand Jason Aldean as part of a significant musical movement, good luck. There's a lot about the singer that's become familiar during his five years as a country hitmaker, after all, he has spent more weeks at No. one on the radio charts than any other country artist in the last 12 months. But none of what he does comes out quite like anyone else. The blues-tinged licks at the end of his phrases—there's a ring of familiarity about them, but you can't really link them to another artist. The smoky guitar riffs that have become a signature—they're built on sounds that have come before, but they don't really belong to anyone else in the country genre, either.

The small-town themes that pervade many of his songs—that's all been done before, but not quite with the unwavering honesty that Aldean applies to the subject.

Since his 2005 debut with the scorching "Hicktown," the singer has set himself apart from the pack as a truly unique artist. He addresses his Georgia-born brand of country music with a singular vision, and he intends to keep it that way.

Read more…

★ **Recommended for you**

| Other Artists |

Luke Bryan
>>>**Click for more info**…<<<

Josh Thompson
>>>**Click for more info**…<<<

The Lost Trailers
>>>**Click for more info**…<<<

Jo Dee Messina
>>>**Click for more info**…<<<

Jamie O'Neal
>>>**Click for more info**…<<<

Study Two: Sample Stimulus Materials

Recommendation Cue: Present
Amount of Choice: High

Hello Susannah,

Artist
Biography
Pictures
Videos
Albums
Tracks
Events
News
Charts

Dashboard Confessional

Fleetwood Mac is a British/American rock band formed in 1967, that has experienced a high turnover of personnel and varied levels of success. From the band's inception through the end of 1974, no incarnation of Fleetwood Mac lasted as long as two years, but all featured core members Mick Fleetwood and John McVie.

The two most successful periods for the band were during the late 1960s British blues boom, when they were led by guitarist Peter Green; and from 1975-87, with more pop-orientation, featuring Christine McVie, Lindsey Buckingham and Stevie Nicks.

The band enjoyed more modest success in the intervening period between 1971 and 1974, with the line-up that included Bob Welch, and also during the 1990s which saw more personnel changes before the return of Nicks and Buckingham in 1997, and more recently, the departure of Christine McVie. The only member present in the band from the very beginning is its namesake drummer Mick Fleetwood. Bassist John McVie, despite his giving part of his name to the band, did not play on their first single nor at their first concerts. Keyboardist Christine McVie has, to date, appeared on all but two albums, either as a member or as a session musician. She also supplied the artwork for the album Kiln House.

Read more…

★ Recommended for you

Other Artists

Recommended based on *experts' evaluations* of your favorite artist.

Ask An Expert
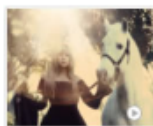
Stevie Nicks
>>>**Click for more info**…<<<
SUPER SIMILARITY

Lindsey Buckingham
>>>**Click for more info**…<<<
SUPER SIMILARITY

Christine McVie
>>>**Click for more info**…<<<
SUPER SIMILARITY

Buckingham Nicks
>>>**Click for more info**…<<<
VERY HIGH SIMILARITY

Heart
>>>Click for more info...<<<
VERY HIGH SIMILARITY

Eagles
>>>Click for more info...<<<
VERY HIGH SIMILARITY

Peter Green
>>>Click for more info...<<<
HIGH SIMILARITY

John Mayall & The
Bluesbreakers
>>>Click for more info...<<<
HIGH SIMILARITY

The Moody Blues
>>>Click for more info...<<<
HIGH SIMILARITY

The Allman Brothers Band
>>>Click for more info...<<<
MEDIUM SIMILARITY

Steely Dan
>>>Click for more info...<<<
MEDIUM SIMILARITY
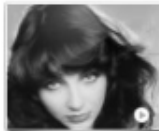
Kate Bush
>>>Click for more info...<<<
MEDIUM SIMILARITY

Supertramp
>>>Click for more info...<<<
LOWER SIMILARITY

**Tom Petty and the
Heartbreakers**
>>>Click for more info...<<<
LOWER SIMILARITY

Crosby, Stills, Nash & Young
>>>Click for more info...<<<
LOWER SIMILARITY

Study Two: Sample Stimulus Materials

Recommendation Cue: Present
Amount of Choice: Low

Appendix F: Study Two Questionnaire

Now please answer the following questions. The following questionnaire asks you to indicate your opinion about the website you have just viewed. Please read the questions carefully, and check one choice from the scale that most closely reflects your opinion or feeling. There are no right or wrong answers. If you have any questions, please raise your hand.

