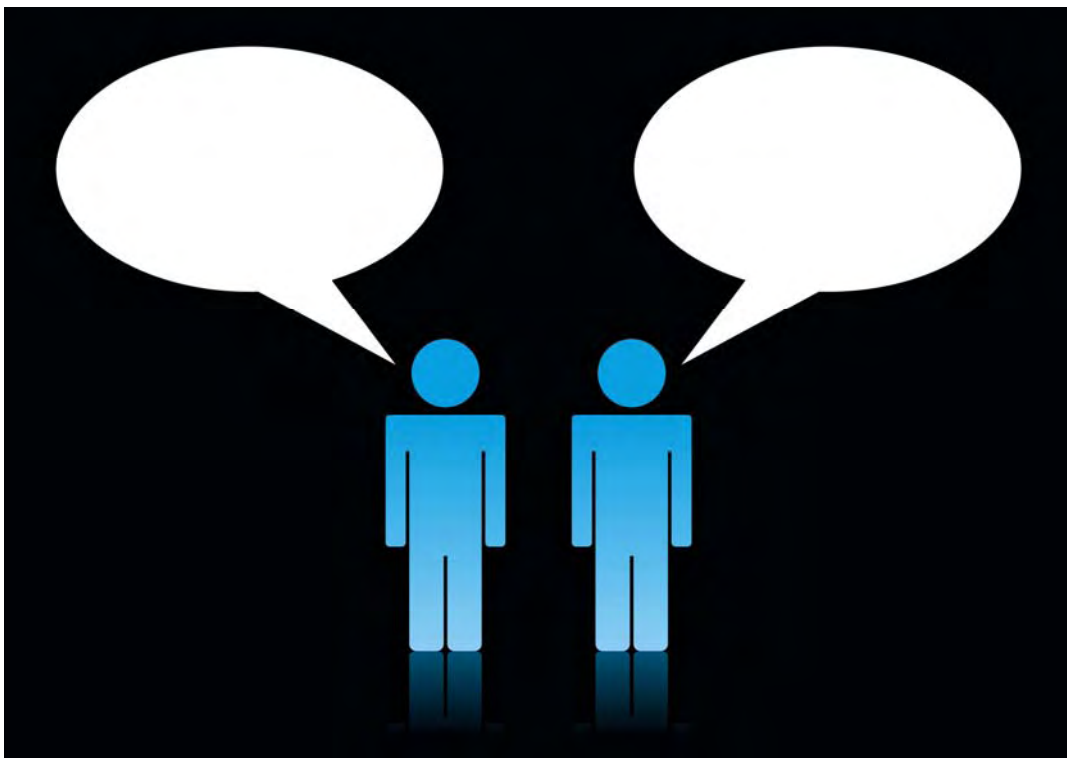


Virtual consumer communities' social influence effects on product attitude changes

A social capital perspective



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Abstract

This study investigates the social influence effects of social capital within virtual consumer communities on members' attitudes towards the products that are being discussed within these communities. Since previous offline and online marketing studies primarily focused on consumer attitude changes from an individual perspective, instead of integrating a view related to the social context, it examines the social influence processes of compliance, identification and internalization, and investigates how these influences emerge from the communities' social system. Data of 622 respondents gathered from five communities indicate that the communities' social context can explain the development of these three social influences, and these interpersonal persuasion processes affect members' product attitudes directly or indirectly in their turn. Internalization had the strongest effect on members' product attitude changes, followed by compliance processes. Identification did not have a direct effect, but showed to have an indirect effect via compliance and internalization. Social capital proved to be a significant antecedent of all three influences. The community's structural character only influenced identification processes. The relations between the community members partly determined the emergence of identification and internalization processes, while a trusting relational setting negatively affected compliance processes. Cognitive social capital was an important antecedent for all three influence processes.

Keywords: Virtual consumer communities, Social influences, Social capital, Product attitude changes.

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“So far as freedom of thought is concerned, we are no worse off with the web, and probably better off. We are more able to voice our views, to find others that share them and to learn how to modify them while being more aware of what others think.” (Leadbeater, 2008, p. 213)

1. INTRODUCTION

The last decade has seen a significant growth of the development of virtual communities. These online networks are based on social interactions, where relationships are built and interests are shared (Lin, 2008). A common form of virtual communities are those focused on consumer-related objectives (Dwyer, 2007), also referred to as virtual consumer communities, which “explicitly centre upon consumption-related interests” (Kozinets, 1999, p. 254). Members within virtual consumer communities seek, share and discuss information regarding products, stores and brands. By engaging in these communities and obtaining and exchanging information, consumers’ product opinions can be influenced (Subramani and Rajagopalan, 2003). This potential impact is highly relevant since most consumers perceive online opinions at least as trustworthy as brand websites (Nielsen, 2009).

The goal of this study is to investigate how virtual consumer communities act as reference groups and affect members’ product attitude formations as such. It does this by assessing how virtual consumer communities exercise influence on product attitudes and how the characteristics of these online networks can affect the emergence and effects of these persuasion processes. Although scholars addressed the notion of viral effects and electronic word-of-mouth (eWOM) within online environments (Cheung et al., 2008; Ho and Dempsey, 2009), it is still unknown which role virtual consumer communities play in consumers’ attitude formation and information adoption (de Valck et al., 2009). Therefore, this study contributes to a conceptual understanding of which social influences operate within virtual consumer communities and how these influences develop from the social contexts of these communities.

Attitude changes can greatly be motivated by interpersonal influences (Petty and Wegener, 1998). Virtual communities are socially rich environments where members can experience social influences in the same way as in the offline world (Postmes et al., 1998; Walther, 1996). Consequently, to broaden the knowledge of social influences within virtual consumer communities, this study adopts the tripartite distinction of social influences that are present in current attitude theory, which indicates that attitude changes can be triggered by compliance, identification and internalization processes (Wood, 2000; see Kelman, 1958, for this typology’s first presentation). Recent research confirmed the value of this categorization in relation to virtual communities (Bagozzi and Lee, 2002; Cheung and Lee, 2010), but it has not specifically been applied within the context of virtual (consumer) communities. This is the first study that will do so and applies this on an interpersonal level, and hypothesizes that attitude changes within virtual consumer communities can be triggered via the same processes as within offline groups.

However, solely applying this social influence distinction within virtual consumer communities does not explain how and why these influences develop. Previous studies already addressed the need for understanding the antecedents of social influences within virtual communities (Dholakia et al., 2004). Kelman (1974, p. 126) described social influence processes as “representing

different types of linkages between the individual and the social system.” Nevertheless, previous offline and online marketing studies primarily focused on consumer attitude changes from an individual perspective, instead of integrating a view related to the social context. As product-related information exchanges and interpersonal influences are resided in the social context of the virtual consumer community, the community’s embedded social capital can be considered as antecedent of these influence processes. Social capital entails community characteristics that determine how network members are connected, what kind of relations they have with other members, and how effective they can communicate with each other (Tsai and Ghoshal, 1998).

Social capital may be a prerequisite for social influence processes in virtual consumer communities. Structural social capital can affect the exchange and exposure of provided information as it indicates how community members are connected. Relational social capital within a virtual community setting can generate a situation where information is adopted sooner without a critical evaluation because of high levels of trust and reciprocity among its relational embedded members. Cognitive social capital, in its turn, can affect the exchange of information provided since it enables community members to efficiently understand information due to a shared language for example.

This paper is organized as follows. First, it introduces the context of virtual consumer communities, the social influences that can change product attitudes and can emerge within those networks and the role of social capital in these persuasion processes. Subsequently, a conceptual model will be put forward, based on psychological attitude theory and social capital theory. Next, this model is tested by survey data from members of five virtual consumer communities. Finally, the empirical findings are discussed and their contributions are elaborated on.

2. THEORETICAL BACKGROUND

2.1 Virtual consumer communities

Millions of computer users engage in virtual communities (Porter, 2004). The concept of virtual communities derived from Rheingold (1993, p. 5), who characterized them as “social aggregations that emerge from the Internet when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationship in cyberspace”. Online participation takes place within various types of online communities, such as social networking sites, forums, discussion boards and blogs. Each virtual community shares the characteristic that its members interact around a shared interest (Porter, 2004). They are formed by people who engage in the main activities of sharing connections, knowledge and content, executed on a voluntary basis (Kania, 2001).

The mass-scale development of these user-generated content and discussions has significant implications for marketing researches and practices, since a large amount of virtual community members seek and share information about products, brands and companies (Bickart and Schindler, 2001). When these online consumer information-sharing activities between persons take place in

computer-mediated contexts, it leads to the development of virtual consumer communities, defined as “affiliative groups whose online interactions are based upon shared enthusiasm for, and knowledge of, a specific consumption activity or related group of activities” (Kozinets, 1999, p. 254). These online discussion groups focused on consumer and/or consumption related information are one of the most common virtual communities (Dwyer, 2007). De Valck (2005) states that virtual consumer communities offer a variety of added value for consumers in terms of knowledge acquisition, social involvement and consumer agency. Examples are such as third party product/service information, aggregated and archived consumer knowledge, access to expert users, improved decision-making/product usage, stage for expression, fellowship and commonality, consumer agency, strength of buying power, greater voice, and sense of ownership (De Valck, 2005, p. 32).

Virtual consumer communities can act as important reference groups, where consumers gather and interpret information, advice and/or reviews of other members, in order to adjust their attitude towards products (de Valck et al., 2009). These influencing processes exist because virtual communities have an informational as well as a social network character (Dwyer, 2007). The knowledge exchanges reflect the information role, while these exchanges primarily take place via the social network interactions between the community members (Kozinets, 1999). Due to the development of such communities and their consumer-to-consumer interactions, electronic word-of-mouth (eWOM) communications are flourishing (Cheung et al., 2008). Because of these processes, consumers’ opinions, knowledge, intentions and behaviours can be affected by information presented by others (Bagozzi and Dholakia, 2002). In this way, the social influences of these reference groups can affect product attitudes of other members. The concepts of consumer product attitudes and interpersonal social influences will be explained in the next paragraphs.

2.2 Consumer product attitudes

Attitudes can be seen as persons’ favourable or unfavourable evaluations of objects (Petty et al., 1997). Attitudes include personal belief structures that can gear behaviour and intentions (McGuire, 1985). Consumer attitudes strongly influences intentions, purchase decisions and consumer behaviour (Warshaw, 1980). This study focuses on consumers’ product attitudes, which can be interpreted as the opinions and evaluations of specific products. As Kapoor and Kulshrestha (2009) indicate, products can have different meanings to people. It is because of this variety that since Batra and Ahtola’s (1990) study, product attitude research does not approach attitudes as unidimensional, but as consisting of an utilitarian and hedonic dimension. The utilitarian attitude dimension focuses on how it executes the function it is designed for, as perceived by the consumer. The hedonic attitude dimension includes emotions and feelings such as sensations and enjoyment that emerge from using the product or thinking about using it (Voss et al., 2003). Since “attitudes are social phenomena that (...) emerge from and are embedded in social interaction” (Wood, 2000, p. 561), the next paragraph explains how social influence processes can affect product attitudes.

2.3 Social influences and product attitude changes within virtual consumer communities

Others' interpersonal social influences are important determinants of information analysis processes and attitude formation or change (Bearden et al., 1989; Dick and Basu, 1994). Therefore, social influence theory may explain how consumers' product attitudes can be influenced by social interactions. Contemporary social influence perspectives share a tripartite distinction between "normative concerns for (a) (...) ensuring satisfactory relations with others given the rewards/punishments they can provide, (...) and (b) ensuring the coherence and favourable evaluation of the self, (...) along with an informational concern for (c) understanding the entity or issue featured in influence appeals" (Wood, 2000, p. 541). This social influence categorization has its origin in Kelman's (1958) social influence classification of compliance (satisfactory relations), identification (self-evaluation) and internalization (informational concern). This study applies Kelman's (1958) social influence distinction within the context of virtual consumer communities and examines its effect on members' product attitudes. As such, it adds to current eWOM research, since prior research already indicated that virtual consumer community members can act as reference groups and affect consumer attitudes via word-of-mouth processes (e.g. Bickart and Schindler, 2001; de Valck, 2005; Lee et al., 2008), but did not reveal how exactly these processes affect product attitudes. De Valck et al. (2009), for instance, studied members' perceived community influence, but do not clarify the specific influences that were in place. These three social influences and their applications within virtual consumer communities will be explicated now.

