

University of Jyväskylä
Jyväskylä School of Business and Economics

ANTECEDENTS OF AND THEIR EFFECT ON TRUST
IN ONLINE WORD-OF-MOUTH: CASE FINNISH
DISCUSSION FORUMS

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Author: Heini Ulmanen

Supervisor: Heikki Karjaluoto

JYVÄSKYLÄ SCHOOL OF BUSINESS AND ECONOMICS

Author Heini Ulmanen	
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<p>Abstract</p> <p>The growing importance of digital marketing communications and digital marketing channels has raised challenges in understanding this new environment and consumers' action within it. Objective of this study was to explore the dynamics of online word-of-mouth and consumers' trust formation towards it. Literature review offers a comprehensive view to trust in its contradictory nature, to the unique characteristics of online word-of-mouth.</p> <p>Research was explanatory and causal, trying to find relationships between variables derived from previous studies and theory. Quantitative method was employed to measure following latent variables: Trustworthiness of a community, website quality, accuracy, relevance, and comprehensiveness of information, information quality, trust in online word-of-mouth and intention to use a discussion forum.</p> <p>Empirical part concentrated on one type of online communities', discussion forums', users' evaluations of different trust enhancing dimensions and the effect on intention to use the discussion forum. Data was obtained through web-based survey which resulted in 442 valid answers. Data was analyzed using Structural Equation Modeling (SEM) technique which offers a way to test hypothesized relationships between constructs. Analysis was conducted with LISREL and resulted in modified empirical model as well as rejecting some of the hypotheses.</p> <p>Findings imply that trust in online word-of-mouth is constituted of two dimensions; friendliness of a community and information value. One expected dimension affecting trust in online word-of-mouth, website quality, was not found and had to be left out from the final model. In addition, competence of community user's and relevancy of information found in discussion forums were excluded from the final analysis. Friendliness of other users is important antecedent of trust in online word-of-mouth, as well as comprehensiveness and accuracy of information. Managers need to understand that comprehensiveness may mean information beyond basic product description; experiences are sought from other users in discussion forums. Trust in online word-of-mouth had a significant impact on future intention to use the discussion forum.</p>	
Keywords Trust, online word-of-mouth, discussion forums, information quality	
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1 INTRODUCTION

Today marketers' interest is undoubtedly turned into Internet. Recent survey shows that almost 90 % of people under 55- years in Finland use Internet and what is more important, almost 80 % have searched information about products or services (Statistics Finland 2010). Additionally, when asked about future plans 94 % of advertisers will harvest social media in their marketing communications compared to 65 % in 2009 (Association of Finnish Advertisers 2010 & 2009). Growing amount of users in social networking sites such as Facebook and Twitter, in company-hosted communities like Starbucks Ideas, and enormous amount of online reviews in eBay, Amazon, DVD-Plaza etc. prove that discussions, feedback, information searching and influence have made a transition from coffee tables to vague, timeless surroundings provided by the Internet.

So companies face an overwhelming amount not only information but choices about what to do with it. As social media is drawing attention in accelerating speed, companies should choose to act or at least, listen (Kaplan & Haenlein 2010). For example, the enthusiasm about the opportunities provided by new Internet technologies for building own online communities can quickly diminish if the consumers are not thought first (Bagozzi & Dholakia 2002). Not being active and in voice does not mean that the existing information should be forgotten. The growing amount of information about company's products and services, competitors, and consumers is generated continuously whether the company is passive or not. As Kaplan and Haenlein (2010) divide social media strategies into using social media and being social, companies can only watch and learn without actually being social. The new technologies have enabled affordable and easy-to-use software for monitoring and analyzing discussions (e.g. Google Alerts, RSS-Feeds, Radian6) hence leaving the decisions about what to do with the information to marketers.

Information about products or services provided and spread by customers, word-of-mouth, has been found to be more trustworthy than information generated from marketers or companies (e.g. Cheong & Morrison 2008). The rise of the power of word-of-mouth in online forms sets challenges

for marketers: Online word-of-mouth (or electronic word-of-mouth, eWom) is disseminated to a larger audience, anyone has a possibility to reach that audience, and it can spread in enormous speed (Cheung, Luo, Sia & Chen 2007; Davis & Khazanchi 2008). Thus it is important to understand what factors affect the trust towards online word-of-mouth in order to shape marketing communications to answer the challenges.

1.1 Research motivation

In Marketing Science Institute report of research priorities for years 2008-2010 (2008, 3) is stated: *"In today's digital environment, understanding peer-to-peer communications and how they affect decisions is particularly important."* The latest report emphasizes the understanding of word-of-mouth activity, i.e. recommendations, customer-to-customer interactions, blogging, and writing reviews even more (MIS 2010).

Trust in online context has been widely researched but the focus has mainly been on trust towards e-commerce (Papadopoulou, Kanellis & Martakos 2001; Grabner-Kräuter & Kaluscha 2003), internet banking (Suh & Han 2002) and websites in general (Koufaris & Hampton-Sosa 2002; Yoon 2002). As Grabner-Kräuter and Kaluscha (2003) state, before examining the trust in a specific context it is important to understand why it is important and what does it consist of.

The concept of trust has been discussed in psychology, sociology, organizational literature, marketing, and communications for decades. Like McKnight and Cervany (2000) propose, maybe it is due to its multidisciplinary it does not have a common definition or even fully agreed dimensions. A plethora of trust research has limited view of the concept itself or different words for describing its components (Serva, Benamati & Fuller 2005). While some antecedents of trust have been mutually agreed on, some still incur conflicting findings calling for further research in different contexts. In addition, trust has been generally researched within context of people, where it is directed towards another person or persons and their actions. Online word-of-mouth however is information which raises the question about the validity of projection of results and concepts of previous studies from interactions between people to a non-human artifact. Can information be a recipient of a trust? (Kelton, Fleischmann & Wallace 2008.)