1. Briefly, please explain why you chose the product.

   _____

2. Are you familiar with the product you chose?

Not at all familiar	1	2	3	4	5	6	7	Very familiar

3. How confident are you that the product you selected to purchase is really the best choice for you?

Not at all confident	1	2	3	4	5	6	7	Very confident

4. The website you just viewed had a list of recommended products. How were the recommendations made?
   4) Based on experts' evaluations of my favorite product
   5) Based on other consumers who also like my favorite product
   6) Unsure

5. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
The recommendations were very useful in my decision making.	1	2	3	4	5	6	7
I found the recommendations very helpful.	1	2	3	4	5	6	7
It was difficult to make a decision about which option to pick.	1	2	3	4	5	6	7

6. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
Recommendations were made based on experts' evaluations of my favorite product.	1	2	3	4	5	6	7

7. Please indicate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I trust recommendations from this website.	1	2	3	4	5	6	7
I believe recommendations to be credible.	1	2	3	4	5	6	7
I found recommendations to be of high quality.	1	2	3	4	5	6	7
I found recommendations to be accurate.	1	2	3	4	5	6	7
I found recommendations to be reliable.	1	2	3	4	5	6	7
I found recommendations to be believable.	1	2	3	4	5	6	7
I found recommendations to be dependable.	1	2	3	4	5	6	7

8. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
The website was customized according to my interests.	1	2	3	4	5	6	7
The website targeted me as a unique individual.	1	2	3	4	5	6	7
This website made purchase recommendations that match my needs.	1	2	3	4	5	6	7

9. Please rate the level of your agreement with the following statement, ranging from "Strongly disagree" to "Strongly agree":

I am confident that the top-ranked recommendation was indeed the best fit for my preference.

Strongly disagree						Strongly agree
1	2	3	4	5	6	7

10. Please provide an overall evaluation of the My-Favorite-Shop.com website you have just viewed. Please rate how well the following adjectives describe your overall evaluation of the website where "Describes very poorly" means the term describes the

website very poorly and "Describes very well" means the term describes the website very well:

	Describes very poorly						Describes very well
Appealing	1	2	3	4	5	6	7
Useful	1	2	3	4	5	6	7
Positive	1	2	3	4	5	6	7
Good	1	2	3	4	5	6	7
Favorable	1	2	3	4	5	6	7
Attractive	1	2	3	4	5	6	7
Exciting	1	2	3	4	5	6	7
Pleasant	1	2	3	4	5	6	7
Likeable	1	2	3	4	5	6	7
High quality	1	2	3	4	5	6	7
Interesting	1	2	3	4	5	6	7

11. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
The content in the website said something important to me.	1	2	3	4	5	6	7
The content featured in the website was meaningful for me.	1	2	3	4	5	6	7
The website didn't have anything to do with me or my life.	1	2	3	4	5	6	7
The website talked about something that concerned me.	1	2	3	4	5	6	7
While being exposed to the website, I thought about how the content was useful to me.	1	2	3	4	5	6	7
The website did not show me anything that made me want to use it.	1	2	3	4	5	6	7

12. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I felt a great degree of affinity toward this website.	1	2	3	4	5	6	7
I felt a great degree of attachment toward this website.	1	2	3	4	5	6	7
I experienced a sense of kinship when	1	2	3	4	5	6	7

going through this site.							
This website made me feel that I was part of a community.	1	2	3	4	5	6	7
This website induced a feeling of belonging in me.	1	2	3	4	5	6	7
I could identify myself strongly with the content on this website.	1	2	3	4	5	6	7

13. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
This website was typical of most websites you see today.	1	2	3	4	5	6	7
You see websites like this all the time; it's the same old thing.	1	2	3	4	5	6	7
I've seen a lot of website like this before.	1	2	3	4	5	6	7
This website was just like other website.	1	2	3	4	5	6	7

14. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I got emotionally involved in this website.	1	2	3	4	5	6	7
I experienced emotion while going through this website.	1	2	3	4	5	6	7
I found myself responding strongly to this website.	1	2	3	4	5	6	7
I got involved with the information and content on this website.	1	2	3	4	5	6	7

15. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
The website created a sense of dialogue with me.	1	2	3	4	5	6	7
The content of the website was interactive.	1	2	3	4	5	6	7
The structure of the website was interactive.	1	2	3	4	5	6	7

16. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I trust the information presented on the website.	1	2	3	4	5	6	7
I believe the information presented on the website to be credible.	1	2	3	4	5	6	7
I found the information presented on the website to be of high quality.	1	2	3	4	5	6	7
I found the information presented on the website to be accurate.	1	2	3	4	5	6	7
I found the information presented on the website to be reliable.	1	2	3	4	5	6	7
I found the information presented on the website to be believable.	1	2	3	4	5	6	7