Kelman's first normative interpersonal influence concept is compliance, which can be defined as giving in to the influence to conform to the expectation of others (Kelman, 1974). This concept is similar to subjective norm as originated in the Theory of Reasoned Action (Fishbein and Ajzen, 1980) and Theory of Planned Behaviour (Ajzen, 1991) (also see Bagozzi and Lee, 2002). As such, it implies the overall pressure of others an individual perceives to comply, where the term others refer to important others (specific persons or groups; Bonfield, 1974). This relates to common-bond groups, where members attach value to being part of a group of specific individual members and create a need to be approved by them as such (Prentice et al., 1994; Sassenberg, 2002). In relation to product attitude change within virtual consumer communities, this means product attitudes can be adjusted because community members feel information is being imposed on them by important other members and that they think that these members want him/her to adopt this information. When this pressure significantly emerges, community members are likely to conform to these other members' attitude and change their attitude accordingly (Lee et al., 2008). Within these situations, a possible information adoption is primarily caused by the pressure an individual perceives and acceptance by common bonds, not by the content and value of the presented information (Wood, 2000).

The second normative influence process is identification, which occurs "when an individual accepts influence because he wants to establish or maintain a satisfying self-defining relationship to another person or a group" (Kelman, 1958, p. 53). It is being characterized by the individual's social

identity in relation to other persons (Bagozzi and Dholakia, 2002). This social identity entails “a cognitive component (a cognitive awareness of one's membership in a social group - self-categorisation), an evaluative component (a positive or negative value connotation attached to this group membership - group self-esteem), and an emotional component (a sense of emotional involvement with the group - affective commitment)” (Ellemers et al., 1999, p. 372). Via these identification processes, virtual consumer community members can identify themselves with the members who supplied product-related information and think and behave in agreement with the norms and expectations of them. As these influences take place, the product judgments of others who a member identifies with can be adopted or affect the product attitudes this consumer holds. This heavily depends on the attractiveness of the influencing member(s) whom the consumer identifies with (Kelman, 1961). The duration of the identification is based on how strong the identification is and to what degree it provides self-esteem. Identification processes are in general less superficial than compliance processes (Bee and Kahle, 2006).

Kelman's (1958) third social influence process is internalization, which is related to the content of influencing messages instead of normative social pressure(s). It is in line with Deutsch and Gerard's (1955) notion of informational social influence, which refers to the act of accepting information obtained from others as evidence about reality. This means that individuals accept the presented information because they think the information is truthful and valuable, not because they want to confirm to other members' expectations. Informational social influence regarding product attitudes can be defined as learning about products and services by seeking information and/or observing others' behaviour and using this information as evidence about reality (Bearden et al., 1989). The degree of influence depends on how certain the person is about the reliability of others' judgment (credibility) and the trustworthiness of these referents (McGuire, 1985). In other words, the degree the consumer sees others as a source of valid information. For instance, information provided by a person perceived as highly credible will sooner be accepted as a purchase decision guide than information that is presented by a person whose expertise is regarded as questionable (Bansal and Voyer, 2000). Consequently, informational social influence is based on the types of referents and their relative impact (Warshaw, 1980). Internalization processes are the least superficial of all three social influences: their effects have the longest potential durability since the information is induced by the individual. This induction means that a person maintains an attitude change, even in situations where external rewards are absent as in the social influence processes of compliance and identification.

Together, these three social influence processes for a large part can determine attitude change. However, the existence of these individual processes in a virtual consumer community depends on the characteristics of the social context that the community offers. The next paragraph explicates the antecedents that can affect this emergence, by focusing on the social capital dimensions of the social network.

2.4 Social capital

Social influences take place when individuals change their attitudes as a result of induction by other persons or groups (Kelman, 1961). Nevertheless, previous offline and online marketing studies primarily focused on consumer attitude changes from an individual perspective, instead of integrating a view related to the social context. Bansal and Voyer (2000), for instance, studied the individual sender's expertise, while Lee et al. (2008) examined the amount and quality of online product reviews, and Bickart and Schindler's (2001) experiment considered internet forums influence in general. In other words: while virtual consumer communities are seen as possible reference groups, understanding of the characteristics of these groups in relation to the social influences that flow from these social networks is lacking. As a result of this limited focus on social groups, these studies treated social influences in a general manner, instead of a specific distinction of social influence processes as this study proposes within the context of virtual consumer communities. Since social influences should be viewed within the context of social systems (Kelman, 1974), knowledge about the social networks that are formed within virtual consumer communities may clarify their role as antecedents of interpersonal influence processes and why they develop. However, up to now, little is known about how online social networks' characteristics affect social influence processes (Hung and Li, 2007).

A highly relevant aspect of social networks in this influence-based view is the concept of social capital, which describes certain resources that are located within social networks. That is, social capital resides in the structure of relationships between network members (Coleman, 1990b). Hence, social capital can be defined as "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu and Wacquant, p. 14). Access to these resources can present benefits for network members (Portes, 1998). As such, social capital can be thought of a characteristic of the network that is formed (Williams, 2006).

The concept of social capital has been studied within various fields of research (e.g. Adler and Kwon, 2002; Ellison et al., 2007; Putnam, 1993). Since the rise of virtual communities, scholars already addressed the existence of social capital within these online networked contexts (e.g. Blanchard and Horan, 1998; Wellman et al., 2001). Lin (1999) argued that the access to free information and data within online networks would greatly affect the creation and use of social capital. When applied within knowledge-sharing contexts such as virtual consumer communities, social capital approaches communities as "knowledge-sharing entities" (Huysman and Wulf, 2006, p. 44). Because social influences within virtual consumer communities are based on online communications, knowledge exchanges and adoptions, these online networks' social capital can affect the emergence of online influences, as prior studies already revealed the role of social capital as facilitating information exchange within electronic networks and providing resources within virtual communities (Chiu et al., 2006; Wasko and Faraj, 2005).

This article uses Nahapiet and Ghoshal's (1998) social capital framework, which outlines the creation and sharing of knowledge and proved to be valid and useful within the context of virtual communities (Chiu et al., 2006; Wasko and Faraj, 2005). Nahapiet and Ghoshal (1998) identified three dimensions of social capital: structural social capital, relational social capital, and cognitive social capital. The structural dimension of social capital refers to the social ties between the community members. These ties are at the heart of social capital, since "the fundamental proposition of social capital theory is that network ties provide access to resources" (Nahapiet and Ghoshal, 1998, p. 252). Structural social capital focuses on how the community members are connected via social structures, configurations and positions. These nodes and their social connections influence how members know each other and know about the existence of other network members.

While the structural dimension of social capital indicates which community members share information and how they do this, the relational dimension specifies when and why they share information (Huysman and Wulf, 2006). Relational social capital has been conceptualized as including a multitude of indicators, but it essentially describes the qualitative characteristics of the social relationships such as trust, reciprocity and relational embeddedness. These characteristics can provide an atmosphere which stimulates the exchange and adoption of knowledge and essentially, can create new intellectual capital (Tsai and Ghoshal, 1998).

Social capital's third dimension, cognitive social capital, consists of "resources that make possible shared interpretations and meanings within a collective" (Wasko and Faraj, 2005, p. 41). Nahapiet and Ghoshal (1998) argue that meaningful communication is always embedded in a social context. This means that interpretation of the exchanged knowledge is dependent on understanding of the background of the network members, for instance knowledge about motivational reasons to share information and in which format. Adler and Kwon (2002) conceptualize it as the 'ability' to engage in effective communication. Consequently, cognitive social capital can be seen as a network's collection of cognitive assets such as underlying shared languages and visions that facilitate resource access within the network.

The next chapter provides the hypothesized linkages between social capital and social influences within virtual consumer communities, together with the additional hypotheses as presented in the conceptual model.

3. HYPOTHESES AND RESEARCH MODEL

3.1 Structural social capital and social influences within virtual consumer communities

A virtual consumer community's structural social capital is built on the social connections of its members. These network ties provide access to valuable resources (e.g. knowledge) in the community, in less time and with less effort (Coleman, 1988). Adler and Kwon (2002) referred to this as the 'opportunity' of the network to exchange social capital. Social network theory already indicated the

influencing effect of the interpersonal structure on actors' beliefs and behaviours (Freeman, 1979; Friedkin, 1998). This paragraph describes the effects of virtual consumer communities' structural social capital on the social influence processes of compliance, identification and internalization.

The compliance argument suggests that community members develop needs to be approved by significant others by giving in to the pressure of these salient others (Kelman, 1961). The intensity of this control resides in the (perceived) power of and dependence on these influencing agents (McGuire, 1985). Hechter's (1987) theory of group solidarity and social exchange research (Cropanzano and Mitchell, 2005) suggests that compliance effects are stronger when groups are more cohesive. This is in line with the initial hypothesis of Deutch and Gerard (1955), who stated that normative social influence would be greater among individuals forming a group than among individuals who do not compose a group. This common-bond group attachment also exists on the Internet and within online communities (Ren et al., 2007, Sassenberg, 2002). As such, it can be concluded that the higher the community's structural social capital, the stronger the compliance effects within the community.

The level of structural social capital within a virtual community can also affect identification influence processes. Identification occurs when community members stereotype themselves in such a way that they identify themselves as ingroup members (Postmes et al., 2005). Within this situation, the influence of, and stereotyping with, other members depend on the attractiveness of these influencing agents (McGuire, 1985). With a higher degree of structural social capital, virtual community members have the opportunity to become more aware of which members are located within the virtual community. This facilitates the identification process of the influencing agents, by the simple fact that member can be more informed about which influencing agents are forming the ingroup. Furthermore, whether community members are affected by identification influences also depends on the norms, rules and ideologies of the ingroup. The exchange of this information is rooted in structural social network factors such as contact frequency and social participation, which leads to, for instance, the sharing of a common set of norms (Drapeu et al., 2009; Hanson and Östergren, 1987). Taken together, higher levels of virtual consumer community's structural social capital can lead to stronger identification influences.

There may also be a relation between a community's structural dimension and informational influence processes (internalization). In these situations, community members are not influenced by normative pressures, but by the content that is being presented by others (Kelman, 1958). Although this influence of others depends on the credibility and trustworthiness of the influencing agents, structural social capital may affect this as well, since social networks such as virtual consumer communities can direct the information supply to its members (Haythornthwaite, 1996; Aral et al., 2007). For instance, two actors who have strong ties are more likely to exchange knowledge more frequently and influence each other in the decision-making process (Wellman and Wortley, 1990). Network members can also influence decision makers by using their network positions in order to control, promote or restrain information (Burt, 2000). In other words, the potential information

presented to community members is dependent on the configuration of the community's network (Nahapiet and Ghoshal, 1998). In sum, the foregoing arguments lead to the following hypotheses:

***Hypothesis 1a.** The level of structural social capital within the virtual consumer community positively influences the level of compliance social influences.*

***Hypothesis 1b.** The level of structural social capital within the virtual consumer community positively influences the level of identification social influences.*

***Hypothesis 1c.** The level of structural social capital within the virtual consumer community positively influences the level of internalization social influences.*

3.2 Relational social capital and social influences within virtual consumer communities

In addition to the structure of the community's connections, social capital includes the qualitative social attributes of these relationships as well. This section describes the hypothesized effects of a virtual consumer community's relational social capital on the three social influences.