In recent studies, online-word-of-mouth has been linked to intention to buy (Cheung & Lee 2009) and to buying behavior through actual sales numbers (Liu 2006; David & Khazanchi 2008). These studies however usually focus on specific product or firm and have access to precise information about sales numbers (in case of books or DVD's) or success (in case of box office movies). Additionally in research and managerial literature a lot of attention has been devoted to building and nurturing company's own online or offline communities (Hagel & Armstrong 1996; Muniz & O'Guinn 2001) but consumers

seem to appraise information offered credible whether the community is supported by company or not (Adjei, Noble & Noble 2009).

On that account, in line with Hennig-Thurau, Gwinner and Walsh (2004) who focused on discussion forums to study motivations to participate in online word-of-mouth in order to gain insights in almost every area of consumption, this research will examine online communities without brand, company or product focus. Besides that these discussion forums have a large body of registered users the content is usually accessible to anyone browsing for information. Cheong and Morrison (2008) state that although none of their research participants actively posted questions or commented on discussion forums the majority had read content created by others either finding it through search engines or actively consulting these discussion forums.

1.2 Research objectives

The objective of this research is to understand why trust towards online word-of-mouth is important, what does it consist of and how marketers can utilize this knowledge in their marketing communications.

The main research problems are:

- How the trust in online word-of-mouth affects consumers' intention to use a discussion forum?
- What are the antecedents of trust in online word-of-mouth?

Other research problems assisting to answer the main problems are:

- What is trust constituted of in online context?
- What is online word-of-mouth?

1.3 Methodology

This research is analytical and explanatory, trying to find causal relationships between variables derived from previous literature (Hirsjärvi, Remes & Sajavaara 2009). Problem setting seeks to explain, hypotheses are derived from theory and tested empirically, and the generalizability of findings is considered which imply nomothetic research approach (Neilimo & Näsi 1980). Quantitative method is chosen for the empirical part due to its advantages of describing large amount of data needed in causal research.

Empirical part was conducted with structured web-based survey. Questions were adapted from previous studies and modified to the context of Finnish discussion forums and translated into Finnish. During a 25-day period, 443 answers were obtained from which 442 were eligible for further analysis.

Data was examined with explanatory factor analysis in SPSS and Structural Equation Modeling (SEM) technique in LISREL in order to test the hypothesized relationships between constructs.

1.4 Definition of key concepts

The amount of research and definitions especially in the field of trust studies as well as in online word-of-mouth examinations requires a basic understanding of concepts under investigation. Here is provided a short introduction to key terms used in this study which will be discussed more detailed in own chapters.

Discussion forum is a site for exchanging information and ideas, often focused around a specific area of interest such as hobby, leisure activity or product. These are a form of communities due to the sense of community emerging from ongoing interactions between group members. (Lehtimäki, Salo, Hiltula & Lankinen 2009.) Discussion forums can be embedded within companies own sites and communities as a one functionality of those but can be operated independently and free of brand- or product focus.

Homophily is the extent to which individuals are similar in certain characteristics such as education, social status, beliefs, and age. When people share mutual understanding, attitudes and social surroundings, interaction and communication is more likely to take place and be more effective. (Rogers 1995.) Normally people evaluate each other's attributes and thus identify through social and contextual cues. However, in online environment cues can be missing, reduced, camouflaged, or falsified and it sets new challenges for evaluation of other's similarity. (Brown, Broderick & Lee 2007.)

Online word-of-mouth is all informal communications related to the usage or characteristics of particular goods and service or their sellers directed at consumers through Internet-based technology (Litvin, Goldsmith & Pan 2008). It differs from traditional face-to-face word-of-mouth in three ways: It is not dependent on time, communication happens from one-to-many and recipient's identity can be unknown to receiver. (Steffes & Burgee 2009.)

Tie strength is the degree to which individuals regard each other as close (Brown et al. 2007). Tie strength can vary from weak to strong depending on closeness, intimacy, frequency of interaction, duration of interaction and breadth of the relationship (Marsden & Campbell 1984). Generally family has been regarded as strong ties and casual acquaintances as weak ties. Tie strength affects to information flow in a way that information from strong ties is found to be more credible but weak ties are more important for the spread of information between groups to a larger audience. (Brown & Reingen 1987.)

1.5 Research Structure

The research is divided into six chapters. In introduction the motivation for the research is presented and methodology discussed. In chapter 2 the concept of trust is examined. In chapter 3 online word-of-mouth and its different variations are presented. Chapter 4 introduces research approach, methodology used and data collection and analysis more detail. In chapter 5 the contexts examined are presented, process of statistical testing opened and results showed. Chapter 6 discusses theoretical conclusions and contributions, managerial implications and limitations and future research suggestions.