17. Please rate your attitudes toward music in general:

Unimportant	1	2	3	4	5	6	7	Important
Boring	1	2	3	4	5	6	7	Interesting
Irrelevant	1	2	3	4	5	6	7	Relevant
Unexciting	1	2	3	4	5	6	7	Exciting
Means nothing	1	2	3	4	5	6	7	Means a lot
Unappealing	1	2	3	4	5	6	7	Appealing
Mundane	1	2	3	4	5	6	7	Fascinating
Worthless	1	2	3	4	5	6	7	Valuable
Uninvolving	1	2	3	4	5	6	7	Involving
Not needed	1	2	3	4	5	6	7	Needed

18. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I know pretty much (a lot) about music.	1	2	3	4	5	6	7
I do not feel very knowledgeable about music.	1	2	3	4	5	6	7
Among my circle of friends, I'm one of the "experts" on music.	1	2	3	4	5	6	7
Compared to most other people, I know less about music.	1	2	3	4	5	6	7
When it comes to music, I really don't know a lot.	1	2	3	4	5	6	7

19. How much does a person's selection of a music album contribute to self-expression -- i.e., a person's ability to express his or her identity?

Not at all	1	2	3	4	5	6	7	A great deal

20. How much do people use a person's selection of a music album to make inferences about others -- i.e., people think they know a lot about a person based on their choice in this domain?

Not at all	1	2	3	4	5	6	7	A great deal

21. How much do you think your preference about music expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

22. How much do you think your preference about music expresses your identity?

Not at all	1	2	3	4	5	6	7	A great deal

23. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I collect unusual products as a way of telling people I'm different.	1	2	3	4	5	6	7
I have sometimes purchased unusual products or brands as a way to create a more distinctive personal image.	1	2	3	4	5	6	7
I often look for one-of-a-kind products or brands so that I create a style that is all my own.	1	2	3	4	5	6	7
Often when buying merchandise, an important goal is to find something that communicates my uniqueness.	1	2	3	4	5	6	7
I often combine possessions in such a way that I create a personal image for myself that can't be duplicated.	1	2	3	4	5	6	7
I collect unusual products as a way of telling people I'm different.	1	2	3	4	5	6	7
I often try to find a more interesting version of run-of-the-mill products because I enjoy being original.	1	2	3	4	5	6	7
I actively seek to develop my personal	1	2	3	4	5	6	7

uniqueness by buying special products or brands.							
Having an eye for products that are interesting and unusual assists me in establishing a distinctive image.	1	2	3	4	5	6	7
The products and brands that I like best are the ones that express my individuality.	1	2	3	4	5	6	7
I often think of the things I buy and do in terms of how I can use them to shape a more unusual personal image.	1	2	3	4	5	6	7

24. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I'm often on the lookout for new products or brands that will add to my personal uniqueness.	1	2	3	4	5	6	7
When dressing, I have sometimes dared to be different in ways that others are likely to disapprove.	1	2	3	4	5	6	7
As far as I'm concerned, when it comes to the products I buy and the situations in which I use them, customs and rules are made to be broken.	1	2	3	4	5	6	7
I often dress unconventionally even when it's likely to offend others.	1	2	3	4	5	6	7
I rarely act in agreement with what others think are the right things to buy.	1	2	3	4	5	6	7
Concern for being out of place doesn't prevent me from wearing what I want to wear.	1	2	3	4	5	6	7
When it comes to the products I buy and the situations in which I use them, I have often broken customs and rules.	1	2	3	4	5	6	7
I have often violated the understood rules of my social group regarding what to buy or own.	1	2	3	4	5	6	7
I have often gone against the understood rules of my social group regarding when and how certain products are properly used.	1	2	3	4	5	6	7
I enjoy challenging the prevailing taste of people I know by buying something they wouldn't seem to accept.	1	2	3	4	5	6	7

25. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
If someone hinted that I had been dressing inappropriately for a social situation, I would continue dressing in the same manner.	1	2	3	4	5	6	7
When I dress differently, I'm often aware that others think I'm peculiar, but I don't care.	1	2	3	4	5	6	7
When products or brands I like become extremely popular, I lose interest in them.	1	2	3	4	5	6	7
I avoid products or brands that have already been accepted and purchased by the average consumer.	1	2	3	4	5	6	7
When a product I own becomes popular among the general population, I begin using it less.	1	2	3	4	5	6	7
I often try to avoid products or brands that I know are bought by the general population.	1	2	3	4	5	6	7
As a rule, I dislike products or brands that are customarily purchased by everyone.	1	2	3	4	5	6	7
I give up wearing fashions I've purchased once they become popular among the general public.	1	2	3	4	5	6	7
The more commonplace a product or brand is among the general population, the less interested I am in buying it.	1	2	3	4	5	6	7
Products don't seem to hold much value for me when they are purchased regularly by everyone.	1	2	3	4	5	6	7
When a style of clothing I own becomes too commonplace, I usually quit wearing it.	1	2	3	4	5	6	7

26. Please rate the level of your agreement with the following statements, ranging from "Strongly disagree" to "Strongly agree":