Relational social capital may influence compliance processes. Relational social capital stresses an environment where network members are relational embedded and based on relational assets such as reciprocity and trust (Blanchard and Horan, 1998, Daniel et al., 2003; Tsai and Ghoshal, 1998; van den Hooff et al., 2010). Reciprocity implies that, when community members help each other, they will be supported in future situations (Chan and Li, 2009). This may steer compliance effects when a member provides a favour to an individual, since this will create a concession by the individual to support that helper in the future (Cialdini and Goldstein, 2004). For instance, a community member who receives useful information without an explicit request can develop an obligation to adopt some attitudes of the member(s) who sent this information. Furthermore, trust in the members of a community may also affect compliance processes. Although trust is mostly related to identification with a community, trust in the authority of individual community members (common bonds) may lead to social influence processes on top of mere identification with the community as a whole (Prentice et al., 1994).

Identification processes may significantly be affected by the relational social capital dimension, due to their relational embedded character of reciprocity and trust. Settoon et al. (1996) explained that the existence of reciprocity increases overall commitment. Commitment, in turn, positively influences members' adoptions of the community norms, which leads to stronger identification influences (Dholakia et al., 2004). Because of virtual communities' low entry and exit barriers, only those members stay who can identify with the community's norms (de Valck et al., 2009). As such, the virtual consumer community's voluntary character leverages the identification processes. Trust has been studied within various research fields (Ulivieri, 2005) and is being considered as fundamental for interpersonal relationships (Butler, 1991) and group behaviour (Hosmer, 1995). The effect of trust on identification processes can also be described in the context of

accepting norms of important others since trusted persons are often considered as important. As such, more trustful relationships can lead to more norm acceptance. The influence of relational social capital on identification is even more prominent when considering the emotional/affective involvement identification processes (Ellemers et al., 1999), which causes the adoption of group norms (Postmes et al., 2005). These previous insights imply that relational social capital is likely to influence identification processes.

A relational embedded environment consisting of reciprocity and trust can also affect informational social influences (internalization). Reciprocity positively influences knowledge exchanges within virtual communities (Wasko and Faraj, 2005). As a result, members will receive more knowledge from more members, which is often perceived as more valuable compared to receiving knowledge from fewer members (Lee et al., 2009). Furthermore, because reciprocity includes members' roles of helping others, members create expectations that potential helpers act in a way that is beneficial for them (Terry and Hogg, 2000; Thomas et al., 1955). Consequently, members will consider the knowledge provided by these helpers as more relevant (Lysaught et al., 1999), which increases the impact of the informational influence. Trust has probably even a larger effect on the internalization process, since these influences heavily depend on the trustworthiness of others (McGuire, 1985). When community members are regarded as trustworthy, they can act as important referents (Dwyer, 2007). In these cases, knowledge provided by community members will be seen as more valuable, which increases their internalization influence (Bickart and Schindler, 2001). The above presented leads to the following hypotheses:

Hypothesis 2a. *The level of relational social capital within the virtual consumer community positively influences the level of compliance social influences.*

Hypothesis 2b. *The level of relational social capital within the virtual consumer community positively influences the level of identification social influences.*

Hypothesis 2c. *The level of relational social capital within the virtual consumer community positively influences the level of internalization social influences.*

3.3 Cognitive social capital and social influences within virtual consumer communities

As already explained in chapter two, cognitive social capital enables virtual consumer community members to understand each other when communicating (Huysman and Wulf, 2006). In this study and in line with Chiu et al. (2006), the cognitive ability of community members is represented by shared language and shared vision. Shared language incorporates language, but also terms, codes and underlying assumptions. Together, they facilitate access to and transfer of information (Daniel et al., 2003). Shared language can affect all three social influence mechanisms, since the impact of these persuasion processes are in part affected by the messages send to the actor (Wood, 2000). As such, shared language increases the overall clarity of social influence messages (McGuire, 1985).

First, cognitive social capital may influence compliance. Compliance refers to a member's perception that important others think that he/she should adopt a certain attitude or behaviour (Kelman, 1961). In other words: the community member feels that others' opinions are forced upon him/her. Cognitive social capital can indicate if there is a common understanding among the community members. According to Hogg and Reid (2006), people develop and adjust their perceptions of the norms they feel complying with by direct and/or mediated communication. When there exists little cognitive social capital between community members, language itself does not act as an optimal frame of reference from which a member interprets information within the social setting of a virtual consumer community. This implies that with lower levels of cognitive social capital, less compliance processes will be in place.

The effects of cognitive social capital on the social influence process of identification are clearly acknowledged by social identity scholars (e.g. Ashforth and Mael, 1989; Hogg et al., 1995). Although not explicitly labelled as shared language and visions, social identity theory does place great emphasis on the common understandings that underlie group membership (Postmes et al., 2005). Because of this shared understanding, community members' social identity regarding the community is strengthened via the processes of self-categorization, emotional involvement and group self-esteem (Ellemers et al., 1999). Additionally, a common understanding can help community members in grasping the essence of group norms, which can lead to higher identification with the community (Dholakia et al., 2004).

Cognitive social capital can significantly influence internalization processes as well, since they are grounded in informational influences and, as already described, a shared language positively affects information exchange and interpretation. Furthermore, when community members have a common vision, community members can more easily see the meaning of shared knowledge within the community, because it enables comparing interpretations and exchange of opinions (Lam, 2001). This, in turn, will positively influence information processing (Sinkula et al., 1997). This leads to the following hypotheses:

***Hypothesis 3a.** The level of cognitive social capital within the virtual consumer community positively influences the level of compliance social influences.*

***Hypothesis 3b.** The level of cognitive social capital within the virtual consumer community positively influences the level of identification social influences.*

***Hypothesis 3c.** The level of cognitive social capital within the virtual consumer community positively influences the level of internalization social influences.*

3.4 Interrelatedness of social capital dimensions within virtual consumer communities

While prior scholars adopted Nahapiet and Ghoshal's (1998) conceptual framework of social capital within online networks, less attention has been paid to the later conceptualization of Tsai and Ghoshal

(1998), who stated that the three social capital dimensions are interrelated. First, the authors state that the existence of social interaction ties (structural social capital) positively affects trust (relational social capital) and a shared vision (cognitive social capital). Second, they suggest that cognitive social capital is at the basis of relational social capital, because a shared understanding, values and vision stimulate trust. Since prior studies confirmed this interconnectedness (van den Hooff and Huysman, 2009; van den Hooff et al., 2009), this study embraces these findings and applies them within a virtual consumer community context. Hence, the following hypotheses are adopted:

***Hypothesis 4a.** The level of structural social capital within the virtual consumer community positively influences the level of the virtual consumer community's relational social capital.*

***Hypothesis 4b.** The level of structural social capital within the virtual consumer community positively influences the level of the virtual consumer community's cognitive social capital.*

***Hypothesis 4c.** The level of cognitive social capital within the virtual consumer community positively influences the level of the virtual consumer community's relational social capital.*

3.5 Social influences and consumer attitudes within virtual consumer communities

As explained in paragraph 2.2, attitudes include personal belief structures about objects. Attitudes can gear behaviour, and social influences are important antecedents of these attitudes. This study adopts the view from general attitude theory, which acknowledges a tripartite distinction of social influence mechanisms (Wood, 2000). This distinction is in this article operationalized by Kelman's (1958) social influence classification of compliance, identification and internalization, and are hypothesized as having a positive effect on absolute product attitude changes within virtual consumer communities.

First, compliance effects can be expected because members of a virtual consumer community may experience pressure to comply with information because of authority and trust they place in important other members and members want to be accepted by these common bond group members (Sassenberg, 2002). For example, Lee et al. (2008) found that group pressure can lead to conformity effects such as product attitude changes. Hence, compliance processes may affect attitude change.

Product opinions can also be adjusted within virtual consumer communities because of identification processes. This can happen on a general level where members identify with the community. In these cases, members develop a product opinion that is in line with the perceived general attitude of the community (members) they identify with. Therefore, identification social influence processes may also influence attitude change.

A last social influence form within consumer communities can develop when members change their product evaluations because they place great value on the posted information as it is perceived as reality. This leads to an internalization process where influence operates in a rational way (Kelman, 1974). As such, members' product attitudes can change because of the information exchanged within the virtual consumer community, depending in part on the credibility of the members that offer that

information, as explained in paragraph 2.3. Since virtual consumer communities are primarily based on information exchange regarding specific topics, acceptance of these informational influence processes will probably have the biggest influential effect on product attitude changes. As such, the following hypotheses are presented:

Hypothesis 5a. *Compliance processes within the virtual consumer community positively influence members' product attitude change.*

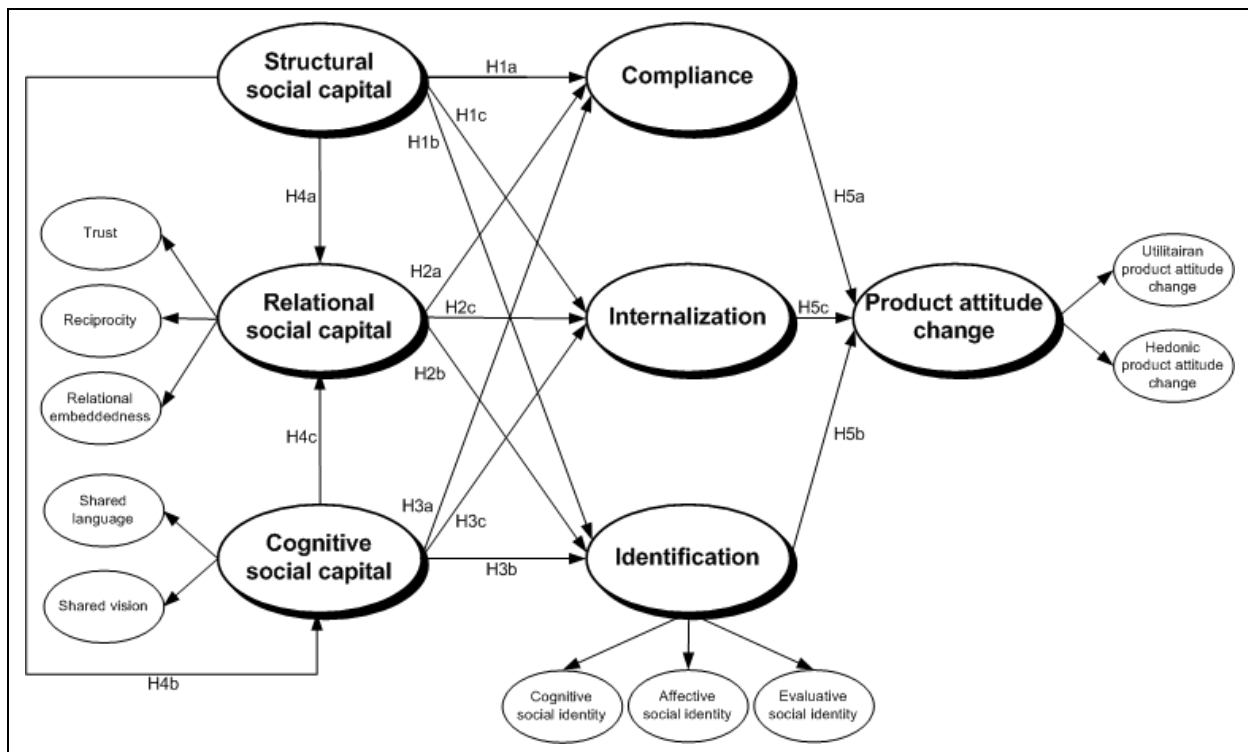
Hypothesis 5b. *Identification processes within the virtual consumer community positively influence members' product attitude change.*

Hypothesis 5c. *Internalization processes within the virtual consumer community positively influence members' product attitude change.*

3.6 Research model

As a result, by drawing upon marketing, social capital, sociology and psychology literature, this study utilizes the following research model, as shown in figure 1.

