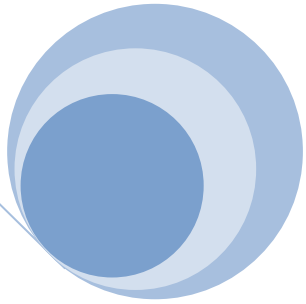

- The Others -

How Social Presence influences consumer behavior in an online context

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How Social Presence influences consumer behavior in an online context

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Abstract

When buying products consumers are influenced by references. With their consuming behavior individuals symbolize with which groups they want to be associated. A way to do this is by buying products that have a higher status. The degree in which individuals behave towards the references is dependent of two factors: social presence and the personality of a individual; need to belong. This research focuses on how social presence and need to belong influence product rating and product choice in an online context. An experimental study was conducted to test the influence of social presence and need to belong on product choice and product rating. As expected, social presence has a positive influence on the product rating, but only when respondents have a low need to belong. Respondents with a high need to belong, rate the products positive when there is no chat present. These results are opposed to what was expected. The finding that chat applications positively influence product rating indicates that it is interesting for marketers to apply social presence in an online context to positively influence product rating by consumers. Further implications of this finding are discussed.

Keywords: Social Presence, online consumer behavior, status, Need to Belong, referent groups, product rating, and product choice.

INTRODUCTION

In the past decade the Internet has grown tremendously and became a new place for businesses of all sizes to expand their market base and provide better customer service.

One of the mayor differences between the online and traditional offline shopping environment is that the offline environment encompasses a wide range of emotions involving social interactions between humans through multiple sensory channels (Pavlou, 2001 ; Childers, Carr, Peck & Carson (2001); Jarvenpaa & Todd (1996)). According to Kumar and Benbasat (2002) "shoppers have become guests, shopping has become an experience and malls have become entertainment centers with communities" (Kumar & Benbasat, 2002, p. 8). But on the contrary most online stores have little emotional or social appeal (Gefen & Straub, 2003), although in the current era of "social media", a change towards more social online shopping is sensible. Because of the limited social appeal, e-commerce may be viewed as lacking human warmth, since it is more

impersonal, anonymous, and automated than traditional person-to-person commerce (Head, Yuan & Archer, 2001). Creating a virtual shopping experience that will seduce the masses must engage both the cognitive and social sides of the user (Kumar & Benbasat, 2002; Parsons, 2002).

As a consequence of the limited social appeal of most websites, consumers experience more uncertainty. The experience of uncertainty has a negative effect on buying products online (Pavlou, Liang & Xue, 2006). Trust is an important factor in decreasing or taking away uncertainty entirely (Pavlou et al., 2006). Trust is also an important factor in the formation of attitude towards online shopping (Hassanein & Head, 2004). Because of this, a lot of research is focused on determining what factors influence the trust of people in the service industry (cf. Basso et al., 2001; Cheskin, 1999; Gefen & Straub, 2003; Riegelsberger & Sasse, 2001). A research topic that has been brought up to increase trust is "Social Presence". Social presence theory has also been drawn on by researchers to explore the lack of human warmth on the Internet (Gefen & Straub, 2003; Hassanein & Head, 2004; Short, Williams & Christie, 1976). This suggests that social presence is an interesting topic for research and that the presence of social presence in an e-commerce environment improves the online consumer experience.

In the recent past social presence has been researched in relationship with trust, loyalty and self-efficacy (Teoh & Cyril, 2008; Cyr, Hassanein, Head & Ivanov, 2007; Dash & Saji, 2007), but little is known about the relationship between social presence and actual consumer behavior. That is why this research focuses on what the effect of social presence is on consumer behavior: how do people rate a product and which product would they choose? Therefore, the first research question is as follows.

- *What is the influence of social presence on product rating and product choice in an online context?*

However, because all people are unique and react to situations in a different way, it is interesting to have a closer look at what the influence of personality is on the relationship between social presence and product rating and product choice. Uziel (2006) conducted a meta-analysis of existing research. This analysis showed that responses toward social presence within social facilitation research are moderated by personality regarding self respect. People scoring low on self respect are more impressionable for the effects of social facilitation. Derived from this research, it can be said that personality traits can have an influence on the effects social presence will have on consumer behavior. Especially the characteristics of Need to Belong are worth taking into account, because social presence is about the alleged presence of others and Need to Belong is a personality scale that measures how much someone is dependent on others. This adds up to the second research questions.

- *What is the influence of Need to Belong on the relationship between social presence and product rating and product choice?*

With the knowledge of the influence social presence has on consumer behavior, the present study tries to expand the consumer insights related to social presence. How do consumers respond towards social presence in online environments

and how is this related to the personality of the consumer? With these insights marketers can focus on the right aspects of social presence and obtain better results in their campaigns and make website-designs more related and fitting to the consumer.

LITERATURE REVIEW

The literature review will give more insight in the literature this research is based on. Furthermore, the research questions will be concretized into hypotheses.

Social Presence

Social presence is the degree of proximity with another person and the degree of proximity of the interpersonal relationship following the first contact (Short, Williams & Christie, 1997, p.65). Social presence indicates the perceived closeness that one experiences during an act of communication. This closeness can be observed in face-to-face communication as well as interaction in different shapes of communication, like online communication, which is the type of communication that is examined in this research.

Fulk, Schmitz and Power (1987) state that social presence is the extent to which a medium allows users to experience others as psychologically present. Other researchers also stress the psychological connection, seeing social presence as concerned with "warmth". A medium is perceived as warm if it conveys a feeling of human contact, sociability and sensitivity (Gefen & Straub, 2003). Examples of website features that encourage social presence include socially rich text content, personalized greetings (Gefen & Straub, 2003) human audio (Lombard & Ditton, 1997), or human video (Kumar & Benbasat, 2002).

Short, Williams and Christie were the founding fathers of the Social Presence Theory. This theory has been summarized by Biocca, Harms and Burgoon (2003): the degree of social presence determines the extent to which a person can form an image, a mental model of the qualities, characteristics and internal feelings of others. Being able to form a better image of the salient other reduces uncertainty because people receive more information; this information increases trust.

Steinbrück et al (2002) found that virtual re-embedding increases online trust. Virtual re-embedding means: incorporating social cues in an online design (such as photos, video text or speech). Likewise, Dash and Saji (2007) have found that increased level of social presence embedded in a website will result in greater trust in online shopping websites.