	Strongly disagree						Strongly agree
I am sensitive about giving out information regarding my preferences.	1	2	3	4	5	6	7
I am concerned about anonymous information (information collected automatically but cannot be used to identify me, such as my computer, network information, operating system, etc.) that is collected about me.	1	2	3	4	5	6	7
I am concerned about how my personally unidentifiable information (information that I have voluntarily given out but cannot be used to identify me, e.g., Zip Code, age-range, sex, etc.) will be used by the firm.	1	2	3	4	5	6	7
I am concerned about how my personally identifiable information (information that I have voluntarily given out AND can be used to identify me as an individual, e.g., name, shipping address, credit card or bank account information, social security number, etc.) will be used by the firm.	1	2	3	4	5	6	7

27. Please write what you believe to be the purpose of this study:

_____

28. Please provide your participant number:

_____

Appendix G: Study Debriefing Form

Debriefing Form

Effects of customized recommendations, product type, and amount of choice on persuasion

Thank you for participating in this study. Now, we would like to share some information about our research question and design of the study.

- In this study, we wanted to learn:
  - The effects of approaches to product recommendations, types of products, and amount of choice on consumers' intent to purchase recommended products.
- To tackle our research question, the following research design is created:
  - When you arrived at the computer lab, you were told that you are participating in a study that is testing an online shopping website. The website was fictitious but the products recommended to you were based on the questionnaire you completed when signing up for this study.
  - Then, you were randomly assigned to one of four different groups. Each group had different information about how the recommendations are made and had different types of products.
  - After you had a chance to use the website, we asked you questions about your attitude toward the website, attitude toward the recommendations, purchase intentions, and some demographic information.
  - Later, we will review your responses along with the other participants in this study. Our purpose is to try to determine what would be an effective approach to recommend products in relations to the type of product.

In order to make sure everyone's responses are not biased by outside influences, **please do not speak with anyone about the study for at least four weeks.** It is very important that others who may participate do *not* know the purpose of this study beforehand.

If you would like to learn more about this topic, you may be interested in reading the following:

Berger, J., & Heath, C. (2007). Where consumers diverge from others: Identity signaling and product domains. *Journal of Consumer Research, 34*(2), 121-134.

Häubl, G., & Murray, K. B. (2003). Preference construction and persistence in digital marketplaces: The role of electronic recommendation agents. *Journal of Consumer Psychology, 13*(1&2), 75-91.

Senecal, S., & Nantel, J. (2004). The influence of online product recommendation on consumers' online choices. *Journal of Retailing, 80*(2), 159-169.

Tam, K. Y., & Ho, S. Y. (2005). Web personalization as a persuasion strategy: An elaboration likelihood model perspective. *Information Systems Research, 16*(3), 271-291.

If you have any questions or concerns about this study, please contact Yeuseung Kim at ykim@unc.edu. Thank you again for your participation. We appreciate your help!

REFERENCES

Alba, J., Lynch, J., Weitz, B., Janiszewski, C., Lutz, R., Sawyer, A., & Wood, S. (1997). Interactive home shopping: Consumer, retailer, and manufacturer incentives to participate in electronic marketplaces. *Journal of Marketing, 61*(3), 39-53.

Adelaar, T., Chang, S., Lanchndorfer, K. M., Lee B. & Morimoto M. (2003). Effects of media formats on emotions and impulse buying behavior. *Journal of Information Technology, 18*, 247-266.

Aggarwal, P., & Vaidyanathan, R. (2003). The perceived effectiveness of virtual shopping agents for search vs. experience goods. *Advances in Consumer Research, 30*(1), 347-348.

Ansari, A., & Mela, C. (2003). E-Customization. *Journal of Marketing Research, 40*(2), 131-145.

Bargh, J. A. (1999). The cognitive monster: The case against the controllability of automatic stereotype effects. In S. Chaiken and Y. Trope (Eds.), *Dual-Process Theories in Social Psychology* (pp. 361-382). New York, NY: The Guilford Press.

Barone, M. J., & Roy, T. (2010). The effect of deal exclusivity on consumer response to targeted price promotions: A social identification perspective. *Journal of Consumer Psychology, 18*(1), 14-16.

Bechwati, N., & Lan, X. (2003). Do computers sweat? The impact of perceived effort of online decision aids on consumers' satisfaction with the decision process. *Journal of Consumer Psychology, 13*(1/2), 139-148.

Beier, J., & Kalyanaraman, S. (2008, May). The psychological appeal of "MyNews.com": The interplay between customization and recommendation sources in news Websites. Paper presented to the Communication and Technology Division at the 58th annual convention of the International Communication Association, Montreal, Canada.

Berger, J., & Heath, C. (2007). Where consumers diverge from others: Identity signaling and product domains. *Journal of Consumer Research, 34*(2), 121-134.