Figure 1. Research model



4. METHODOLOGY

4.1 Data collection and sample

This study concentrates on online forum communities where information sharing is focused on certain product groups. Data were collected via an online survey among participants of five virtual consumer communities. To ensure that the research focused on virtual consumer communities, a list of communities that met the requirements of a virtual consumer community (as defined in chapter two) was created. These communities included online discussions about consumer activities related with a variety of products and brands within a certain product category. As a consequence of relative low response rates of online surveys (Cook et al., 2000), relative large virtual consumer communities were investigated. From the pool of communities, the moderator(s) and/or administrator(s) of nine communities were approached with the request to assist in creating awareness for the online survey. As a result, five communities replied positively to this request. These communities are all based on bulletin boards: forums where users can post messages within separate threads. Table 1 provides some demographic information of the communities included in the study.

Table 1. Characteristics of participated virtual consumer communities

Virtual consumer community	URL	Product category	Community online since	Registered users ²	Research sample
Hardware.info	http://www.hardware.info/forum/	Computer products	2000	58.118	369
Mobilyz	http://www.mobilyz.com/forum/	Mobile products	2005	137.567	102
AboutDJ	http://www.aboutdj.nl/community/	DJ gear	2004	2.778	100
Helpmij	http://www.helpmij.nl/forum/	Computer products	1999	183.715	26
Gamer	http://forum.gamer.nl/	Games	1999	85.254	25

Hardware.info is one of the largest websites that informs Dutch and Belgium consumers about computer products. It not only offers news items, but also product information, reviews, price comparisons and videos. Its community consists of a forum, a database of members' computer system configurations, member product reviews and members' product benchmarks. Mobilyz is a large Dutch community, centred on mobile devices. All presented information is oriented to the specific mobile device of the user. Mobilyz presents news, reviews, tips and videos. The community is primarily active within the forum. AboutDJ is in essence similar to Mobilyz, but it focuses on DJ gear and has a smaller user base. It includes news, reviews, tutorials, and best buy tips, while community activities operate in its forum. Helpmij claims to be the biggest computer helpdesk of the Netherlands. It focuses completely on social interactions between its members, via an active forum and online chat. Gamer is

² As stated on the community's websites, July 25th, 2010

part of a professional publishing organization, and provides Dutch gamers with information about games and game consoles via news articles, reviews, interviews, videos and dossiers about specific topics. Gamer's community consists of member reviews, previews, weblogs and a separate forum.

Data was collected using an online survey. Facilitation by the community manager and/or website manager was provided by giving permission to post the survey link in a community thread, publicizing a news item on the community's front page and publishing an item within the community's digital newsletter. In addition, a small incentive was hold out to one randomly selected respondent per community, in order to increase response rates.

4.2 Sample

Data collection was done from May 31st to July 22nd 2010 and yielded a total of 622 Dutch respondents who completed the survey, ranging from 369 for Hardware.info to 25 for Gamer. The respondents range in age from 10 to 70 year ($M = 28.37$, $SD = 12.95$), of which 97.9% are male and 2.1% are female. On average, they were community members for 31 months (2 years and 7 months) ($M = 31$, $SD = 27$), and spent 537 minutes (8 hours and 57 minutes) per week visiting the virtual consumer community ($M = 537$, $SD = 785$). As such, they can be characterized as experienced users. An overview of the characteristics of the complete sample and of the three largest subsamples is presented in table 2. The fact that community members' existing attitudes of the products examined were already quite high ($M = 4.10$) is emphasized here, since prior attitudes may affect attitude changes due to social influence effects (Oskamp, 1991).

Table 2. Demographics of overall sample and of three largest community samples

	Overall (N = 622)		Hardware.info (N = 369)		Mobilyz (N = 102)		AboutDJ (N = 100)	
	Mean or %	S.D.	Mean or %	S.D.	Mean or %	S.D.	Mean or %	S.D.
Gender								
Male	97.9%		99.5%		91.2%		99.0%	
Female	2.1%		0.5%		8.8%		1.0%	
Age	28.37	12.93	26.05	11.71	42.87	11.04	23.0	6.75
Education								
None	0.2%		0.3%		0.0%		0.0%	
Primary	2.3%		2.4%		1.0%		0.0%	
Lower	3.2%		3.8%		2.0%		1.0%	
Intermediate	56.6%		63.4%		41.2%		49.0%	
Higher	37.6%		29.8%		55.9%		50.0%	
Occupation								
Full-time job	37.9%		31.2%		70.6%		31.0%	
Part-time job	6.6%		6.2%		11.8%		3.0%	
Student	30.2%		32.8%		2.0%		50.0%	
Highschool student	15.6%		20.1%		1.0%		12.0%	
No job	5.6%		6.0%		8.8%		2.0%	
Other	4.0%		3.8%		5.9%		2.0%	
Internet use per day	5 hours 12 min.	3 hours 24 min.	5 hours 21 min.	3 hours 15 min.	5 hours 33 min.	4 hours 19 min.	4 hours 5 min.	2 hours 36 min.
Virtual community use per week	8 hours 57 min.	13 hours 5 min.	9 hours 10 min	11 hours 40 min.	6 hours 8 min.	15 hours 1 min.	7 hours 52 min.	13 hours 31 min.
Virtual community Membership	2 years 8 months	2 years 3 months	2 years 4 months	2 years 1 month	4 years 3 months	2 years 6 months	1 year 6 months	1 year
Dominant motivations to join virtual community³								
Informational	4.01	0.68	4.08	0.66	3.92	0.56	4.07	0.64
Entertainment	3.04	1.02	3.11	1.00	2.57	0.98	3.20	0.89
Transactional	2.35	1.07	2.41	1.11	2.11	0.98	2.47	0.96
Social	2.24	0.86	2.16	0.85	2.33	0.88	2.32	0.80
Esteem	1.61	0.78	1.65	0.81	1.39	0.61	1.66	0.76
Product attitude before reading on community								
Overall	4.10	0.73	4.04	0.72	4.16	0.64	4.42	0.65
Utilitarian	4.17	0.82	4.13	0.83	4.21	0.73	4.50	0.69
Hedonic	4.04	0.79	3.95	0.78	4.11	0.68	4.34	0.70

³ On a 1-5 scale

4.3 Measures

The measurement items used in the online survey were, where possible, derived from existing measures validated in prior literature, and can be found in appendix A. Each item was adapted to fit this study's context of virtual consumer communities and translated in Dutch. Most items were measured via a 5-point likert scale, ranging from strongly disagree (1) to strongly agree (5). Second-order variable measures were created following Wetzels et al.'s (2009) guidelines for specifying hierarchical latent variables within PLS path modeling, by relating the second-order latent variable to the first-order latent variable items.

Independent measures. Most measures for the second-order constructs structural social capital, relational social capital, cognitive social capital and their underlying first-order constructs were taken from Chiu et al. (2006). However, since these authors' items for structural social capital primarily focused on the quantity of interactions between the community connections instead of the structure and positions of these connections (which is the foundation of structural social capital's opportunity character), other items were needed to measure structural social capital. Therefore, we used items from Van den Hooff and Huysman (2009) and Law (2008) to measure *structural social capital*. The items for the first-order constructs trust, reciprocity and relational embeddedness that composed the second-order measures for *relational social capital* were adapted from Chiu et al. (2006) and van den Hooff et al. (2009). In line with Chiu et al. (2006), *cognitive social capital* consisted of the construct items for shared language and shared vision.

Mediating measures. Prior research regarding social influences within virtual communities measured these persuasion influences on a general level of the whole community (e.g. de Valck, 2005) or by using a proxy such as susceptibility to interpersonal influences (e.g. Pentina, 2008). However, this study focused on the specific individual-level social influences that relate to product attitude changes. Consequently, the survey participants were asked to write down the product that they read and discussed about most within the virtual consumer community during the last two months. The questions regarding social influences and product attitude change were related to that specific product and the community members that discussed that product.

Items for the *compliance* measure were derived from Venkatesh (2000) and Lee and Kozar (2008) and adjusted, together with two items newly designed for the purpose of this study. The items for the second-order *identification* construct were adopted from Dholakia et al. (2004), and included items of the constructs cognitive social identity, affective social identity and evaluative social identity, derived from Ellemers et al. (1999). Previous studies that dealt with *internalization* influences within virtual communities adopted Bagozzi and Dholakia's (2002) representation of group norms adoptions. However, as already explained in chapter two, this study focuses on the content of the influencing

message as represented by the concept of informational influence (Wooten and Reed II, 1998). As such, internalization was measured with items adapted from Henningsen et al. (2006).

Dependent measures. For measuring the dependent variable *product attitude change*, Voss et al.'s (2003) utilitarian and hedonic consumer attitude dimensions were adapted. The survey participants were asked to indicate how they perceived their product attitude change for each of these attitude dimensions, after reading and discussing about the specific product within the virtual consumer community and compared to their previous attitude before participation within the virtual consumer community. This was done via a less (-2) to more (+2) scale. As such, this second-order latent variable could be positive and negative. The definite measure was created by taking the absolute values of these changes, in order to measure the absolute attitude changes because of virtual consumer community influences.

5. RESULTS

In order to validate the research model and the hypothesized effects, partial least squares (PLS) modeling was applied. PLS is often used within IS research and assesses the measures' reliability and validity, together with simultaneously testing of a set of regressions. PLS is appropriate when the research model is complex (Henseler et al., 2009), and requires minimal demands on sample size (Chin, 1998). The software package SmartPLS 2.0 M3 (Ringle et al., 2005) was used for this analysis.

5.1 Measurement model

First, the scales were validated by means of reliability and validity tests. These tests were done for the overall sample and the three largest virtual community samples. As the results of all tests were similar, only the results for the overall sample are reported here. The tests led to deletion of some items (one shared language item, two structural social capital items and one utilitarian product dimension item) because of a negative impact on the scale's reliability, assessed via Cronbach's alpha and composite reliability scores. Appendix A lists the variables and the final measurement items used within this study. Appendix B depicts the variable means per community, which shows no significant differences between the variable means of the three largest communities.

Table 3 provides an overview of the means and reliabilities of the scales of the latent first-order variables. All used scales can be considered as reliable, with Cronbach's alphas (0.80 and above) and composite reliabilities (0.88 and above) higher than the advocated value of 0.7. All scales load high on convergent validity, with average variance extracted (AVE) scores (0.68 and above) higher than 0.50 (Hulland, 1999). In addition, discriminant validity was assessed by examining if the square roots of the variables' AVE scores are larger than the correlation with other constructs (Gefen et al., 2000). As table 4 clearly shows, all scales demonstrate good discriminant validity.

In order to test if there was a difference in presence perception of the different social influence processes, compliance ($M = 2.59$, $SD = 0.91$), identification ($M = 2.85$, $SD = 0.72$) and internalization ($M = 3.40$, $SD = 0.74$) were compared via the multiple-comparison procedure of a within-subject GLM design with repeated measures. These pairwise comparisons of effects lead to the finding that all mean differences were significant $F(2, 1242) = 262,41$, $p < .001$. Post-hoc tests revealed that internalization was experienced as most present by the community members, followed by identification and compliance. In order to examine the social capital's social influence effects on attitude changes, the hypothesized structural model was tested, which will be explained in the next paragraph.