Of the many ways to add social presence to a website, chat has been used by several other researchers. Cyr et al. (2007) used a chat application in their research and Khalifa and Shen (2004) and Fortin and Dholakia (2005) showed that a higher level of interactivity has a positive effect on the experienced level of social presence. Yang, Hu and Chen (2005) note that social cues that are functional, like chat and other feedback systems, are appreciated the most. For these reasons the usage of a chat application was found the best way to simulate social presence in this research.

It was expected that the level of relevance of the text in the chat application also would influence the experienced social presence. Research conducted by Kaakinen and Hyona (2008) shows that relevant text is better remembered. This finding is confirmed by McCrudden, Magliano and Schraw (in press). They also found that relevant text is remembered better and read more slowly.

From these findings can be derived that because relevant text is remembered better, it receives more attention. More attention means that subjects will be more aware of the presence of the chat and thus experience more social presence, indicating that relevant chat would be experienced as a higher level of social presence.

Furthermore, at the moment social media is emerging, meaning that marketers more and more focus on conversations with and between the consumers. As Constantinides (n.d.) notes, social media allows direct connectivity, interaction between individuals and the easy publication and editing of content. Allowing consumers to talk online about their shopping experiences; they publish product reviews and give advices to each other. By simulating social presence with a chat application, recommendations on the specific use of chat for influencing the conversations online can be made.

Both virtual re-embedding and social presence have a positive influence on trust towards a website. In line with the growing popularity of online shopping and buying, it is plausible that trust toward the internet as a sales channel has grown. The issue around trust and improving it online seems to be solved in time. One reason is that more website owners use new media to create a personal and warm feeling and another reason is that online shopping is becoming more well-known and accepted. For these reasons, research on social presence should not focus on trust but on actual consumer behavior. This research will address this currently unexplored research area.

Consumer behavior and status

Consumer behavior is about the steps consumers take before buying a product or service. Blackwell, Miniard and Engel (2001) define consumer behavior as the activities persons undertake before they obtain, consume and dispose a product or service. Obtaining is about the activities that lead to the purchase of products and services, while consuming is about the how, where, when and the circumstances of the usage of a product or service. Disposing is about how and when consumers dispose the packaging and the product.

In line with the obtaining of a product or service, Häubl and Trifs (2000) describe a two-stage process that consumers tend to use to reach their decision. At the first stage consumers screen a set of available products and identify a subset of the most promising alternatives. Subsequently, they evaluate the latter in more depth, perform relative comparisons across products on important attributes and then make a purchase decision. This two-step process and the obtaining are about rating a product; it becomes apparent that consumer behavior is firstly about gaining information and rating a product or service before a consumer makes a choice. Therefore this research uses product rating and product choice to operationalize consumer behavior.

The choosing of a product is not a rational process. As will be described in the next section, people are influenced by the opinion of others, especially when those others are experienced as being present, real or imagined. It seems logical that social presence is related to consumer behavior, but there are only a few studies known on the topic of consumer behavior and Social Presence.

Dahl, Argo and Manchanda (cf. Dahl, Manchanda, & Argo, 2001; Argo, Dahl, & Manchanda, 2005) linked social presence to consumer behavior in an offline retail context. Among other things, they found that people felt more shame and were more embarrassed when there was real or imagined social presence when buying products that outfaced the participant (e.g. condoms) (Dahl et al, 2001). In later research they found that social presence leads to more impression management with the consumer; oftentimes they chose the more expensive brand variant of the product and used the "non-cool" testing device of the product less (Argo et al, 2005).

As the research of Argo et al (2005) demonstrates, people often choose the more expensive brand variant and disliked using a "non-cool" device when they experienced a social presence. Looking at the literature on status products an explanation can be found.

The idea that material goods play a role in defining and delimiting the concept of the self, has a long pedigree (Belk, 1988). William James wrote in 1890: "a man's Self is the sum total of all that he can call his, not only his body and his psychic powers, but his clothes, his friends, his wife and children, his ancestors, his reputation and works, his lands and yacht and bank account…" (James, 1890).

The link between the consumption of material goods and the development and maintenance of personal identity is a prominent and important element in the modern understandings of consumer behavior. In earlier times "we were what we did (or sometimes who we knew), in modern society we are what we consume" (Jackson, 2005).

Embedded within the idea that consumption and identity are linked, lies an important insight into the relationship between the consumer and consumer goods: the claim that consumer goods play vital symbolic roles in our lives (Barthes 1973, Czikszentmihalyi & Rochberg-Halton 1981, Dittmar 1992, McCracken 1990). Goods are not just valued for what they can do, but for what they represent to us and others.

Derived from the information written above, organizations do not just sell products and services – they sell feelings, lifestyle, and meaning (Berry & Gresham, 1986; Berry, Seiders, & Gresham, 1997; Holbrook & Hirschman, 1982; Lucas & Gresham, 1988; Pride & Ferrell, 2003). The psychological meanings of products have a strong impact on consumers. "People buy products not only for what they can do, but also for what they *mean*" (Levy, 1959).

Mead's (1934) Symbolic Interaction Theory proposes that a person develops a conception of the self based on others' reactions to him/her, both real and imagined. Goffman (1957) has extended this theory by adding that a person consciously attempts to present an image that he/she wants others to accept and validate. Given that a person's possessions contribute to the impressions others' have of him/her, the products one possesses become inextricably tied to the formation and enhancement of one's self-concept and identity (Belk, 1988; Leigh & Gabel, 1992; McCracken, 1986; Solomon, 1983; Wackman, 1973).

In summary, product consumption is a means for individuals to express their taste and lifestyle and acquire status based on the symbolic meaning of their possessions and consumption behavior (Featherstone, 1987; Leigh & Gabel, 1992; Meyers,

1984; Packard, 1957; Schudson, 1984; Turner, 1988; Wernick, 1983). That is why the research of Argo et al (2005) showed that one chooses the more expensive product. But besides the symbolic meaning and the (perceived) status one derives from the product, the effect of the presence of a group is also related to how one sees him/herself and wants to present him or her. This leads to the questions how other people, individuals or groups, influence consumer's decisions.