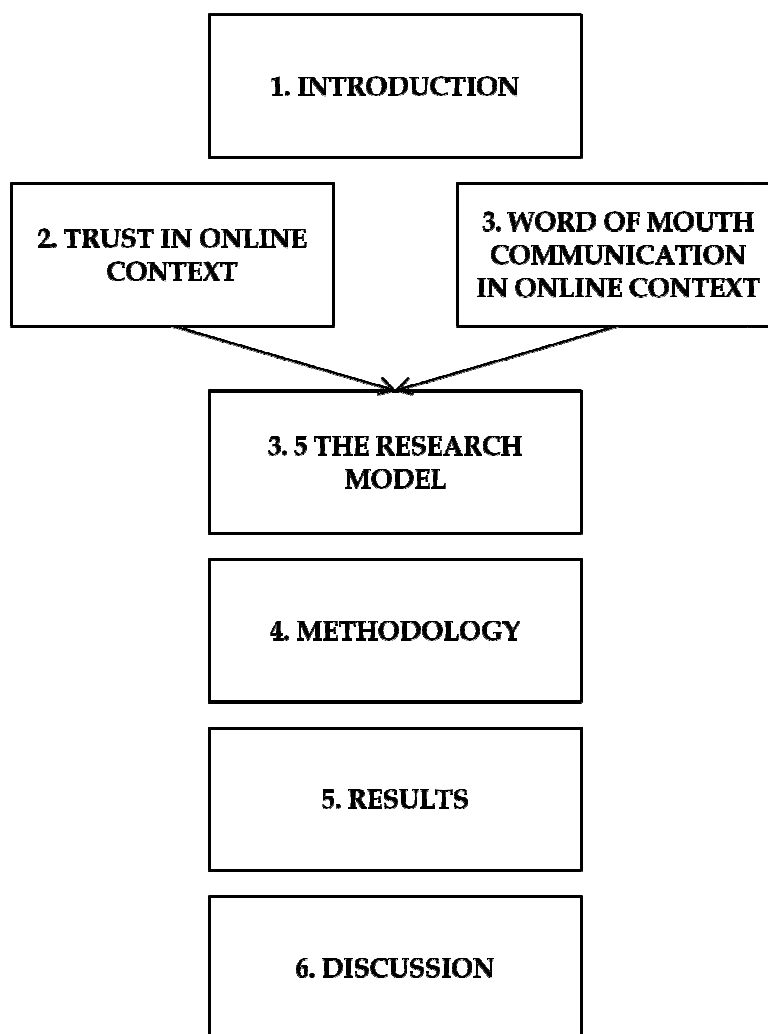


FIGURE 1 The Research Structure

2 TRUST IN ONLINE CONTEXT

This chapter discusses trust from various views. First, the definitions and nature of trust is examined. Next, the characteristics of someone's trustworthiness are reviewed. In addition, trustworthy information and trustworthy systems as concepts are analyzed. Finally trust is distinguished from distrust.

2.1 Definitions and the nature of trust

Despite the breadth of definitions of trust, all contain same elements through which the concept is easier to understand and examine.

"Trust is defined as a willingness to rely on an exchange partner in whom one has confidence."¹

"...is the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party."²

"Trust is the willingness to rely on a specific other, based on confidence that one's trust will lead to positive outcomes."³

Willingness to be vulnerable implies of becoming aware of the possibility of losing something, i.e. becoming aware of a risk included in that relationship. However it is important to note that it does not mean the same as actually taking a risk because one can trust without engaging in trusting action. "*Trust is the willingness to assume risk, behavioral trust is assuming that risk.*" (Mayer et al. 1995.)

¹ Moorman, Zaltman & Deshpande 1992, 315

² Mayer, Davis & Schoorman 1995, 712

³ Chopra 2003, 333

Mayer et al. (1995) propose that the outcome of trust is risk taking in a relationship and the form of risk taking depends on situation. It is differentiated from general risk taking behavior in a way that it entails another party to whom the trustor may make him or herself vulnerable. Risk is context specific in a manner that every situation has positive or negative outcomes and the possibilities for each one to occur. On the other hand, as McKnight, Choudhury and Kacmar (2002) state, trust is important because it helps consumers overcome perceptions of uncertainty and risk, thus enabling engagement in “trust-related behaviors”.

Further analyzed, McKnight and Cervany (2000) proposed a trust typology which has four constructs: Trust beliefs, trust intentions, disposition to trust and institutional trust. Trust intentions are divided into two sets: Actual willingness to depend and subjective probability of depending which is the perceived likelihood that one actually will depend on another. (McKnight & Cervany 2000.) Later trust related behaviors were included to the model as a separate construct thus following the idea presented by Mayer et al. (1995) (FIGURE 2).

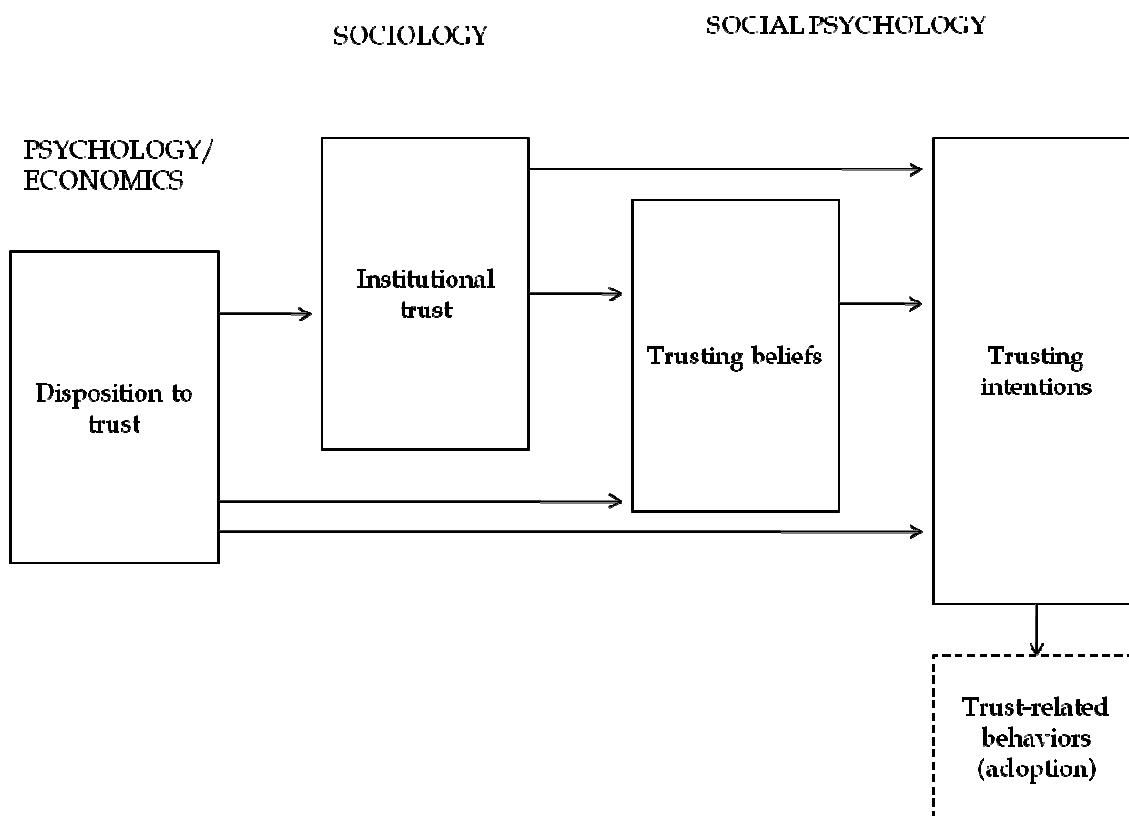


FIGURE 2 An Interdisciplinary Model of Trust Constructs (McKnight & Cervany 2000 and McKnight et al. 2002)