Table 3. Number of items, mean, standard deviation, Cronbach's Alpha (α), average variance extracted (AVE), composite reliability (CR) and range of latent variables

Variable	# items	Mean	S.D.	α	AVE	CR	Range
1. strcap	7	2.56	0.92	0.92	0.70	0.95	1-5
2. trust	5	3.30	0.72	0.88	0.68	0.91	1-5
3. reci	2	4.00	0.71	0.81	0.84	0.91	1-5
4. embed	2	3.00	0.96	0.83	0.86	0.92	1-5
5. shlan	2	3.52	0.76	0.74	0.79	0.88	1-5
6. shvis	3	3.26	0.78	0.85	0.77	0.91	1-5
7. compl	4	2.59	0.91	0.89	0.74	0.92	1-5
8. idcog	2	2.92	0.81	0.80	0.84	0.91	1-5
9. idaff	2	3.00	0.88	0.84	0.86	0.93	1-5
10. ideval	2	2.65	0.90	0.89	0.90	0.95	1-5
11. intern	4	3.40	0.74	0.83	0.66	0.88	1-5
12. attchang.ut	4	1.11	0.68	0.91	0.79	0.94	0-2
13. attchang.he	5	0.99	0.71	0.92	0.77	0.94	0-2

strcap=structural social capital, trust=trust, reci=reciprocity, embed=relational embeddedness, shlan=shared language, shvis=shared vision, compl=compliance, idcog=cognitive social identity, idaff= affective social identity, ideval=evaluative social identity, intern=internalization, attch.ut= utilitarian product attitude change, attch.he= hedonic product attitude change

Table 4. Correlations of latent variables

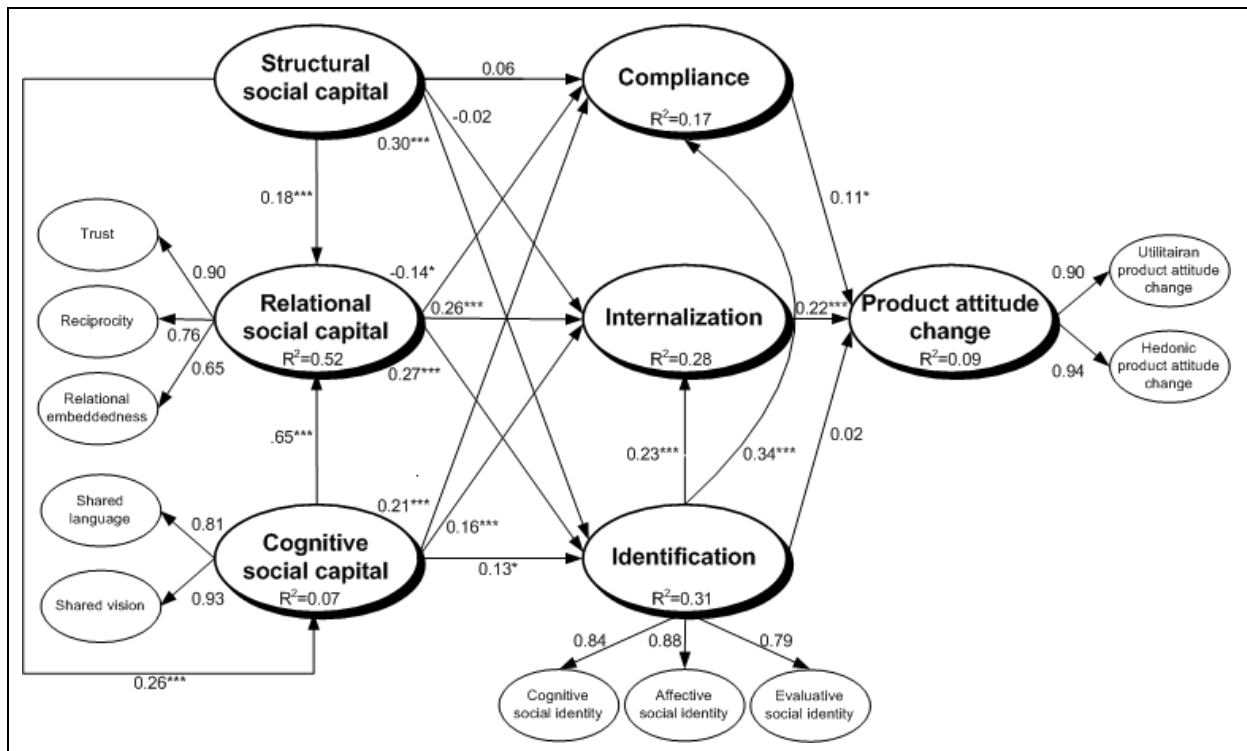
Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. strcap	.84												
2. trust	.17**	.82											
3. reci	.27**	.52**	.92										
4. embed	.57**	.36**	.43**	.93									
5. shlan	.28**	.50**	.42**	.35	.89								
6. shvis	.21**	.63**	.47**	.40**	.55**	.88							
7. compl	.21**	.17**	.09	.19**	.19**	.27**	.87						
8.idcog	.30**	.40**	.31**	.40**	.31**	.38**	.33**	.91					
9. idaff	.34**	.32**	.31**	.52**	.29**	.34**	.28**	.65**	.93				
10. ideval	.45**	.15**	.17**	.36**	.22**	.21**	.35**	.47**	.54**	.95			
11. intern	.21**	.41**	.41**	.30**	.33**	.41**	.35**	.44**	.39**	.18**	.81		
12. atch.ut	.06	.21**	.14**	.12**	.17**	.23**	.18**	.13**	.13**	.09**	.28**	.89	
13.atth.he	.09**	.20**	.14**	.13**	.18**	.21**	.20**	.15**	.13**	.10**	.23**	.69**	.88

strcap=structural social capital, trust=trust, reci=reciprocity, embed=relational embeddedness, shlan=shared language, shvis=shared vision, compl=compliance, idcog=cognitive social identity, idaff= affective social identity, ideval=evaluative social identity, intern=internalization, atch.ut= utilitarian product attitude change, atth.he= hedonic product attitude change. Diagonal values are square roots of AVE. **p < .01

5.2 Structural model

As PLS lacks indexes to measure overall model fit, the hypothesized structural model was assessed by examining the structural path coefficients, and determination coefficients (R^2) of the endogenous variables. This was done by applying the bootstrapping technique (622 re-samples). In this model, compliance and internalization had a direct positive and significant effect on the community members' product attitude change, while identification did not have an influence. Since all three social influence processes are not mutually exclusive (Kelman, 1961), an additional model was tested to examine if the identification processes had an indirect effect on product attitude change via the compliance and internalization processes. Figure 2 depicts the results for this final tested model. Table 5 provides an overview of the path coefficients and their significance.

Figure 2. Results final tested structural PLS model



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

Table 5. Path Coefficients for final tested model

Path	Hypothesis	Coefficient
Structural social capital → Compliance	1a	.06
Structural social capital → Identification	1b	.30***
Structural social capital → Internalization	1c	-.02
Relational social capital → Compliance	2a	-.14*
Relational social capital → Identification	2b	.27***
Relational social capital → Internalization	2c	.26***
Cognitive social capital → Compliance	3a	.21***
Cognitive social capital → Identification	3b	.13*
Cognitive social capital → Internalization	3c	.16***
Structural social capital → Relational social capital	4a	.18***
Structural social capital → Cognitive social capital	4b	.26***
Cognitive social capital → Relational social capital	4c	.65***
Compliance → Overall product attitude change	5a	.11
Identification → Overall product attitude change	5b	.02
Internalization → Overall product attitude change	5c	.22***
Identification → Compliance		.34***
Identification → Internalization		.23***

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

Overall, the findings support 10 of the 15 hypotheses of the model with significance levels of $p < .05$ and lower, together with some additional significant effects. The first hypothesis posed that virtual consumer communities' structural social capital had a positive effect on all three social influence processes. This positive effect was only found significant in relation to identification ($\beta = .30, p < .001$), while no significant effects on compliance and internalization was found.

Considering the second hypothesis, a strong influence of relational social capital on the social influence processes emerged. The positive hypothesized effects on identification ($\beta = .27, p < .001$) and internalization ($\beta = .26, p < .001$) were found to be significant. Contrary to the expectations, relational social capital showed to have a negative effect on the compliance processes ($\beta = -.14, p < .05$). An explanation for this negative effect of virtual communities' relational character can be found in the discussion.

The third hypothesis predicted a positive effect of cognitive social capital on all social influence processes. All three hypotheses were confirmed, with significant effects on compliance ($\beta = .21, p < .001$), identification ($\beta = .13, p < .05$) and internalization ($\beta = .16, p < .001$).

The results further support the hypothesized interrelatedness of the social capital dimensions. Structural social capital had a positive and significant effect on relational social capital ($\beta = .18, p < .001$) and cognitive social capital ($\beta = .26, p < .001$), while cognitive social capital proved to have a positive and significant strong effect on relational social capital ($\beta = .65, p < .001$).

As for the social influence effects on the dependent product attitude change variable, the social influence processes of compliance ($\beta = .13, p < .01$) and internalization ($\beta = .22, p < .001$) were found to have a significant direct positive effect on product attitude changes, while no effect was found for the identification processes. As already described, although each social influence process has a distinct set of antecedents, they are not mutually exclusive (Kelman, 1961, 1974). For this reason the indirect effects of identification via the processes of compliance and internalization were tested, and found to be positive and significant ($\beta = .34, p < .001$, and $\beta = .23, p < .001$ respectively).

The determination coefficients of the endogenous variables showed a diverse image, with higher values for relational social capital ($R^2 = .52$), identification ($R^2 = .31$) and internalization ($R^2 = .28$), and lower values for compliance ($R^2 = .17$), product attitude change ($R^2 = .09$) and cognitive social capital ($R^2 = .07$).

6. DISCUSSION

6.1 Summary and implications of results

Not only does this study show that social influences affect virtual consumer community members' product attitudes, it also contributes by demonstrating the role of virtual consumer communities' social capital dimensions as important antecedents of all three interpersonal persuasions. In other words: it offers valuable insights in the linkage between the social context of the virtual consumer community and the individual level effects of the social influences on attitude changes.

First, this study confirms that the information acquired by reading and discussing about products within virtual consumer communities affects how consumers form product evaluations. Moreover, in addition to this confirmation, this study contributes to current eWOM research by extending the social influence argument by separating it in three different processes. It does so by examining these influences on an individual level within the virtual consumer communities, instead of a more general level of the virtual communities in totality. The results demonstrate that the social influence processes of compliance, identification and internalization operate within virtual consumer communities, and that these processes lead to changes in the product attitudes of the community members. Yet, their actual effect on members' attitude changes is relative small. In other words: community members are marginally susceptible to these influences in their product attitude formation processes. This finding can logically be explained by the fact that this study examines product attitude changes of product attitudes that already existed before members read about it on the virtual consumer community. These past attitudes and possible experiences greatly affect current attitudes (Conner and Armitage, 1998; Oskamp, 1991). Together with the fact that these existing attitudes already had high levels in advance, product attitude change formations are for a great deal predicted by already existing attitudes. However, social influences definitely proved to have effects as well.

The results indicate that, as a result of social influence processes, members create new views towards situations that are related with the attitudes of certain products, instead of only expressing a superficial attitude change. These are valuable findings, especially considering the fact that attitudes are often long-lasting tendencies towards objects, and there must be a clear induction with a relative gross change for social influences to have a durable, non-superficial, effect (Kelman, 1974). Moreover, attitude changes were examined via self-reported data. Since most people are limited willing to report their susceptibility towards attitude change, the fact that this study explains attitude change indicates the impact of the social influences investigated.

The three social influence processes have different effects on attitude changes. Internalization had the strongest direct effect on members' attitude change. Apparently, members are most susceptible to informational influence. This is because the community's activities are primarily based on information exchange. Compliance processes are not common within virtual consumer communities, but do directly influence attitude changes. Because of virtual communities' voluntary character,

community members who maintain their activities within the community do attach value to specific individuals within the community and want to be part of this common-bond group of members (Ren et al., 2007). Consequently, when compliance processes arise, members will be sensitive to these conformity persuasions.