Being part of a group, trying to fit in and striving to pleasure others are of influence on the decision making process of the consumer. In their consumer behavior people are influenced by references (Blackwell, Miniard & Engel, 2001).

The influence of references can be normative or informative. Normative influence occurs when individuals revise their behavior or beliefs to meet the expectations of a certain group. People conform to the expectations of others (Calder & Burnkrant, 1977). A differentiation can be made between conforming because one wants to increase self image (value-expressive influence), or conforming because one wants to receive a reward or avoid punishment (utilitarian influence) (Bearden & Etzel, 1982). The informative influence is the tendency to accept information from others as proof for how reality works (Deutch & Gerard, 1955). A person will use recommendations of others as proof that a product is suitable and has good quality. Furthermore, a person will use this collected information in their decision making process. Both the informative and normative influences can appear when there is a social presence in an online context.

It has become clear that social presence in an offline context influences consumer behavior. This influence towards high status goods and other striking goods is one of the effects of reference groups, but it is still unclear if this influence will also appear in an online context. This research will put social presence in an online context to test if it has the same effects online. This leads to the proposition:

Proposition 1: When people experience more social presence in an online context, they want to show their social status and choose products that have a higher perceived status and rate the products with a higher perceived status better.

Need to Belong

As seen before in this literature review, buying products with a high status will increase the personal status of an individual. People who most value high quality and high status products are also the ones that are the most impressionable for the normative and informative influences of the group (Bearden, Netemeyer, & Teel, 1989; Blackwell et al., 2001). The presence of a group during the process of consuming (unconsciously) enhances the awareness of group values and competition behavior. Self-respect and approval are a basis for analyzing the influences of groups and social presence.

For decades, social and personality psychologists have argued that people have an intrinsic motivation to affiliate and bond with each other (Epstein, 1991; Freud, 1915/1963; Maslow, 1968; Murray, 1938). More recently, Baumeister and Leary (1995) have argued that the need to belong lies at the heart of many important social phenomena, ranging from both infant and adult attachment to adult emotional experience and physical well-being. The need to belong is defined as the desire for frequent, positive, and stable

interactions with others (Williams & Sommer, 1997) and is fulfilled primarily through affiliation with and acceptance from others (Gardner, Pickett, & Brewer, 2000). As a result, people show a strong need for social acceptance and an even stronger aversion to social rejection (Leary, 2001). More important, Baumeister and Leary (1995) have argued that people strive to fulfill this basic need not only by attempting to maximize their actual acceptance from others, but also by structuring their beliefs about the self and others in ways that allow them to feel that most people like and accept them (see also Williams & Sommer, 1997). The results of these cited studies suggest that people with a high need to belong seek for the acceptance of others and thus are sensitive to the influence of others, of the group. That is why it is assumed that need to belong will moderate the influence of social presence on product rating and product choice.

It is expected that need to belong will interact with the presumed relationship between social presence and product rating and product choice. People who are more sensitive towards the opinions of others will be more influenced by social presence. Their needs will be triggered by social presence, but people that have a low need to belong, will be less influenced by social presence. This leads to the following proposition:

Proposition 2: When people have a high Need to Belong, social presence will have more influence. The effect of social presence on product rating and product choice is moderated by Need to Belong.

Based on the proposition 1 and proposition 2, the following hypothesis can be formulated:

H1: Higher levels of social presence will lead to choosing products with a higher status and a more positive product rating

H2: The effect of social presence on product rating and product choice is positively influenced by Need to Belong

These two hypotheses are visualized in the conceptual research model Figure 1. In conclusion, the literature review showed that social presence has been the subject of several researches, but that there is little research that relates social presence to online consumer behavior and even less research that hypothesized that personality traits have a moderating effect. Therefore an experimental study was conducted to test these effects.

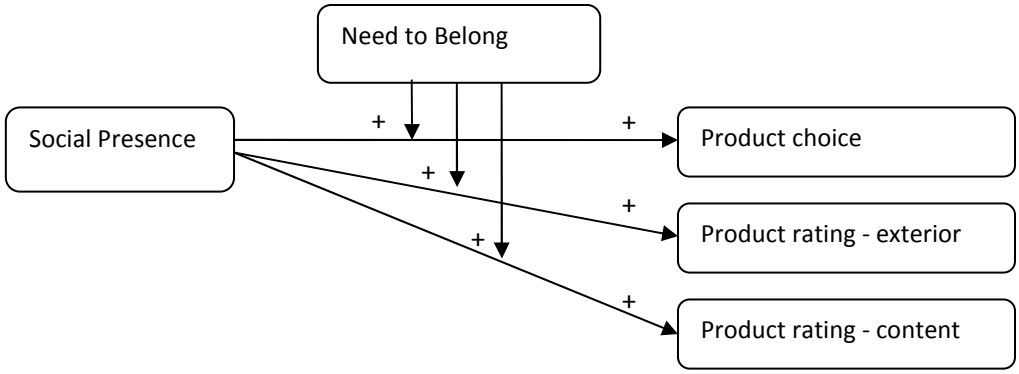

Figure 1
Conceptual model

METHOD

A pretest and main study were conducted to answer the research questions and test the hypotheses. Books were found the most appropriate products to the hypotheses with. The pretest was conducted to determine which books should be used in the main study and if people naturally understand the concept of "status" related to books. The main study was conducted to assess the influence of social presence on product rating and product choice.

Product

In this research books were chosen as the products to test the hypotheses with. Books were chosen because brand awareness and brand preferences would less interfere with the results of the experiment opposed to other status goods like mobile phones, automobiles or cloths. Another advantage of using books is that there is a natural understanding of the difference between books with a low status and books with a high status.

Pretest

The goal of the pretest was to determine how people would rate several books on the dimensions of status and literary level. The pretest was carried out by an online questionnaire, consisting 26 book titles that had to be rated on status and perceived literary level. The 26 titles were chosen based on a pre-pretest. Ten people answered the questions "name three books that you would ascribe a low status" and "name three books that you would ascribe a high status". The respondents were also asked what they understood by "status" related to books and when they believe it is high or low. Based on the results of the pre-pretest thirteen books with a perceived low status and thirteen books with a perceived high status were selected and tested in the pretest.

Results

A total of 31 respondents participated in the pretest. Of the 26 books that were rated, the five that scored the highest and lowest on status were selected to be used in the main study (see table 1 and table 2).