Berger, J., & Heath, C. (2008). Who drives divergence? Identity signaling, outgroup dissimilarity, and the abandonment of cultural tastes. *Journal of Personality and Social Psychology, 95*(3), 593-607.

Berger, J., & Rand, L. (2008). Shifting signals to help health: Using identity signaling to reduce risky health behaviors. *Journal of Consumer Research, 35*(3), 509-518.

Bettman, J. R. (1979). *An Information Processing Theory of Consumer Choice*. Reading, MA: Addison-Wesley.

Bettman, J. R., Luce, M. F., & Payne, J. W. (1998). Constructive consumer choice processes. *Journal of Consumer Research, 25*, 187-217.

Bright, L. F., & Daugherty, T. (2012). Does customization impact advertising effectiveness? An exploratory study of consumer perceptions of advertising in customized online environments. *Journal of Marketing Communications, 18*(1), 19-37.

Briñol, P., & Petty, R. E. (2006). Fundamental processes leading to attitude change: Implications for cancer prevention communications. *Journal of Communication, 56*(1), S81-S104.

Chellappa, R. K., & Sin, R. G. (2005). Personalization versus privacy: An empirical examination of the online consumer's dilemma. *Information Technology and Management, 6*(2-3), 181-202.

Chen, S., & Chaiken, S. (1999). The heuristic-systematic model in its broader context. In S. Chaiken & Y. Trope (Eds.). *Dual-Process Theories in Social Psychology* (pp. 73-96). New York, NY: The Guilford Press.

Chernev, A., Hamilton, R., & Gal, D. (2011). Competing for consumer identity: Limits to self-expression and the perils of lifestyle branding. *Journal of Marketing, 76*, 66-82.

Cho, Y. H., Kim, J. K., & Kim, S. H. (2002). A personalized recommender system based on web usage mining and decision tree induction. *Expert Systems with Applications, 23*, 329-342.

Dabholkar, P. A., & Sheng, X. (2012). Consumer participation in using online recommendation agents: Effects on satisfaction, trust, and purchase intentions. *The Service Industries Journal, 32*(9), 1433-1449.

Dellaert, B., & Häubl, G. (2012). Searching in choice mode: Consumer decision processes in product search with recommendations. *Journal of Marketing Research, 49*(2), 277-288.

Demangeot, C., & Broderick, A. J. (2010). Consumer perceptions of online shopping environments: a gestalt approach. *Psychology & Marketing, 27*(2), 117-140.

Diehl, K. (2005). When two rights make a wrong: Searching too much in ordered environments. *Journal of Marketing Research, 42*(3), 313-322.

Diehl, K., Kornish, L., & Lynch, J. (2003). Smart Agents: When lower search costs for quality information increase price sensitivity. *Journal of Consumer Research, 30*(1), 56-71.

Diehl, K., & Poynor, C. (2010). Great Expectations?! Assortment Size, Expectations, and Satisfaction. *Journal of Marketing Research, 47*(2), 312-322.

Enright, A. (2010, December 1). E-retail's first billion-dollar day. Retrieved from
http://www.internetretailer.com/2010/12/01/e-retails-first-billion-dollar-day

Escalas, J. E., & Bettman, J. R. (2003). You are what they eat: The influence of reference
groups on consumer connections to brands. *Journal of Consumer Psychology, 13*(3),
339-348.

Escalas, J. E., & Bettman, J. R. (2005). Self-construal, reference groups, and brand meaning.
Journal of Consumer Research, 32(3), 378-390.

Flanagin, A. J., & Metzger, M. J. (2003). The perceived credibility of personal Web page
information as influenced by the sex of the source. *Computers in Human Behavior,
19*(6), 683-701.

Flanagin, A. J., & Metzger, M. J. (2007). The role of site features, user attributes, and
information verification behaviors on the perceived credibility of web-based
information. *New Media & Society, 9*(2), 319-342.

Flynn, L. R., & Goldsmith, R. E. (1999). A short, reliable measure of subjective knowledge.
Journal of Business Research, 46(1), 57-66.

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American
customer satisfaction index: Nature, purpose, and findings. *Journal of Marketing,
60*(4), 7-18.

Franke, N., Keinz, P., & Steger, C. J. (2009). Testing the value of customization: When do
customers really prefer products tailored to their preferences? *Journal of Marketing,
73*(5), 103-121.

Franke, N., Schreier, M. & Kaiser, U. (2010). I designed it myself. *Management Science, 56*,
125-140.

Gershoff, A. D., Mukherjee, A., & Mukhopadhyay, A. (2003). Consumer acceptance of
online agent advice: Extremity and positivity effects. *Journal of Consumer Psychology
13*(1-2), 161-170.

Häubl, G., & Murray, K. B. (2003). Preference construction and persistence in digital
marketplaces: The role of electronic recommendation agents. *Journal of Consumer
Psychology, 13*(1&2), 75-91.