Identification processes do not seem to affect product attitudes directly. This result is in line with expectations from communication theories such as Media Richness Theory (MRT; Daft & Lengel, 1986) and Media Synchronicity Theory (MST; Dennis et al., 2008). In general, virtual consumer communities can be considered as less rich as other online communities such as social networking sites. The former is primarily aimed at information exchange, while the latter focuses on creating rich online profiles (Boyd and Ellison, 2007). This focus on information exchange with low social presence also leads to the fact that more ‘lurkers’ (reading visitors with little contribution) than ‘posters’ (active members who post and have interactions) are present within virtual communities (Lampel and Ballah, 2007). Next, virtual consumer communities often do not host a variety of communication possibilities as in social networking sites (O’Murchu, Breslin and Decker, 2004). This often results in asynchronous communication between virtual consumer community members. As such, these communities can be identified as low on richness and synchronicity. This creates situations where it is difficult to identify with other members because of limited social cues and possibilities to get a shared understanding of the underlying situation of the members behind the information exchange within the community (Dennis et al., 2008).

However, identification processes have an indirect effect on product attitude changes, via their positive impact on the compliance and identification processes. In other words: the processes of compliance and internalization predominate in terms of social influence effects, but community members’ social identity partly operate underneath these social influences. This seems a logical finding, given the fact that the compliance power of subjective norms depend on the salience perception of the bond with others (Fishbein and Ajzen, 1980). Furthermore, since internalization depends on the credibility and trustworthy characteristics of the influencing members, identification with others in terms of these characteristics stimulates the internalization process.

A second key insight is the finding that the social context of the virtual consumer communities in terms of social capital proved to be an antecedent of the social influence processes. A community’s structural social capital only positively affected identification processes, while having no effect on compliance and internalization. Frequent interactions with, and awareness of the existence of other community members positively influences members’ identification processes as such. The missing effect of structural social capital on compliance processes, together with the result that the virtual consumer communities’ structural social capital was relative low, indicates that these online social networks do not have the potential to be cohesive, which may limit their conformity power heavily. Structural social capital entails the structure and connectedness of the members, but does not indicate

the quality of with the community members' connections. For more durable and impactful influences such as internalization, qualitative relationships seem to be necessary as became clear.

That is, relational social capital does positively influence the more durable processes of internalization and identification, but not the less durable compliance processes. Internalization processes have the strongest potential impact on attitude changes, since it entails acceptance and induction of the provided information, which in turn is based on the credibility and trustworthiness of the influencer. The higher the community's relational social capital, the more members are relational embedded in an environment of trust and reciprocity. This leads to more appreciation of the provided information in terms of perceived relevance and value, and internalization of the information as a consequence. Identification processes, on the other hand, are positively influenced by communities' relational social capital since it stimulates commitment with and affective bonds between the individual members and the community (members) they identify with.

In contrast, relational social capital proved to have a negative effect on compliance processes, opposed to the hypothesized positive effect. An explanation for this effect is twofold. First, reciprocity (one of the relational social capital dimensions) within virtual consumer communities is primarily related to the quantity of sharing information (Chiu et al., 2006; Wasko and Faraj, 2005), but it does not lead to the development of other expectations or concessions. In other words, while reciprocity can have an effect on members' perceived need to share information, it has no influencing power to impose product attitude changes. Moreover, compliance processes do not seem to flourish in situations where there exists a trusting environment. The virtual consumer communities were perceived as consisting of high levels of relational social capital dimensions, while compliance processes had the lowest perceived presence of all three interpersonal influences. As already explained, as the relational aspect of the community becomes stronger, influence processes are more focused on internalization and identification, and less on compliance as such.

Results regarding communities' cognitive social capital show its value as antecedent of all three social influences. As virtual consumer communities solely host online discussions, community members can only display their support, advice, experiences and behaviour as text, pictures, video's and/or links. In other words: the social influence mechanisms that can be in place within virtual consumer communities are computer-mediated. The positive impact of communities' cognitive social capital indicates that for all social influences to develop, community members need to have a certain level of shared cognitive assets to understand each other and perceive the communication with the community as meaningful within that specific setting.

Finally, this study provides support for the original proposition of Tsai and Ghoshal (1998) concerning the interrelatedness of the social capital dimensions, and verifies this within a virtual consumer context. Virtual communities' structural and cognitive social capital had a strong effect on the quality of relations within the community. In other words: trustful relations within a virtual community are significantly founded on the structure and knowledge of which members are part of the

community, and the degree of meaningful communication between the members developed through a shared language and vision. Furthermore, a virtual community's shared language and vision are in turn positively, though marginally, influenced by its structural social capital. It can be concluded that cognitive assets develop when community members are somehow connected to each other as such.

6.2 Implications and future research

Despite the large amount of virtual communities focused on consumer-related objectives and academic attention towards electronic word-of-mouth, little is known about how virtual consumer communities ultimately influence product attitudes. This study enhances understanding of social influences on consumers their product attitudes within the context of virtual consumer communities in two ways. First, it examined the relation between the community's social capital and three social influences, which created insights in the linkages between the general social context of the community and the individual level effects of social influence processes. Second, it identified that three social influences developed by Kelman (1958) also operate within virtual consumer communities and that these social influence processes partly explain the relationship between the social context of the virtual consumer community and members' individual product attitude change. Accordingly, this study not only contributes by examining specific interpersonal influences within virtual consumer communities, it also provides understanding how the characteristics of these communities affect the emergence of these influence processes.

Some aspects need to be considered when interpreting the study's conclusions, which create avenues for additional research. First, as the perceived product attitude changes were only partly explained by social influences, further research is needed to understand what other factors trigger these attitude changes. In this regard, prior attitudes could be included for instance since these may greatly affect changes in current attitudes (Oskamp, 1991). Second, this study's goal was to conduct a general analysis of social capital dimensions and social influence processes. Considering some different results between the five virtual consumer communities however, future research could aim for a more comprehensive approach by taking into account other characteristics of virtual consumer communities in addition to social capital, and examining these characteristics' (moderating) effect on the social influence processes. For example, large communities may have less dense social structures and relations, since social influences differ among small and large groups (Postmes et al., 2005). This study already made clear that these social structures and relations have an effect on the emergence of social influences. Third, the personal characteristics of the virtual community members may be investigated, such as members' satisfaction, sense of belonging and loyalty (Lin, 2008) and members' susceptibility to influences (Bearden et al., 1989). This can provide additional insights in not only the individual effects of persuasion processes, but also in the linkage between the social context and the individual acceptance of social influences. Finally, as this study is cross-sectional, it did not investigate the development of social capital and interpersonal social influences. Future research can

aim for a longitudinal study, which may offer additional knowledge about the communities' social dynamics and influence processes.

7. CONCLUSION

Garton et al. (1999, p. 75) already acknowledged that scholars "(...) need to go beyond studying single users, two-person ties and small groups to examining the computer-supported social networks". This need is still relevant within the area of virtual consumer communities and the social influences they exert because, despite the large number of these online networks, little is known about the nature of the persuasion processes that can exist within these online communities (Winer, 2009). This study examined interpersonal-level social influence effects on product attitudes within five virtual consumer communities. Moreover, this study investigated if social capital predicts these social influence processes and explains the linkage between the community's social context and individual-level effects as such.

The results demonstrate that product attitudes can change due to participation within virtual consumer communities. The social influence processes of compliance, identification and internalization are present within virtual consumer communities, and differences in perceived presence are based on the virtual consumer community's primary activity of exchanging product-related information. On an individual level, internalization processes have the strongest effect on product attitude changes, since it shares the informational aspect with the virtual consumer community's purpose. Compliance had a smaller effect on product attitude changes, due to the fact that compliance does not seem to emerge within trusting environments. Direct identification influences on attitude change were lacking, probably due to virtual consumer communities' asynchronous character and low social presence of the community members. However, identification did affect compliance and internalization processes, and therefore indirectly influences product attitude change.

The results further show that virtual consumer communities' social capital has an important role as antecedent linkage between the social influence processes and the social system that is formed by the community. The virtual community's social capital dimensions affect the social influence processes. It was found that internalization and identification partly depend on the relations between virtual consumer community members, while stronger relations had a negative effect on the emergence of compliance processes. The structural facet of the community's social capital only affected the identification processes. Cognitive social capital proved to be an important antecedent for all three influences.

In all, this study contributes to current eWOM research by extending the social influence argument by separating it in three different processes of compliance, identification and internalization and examining their interpersonal effects on community members' product attitude change, together with linking the emergence of these influences with the social capital characteristics of these online

social networks. Further research can benefit of these insights in order to build a comprehensive understanding of how online persuasion emerges, and how it operates within online social networks.

APPENDIX A MEASUREMENT ITEMS FOR SURVEY

The survey consisted of the following items. Most items were measured via a 5-point likert scale, ranging from strongly disagree (1) to strongly agree (5).

Item	Measure	Source
<i>Reasons joining virtual consumer community (REASON)</i>		Pentina et al. (2008) Scale 1-5
reasonsoc1	To get to know others.	
reasonsoc2	To socialize.	
reasonsoc3	To meet new friends.	
reasonsoc4	To meet like-minded people.	
reasonsoc5	To discuss interests	
reasonsoc6	To stay in touch	
reasonent1	To be entertained	
reasonent2	To relax	
reasonent3	To play	
reasoninf1	To learn how to do things	
reasoninf2	To solve problems	
reasoninf3	To generate ideas	
reasoninf4	To make decisions	
reasonest1	To impress people	
reasonest2	To feel important	
reasontra2	To buy/sell stuff	
reasontra3	To market my products	
<i>Structural social capital (STRCAP)</i>		Van den Hooff & Huysman (2009) (adapted)
strcap3	When someone has a question relevant to the ___ forum, I know which member in the ___ forum will be able to help.	Law (2008) (adapted)
strcap 4	Within the ___ forum, I know who has knowledge that is relevant to me at their disposal.	Scale 1-5
strcap 5	Members in the ___ forum know what knowledge I have at my disposal.	
strcap 6	I am regularly in contact with members in the ___ forum who have knowledge at their disposal that is relevant to me.	
strcap 7	In the ___ forum, I know many members who can provide useful inputs to my questions or problems.	
strcap8	In the ___ forum, I know many members whom I have frequent communication about knowledge-related topics.	
strcap9	In the ___ forum, I have many acquaintances whom I can approach if I want advice on a question.	

APPENDIX A MEASUREMENT ITEMS FOR SURVEY (continued)

Item	Measure	Source
<i>Trust (TRUST)</i>		Chiu et al. (2006) Scale 1-5
trust1	Members in the ___ forum will not take advantage of others even when the opportunity arises.	
trust2	Members in the ___ forum will always keep the promises they make to one another.	
trust3	Members in the ___ forum would not knowingly do anything to disrupt the conversation.	
trust4	Members in the ___ forum behave in a consistent manner.	
trust5	Members in the ___ forum are truthful in dealing with one another.	
<i>Reciprocity (RECI)</i>		Chiu et al. (2006) Scale 1-5
reci1	I know that other members in the ___ forum will help me, so it's only fair to help other members.	
reci2	I believe that members in the ___ forum would help me if I need it.	
<i>Relational embeddedness (EMBED)</i>		Van den Hooff et al. (2010) (adapted) Scale 1-5
embed1	I feel connected to the members in the ___ forum.	
embed2	I view the ___ forum as a group I belong to.	
<i>Shared language (SHLAN)</i>		Chiu et al. (2006) (adapted) Scale 1-5
shlan2	Members in the ___ forum use understandable communication pattern during the discussion.	
shlan3	Members in the ___ forum use understandable narrative forms to post messages or articles.	
<i>Shared vision (SHVIS)</i>		Chiu et al. (2006) (adapted) Scale 1-5
shvis1	Members in the ___ forum share the same vision regarding the forum.	
shvis2	Members in the ___ forum share the same goal regarding the forum.	
shvis3	Members in the ___ forum share the same values regarding the forum.	