Furthermore, it can be concluded that the respondents have a natural understanding of the concept of high and low status. Derived from the answers given in the pre-pretest, similarities between the ten respondents on their concept of low and high status can be found. All subjects account that books with a low status are about entertainment and easy reading and not about evolving yourself or learning from the books. The books with a high status are called literature and are more difficult to read with more depth and a more extensive writing style. Based on the results that the concept of status is naturally understood, the decision to not explicitly explain the definition of status in the main research was made.

Table 1

Top 5 of books with the highest status

		M	*SD*	*N*
1.	Het Achterhuis - Anne Frank	4,26	0,77	31
2.	De Vliegeraar - Khaled Hosseini	3,81	1,38	31
3.	De ontdekking van de hemel - Harry Mulisch	3,74	0,89	31
4.	Schaduw van de wind - Carlos Ruiz Safon	3,65	0,88	31
5.	De Alchemist - Paulo Coelho	3,55	0,72	31

Table 2

Top 5 of books with the lowest status

	M	*SD*	*N*
1. Eenmaal andermaal verliefd - Jill Mansel	2,03	0,83	31
2. Alles wat een vrouw moet weten - Veronika Immler	2,23	0,92	31
3. Hittegolf - James Patterson	2,48	0,63	31
4. De volmaakte vreemdeling - David Gregory	2,68	1,01	31
5. Dood van een masseuse - Kate White	2,74	0,77	31

MAIN STUDY

The pretest showed which five books got the highest and which five books got the lowest scores on status. This insight was used for the main study.

Stimuli

To test the hypotheses, an experimental study was conducted in which respondents were asked to evaluate ten books. Social presence was manipulated by the usage of a chat application. As stated before, of the many ways to add social presence to a website, chat has been used by several other researchers (Cyr et al, 2007; Khalifa &Shen, 2004; Fortin & Dholakia, 2005). Based on their positive findings on the usage of chat applications to simulate social presence, this research too will use chat.

Two different chat manipulations were developed. The first chat application contained text that had no relationship with the ten books displayed on the website. Four chatters with anonymous identities spoke about movies, music, visiting America and art. The second chat application contained text about books presented on the website. In this application too, four anonymous chatters spoke with each other. They talked about how they love to read and what kind of books they prefer to read.

The ten books from the pretest were displayed by showing the title, the author, a cover picture and a short summary. The cover picture and summary were extracted from the website of a bookstore chain Bruna (bruna.nl).

The website that displayed the chat applications and books was especially developed for this research. The lay-out, chat application and content were designed by the researcher while Euro RSCG combined it into a working website with database to store all the data.

Respondents and design

A total of one hundred and twenty four respondents, 66 female and 58 male, all students at the University of Twente, participated in this study, age varied from 18 to 30 years (*M*= 22, *SD*= 2,19).

The experiment had a 2 (Need to Belong: low versus high) x 3 (chat application: no versus irrelevant versus relevant) between-respondents design.

Procedure

Students of the University of Twente were invited to participate in this experiment via an internal system, rewarding them with three euro's or a credit. The experiment was performed for seventeen days in March and April of 2010.

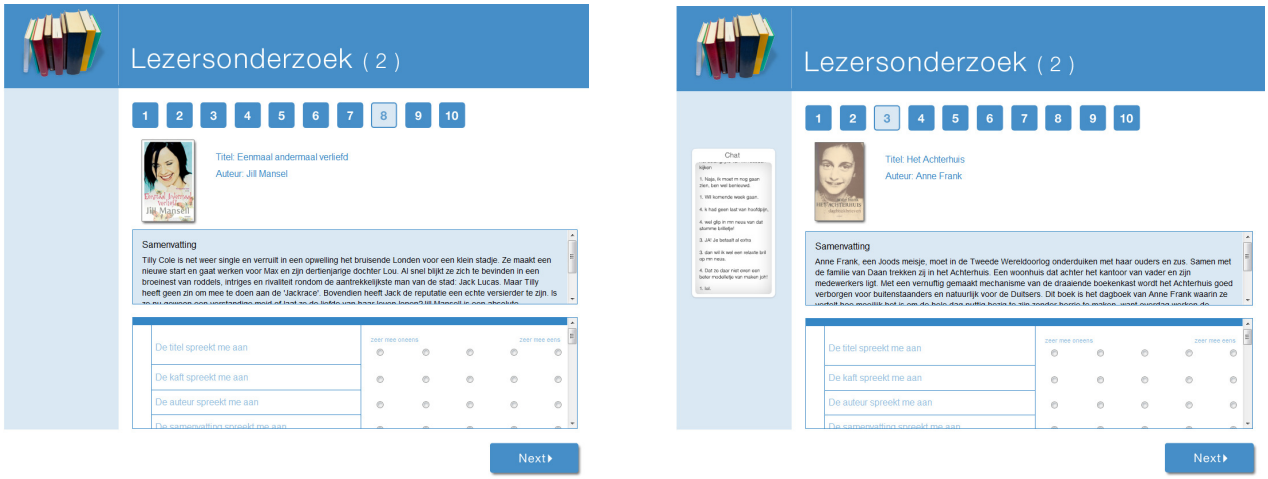

Figure 2

Two of the three chat manipulations used in this research. Left the no chat application and right the irrelevant chat application

The first page of the website consisted of an introduction and welcomed respondents to the research. Prior to reading the introduction, every respondent got a short oral introduction telling that he or she had to criticize ten books where it did not matter if one or more of the books had been read before participating in this research. In the case a book had been read, the respondents were asked to try to criticize the book based on the information visible on the website.

The second page contained demographical questions which were succeeded by the a set of questions on personality. These were questions for the construct of Need to Belong.

After these questions respondents were randomly assigned to one of the three conditions; no chat application, a chat application with irrelevant text or a chat application with relevant text. The chat applications remained visible while rating the ten books.

After respondents saw the stimuli and rated the ten books, the constructs of Product Choice and Social Presence were measured.

Measures

Need to Belong was measured with the ten original items from Leary, Kelly, Cottrell & Schreindorfer (2006). This scale proved very reliable ($\alpha = .81$).

In all the three conditions respondents had to answers a total of nine questions about Product rating. The first four items represented the rating of the exterior of the book and the other items represented the rating of the content of the book. In overall the reliability of the construct Product rating exterior is high ($\alpha > .80$). The reliability of the construct Product rating content has also proven to be high ($\alpha > .80$). Table 3 gives a detailed overview of the reliability on both the exterior and content constructs per book.