It should be noted that Mayer et al. (1995) differentiated trust from other similar constructs which are cooperation, confidence, and predictability. They argue that cooperation can exist without trust and as Chen (2003) points out,

cooperation itself is already behavior. On the other hand confidence is more complex. What separates it from trust is the perception and attribution; if one does not every time consider the alternatives, the situation is confidence. If one knowingly chooses one alternative over others that may include the possibility of disappointing others, situation is defined as trust. (Luhmann 1988 in Mayer et al. 1995.) Predictability has been included to dimensions of trust as well and will be reviewed in more detail in chapter 2.2.2.

McKnight et al. (2002) note that trust-related literature is divided into cognitive-based and knowledge-based literature. First course proposes that due to social categorization, reputation, illusions, disposition, institutional roles and structures or out of the need to immediate cooperation trusting beliefs can form rapidly before parties have any significant information about each other. Cognition-based trust is based on observation and perceptions, initial evaluation on other partner's trustworthiness; it is the rational base for trust (McAllister 1995; Chopra 2003; Kim, Ferrin & Rao 2008).

Knowledge-based literature posits that trust evolves gradually through a set of interactions, experiential social exchange (McKnight et al. 2002). It includes the familiarity with the other partner which reduces social uncertainty (Gefen, Srinivasan Rao & Tractinsky 2002). Further, researchers have described affective-based trust which also is based on a set of continued interactions; emotional relationships. It stems from the emotional ties between individuals: People make investments in relationship, express care and concern and help each other thus providing basis for trust to develop. (McAllister 1995; Chopra 2003; Gefen et al. 2003; Kim et al. 2008.) It is proposed that cognition-based trust may be more prominent when there exists no relationship and the focus is on initial contact evaluation, and that affective-based trust is in case of established relationships (Chopra 2003; Gefen et al. 2003).

Not any of the four definitions presented in the beginning of this chapter include the word trustworthiness which has been used interchangeably with trust (e.g. Doney & Cannon 1997; Järvenpää & Staples 2000). In spite of both customs being in use, it is almost unified view that these two should be distinguished in the sake of proper conceptualization (Gefen et al. 2002; Serva et al. 2005). However, trustworthiness can be seen as forming the basis for trust and down-streaming trusting actions (Serva et al. 2005). It includes the characteristics of a trustee (Mayer et al. 1995) and while there is still some discussions which these characteristics are, trustworthiness refers to the construct "Trust beliefs" in figure 2 (McKnight & Cervany 2000; McKnight et al. 2002), and will be discussed in more detail in chapter 2.2.

Other constructs of trust, disposition to trust and institutional trust (FIGURE 2) can be examined through location of trust in different sociopsychological spaces (Chopra 2003). All definitions in the beginning of this chapter, in addition to several others (Morgan & Hunt 1994; McAllister 1995; Kim et al. 2008), include notion of another party which has been usually human, but lately also computer technology (Tseng & Fogg 1999), a community of sellers (Pavlou & Gefen 2004) and information (Kelton et al. 2008). Trust can be

seen as a personality trait, as a social tie between two individuals, a gradual property of a mutual relationship and as a feature of a community as a whole. These will be reviewed next in more detailed manner.

2.1.1 Individual trust

Differing slightly from Chopra's (2003) reference to trust as a personality trait, McKnight and Cervany (2000) discuss individual trust by the term disposition to trust. It "*means the extent to which one displays a consistent tendency to be willing to depend on general others across a broad spectrum of situations and persons.*" This refers to the idea presented by Mayer et al. (1995) of viewing trust a consumer-specific trait that leads to a generalized expectation about the trustworthiness of others. One can have a different propensity to trust and it is seen as a stable within-party factor that will affect the likelihood the party will trust to another. It can be thought as the general willingness to trust others. (Mayer et al. 1995; Kim et al. 2008.) Futher, McKnight et al. (2002) divide disposition to trust into two sub-categories; faith in humanity and trusting stance. Faith in humanity refers to a faith in others' trustworthiness in general. Trusting stance is an economic variable seen as a personal strategy of dealing with others, assuming better outcomes unless proven otherwise.

Disposition to trust (or propensity to trust) has been found to have an effect on trust or intention to trust (Kim et al. 2008). However some differing findings have also been presented. Jones & Leonard (2008) examined the effect of natural propensity to trust on individuals trust on consumer to consumer e-commerce. They found no significant relationship between them but note that this may due to the different context where sellers and buyers are all consumers. In addition, Gill, Boies, Finegan & McNally (2005) discovered no significant path from propensity to trust to intention to trust in their first study. However in their second study the relationship between propensity to trust and intention to trust was moderated by situational strength, i.e. were the participants given high or low trustworthiness information about the trustee.

Kelton et al. (2008) proposed that disposition to trust is also relevant when examining trust in information. According to them, some people are naturally more likely to accept information while others are more likely to handle information with suspicion. They also suggest that the influence is strongest when information is unfamiliar.