APPENDIX A MEASUREMENT ITEMS FOR SURVEY (continued)

Item	Measure	Source
<i>Compliance (COMPL)</i>		Scale 1-5
compl1	Members within the ___ forum important to me who discuss the ___ product impose their attitude of that product on me.	Newly designed
compl2	Members within the ___ forum whose opinions I value and who discuss the ___ product impose their attitude of that product on me.	Newly designed
compl3	Members within the ___ forum important to me who discuss the ___ product think that I should adopt their attitude of that product.	Venkatesh (2000) (adapted)
compl4	Members within the ___ forum whose opinions I value and who discuss the ___ product think that I should adopt their attitude of that product.	Lee & Kozar (2008) (adapted)
<i>Cognitive social identity (idcog)</i>		Dholakia et al. (2004) (adapted)
idcog1	There is an overlap between my self-image and with the members within the ___ forum who discuss the ___ product.	Scale 1-5
idcog2	There is an overlap between my personal identity and the identity of the members within the ___ forum who discuss the ___ product.	
<i>Affective social identity (idaff)</i>		Dholakia et al. (2004) (adapted)
idaff1	I am attached to the members within the ___ forum who discuss the ___ product.	Scale 1-5
idaff2	My feelings of belongingness toward the members within the ___ forum who discuss the ___ product are strong.	
<i>Evaluative social identity (ideval)</i>		Dholakia et al. (2004) (adapted)
ideval1	I am a valuable member of the group of members within the ___ forum who discuss the ___ product.	Scale 1-5
ideval2	I am an important member of the group of members within the ___ forum who discuss the ___ product.	
<i>Internalization (INTERN)</i>		Henningsen et al. (2006) Scale 1-5
intern1	I feel that the members within the ___ forum who discuss the ___ product presented arguments that influenced me.	
intern2	In the group of members within the ___ forum who discuss the ___ product, information about that product was persuasive.	
intern3	I think the members within the ___ forum who discuss the ___ product used facts to sway my attitude towards that product.	
intern4	Members within the ___ forum who discuss the ___ product used their information to change my mind regarding that product.	
<i>Utilitarian and hedonic product attitude change (ATTCHANG.HEUT)</i>		Voss et al. (2003) (adapted) Scale -2 - 2
att1ut1	Less effective / More Effective	
att1ut2	Less helpful / More Helpful	
att1ut3	Less functional / More Functional	
att1ut5	Less practical / More Practical	
att1he1	Less fun/ More fun	
att1he2	Less exciting/ More exciting	
att1he3	Less delightful / More delightful	
att1he4	Less thrilling / More thrilling	
att1he5	Less Enjoyable / More enjoyable	

APPENDIX B OVERVIEW VARIABLE MEANS PER COMMUNITY

Table B.1 Means of first-order and second-order variables divided by community, together with F-value of differences between community.

Variable	Overall (N=622)	Hardware (N=369)	Mobilyz (N=102)	AboutDJ (N=100)	Helpmij (N=26)	Gamer (N=25)	F-value
Structural social capital	2.56	2.48	2.51	2.68	2.92	3.18	5.25***
Trust	3.30	3.28	3.39	3.46	3.28	2.68	6.60***
Reciprocity	4.00	4.01	3.99	4.06	3.96	3.76	0.95
Relational embeddedness	3.00	2.93	3.21	2.93	3.35	2.98	2.66
Relational social capital	3.39	3.36	3.48	3.48	3.44	2.99	3.95**
Shared language	3.52	3.47	3.49	3.74	3.60	3.36	2.87*
Shared vision	3.26	3.28	3.20	3.40	3.18	2.64	5.20***
Cognitive social capital	3.36	3.36	3.32	3.53	3.35	2.93	4.36**
Compliance	2.59	2.66	2.26	2.72	2.64	2.38	5.05**
Cognitive social identity	2.92	2.91	3.04	2.85	2.67	2.98	1.45
Affective social identity	3.00	2.95	3.18	2.94	3.00	3.20	1.75
Evaluative social identity	2.65	2.61	2.69	2.62	2.85	2.98	1.44
Identification	2.85	2.82	2.97	2.80	2.84	3.05	1.42
Internalization	3.40	3.43	3.31	3.45	3.11	3.30	1.75
Utilitarian product attitude change	1.11	1.08	1.06	1.31	1.31	0.72	5.21***
Hedonic product attitude change	0.99	0.91	0.99	1.24	1.08	1.08	4.42**
Overall product attitude change	1.05	1.00	1.02	1.27	1.19	0.90	4.50**

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

All variables measures on 1-5 scale, except product attitude changes with 0-2 scale.

All significant differences included significant lower means for the Gamer sample, except for structural social capital where the Helpmij and Gamer samples had significant higher means than the other communities.

REFERENCES

- Adler, P.S. and Kwon, S-W. (2002). Social capital: prospects for a new concept. *Academy of Management Review*, 27(1), 17-40.
- Ajzen, I. (1991). The theory of planned behavior, *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Algesheimer, R., Dholakia, U. M. and Herrmann, A. (2005). The social influence of brand community: evidence from European car clubs, *Journal of Marketing*, 69(3), 19-34.
- Aral, S., Brynjolfsson, E. and Van Alstyne, M. (2007). Productivity effects of information diffusion in networks. In *Proceedings of the 28th Annual International Conference on Information Systems. December 10-12 (1-25., Montreal, CA.*
- Ashforth, B.E. and Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14(1), 20-39.
- Bagozzi, R. P. and Dholakia, U. M. (2002). Intentional social action in virtual communities. *Journal of Interactive Marketing*, 16(2), 2-21.
- Bagozzi, R.P. and Dholakia, U.M. (2006). Antecedents and purchase consequences of customer participation in small group brand communities. *International Journal of Research in Marketing*, 23(1), 45-61.
- Bansal, H.S. and Voyer, P.A. (2000). Word-of-mouth processes within a service purchase decision context. *Journal of Service Research*, 3(2), 166-177.
- Batra, R. and Ahtola, O.T. (1990). Measuring the hedonic and utilitarian sources of consumer attitudes. *Marketing Letter*, 2(2), 159-170.
- Bearden, W.O., Netemeyer, R.G. and Teel, J.E. (1989). Measurement of consumer susceptibility to interpersonal influence, *Journal of consumer research*, 15(4), 473-481.
- Bee, C.C. and Kahle, L.R. (2006). Relationship marketing in sports: a functional approach. *Sport Marketing Quarterly*, 15(2), 102-110.
- Benkler, Y. (2006). *The wealth of networks*. London: Yale University Press.
- Bickart, B. and Schindler, R. M. (2001). Internet forums as influential sources of consumer information, *Journal of Interactive Marketing*, 15(3), 31-40.
- Blanchard, A. and Horan, T. (1998). Virtual communities and social capital. *Social Science Computer Review*, 16(3), 293-307.
- Bouman, W., T. Hoogenboom, R. Jansen, M. Schoondorp, B. De Bruin and A. Huizing (2008). The realm of sociality: notes on the design of social software. University of Amsterdam, Netherlands . Sprouts: Working Papers on Information Systems, 8(1). <http://sprouts.aisnet.org/8-1>
- Bourdieu, P. and Wacquant, L. (1992). *An invitation to reflexive sociology*. Chicago: University of Chicago Press.
- Boyd, D. (2007). The significance of social software. In Burg, T. N. and Schmidt, J. (Eds). *BlogTalks reloaded: Social software research & cases* (p. 15-30). Norderstedt: Books on Demand.
- Boyd, D.M. and N.B. Ellison (2007). Social network sites: definition, history, and scholarship. *Journal of computer- mediated communication*, 13, (1), 210-230.
- Burt, R. (2000). The Network Structure of Social Capital. In: Sutton, R. and B. Staw (2000), *Research in Organizational Behavior*. Greenwich: JAI Press.
- Butler, J.K. (1991). Toward understanding and measuring conditions of trust: evolution of a conditions of trust inventory, *Journal of Management*, 17(3), 643-663.
- Chan, K. W. and Li, S. Y. (2009). Understanding consumer-to-consumer interactions in virtual communities: the salience of reciprocity, *Journal of Business research*, forthcoming, 1-8.
- Cheung, C.M.K. and Lee, M.K.O. (2010). A theoretical model of intentional social action in online social networks. *Decisions Support Systems*, 49(1), 24-30.
- Cheung, C.M.K., Lee, M.K.O. and Rabjohn, N. (2008). The impact of electronic word-of-mouth: the adoption of online opinions in online customer communities. *Internet Research*, 18(3), 229-247.
- Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In: Macoulides, G.A. (ed). *Modern methods for business research*. Mahwah: Lawrence Erlbaum

- Associates, 295-336 .
- Chiu, C-M, Hsu, M-H and Wang, E.T.G. (2006). Understanding knowledge sharing in virtual communities: an integration of social capital and social cognitive theories, *Decision support systems*, 42, 1872-1888.
- Cialdini, R.B. and Goldstein, N.J. (2004). Social influence: compliance and conformity. *Annual Review of Psychology*, 55, 591-621.
- Coleman, J.S. (1988), Social Capital in the creation of human capital. *American Journal of Sociology*, 94, 95-120.
- Coleman, J. S. (1990a). *Foundations of social theory*. Cambridge: Belknap Press of Harvard University of Press.
- Coleman, J. S. (1990b). Social capital in the Creation of Human Capital. *American Journal of Sociology*, 94, 95-120.
- Conner, M. and Armitage, C.J. (1998). Extending the theory of planned behavior: a review and avenues for further research. *Journal of Applied psychology*, 28(15), 1429-1464.
- Cook, C., Heath, F. and Thompson, R. L. (2000). A Meta-Analysis of Response Rates in Web- or Internet-Based Surveys. *Educational and Psychological Measurement*, 60(6), 821-836.
- Cropanzano, R. and Mitchell, M.S. (2005). Social exchange theory: an interdisciplinary review. *Journal of Management*, 31(6), 874-900.
- Cross, R. and Parker, A. (2004). *The hidden power of social networks*. Boston: Harvard Business School Press.
- Daft, R. L. and Lengel, R. H. (1986). Organizational Information Requirements, Media Richness and Structural Design, *Management Science*, 32(5), 554-571.
- Daniel, B., Schwier, R. A. and McCalla, G. (2003). Social capital in virtual learning communities and distributed communities of practice, *Canadian journal of learning and technology*, 29(3), 113-139.
- De Bruyn, A. and Lilien, G. L. (2008). A multi-stage model of word-of-mouth influence through viral marketing, *International journal of Research in Marketing*, 25, 151-163.
- De Valck, K. (2005). *Virtual Communities of Consumption: Networks of Consumer Knowledge and Companionship*. Rotterdam, Erasmus University Rotterdam. PhD.
- De Valck, K., van Bruggen, G. H. and Wierenga, B. (2009). Virtual communities: a marketing perspective, *Decision support systems*, 47, 185-203.
- Dennis, A. R., Fuller, R. M., & Valacich, J. S. (2008). Media, tasks, and communication processes: A theory of media synchronicity. *MIS Quarterly*, 32(3), 575-600.
- Deutsch, M. and Gerard, H.B., (1955). A study of normative and informational social influences upon individual judgment, *The journal of abnormal and social psychology*, 51(3), 629-636.
- Dholakia, U.M., Bagozzi, R.P. and Pearo, L.K. (2004). A social influence model of consumer participation in network- and small-group-based virtual communities. *International Journal of Research in Marketing*, 21, 241-263.
- Dick, A. S. and Basu, K. (1994). Customer loyalty: toward an integrated conceptual framework, *Journal of the Academy of Marketing Science*, 22(2), 99-113.
- Drapeau, A., Boyer, R. and Lesage, A. (2009). The influence of social anchorage on the gender difference in the use of mental health services. *The Journal of Behavioral Health Services & Research*, 36(3), 372-384.
- Dwyer, P. (2007). Measuring the value of electronic word of mouth and its impact in consumer communities, *Journal of Interactive Marketing*, 21(2), 63-79.
- Ellemers, N., Kortekaas, P. and Ouwerkerk, J.W. (1999). Self-categorization, commitment to the Group and self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology*, 29, 371-389.
- Ellison, N.B., Steinfield, C. and Lampe, C. (2007). The benefits of Facebook “friends”: social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143-1168.
- Fishbein, M., I. and Ajzen (1980). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading: Addison-Wesley.
- Freeman, L. C. (1979). Centrality in social networks conceptual clarification, *Social Networks*, 1, 215-239.