Social Presence is measured by five items developed by Grefen & Straub (2003). They derived this scale from the original by Short et al. (1976), but the scale of Grefen & Straub (2003) is recently more practiced than the original. Hassanein & Head (2004), Pavlou et al (2006) and Cyr et al (2006) all used the version of Grefen & Straub (2003) in their research. Social Presence proved to be a reliable scale ($\alpha = .90$).

Table 3

Results reliability analysis per construct

Book	*Construct*	*Crohnbach's Alpha*	*N of items*	*N of cases*
	Pro/Consumer	0,73	19	124
	Need to Belong	0,81	10	124
Book 1	Product rating - exterior	0,72	4	124
	Product rating - content	0,92	4	124
Book 2	Product rating - exterior	0,75	4	124
	Product rating - content	0,94	4	124
Book 3	Product rating - exterior	0,81	4	124
	Product rating - content	0,92	4	124
Book 4	Product rating - exterior	0,80	4	124
	Product rating - content	0,93	4	124
Book 5	Product rating - exterior	0,82	4	124
	Product rating - content	0,94	4	124
Book 6	Product rating - exterior	0,88	4	124
	Product rating - content	0,91	4	124
Book 7	Product rating - exterior	0,82	4	124
	Product rating - content	0,94	4	124
Book 8	Product rating - exterior	0,91	4	124
	Product rating - content	0,95	4	124
Book 9	Product rating - exterior	0,69	4	124
	Product rating - content	0,91	4	124
Book 10	Product rating - exterior	0,81	4	124
	Product rating - content	0,92	4	124
	Social Presence	0,90	5	124

RESULTS

The results show that chat is an indicator of social presence and that social presence has a positive influence on product rating. These effects were found on book 1 and book 3. There were no results found for product choice.

Manipulation check

To check the validity of the manipulation of experimental treatments, subjects assessed the perceived social presence of the experimental websites.

A one-way analysis of variance indicated that there is a significant main effect on Social Presence by the used chat applications, F (2,121) = 4.5, $p < .05$. It was found that the difference between no chat and irrelevant chat is significant, $F(2, 121) = 4.5$, $p < .05$ and that the difference between no chat and relevant chat is significant, $F(2, 121) = 4.5$, $p < .05$. These findings are displayed in table 4.

The experimental websites showed for the study to demonstrate two different levels of social presence; namely low social presence when there is no chat manipulation and higher social presence for the irrelevant and relevant chat manipulation.

Table 4

Average scores of Social Presence, taken on a 5-point scale as function of chat manipulations; higher scores indicate higher levels of Social Presence

	Social Presence		
Chat manipulation	*M*	*SD*	*N*
Irrelevant	3.61	1.19	47
Relevant	3.57	1.12	38
No chat	2.89	1.34	39
Total	3.37	1.25	124

Product rating

Product rating has been divided into two segments, namely the exterior and the content of the book. First the results of the product rating by the exterior will be discussed and then the same will be done for the product rating by the content of the books.

Product rating exterior

A one-way between-groups multivariate analysis of variance was performed to investigate if product rating of the exterior is influenced by Chat and by Need to Belong.

A significant interaction effect between chat and Need to Belong has been found, $F(2, 118) = 6{,}62$; $p < .01$ for book 3 (Achterhuis by Anne Frank). This interaction effect was analyzed using a simple main effects analysis. Pairwise comparisons revealed that the irrelevant chat and relevant chat manipulation significantly differ from the no chat condition on product rating of book three for people with a low Need to Belong, $M_{irrelevant} = 3.53$ versus $M_{nochat} = 2.97$, $F(2, 118) = 5.62$, $p < .05$ and $M_{relevant} = 3.78$ versus $M_{nochat} = 2.97$, $F(2, 118) = 5.62$, $p < .001$. Furthermore, a significant effect was found in the no chat condition between low NtB and high NtB, $M_{lowNtB} = 2.97$ versus $M_{highNtB} = 4.06$, $F(1,118) = 17.72$, $p < .001$. The findings suggest that when people have a low Need to Belong they react as hypothesized; in the no chat surrounding they rate products lower than when they do experience a social presence. This is interaction effect is visualized in Figure 3.

Product rating content

A one-way between-groups multivariate analysis of variance was performed to investigate if product rating of the content is influenced by chat and by Need to Belong.

A significant main effect was found for book 1 (Alles wat een vrouw moet weten by Veronika Immler & Antje Steinhauser) on Need to Belong, $F(1, 118) = 5.26$, $p < .05$. When the results for product rating content were considered separately, the only significant difference was found in the no chat condition, $F(1, 118) = 4.64$, $p < .05$. An inspection of the mean scores indicated that respondents with a high Need to Belong rate this book higher ($M = 3.01$, $SD = 0.89$) than respondents with a low Need to Belong ($M = 2.33$, $SD = 0.98$). This main effect is visualized in Figure 5. This finding is interesting because it only appears when there is no chat present on the website. Based on the literature found on need to belong, it was expected that in the irrelevant and relevant chat conditions need to belong would positively influence product rating. This means that the found effect, respondents rating the book higher

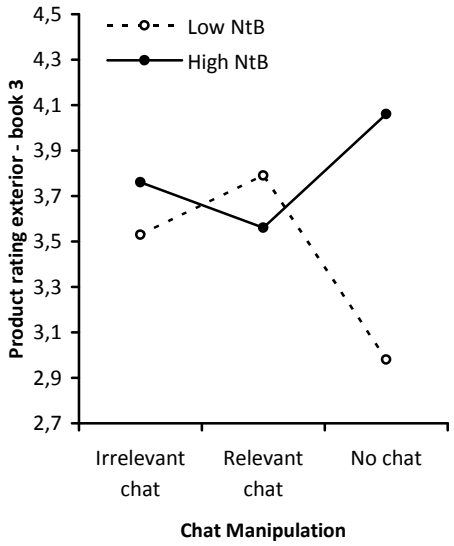

Figure 3
Average scores of product rating exterior, taken on a 5-point scale, as a function of chat manipulation and Need to Belong; higher scores indicate higher levels of product rating