2.1.2 Interpersonal trust

While all different spaces have received attention, the most common approach has been viewing trust as an interpersonal trust between two parties who have an encounter or prolonged relationship (Chopra 2003). The approach is different from the relational in the sense that while it can be noted that trust can develop in the process of interactions (Ridings 2002) it mainly focuses on attitudes or behaviors directed towards another party (Chopra 2003). Parties evaluate each other's similarity, motives, actions, appearance and in certain

situation. Rotter (1971, 71) defined interpersonal trust “...as an expectancy held by an individual or a group that the word, promise, verbal, or written statement of another individual or group can be relied on.” and studied player’s attitudes and behaviors based on type of messages the other player gave in the gaming situation. These evaluations are directed on other party’s perceived trustworthiness (e.g. trust in trusting beliefs) and will be discussed more detailed in chapter 2.2.

Lately the interest has been on pondering with the idea of the other party being non-human or being constituted of group of individuals. Zaheer, McEvily and Perrone (1998) examine interpersonal and interorganizational trust, and state that while discussing about an organization trusting another one needs to consider the fact that organizations are constituted of individuals who trust and are trusted. McKnight and Cervany (2000) argue that although their typology of trust relies on studies wherein other party is generally human, it has some applicability to studies examining trust in a “thing”. Tseng and Fogg (1999) argued that credibility is only perceived quality, it is not firmly remained in an object, a person or a piece of information. Chopra (2003) lists four domains in online context where trust is important: Information, Information systems, E-Commerce and Online relationships.

2.1.3 Relational trust

Trust can be seen as an emergent feature of a relationship (Kelton et al. 2008). Ridings (2002) states that in virtual communities, trust can be seen as developing from ongoing interactions between the members of the community. Exchange relationship can also be seen as fostering the development of affective trust as one’s knowledge about the capabilities, benevolence, and integrity of a firm increases (Chen 2003). Saparito, Chen and Sapienza (2004) differentiated between calculative trust and relational trust in relationships between banks and small firms. They argue that “consistent consumer-oriented activities such as availability, helpfulness, and openness in communication create relational trust” and that “...bank’s frequent social interaction with customers facilitates social-emotional relationships.” (Saparito et al. 2004, 402 - 403.) These descriptions illustrate the dimension of continuity needed in order to build trust.

Intriguing feature of relational trust is its transformative nature. Trust can influence the behavior of both parties to the relationship, as well as change the nature of the relationship itself. Further, it is noted that trust is assumed to be mutual and in contrast to e.g. interpersonal trust, more strict constraints are placed on the contexts in which trust may apply. (Kelton et al. 2008.)

2.1.4 Societal trust

Trust is important to the proper functioning of a society. One needs to trust systems to be in place and work in right manner in order to carry out normal activities. (Chopra 2003.) McKnight & Cervany (2000) refer to this as institution-based trust which “means one believes the needed conditions are in place to enable one to anticipate a successful outcome in an endeavor or aspect of one’s life”.

Järvenpää and Staples (2001) discovered that in the case of trust in Internet stores there could be an infrastructure-based trust factor that moderates the effect of antecedents on consumer perceptions of trust. One can trust in Internet systems to work properly or that specific situation in Internet is trustworthy, dividing institution-based trust in structural assurance and situational normality. This is important to note because consumers' trust can develop towards the Internet itself by ensuring that its institutions are in place, but not necessarily towards the e-commerce vendor at the same time. On the other hand consumers may trust an e-commerce vendor but not the Internet generally. (McKnight et al. 2002.) Structural assurances in the Internet provide tangible elements purposefully used to build trust in firm's competence, benevolence and integrity. Situational normality can be referred as the professional look of the websites which though is a rather vague concept and can differ from situation to another. (Chen 2003.) Pavlou and Gefen (2004) studied specifically institutional trust in a community of sellers dividing it to perceived effectiveness of three IT-enabled institutional mechanisms (feedback mechanisms, third-party escrow services, and credit card guarantees).

The discussion of the nature of trust can be summarized in Chen's (2003) list:

"First, trust is a psychological state that researchers in different disciplines interpret in terms of beliefs, confidence, positive expectations, or perceived probabilities. Second, trust is not a behavior (e.g., cooperation), or a choice (e.g., taking a risk), but an underlying psychological condition that can cause or result from such actions. Third, trust has positive outcomes. Fourth, trust is developed under specific conditions – risk and interdependence."

2.2 Dimensions of trust

Words generally associated with trust, such as honesty, credibility, reliability, goodwill, and morality are all trustor's beliefs about trustee's qualities (Mayer et al. 1995; McKnight et al. 2002). All these beliefs together form trustee's trustworthiness, and lately it has been agreed that it should be treated as a multi-dimensional construct (Serva et al. 2005). People can evaluate the trustworthiness of sources, whether they are other people, websites, information systems, computer technologies, companies, or organizations. However, evaluation done in face-to-face situations differs significantly from evaluation done on the phone, through e-mail, and online. These differences will be discussed more detailed in chapter 3, next an overview of trust factors presented in previous literature is provided.

Despite plethora of factors attached to the construct of trustworthiness, most commonly used are ability, benevolence and integrity. Other used dimensions can be categorized under these three main dimensions, as McKnight and Cervany (2000) have done in their thorough literature analysis.

Ability has been defined through a group of skills, competencies, and characteristics that enable a party to have an influence within some specific domain (Mayer et al. 1995). Hence it is the same construct which some refer as competence (Chen 2003; Chopra 2003; Kim & Han 2009). Trustee's characteristics can show an expertise in certain area of interest or situation and thus must be always evaluated within context; universal ability rarely exists. In case of e-vendor's competence, it is the ability to fulfill the promises communicated to its audience (Chen 2003). Listener's perceptions of speaker's characteristics when evaluating trustworthiness included expertness relevant to the topic under discussion (Giffin 1967). When examining community-driven knowledge sites such as Yahoo!Answers, Kim and Han (2009) describe competence in that way "*CKS has the ability, knowledge, skill, and expertise to provide information and answer questions.*" Ability can spur from personal experience with the certain area of interest or situation which has been found to have an effect on source credibility (Heung & Morrison 2008). It can be concluded that ability and competence are used interchangeably and possess the same elements; skills, knowledge, and expertise.