Häubl, G., & Trifts, V. (2000). Consumer decision making in online shopping environments:
The effects of interactive decision aids. *Marketing Science, 19*(1), 4-21.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new
millenium. *Communication Monographs, 76*(4), 408-420.

Huang, P., Lurie, N., & Mitra, S. (2009). Searching for experience on the Web: An empirical examination of consumer behavior for search and experience goods. *Journal of Marketing, 73*(2), 55-69.

Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology, 79*, 995-1006.

Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer trust in an Internet store. *Information Technology and Management, 1*(1), 45-71.

Jiang, Y., Shang, J., & Liu, Y. (2010). Maximizing customer satisfaction through an online recommendation system: A novel associate classification model. *Decision Support Systems, 48*, 470-479.

Johnson, E. J. (2008). Man, my brain is tired: Linking depletion and cognitive effort in choice. *Journal of Consumer Psychology, 18*(1), 14-16.

Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist, 58*(9), 697-720.

Kalyanaraman, S., & Ivory, J. D. (2009). Enhanced information scent, selective discounting, or consummate breakdown: The psychological effects of Web-based search results. *Media Psychology, 12*(3), 295-319.

Kalyanaraman, S., & Sundar, S. S. (2006). The psychological appeal of personalized content in Web portals: Does customization affect attitudes and behavior? *Journal of Communication, 56*(1), 110-132.

Karahanna, E., & Straub, D. W. (1999). The psychological origins of perceived usefulness and ease-of-use. *Information & Management, 35*(5), 237-250,

Kramer, T., Spolter-Weisfeld, S. & Thakkar, M. (2007). The effect of cultural orientation on consumer responses to personalization. *Marketing Science, 26*(2), 246-258.

Kreuter, M. W., Bull, F. C., Clark, E. M., & Oswald, D. L. (1999). Understanding how people process health information: A comparison of tailored and untailored weight loss materials. *Health Psychology, 18*(5), 487-494.

Kreuter, M. W., & Skinner, C. S. (2000). Tailoring: What's in a name? *Health Education Research, 15*(4), 1-4.

Kreuter, M. W., & Wray, R. J. (2003). Tailored and targeted health communication: Strategies for enhancing information relevance. *American Journal of Health Behavior, 27*(S3), S227-S232.

Kumar, N., & Benbasat, I. (2006). The influence of recommendations and consumer reviews on evaluations of websites. *Information Systems Research, 17*(4), 425-439.

Labenz, N. (2011). Personal recommendations could give eCommerce a comeback. Retrieved from http://articles.businessinsider.com/2011-09-02/strategy/30128226_1_trust-websites-brick-mortar

Lafferty, B. A., & Goldsmith, R. E. (1999). Corporate credibility's role in consumers' attitudes and purchase intentions when a high versus a low credibility endorser is used in the ad. *Journal of Business Research, 44*(2), 109-116.

Lafferty, B. A., & Goldsmith, R. E. (2004). How influential are corporate credibility and endorser attractiveness when innovators react to advertisements for a new high-technology product? *Corporate Reputation Review, 7*(1), 24-36.

Laczniak, R. N., Kempf, D. S., & Muehling, D. D. (1993). The relationship between experimental manipulations and tests of theory in an advertising message involvement context. *Journal of Advertising, 22*(3), 59-74.

Li, C. & Kalyanaraman, S. (2009). Are highly tailored messages always more effective? The influence of cultural psychology on web-based customization. *Paper presented at the annual meeting of the International Communication Association, Marriott, Chicago, IL.* Retrieved from http://www.allacademic.com/meta/p300341_index.html

Li, H., Kuo, C., & Russell, M. G. (1999). The impact of perceived channel utilities, shopping orientations, and demographics on the consumer's online buying behavior. *Journal of Computer-Mediated Communication, 5*(2). Retrieved from http://jcmc.indiana.edu/vol5/issue2/hairong.html

Li, N., & Zhang, P. (2002). Consumer online shopping attitudes and behavior: An assessment of research. In R. Ramsower & J. Windsor (Eds.). *Proceedings of the 8th Americas Conference on Information Systems* (pp. 508-517). Dallas, TX.

Liu, Y., & Shrum, L. J. (2009). A dual-process model of interactivity effects. *Journal of Advertising, 38*(2), 53-68.

Malhotra, N. (1982). Information load and consumer decision making. *Journal of Consumer Research, 8*(4), 419-430.

Malthouse, E. C., & Elsner, R. (2006). Customisation with cross-basis sub-segmentation. *Database Marketing & Customer Strategy Management, 14*(1), 40-50.

Markus, H., & Schwartz, B. (2010). Does choice mean freedom and well being? *Journal of Consumer Research, 37*, 344-355.