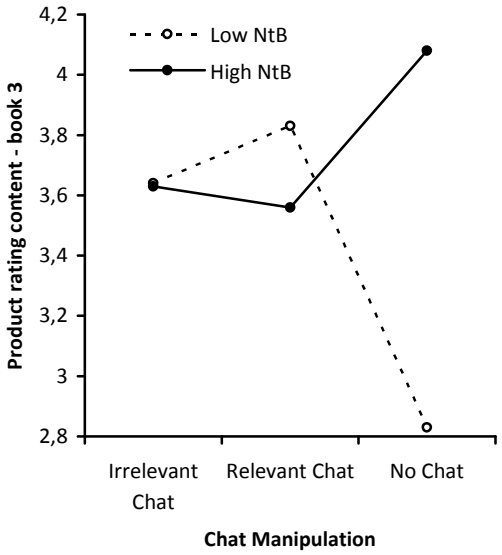

Figure 4
Average scores of product rating content, taken on a 5-point scale, as a function of chat manipulation and Need to Belong; higher scores indicate higher levels of product rating

when they have a high need to belong when there is no chat, is opposite to the expected effect.

The one-way between-groups multivariate analysis of variance also showed that there was an interaction effect on book 3 (Achterhuis by Anne Frank) between chat and Need to Belong, $F(2, 118) = 7.81$, $p < .001$. This interaction effect was analyzed using a simple main effects analysis. Pairwise comparisons revealed that both irrelevant chat and relevant chat significantly differ from no chat on product rating of book 3 for people with a low Need to Belong, $M_{irrelevant} = 3.64$ versus $M_{nochat} = 2.83$, $F(2, 118) = 7.12$, $p < .01$. Furthermore, a significant effect was found in the no chat condition between low Need to Belong and high NtB, $M_{lowNtB} = 2.83$ versus $M_{highNtB} = 4.08$, $F(1,118) = 18.27$, $p < .001$. This is interaction effect is visualized in Figure 4.

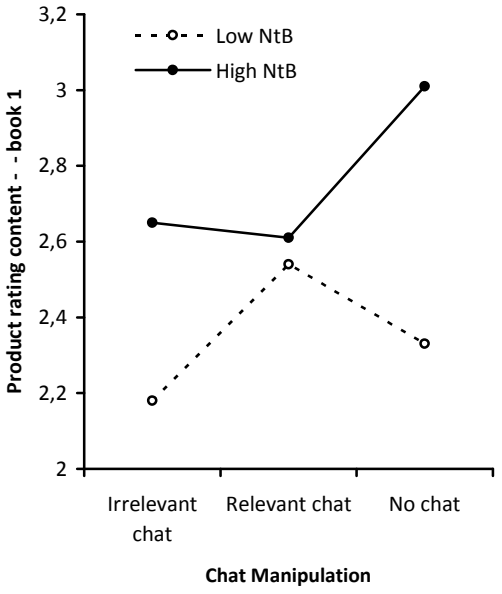

Figure 5
Average scores of product rating content, taken on a 5-point scale, as a function of chat manipulation and Need to Belong; higher scores indicate higher levels of product rating

Sequence effect

Because the ten books in this research could technically not appear randomly to the subjects, an analysis to control the effect of sequence has been performed. A one-way between-groups multivariate analysis of variance was performed to investigate if product rating of the content and exterior were influenced by the order of appearance of the books. This analysis showed that a significant main effect for sequence was found $F(18,111) = 24.07$, $p < .001$, secondly an interaction effect of sequence, need to belong and chat manipulation was found $F(36,204) = 1.63$, $p < .05$. Furthermore the interaction effect between sequence and need to belong proved to be non significant, $F(18,111) = 0.76$, ns, and the interaction effect between sequence and chat manipulation also proved to be non significant, $F(36,204) = 0.73$, ns.

A univariate analysis of variance was then carried out to reveal the nature of the sequence effects. It was expected that the effect of the chat manipulation would be stronger present at the beginning of the research due to habituation and learning. The effect of habituation and learning was expected to become visible when product rating of the exterior and content significantly differs for the first books opposed to the last books. To test this expectation books 1 to 5 were compared to books 6 to 10, book 1 to 4 were compared to books 7 to 10, books 1 to 3 were compared to books 8 to 10, etcetera. Table 5 gives an overview of the results. The table shows that there were no significant effects found and that it is indistinct where the sequence effect can be found.

Table 5

Paired comparison of the sequence effect

Pairs	*Product Rating*	*F*	*Sig*
Book 1 to 5 vs. Book 6 to 10	content	F (2, 121) = 1.09	ns
	exterior	F (2, 121) = 0.28	ns
Book 1 to 4 vs. Book 7 to 10	content	F (2, 121) = 1.45	ns
	exterior	F (2, 121) = 0.54	ns
Book 1 to 3 vs. Book 8 to 10	content	F (2, 121) = 0.94	ns
	exterior	F (2, 121) = 0.89	ns
Book 1 to 2 vs. Book 9 to 10	content	F (2, 121) = 0.17	ns
	exterior	F (2, 121) = 0.68	ns
Book 1 vs. Book 10	content	F (2, 121) = 0.38	ns
	exterior	F (2, 121) = 0.06	ns

Product choice

Product choice has been analyzed by matching status to choice. In the experiment respondents were asked which book they would choose if they could win it and they also had to ascribe status to each of the ten books. The answers to both questions were matched, meaning that from every respondent it was visible which book they had chosen to win and which level of status they had ascribed to that particular book. In this way it was possible to see how much people per chat

condition would have chosen a book with a high perceived status.

Product choice and status

The results of the analysis showed that there were no interaction- or main effects (main effect chat manipulation:F(2, 81) = 2.48, ns; main effect Need to Belong: F(1, 81) = 0.04, ns and interaction effect: F(2, 81) = 1.98, ns), indicating that there was no difference in the different chat conditions and which books respondents would choose related to status.

Product choice and literary level

In addition, the same analysis has been done with literary level of the books instead of status. This analysis showed no results (main effect chat manipulation: F(2, 81) = 1.29, ns; main effect Need to Belong: F(1, 81) = 0.13, ns and interaction effect: F(2, 81) = 1.32, ns).