Benevolence refers to the extent to which a trustee is believed to want to do good to the other party, beside from a calculative profit motive. It is a positive orientation of the trustee towards the trustor. (Mayer et al. 1995.) It is a belief that the other party will act in the best interest and take care of the trustor (Kim & Han 2009). These can also be called "honorable intentions" (Gefen 2002) and "positive intentions" (Chopra 2003; Kelton et al. 2008). Kelton et al. (2008) list goodwill, benevolence, loyalty and motivations to form positive intentions set and argue that they represent the trustee's feelings toward the trustor. It is also stated that a benevolent person does not act opportunistically (McKnight & Cervany 2000). Benevolent behavior has been described as that other consumers "*...have nothing to gain...*" "*...have nothing at stake...*" (Cheong & Morrison 2008).

Integrity means the trustor's perception that trustee conforms to a set of principles that the trustor finds acceptable (Mayer et al. 1995). It is referred as telling the truth, fulfilling promises, and acting in consistent and reliable manner (McKnight & Cervany 2002; Chen 2003; Kim & Han 2009). Further, Chopra (2003) and Kelton et al. (2008) use the term *ethics* in case of trust in information which refers to moral principles which the trustee adheres.

In conclusion, when examining trust and its dimensions, division to competence, benevolence and integrity have received the most support in research. Other often used terms in trust discussion are credibility and predictability, which need to be differentiated from this study's concept of trustworthiness.

2.2.1 Credibility

Gefen (2002) states that credibility has been described as a combination of integrity and ability. Ganesan and Hess (1997, 440) treat credibility as a separate dimension of trust together with benevolence and argue that credibility is based

on other partner's promise keeping abilities. They include predictability, competencies crucial to task execution and reliability in terms of delivering goods and services in time to credibility as well. Kelton et al. (2008) include credibility, the degree of which information provided by the trustee can be believed, to competence.

In their thorough review of credibility, Rieh and Danielson (2007) distinguish credibility and trust alike way that McKnight and Cervany separate trust and trusting behaviors. According to Rieh and Danielson (2007) credibility is the perceived quality of a source which might result in trusting behaviors. It has also been referred as message recipient's perception of the credibility of the source. Cheung et al. (2008, 232) state that credibility "*...is defined as the extent to which an information source is perceived to be believable, competent, and trustworthy by information recipients.*" They study it through source expertise and source trustworthiness which can be referred as source bias, reflecting the bias/incentives that may echo in source's information. However, they found that tie strength and homophily, factors normally associated with evaluation of offline word-of-mouth, had an effect on source credibility in online community settings.

Personal experience with the area of interest or situation in case has been found to affect source credibility. It provides a direct, "front-line" encounters and fuller picture than the selling partner's disclosure of the product. (Cheong & Morrison 2008.) Engineers searching information from their colleagues relied rather on workers with hands-on experience rather than appointed experience (Hertzum, Andersen, Andersen & Hansen 2002). In conclusion, credibility is clearly a specific trust belief but overlaps with other dimensions so that it cannot be included to the model as a separate construct.

2.2.2 Predictability

Predictability and trust have been used as equal terms, denoting that predictable behavior increases trust. However, predictability cannot always influence trust in positive way. Someone can be predicted to engage in negative actions which obviously cannot contribute to higher level of trust. (Mayer et al. 1995.) In contrast to Mayer et al. (1995), many researchers have included predictability either into definitions of trust itself or into trustworthiness.

Zaheer et al. (1998) trust definition includes a notion that an actor will behave in predictable manner. They write that while reliability includes the dimension of competence, predictability simply refers to a degree of consistency. Likewise, the integrative typology of trust constructs includes consistency to predictability (McKnight et al. 2002). Further, Tschannen-Moran and Hoy (2000) agree to Mayer et al. (1995) that predictability alone does not define trust and suggest that benevolent behavior combined with predictability results in reliability or dependability.

Predictability has been later included in "trust beliefs" (McKnight & Cervany 2000) where it means the belief that there is enough consistency in other person's actions, **good or bad**, to predict them in a given situation.

Afterwards it was specified to be relevant only in ongoing trust model in opposed to initial trust model due to its consistency dimension (McKnight, Choudhury & Kacmar 2002). Numerous studies (e.g. Chopra 2003; Gefen et al. 2003; Fam 2004; Kelton et al. 2008; Lenzini et al. 2010) employ predictability as one trustworthiness dimension, so there is still disagreement on its definite nature.

2.2.3 Trust formation process

The development of trust can or cannot be a gradual process. Two parties may have some knowledge about each others to which they base their decisions. Meeting face-to-face or communicating by other means provides something tangible for the other party to evaluate other's trustworthiness. Was the delivery on time, did the salesman dress neatly? Ongoing interactions form a relationship which may induce deeper emotional bonds thus fostering affective trust. On the other hand, at any stage of exploring the relationship one can hear other's opinions about the other party. Trust can also be violated at any point of the relationship (Tschannen-Moran & Hoy 2000.)

Trust processes can be divided into prediction, attribution, bonding, reputation and identification (Chopra 2003; Kelton et al. 2008). In first phase, prediction, trust is based on previous knowledge about other party. Assessment of the previous actions provides a picture of consistency and predictability which can help in trust formation. In contrast, attribution entails an active observation about other party's characteristics and actions. Evaluation of trustworthiness is done through evidence, not just based on knowledge. Attribution is a cognitive process. Neither of these first two stages includes any notion of emotions which are presented in bonding. Ongoing relationship is needed for affective trust to develop. Reputation based trust has developed already to an institutional, general level; one trusts other's recommendations. Identification is the extent to which the parties share a common identity, goals, and values. (Kelton et al. 2008.)