Metzger, M. J., Flanagin, A. J., Eyal, K., Lemus, D. R., & McCann, R. M. (2003). Credibility for the 21st century: Integrating perspectives on source message, and media credibility in the contemporary media environment. In *Communication Yearbook, 27*(pp. 293–335), Mahwah, NJ: Lawrence Erlbaum.

Metzger, M. J., Flanagin, A. J., & Medders, R. B. (2010). Social and heuristic approaches to credibility evaluation online. *Journal of Communication, 60*(3), 413-439.

Montgomery, A., & Smith, M. (2009). Prospects for personalization on the Internet. *Journal of Interactive Marketing, 23*(2), 130-137.

Moon, J., Chadee, D., & Tikoo, S. (2008). Culture, product type, and price influences on consumer purchase intention to buy personalized products online. *Journal of Business Research, 61*(1), 31-39.

Nikolaeva, R., & Sriram, S. (2006). The moderating role of consumer and product characteristics on the value of customized online recommendations. *International Journal of Electronic Commerce, 11*(2), 101-124.

Ohanian, R. (1990). Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness, and attractiveness. *Journal of Advertising, 19*(3), 39-52.

Oyserman, D. (2009). Identity-based motivation: Implications for action readiness, procedural-readiness, and consumer behavior. *Journal of Consumer Psychology, 19*(3), 250-260.

Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and persuasion: Classic and contemporary approaches*. Dubuque, IA: William C. Brown.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 123–205). San Diego, CA: Academic Press.

Petty, R. E., & Wegener, D. T. (1998). Matching versus mismatching attitude functions: Implications for scrutiny of persuasive messages. *Personality and Social Psychology Bulletin, 24*(3), 227-240.

Piller, F. T., & Tseng, M. M. (2010). *Handbook of research in mass customization and personalization.* New Jersey: World Scientific.

Pine, B. J. (1999). *Mass customization: The new frontier in business competition*. Boston: Harvard Business School Press.

Polman, E. (2012). Effects of self–other decision making on regulatory focus and choice overload. *Journal of Personality and Social Psychology, 102*(5), 980-993.

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Postma, O. J., & Brokke, M. (2002). Personalisation in practice: The proven effects of personalisation. *Journal of Database Marketing, 9*(2), 137-142.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*, 717-731.

Rigby, D. (2011, December). The future of shopping. *Harvard Business Review*. Retrieved from http://hbr.org/2011/12/the-future-of-shopping

Rowley, J. (2000). Product searching with shopping bots. *Internet Research: Electronic Networking Applications and Policy, 10*, 203-213.

Scheibehenne, B., Greifeneder, R., Todd, P. M. (2009). What moderates the too-much-choice effect? *Psychology & Marketing, 26*(3), 229-253.

Schweiger, W. (2000). Media credibility–experience or image?: A survey on the credibility of the world wide web in Germany in comparison to other media. *European Journal of Communication, 15*(1), 37-59.

Sela, A., Berger, J., & Liu, W. (2009). Variety, vice, and virtue: How assortment size influences option choice. *Journal of Consumer Research, 35*(6), 941-951.

Sen, S., & Lerman, D. (2007). Why are you telling me this? An examination into negative consumer reviews on the Web. *Journal of Interactive Marketing, 21*(4), 76-94.

Senecal, S., & Nantel, J. (2004). The influence of online product recommendation on consumers' online choices. *Journal of Retailing, 80*(2), 159-169.

Simonson, I. (2005). Determinants of customers' responses to customized offers: Conceptual framework and research propositions. *Journal of Marketing, 69*(1), 32-45.

Skinner, C., Strecher, V., & Hospers, H. (1994). Physicians' recommendations for mammography: Do tailored messages make a difference? *American Journal of Public Health, 84*(1), 43-49.

Smith, D., Menon, S., & Sivakumar, K. (2005). Online peer and editorial recommendations, trust, and choice in virtual markets. *Journal of Interactive Marketing, 19*(3), 15-37.

Snyder, C. R., & Fromkin, H. L. (1977). Abnormality as a positive characteristic: The development and validation of a scale measuring need for uniqueness. *Journal of Abnormal Psychology, 86*(5), 518-527.

Song, J. H., & Zinkhan, G.M. (2008). Determinants of perceived Web site interactivity. *Journal of Marketing, 72*(2), 99-113.

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in ecommerce: An exploration of its antecedents and consequences. *Journal of Retailing, 78*(1), 41-50.

Sternthal, B., Dholakia, R., & Leavitt, C. (1978). The persuasive effect of source credibility: Tests of cognitive response. *Journal of Consumer Research, 4*(4), 252-260.

Strahilevitz, M. (1999). The effects of product type and donation magnitude on willingness to pay more for a charity-linked brand. *Journal of Consumer Psychology, 8*(3), 215-241.