- Friedkin, N.E. (1998). *A structural theory of social influence*. Cambridge: Cambridge University Press.
- Gefen, D. and Straub, D. (2005). A practical guide to factorial validity using PLS-graph: tutorial and annotated example, *Communications of the Association for Information Systems*, 16(1), 91-109.
- Gefen, D., Straub, D. and Boudreau, M-C. (2000). Structural equation modeling and regression: guidelines for research practice, *Communications of the Association for Information Systems*, 4(7), 1-70.
- Hanson, B.S. and Östergren, P.O. (1987). Different social network and social support characteristics, nervous problems and insomnia: Theoretical and methodological aspects on some results from the population study "Men born in 1914," Malmö, Sweden. *Social Science and Medicine*, 25(7), 849-859.
- Haythornthwaite, C. (1996). Social network analysis: An approach and technique for the study of information exchange, *Library and Information Science Research*, 18(4), 323-342.
- Hechter, M. (1987). *Principles of group solidarity*. Berkeley: University of California Press.
- Henningsen, D. D., Henningsen, M. L. M., Carpenter, C., and Shaw, C. (2006). Examining personal and situational factors associated with normative and informational forces in groups: A test of relational framing theory and conflict styles. Paper presented at the annual meeting of the National Communication Association, San Antonio.
- Henseler, J., Ringle, C.M. and Sinkovics, R.R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, 20, 277-319.
- Ho, J.Y.C. and Dempsey, M. (2009). Viral marketing: motivations to forward online content, *Journal of Business Research*, forthcoming.
- Hogg, M.A. and Reid, S.A. (2006). Social identity, self-categorization, and the communication of group norms. *Communication Theory*, 16(1), 7-30.
- Hogg, M.A., Terry, D.J. and White, K.M. (1995). A tale of two theories: a critical comparison of identity theory with social identity theory. *Social Psychological Quarterly*, 58(4), 255-269.
- Hosmer, L.T. (1995). Trust: the connecting link between organizational theory and philosophical Ethics, *Academy of Management Review*, 29(2), 379-403.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic Management Journal*, 20, 195-204.
- Hung, K.H. and Li, S.Y. (2007). The influences of eWOM on virtual consumer communities: social capital consumer learning, and behavioral outcomes. *Journal of Advertising Research*, 47(4), 485-495.
- Huysman, M. and Wulf, V. (2006). IT to support knowledge sharing in communities: towards a social capital analysis. *Journal of Information Technology*, 21, 45-51.
- Kania, D. (2001). *Branding.com: Online Branding for Marketing Success*, Chicago: McGraw-Hill.
- Kapoor, A. and Kulshrestha, C. (2009). Consumers' perceptions: an analytical study of influence of consumer emotions and response. *Direct Marketing: An International Journal*, 3(3), 186-202.
- Kelman, H.C. (1958). Compliance, identification, and internalization: the three processes of attitude change. *Conflict Resolution*, 2(1), 51-60.
- Kelman, H.C. (1961). Processes of opinion change. *Public Opinion Quarterly*, 25, 57-78.
- Kelman, H.C. (1974). Social influence and linkages between the individual and the social system: further thoughts on the processes of compliance, identification, and internalization. In: Tedeschi, J. (Ed.). *Perspectives on social power*, Chicago: Aldine, 125-171.
- Kozinets, R. V. (1999). E-tribalized marketing?: the strategic implications of virtual communities of consumption, *European Management Journal*, 17(3), 252-264.
- Lam, Y. L. J. (2001). Toward reconceptualizing organizational learning: a multidimensional interpretation. *The International Journal of Educational Management*, 15(4/5), 212-219.
- Lampel, J. and Ballah, A. (2007). The role of status seeking in online communities: giving the gift of experience. *Journal of Computer-Mediated Communication*, 12(2), 434-455.
- Leadbeater, C. (2008). *We-Think: mass innovation, not mass production*. London: Profile Books.
- Lee, Y. and Kozar, K.A. (2008). An empirical investigation of anti-spyware software adoption: A multitheoretical perspective. *Information & Management*. 45, 109-119.
- Lee, S. H. M., Cotte, J. and Noseworthy, T. J. (2009). The role of network centrality in the

- flow of consumer influence, *Journal of Consumer Psychology*, forthcoming.
- Lee, J., Park, D-H. and Han, I. (2008). The effect of negative online consumer reviews on product attitude: an information processing view. *Electronic Commerce Research and Application*, 7, 341-352.
- Levin, D. Z. and Cross, R., (2004). The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer, *Management Science*, 50(11) , 1477–1490.
- Lin, H-F. (2008). Determinants of successful virtual communities: contributions from system characteristics and social factors, *Information & Management*, 45(8), 522-527.
- Lin, N. (1999). Building a network theory of social capital. *Connections*, 22(1), 28-51.
- Lysaught, E.M., Rapp, L.A., Wodarski, J.S. and Feit, M.D. (1999). An integrated human behavior theory: the exchange model. *Journal of Human Behavior in the Social Environment*, 2(3), 29-54.
- McGuire, W.J. (1985). Attitudes and attitude change. In: Lindzey, G. and Aronson, E. (eds). *The handbook of social psychology*, 3(2), New York: McGraw-Hill, 233-349.
- Nahapiet, J. and Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage, *Academy of Management Review*, 23(2), 242-266.
- Nielsen (2009). *Nielsen global consumer confidence report: Trust in advertising*, March.
- Pentina, I., Prybutok and Zhang, X. (2008). The role of virtual communities as shopping reference groups. *Journal of Electronic Commerce Research* , 9(2), 114-134.
- O'Murchu, I., J.G. Breslin and S. Decker (2004). Online social and business networking communities. Available at: <http://ftp.informatik.rwth-aachen.de/Publications/CEUR-WS/Vol-107/paper2.pdf>.
- Oskamp, S. (1991). *Attitudes and Opinions*. Englewood Cliffs: Prentic Hall.
- Petty, R. E., & Wegener, D. T. (1998). Attitude change: Multiple roles for persuasion variables. In D. Gilbert, Fiske, S. and G. Lindzey (Eds.). *Handbook of social psychology* (4th ed., Vol. 1), p. 323-390. Boston: McGraw-Hill.
- Porter, C.E. (2004). A Typology of Virtual Communities: A Multi-Disciplinary Foundation for Future Research, *Journal of Computer Mediated Communication*, 10(1).
- Postmes, T., Haslam, S.A. and Swaab, R.I. (2005). Social influence in small groups: an interactive model of social identity formation. *European Review of Social Psychology*, 16, 1 -42.
- Postmes, T., Spears, R. and Lea, M. (1998). Breaching or building social boundaries? SIDE-effects of computer-mediated-communication. *Communication Research*, 25(6), 689-715.
- Prentice, D.A., Miller, D.T. and Lightdale, J.R. (1994). Asymmetries in attachments to groups and to their members: distinguishing between common-identity and common-bond groups. *Personality and Social Psychology Bulletin*, 20(5), 484-493.
- Putnam, R. D. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton University Press
- Rheingold, H. (1993). *The virtual community: homesteading on the electronic frontier reading*, Massachusetts: Addison-Wesley.
- Ringle, C.M., Wende, S. and Will, A. (2005). SmartPLS 2.0 (beta), www.smartpls.de. Hamburg: University of Hamburg.
- Ren, Y., Kraut, R. and Kiesler, S. (2007). Applying common identity and common bond theory to design of online communities. *Organization Studies*, 28(3), 377-408.
- Sassenberg, K. (2002). Common bond and common identity groups on the Internet: attachment and normative behavior in on-topic and off-topic chats,
- Settoon, R. P., Bennett, N. and Liden, R. C. (1996). Social exchange in organizations: perceived organizational support, leader-member exchange, and employee reciprocity, *Journal of Applied Psychology*, 81(3), 219-227.
- Shin, D. H. (2008). Understanding purchasing behaviors in a virtual economy: Consumer behavior involving virtual currency in Web 2.0 communities, *Interacting with Computers*, 20, 433-446.
- Sinkula, J. M., Baker, W. E. and Noordewier, T. (1997). A framework for market-based organizational learning: Linking values, knowledge, and behavior, *Journal of the Academy of Marketing Science*, 25(4), 1552-7824.
- Song, J. and Zahedi, F.M. (2005). A theoretical approach to web design in e-commerce: a belief reinforcement model. *Management Science*, 51(8), 1219-1235.

- Subramani, M.R. and Rajagopalan, B. (2003). Knowledge-sharing and influence in online social networks via viral marketing. *Communications of the ACM*, 46(12), 300-307.
- Tapscott, D. and Williams, A. D. (2006). *Wikinomics: how mass collaboration changes everything*. New York: Penguin Group.
- Terry, D. J. and Hogg, M. A. (2000). *Attitudes, behavior, and social context: the role of norms and group membership*, New Jersey: Lawrence Earlbaum Associates.
- Thomas, E., Polansky, N. and Kounin, J. (1955). The expected behavior of a potentially helpful person, *Human Relations*, 8(3), 165-174.
- Tsai, W. and Ghoshal, S. (1998). Social capital and value creation: the role of intrafirm networks, *Academy of Management Journal*, 41(4), 464-476.
- Ulivieri, F. (2005). *Trust across disciplines*. Available at: <http://www.istc.cnr.it/T3/map/index.html>.
- Van den Hooff, B. and Huysman, M. (2009). Managing knowledge sharing: emergent and engineering approaches. *Information & Management*, 46(1), 1-8.
- Van den Hoof, B., de Leeuw van Weenen, F., Soekijad, M. and Huysman, M. (2010). The value of online networks of practice: the role of embeddedness and media use. *Journal of Information Technology*, 25(2), 205-215.
- Venkatesh, V. and Davis, F.D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science*, 46(2), 186 - 204.
- Voss, K.E., Spangenberg, E.R. and Grohmann, B. (2003). Measuring the hedonic and utilitarian dimensions of consumer attitude. *Journal of Marketing Research*, 40(3), 310-320.
- Walther, J. B. (1996). Computer-Mediated Communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, 23(1), 3-43.
- Warshaw, P. R. (1980). A new model for predicting behavioral intentions: an alternative to fishbein, *Journal of Marketing Research*, 17(2), 153-172.
- Wasko, M.M. and Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice, *MIS Quarterly*, 29(1), 35-57.
- Wellman, B., Haase, A. Q., Witte, J. and Hampton, K. (2001). Does the Internet increase, decrease of supplement social capital?, *American Behavioral Scientists*, 45(3), 436-455.
- Wellman, B., and Wortley, S. (1990). Different strokes from different folks: Community ties and social support, *American Journal of Sociology*, 96, 558-88.
- Wetzels, M., Odekerken-Schröder, G. and van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: guidelines and empirical illustration. *MIS Quarterly*, 33(1), 177-195.
- Williams, D. (2006). On and off the 'net: scales for social capital in an online era. *Journal of Computer-Mediated Communication*, 11, 593-638.
- Winer, R. S. (2009). New communication approaches in marketing: issues and research directions, *Journal of Interactive Marketing*, 23(2), 108-117.
- Wood, W. (2000). Attitude change: persuasion and social influence. *Annual Review of Psychology*, 51 539-570.
- Wooten, D.B. and Reed II, A. (1998). Informational influence and the ambiguity of product experience: order effects on the weighting of evidence. *Journal of Consumer Psychology*, 7(1), 79-99.