McKnight, Cummings and Cervany (1998) note that trust cannot be simply seen as developing from low levels to higher over time. Every time trust is examined, the starting point can vary for different people. Some can have higher initial trust consisted of disposition to trust and institutional trust.

2.3 Trustworthy information

In line with Tseng and Fogg (1999) who examine credibility of computer product, when discussing trust one is discussing a human perception or evaluation of trust. Trust is not refrained as an element between two persons or an element possessed by one. Kelton et al. (2008) argue that information can be the recipient of trust as well.

One must also take in notion that trust in information can be confused with trust in information systems, i.e. trust in medium through which the information is handled (Marsh & Dibben 2003). This idea is further enlightened by Rieh and Danielson (2008) which divide the assessment of source credibility into assessing credibility of Web, credibility of Web sites, or credibility of Web information.

The trustworthiness or credibility of information is often discussed through information quality, which is the cognitive dimension of trust (Chopra 2003). Quality is defined as a conditional, perceptual, and somewhat subjective attribute which can be understood differently by different people (Wikipedia). Despite quality being a subjective attribute, different fields apply multiple criteria and checklists for quality in line with separate quality management programs. Information quality has been used to explain generally the success of information systems (DeLone & McLean 1992), perceived ease-of-use and usefulness of sustaining virtual community (Lin 2007), the intention to use Wikipedia (Wang, Ling, Chen & Yang 2008), information adoption (Cheung, Lee & Rabjohn 2008), uncertainty reduction (Adjei et al. 2009), and intention to adopt a recommender system (Ilyas & Komiak 2010) to name few.

Nicolaou and McKnight (2006) define perceived information quality (PIQ) as a cognitive belief about the favorable or unfavorable characteristics of the currency, accuracy, completeness, relevance, and reliability of the exchanged information. Additionally, Alexander and Tate (2000) list five traditional evaluation criteria for information quality: Authority, accuracy, objectivity, currency, and coverage.

Adjei et al. (2009) discuss a broader term, online communication quality, as a key driver of uncertainty reduction. In their view, timeliness of information is the speed of response to the message posted. Furthermore they argue that timely responses are more valuable than late responses. Relevance of information is task related, meaningful and relevant to the purchase and consumption and more efficient in reducing uncertainty. Frequency of information is the number of replies to the message postings; more information means more reduced uncertainty. They also include duration of interaction as a factor to reduce uncertainty because longer encounter can provide deeper and more descriptive information.

Cheung et al. (2008) use relevance, timeliness, accuracy and comprehensiveness as dimensions of information quality. Chopra (2003) states that ability can be examined through accuracy, currency, coverage and believability of information. Furthermore, benevolence consists of objectivity which refers to the extent the information is free from bias, distortion or deception. Integrity is examined through validity. (Chopra 2003.)⁴ Lin (2007) implements accuracy, comprehensiveness and currency as information quality dimensions while Ilyas and Komiak (2010) include only accuracy and timeliness. Cheung, Luo, Sia and Chen (2007) suggest that credibility of a

⁴ The author himself uses different concepts for trust beliefs. Ability = Competence, Benevolence = Positive intentions, Integrity = Ethics

recommendation consists of informational and normative influence. Informational influence includes argument strength, which refers to information quality discussed here, but they do not provide further breakdown of its elements.

The extent to which the system provides all essential information is represented by completeness or comprehensiveness (Wixom & Todd 2005). Accuracy means that the information is reliable and free from errors or at least perceived as so (Alexander & Tate 1999; Wixom & Todd 2005). Currency implies that the information can be identified as up to date. Relevance refers to the significance of acquired information to the decision making process. Effective communication must mean something to the receiver. (Adjei et al. 2009.)

In contrast to multiple checklists for information quality, the affective dimension has not been discussed as thoroughly. Chopra (2003) suggests that it is important in case where the topic is emotionally charged, as in politics, or when it appeals to user's aesthetics. Bickart and Schindler (2001) argue that internet forums are credible information sources because their ability to create empathy among readers through presenting personal experiences, stories and evoking feelings.

Berger and Messerschmidt (2009) present information quality governance as a part of sociability and usability of a community. It considers other's evaluation of the content as a sign of good quality and if it is important for users to be able to evaluate the quality of content. However this proposition did not receive any support.

2.4 Trustworthy systems

Credibility of the Internet can be derived from three sources: Evaluating the Web, evaluating the information found in the Web, or evaluating the website itself (Rieh & Danielson 2008). A vast body of online trust research has focused on the latter one; trust in different systems. This has been especially prominent in internet banking, mobile banking, e-commerce, and online payments where perceived risk is high. The context where within the trust is evaluated can either enhance or hamper trust formation.

Trustworthiness of a website or other information systems has been examined through perceived systems quality or perceived usability. Systems quality refers measures the functionality of a website. It is described through reliability, flexibility, convenience of access and response time. (Lin 2007.) Usability concerns the ease of understanding the functions, interface, contents, and structure of the system. It also calls in for simplicity of use in earlier stages, clear navigation, speed of finding necessary information, and the user's control of own doings. Usability was found to have an effect on trust. (Flavian, Guinaliu & Gurrea 2006.) A slightly different view to usability is offered by Preece (2001) who argues that sociability and usability are key factors of online

community's success. She states that while other usability factors are important as well, due to software's role as a medium for social interaction these four pieces are particularly important: Dialogue and social interaction support, information design, navigation, and access. Wang (2005) summarizes the trust inducing features of a website to graphic design, structure design, content design, and social cue design.

Often systems quality is related to protection of security and privacy. Ilyas and Komiak (2010) examined perceived systems quality through authentication which ensures that parties involved are who they are claiming to be, and data integrity which means that no data is modified, created, or deleted illegitimately. Kim et al. (2008) related grouped perceived privacy protection and perceived security protection under cognitive-based trust antecedents and found that they have a direct and indirect effect on trust through perceived risk.