The results of the pre-pretest showed that people think that books with a high literary level are often books that they perceive as books with a high status. So based on this thought, the correlation between literary level and status was analyzed. This showed that there was a large, positive relationship between the two variables, r=0.51, n=124, p < .001 with high levels of status associated with high levels of literary level.

So in an extra research, status and literary level were combined and anew the analyses were performed. This showed no interaction- or main effects (main effect chat manipulation: F(2, 81) = 1.97, ns; main effect Need to Belong: F(1, 81) = 0.76, ns and interaction effect: F(2, 81) = 1.77, ns.

DISCUSSION

In this section the findings of the present study will be discussed and feedback to the hypothesis will be presented.

General conclusion

The results display that the usage of a chat application will increase the experience of social presence. Furthermore, the interaction effects found on book 3 indicate that persons with a low need to belong will rate the book more positive when chat is visible in the online environment. This effect is not as expected.

The results that were found on two of the ten books indicate that respondents with a high need to belong rate books more positive then respondents with a low need to belong in the condition without a chat application. In addition, there were no differences found on product rating between relevant, irrelevant and no chat for subjects with a high need to belong. This effect too is not as expected.

Unexpectedly, there were no results found on product choice either. A possible explanation for these outcomes will be discussed.

Manipulation check

In this research social presence was manipulated by using a chat application with relevant and irrelevant text. The manipulation check showed that the levels of social presence were experienced as different. This difference was found between no chat and irrelevant chat and between no chat and relevant chat. The differences between irrelevant and relevant chat were too small to have meaning, indicating that the presence of a chat application gives the respondents a sense of social presence, no matter what the topic of conversation is. It can

be concluded that by just adding a chat application on a website it is possible to create social presence. This is confirmed by other studies, Cyr et al. (2007) and Khalifa & Shen (2004) successfully used chat applications in their studies to create a sense of social presence.

Feedback to the hypotheses

The results found on book 3 (Achterhuis by Anne Frank) show two interaction effects for product rating, one in exterior and one in content, both for respondents scoring low on need to belong. Both effects show that subjects with a low need to belong rate the exterior and content of book 3 significantly different in the relevant and irrelevant chat conditions opposed to the no chat condition. This suggests that social presence has a positive influence on how respondents rate this book; in the irrelevant and relevant chat conditions the book was rated more positive than in the no chat surrounding.

This result is conform hypothesis 1, that reflects that when respondents experience higher levels of social presence they will rate books more positive then when there is no chat. But, as the results showed, the effect found on book 3 only occurs when subjects have a low need to belong.

It was not expected that this effect would occur for respondents with a low need to belong, but a possible explanation is that these respondents are distracted by social presence leading to a less critical attitude. This less critical attitude will result in a more positive rating.

From the Literature review on need to belong can be derived that respondents scoring low on need to belong are less dependent on the opinions of others, indicating that they naturally are more critical. Besides, the research of Riegelsberger, Sasse and McCarthy (2001) indicates that respondents can be distracted by elements on a website and that these elements can be experienced as clutter. Their findings indicate that the usage of non-task related text and photo's is questionable because both can negatively influence task performance. This could indicate that the presence of a chat application distracts subjects, resulting in them becoming less critical and therefore rating the book more positive.

The interaction effects found on book 3 also indicate that need to belong has a moderating effect on social presence and product rating, but that the relationship is not as expected. Hypothesis 2 predicts this moderating effect but in the opposite direction; it was expected that when respondents have a high need to belong they would rate products more positive and choose products with a higher status when there is a social presence. But as the results show, the respondents with a low need to belong showed to behave according this hypothesis. Hypothesis 2 is thus partly true; there is a moderating effect but the influence is opposed to the expected relationship.

In addition to the formulated hypotheses, an extra effect was found. This is the effect found on book 1 (Alles wat een vrouw moet weten by Veronika Immler & Antje Steinhauser) that as well was found on book 3. The results show that respondents who score high on need to belong rate the book higher than respondents with a low need to belong, in the condition without chat. In addition, for subjects with a high need to belong, there were no differences found between the conditions that displayed irrelevant or relevant chat and the condition that did not display a chat

application. An explanation for these results is that subjects with a high need to belong always display more socially desirable behavior, even when there is no direct social presence.

Product choice

The results show that there is no relationship found between product choice, status and social presence. Subjects were asked to choose a book that they could win. In the analysis it was supposed that subjects would choose the book they ascribed the highest status to. However, as the results show, it is not true that subjects choose the book which they ascribed the highest status to.

As the literature review shows, this finding is contradicting with the theory on status related to consumer behavior, the relationship between consumer behavior and status is de basis of our consuming society (Jackson, 2005). An explanation could be that the relationship between status and the product used in this research (books) is not obvious and strong enough. There are several products that are directly related to status (e.g. automobiles), but with books this relationship is less clear.

THEORETICAL IMPLICATIONS

First, this study attempts to combine both social presence and consumer behavior in an online context. While social presence and consumer behavior have been introduced and utilized in a considerable amount of research in behavioral science earlier, little is known on how social presence and consumer behavior interfere with each other in an online context.

Second, the present study tries to theoretically explore the influence of personality on social presence and consumer behavior. Need to belong has proven to be a character trait that makes people react to social presence in different ways. People low on need to belong rate products more positive when there is chat visible and people with a high need to belong rate products positive when there is no chat in the online environment.

Third, this study has demonstrated the role of chat applications to be effective. In addition to the knowledge that social presence has several positive effects, the usage of chat applications to create social presence is found to be successful. Furthermore, for subjects with a low need to belong, social presence will influence their product rating positively.

LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

Firstly, the manipulation of social presence is performed by using chat applications with anonymous chatters. In this research the manipulation was successful, but it seems reasonable to expect more and better results of social presence when the applied chat application would contain more personal information, like a name and picture.

Here it could also be interesting to investigate what the influence of reference groups would be. In the theoretical background it became clear that in their consumer behavior, people are influenced by references (Blackwell, Miniard & Engel, 2001). Not only by adding more personal information to the chat application the experienced social presence can be increased, but also by indicating that the persons chatting and giving his/her opinion are like minded can positively influence product choice and product rating.