Sundar, S. S. (2008). The MAIN model: A heuristic approach to understanding technology effects on credibility. In M. J. Metzger & A. J. Flanagan (Eds.), *The John D. and Catherine T. MacArthur foundation series on digital media and learning* (pp. 73-100). Cambridge, MA: The MIT Press.

Sundar, S. S., Knobloch-Westerwick, S., & Hastall, M. R. (2007). News cues: Information scent and cognitive heuristics. *Journal of the American Society for Information Science and Technology, 58*(3), 366-378.

Sundar, S. S., & Nass, C. (2001). Conceptualizing sources in online news. *Journal of Communication, 51*(1), 52-72.

Sundar, S. S., Oeldorf-Hirsch, A., & Xu, Q. (2008). The bandwagon effect of collaborative filtering technology. *Proceedings of CHI'08 Extended Abstracts on Human Factors in Computing Systems, 26*, 3453-3458.

Sundar, S. S., Oh, J., Kang, H., & Sreenivasan, A. (2012). How does technology persuade?: Theoretical mechanisms for persuasive technologies. In J. P. Dillard & L. Shen (Eds.). *The SAGE Handbook of Persuasion: Developments in Theory and Practice* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Sundar, S. S., Xu, Q., & Oeldorf-Hirsch, A. (2009). Authority vs. peer: How interface cues influence users. *Proceedings of the 27th International Conference Extended Abstracts on Human Factors in Computing Systems (CHI'09), 27*, 4231-4236.

Taylor, D. G., Davis, D. F., & Jillapalli, R. (2009). Privacy concern and online personalization: The moderating effects of information control and compensation. *Electronic Commerce Research, 9*(3), 203-223.

Tian, K. T., Bearden, W. O., & Hunter, G. L. (2001). Consumers' need for uniqueness: Scale development and validation. *Journal of Consumer Research, 28*(1), 50-66.

Tam, K. Y., & Ho, S. Y. (2005). Web personalization as a persuasion strategy: An elaboration likelihood model perspective. *Information Systems Research, 16*(3), 271-291.

Trifts, V., & Häubl, G. (2003). Information availability and consumer preference: Can online retailers benefit from providing access to competitor price information? *Journal of Consumer Psychology, 13*(1&2), 149-159.

Venkatesh, V., Morris, M. G., Davis, G. B., Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Verhagen, T., Boter, J., & Adelaar, T. (2010). The effect of product type on consumer preferences for website content elements: An empirical study. *Journal of Computer-Mediated Communication, 16*(1), 139-170.

Wang, A. (2005). The effects of expert and consumer endorsements on audience response. *Journal of Advertising Research, 45*(4), 402-412.

Wang, W., & Benbasat (2007). Recommendation agents for electronic commerce: Effects of explanation facilities on trusting beliefs. *Journal of Management Information Systems, 23*(4), 217-246.

Webb, M. S., Hendricks, P. S., & Brandon, T. H. (2007). Expectancy priming of smoking cessation messages enhances the placebo effect of tailored interventions. *Health Psychology, 26*(5), 598-609.

White, T., Zahay, D., Thorbjørnsen, H., & Shavitt, S. (2008). Getting too personal: Reactance to highly personalized email solicitations. *Marketing Letters, 19*(1), 39-50.

Wu, G. (2006). Conceptualizing and measuring the perceived interactivity of Web sites. *Journal of Current Issues and Research in Advertising, 28*(1), 87-104.

Wu, G., Hu, X., & Wu, Y. (2010). Effects of perceived interactivity, perceived Web assurance and disposition to trust on initial online trust. *Journal of Computer-Mediated Communication, 16*(1), 1-26.

Xiao, B., & Benbasat, I. (2007). E-commerce product recommendation agents: Use, characteristics, and impact. *MIS Quarterly, 31*(1), 37-209.

Yoon, K., Kim, C. H., & Kim, M. (1998). A cross-cultural comparison of the effects of source credibility on attitudes and behavioral intentions. *Mass Communication & Society, 1*(3/4), 153-173.

Young, R. (2012, June 25). Online appeals to the male of the species. *The New York Times*. Retrieved from http://www.nytimes.com/2012/06/25/fashion/online-helps-increase-mens-wear-sales.html?pagewanted=all

Zaichkowsky, J.L. (1994). The personal involvement inventory: Reduction, revision, and application to advertising. *Journal of Advertising, 23*(4), 59-70.

Zhang, J., & Wedel, M. (2009). The effectiveness of customized promotions in online and offline stores. *Journal of Marketing Research, 46*(2), 190-206.

Zhao, X., Lynch, J. G., Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197-206.

Zickuhr, K. (2010, December 16). *Generations 2010.* Retrieved from http://pewinternet.org/~/media//Files/Reports/2010/PIP_Generations_and_Tech10.pdf