Secondly, it is interesting and important to notice that the results of this research were only found on two books. The interaction-effects were only found for book 3, (Het Achterhuis by Anne Frank); the main effect was only found for book 1 (Alles wat een vrouw moet weten by Veronika Immler & Antje Steinhauser). Petty and Cacioppo (1996) believe it is the task of the researcher to find out why the unexpected happened, e.g. why the results were only found for these books. They note that when a theory is more than a "hunch" and it has some previous research to support it, it is sensible to suspect that some aspect of the procedure might be responsible for the failure. Petty and Cacioppo (1996) distinguish two types of procedural problems that can arise. The first involves operationalization problems with the variables and the second involves background variable problems. Because the manipulation check showed that the manipulation worked, it is reasonable to believe that other background variables might be of influence. One of those variables is status. Book 3 is the book that received the highest rating on status. It was expected that the influence of social presence would be the strongest at a book with a high status, this proved to be true. But it is unfortunate that this effect is not found at other books, indicating that at those books status might not have been strong enough. Furthermore, this book is a somewhat special book because the story of Anne Frank is worldwide known and closely related to the history of the world. Besides, this book is the only one out of the ten books that tells a true story.

The effect found on book 1 (subjects with a high need to belong rate the book positive when there is no chat) was also found on book 3, indicating that this effect is not related to status because the books are each other's opposites on status. Book 1 has received a very low status and book 3 has received the highest status. As stated in the Discussion, a possible explanation for the effect that respondents with a high need to belong rate books more positive when there is no chat, is social desirable behavior.

Thirdly, as noted before, the manipulation had another effect. Because the ten books technically could not appear randomly to the subjects, an effect of sequence has been found. As became clear in the results, it is indistinct what the nature of this effect is. Some explanations for this effect can be found in habituation and learning.

Habituation can occur to repeated stimulus presentation relatively quickly, often within a couple of minutes (Reis & Judd, 2000). It took most respondents 25 to 30 minutes to complete this research and they repeatedly saw the chat manipulation, meaning that it is likely they habituated. Riegelsberger, Sasse and McCarthy (2001) found that learning can have an important role on how subjects perform their task. They found that subsequent views of the same page structure were largely ignored. Apparently participants are quick learners of the structure of the page. They learned where to expect task-related information and as a consequence they paid less attention to the chat manipulation as the experiment continued.

Fourthly, as discussed in the Discussion there were no results found on product choice. It was explained that there were no findings due to a weak relationship between status and the product used in this research. Therefore, it is advised to further investigate if this relation becomes clearer

when tested on other products. Products like automobiles, watches and apparel have a more obvious connection with status and therefore are likely to show results on the hypothesized relationship between status and product choice.

Besides, when other products are tested, more insight into relationship between respondents with a high need to belong and social presence can be gained. The present study did not reveal a relationship between subjects with a high need to belong and social presence, while it was expected.

PRACTICAL IMPLICATIONS

The results of this research show that social presence influences product rating. The presence of a chat application positively influences the rating of products (books). The idea that social presence influences product rating and product choice has been confirmed by the research of Hassanein and Head (2005). They showed that websites for products for which consumers seek fun and entertaining shopping experiences (like apparel) adding social presence can be beneficial. Dash and Saji (2008) found that social presence reduces the perceived risk association and consequently positively influences the online purchase intention.

Based on these researches and the findings of the present study, it could be interesting for marketers to apply social presence in all kinds of marketing related activities. But, the research of Hassanein and Head (2005) also states that the influence of social presence can differ per product category. Furthermore, the present study indicates that it is dependent on personality if a person rates products more positive in presence of a chat application. The study found that respondents with a low need to belong rate products more positively in the presence of a chat application. The study also found that compared to respondents with a low need to belong, respondents high on need to belong rate products positive when there is no chat application. Thus, although this research was unable to determine the expected differences for respondents high on need to belong when adding social presence, this research showed no negative impact on consumer behavior for this group. But , adding social presence does indeed positively effect the consumer behavior of respondents low on need to belong. This conclusion makes it advisable to implement chat applications on the websites of companies like Amazon, Bol.com and the web shops of companies like Media Markt to positively influence the rating of their products. The results of this research are not all as expected but very much interesting for further research and practical use for marketers.

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APPENDIX A

Items used in the pre-pretest

Status
Wil je minimaal 3 boektitels noemen die je een hoge status toekent?
Wil je minimaal 3 boektitels noemen die je een lage status toekent?
Wat versta je onder (hoge/lage) status?

Items used in the pretest

Status en literair gehalte
Dit boek ken ik een lage status toe.
Dit boek ken ik een hoge status toe.
Ik vind dit een literair boek.
Heb je dit boek gelezen?

Items used in the main study

Need to belong
Wanneer andere mensen mij niet lijken te accepteren, dan maak ik mij daar niet druk over[RC]
Ik probeer niets te doen, wat ervoor zou kunnen zorgen dat andere mensen mij afkeuren of gaan mijden
Ik maak mij zelden zorgen over of andere mensen om mij geven[RC]
Ik heb het nodig om te weten dat er mensen zijn tot wie ik mij in geval van nood kan wenden
Ik wil graag dat andere mensen mij accepteren
Ik ben niet graag alleen
Het maakt mij niets uit om voor langere tijd van mijn vrienden gescheiden te zijn[RC]
Ik heb een sterke behoefte om erbij te horen
Ik vind het erg vervelend, wanneer ik niet bij de plannen van anderen betrokken wordt
Mijn gevoelens zijn snel gekwetst, wanneer ik de indruk krijg dat anderen mij niet accepteren
Note[RC] item reverse coded

Product rating – exterior
De titel spreekt me aan
De kaft spreekt me aan
De auteur spreekt me aan
De samenvatting spreekt me aan

Product rating – content
Dit is een boek dat ik wel zou willen lezen
Dit soort boeken spreekt mij aan
Dit boek sluit aan bij mijn interesses
Dit boek is te populair voor mij[RC]
Op basis van de beschikbare informatie beoordeel ik dit boek met het cijfer... [RC]
Note[RC] item reverse coded

Product choice
Je maakt kans om een van de 10 onderstaande boektitels te winnen. Welke kies je?

Status
Dit boek ken ik een hoge status toe
Ik vind dit een literair boek

Social Presence
Er is een gevoel van menselijk contact op deze website
Er is een gevoel van persoonlijke aandacht op deze website
Er is een gevoel van gezelligheid op deze website
Deze website straalt menslijke warmte uit
Er is een gevoel van menselijke gevoeligheid op deze website