Lenzini et al. (2010) propose recommender site elements that affect on the perceptions of trustworthiness: User interface, linguistic content and quality of recommendations. User interface is evaluated through certification from trusted parties, management info, past reviews patterns, references from past and current users, offer/compare reviews, source of reviews present and easy to check, and reputation of the reviews managed. Linguistic content which could be analyzed automatically includes contact information, grammar and spelling, duplication, publication date, source reputation and subjectivity. Recommendation quality is divided into robustness of rating system, multi-criteria recognition, recognition and roles, rewards, personalization, and web of trust. (Lenzini et al., 2010.)

When people interact with computer or other systems, trustworthiness usually always matters. However, when user is not aware of the system, does not recognize the possibility of a system bias, has not any investment with the interaction, or when the computer acts only as a transmittal device, trustworthiness is not necessarily evaluated. This can be the case when user is surfing on the Internet without any particular motive. (Tseng & Fogg 1999.)

2.5 Distrust

It is worth noticing that similarly to separation of satisfaction and dissatisfaction, trust and distrust are different concepts. If there are no signs of distrust, it does not necessarily imply the presence of high trust. Additionally, the situation of low trust is not the same as the presence of high distrust. (Cho 2006.) Furthermore, the same precursors of high trust are not essentially precursors to low distrust (Lewicki, McAllister & Bies 1998).

While Lewicki et al. (1998) define trust "*...in terms of confident positive expectations regarding another's conduct...*" distrust is confident negative

expectations regarding another's conduct.⁵ It concerns expectations of things feared. Likewise, when trust is defined as the willingness to be vulnerable, distrust is the *unwillingness* to be vulnerable (Benamati, Serva & Fuller 2010). Both trust and distrust definitions include the expectations part, hence distrust cannot be just an absence of trust: it has to be an active evaluation of other's harming behavior (Cho 2006). Trust and distrust can be seen as helping to simplify decision-making processes. Presence of trust reduces the complexity of the decision-making situation by enabling individuals to expose themselves to risk. Distrust decreases complexity by urging individuals to take protective action to reduce risk. (Lewicki et al. 1998.) Thus it is easier to understand a situation where blind distrust exists; it prevents individual to take any action ever. Likewise blind trust leads to a situation where individual takes unnecessary risks. (Benamati et al. 2010.)

Trust and distrust have proven to be separate constructs in variety of studies (e.g. McKnight, Kacmar & Choudry 2003; McKnight et al. 2004; Cho 2006; Benamati et al. 2010). This may due to that trust and distrust are based on different emotions (McKnight & Cervany 2001; McKnight, Kacmar & Choudry 2004; Benamati et al. 2010). McKnight et al. (2004) suggest that while trust and distrust post possess cognitive and affective components, it is the affective components that differentiate distrust from trust. High distrust includes fear, skepticism, cynicism, wariness and watchfulness, and vigilance, low distrust means that these do not exist. Additionally high trust includes hope, faith, confidence, assurance, and initiative, and low trust means that these do not exist. Hence trust and distrust can exist simultaneously and are not opposites of a continuum. As an example, low trust combined with high distrust may result in paranoia. (Lewicki et al. 1998.)

Cho (2006) examines the effects of competence and benevolence on trust and distrust and finds those to be asymmetrical. Positive effects of benevolence build trust more significantly than its negative effects induce distrust. In contrast, negative effects of competence were found to engender distrust more than its positive effects develop trust. As concerning institutional trust, negative opinions about the Web were enhanced by suspicion of humanity (distrust) when faith in humanity (trust) provided basis for positive opinions about the web (McKnight et al. 2003). For trust and distrust outcomes also differ. Absence of trust does not necessarily prevent giving personal information but high amount of distrust does. In addition high distrust does not imply that a customer will not re-visit a web store, but high trust can enhance commitment. (Cho 2006.)

McKnight et al. (2004) argued that disposition to trust and disposition to distrust have different effect depending of the risk associated with the situation. Perceived web site quality and willingness to explore the site were hypothesized as low-risk situations and trust intention towards the website as high-risk situation. Compelling finding was that out of four constructs only

⁵ Another's conduct refers to another's words, actions, and decisions (what another says and does and how he or she makes decisions). (Lewicki et al. 1998, 439.)

dispositional distrust (suspicion of humanity) predicted the high-risk situation. In other words, suspicion of humanity had a significant negative impact on trusting intention while faith in humanity and trusting stance did not have a positive impact on trusting intention. Xia, Bensabat and Xia (2010) included the comparison of trust and distrust effects on differing risk situations and conclude that distrust is more strongly related to intention to use when risk is high. Excluding the risk variable, Ou and Sia (2009) found that distrust has more significant effect on intention to not use a web site than the trust had on the intention to use the web site. These findings may also explain the contrasting results of the non-existent effect of disposition to trust or propensity to trust on trusting intention (as in Gil et al. 2005 and Jones & Leonard 2008).

In their review of 39 studies of Web-based consumer trust/distrust, Ou and Sia (2009) list web site elements that build trust or reduce distrust. They note that in some of the reviewed studies these have been treated as bipolar, denoting that elements that build trust should also employ the same influence on eliminating distrust. Based on studies discussed in this chapter, this view is not sufficient and the elements should be taken notion with caution. In line with Small, von Dran and Barcellos (1999), Ou and Sia (2009) categorize web site elements to hygiene attributes and motivating attributes. Elements in the first category are essential for the web site to function and prevent dissatisfaction but do not necessarily lead to satisfaction. Latter category includes elements that add extra value and create satisfaction but the absence will not lead to dissatisfaction. (Small et al. 1999.) This categorization was used as a basis for asymmetrical effects of trust and distrust on buying intention, where it was confirmed that attributes that foster trust do not indubitably reduce distrust, and that attributes that reduce distrust may not be effective improving trust (Ou & Sia 2009.)

Perhaps the main contribution of recognizing trust and distrust as a separate constructs is the attention to the wording of survey items. Studies presented in this chapter note that items used to examine distrust are worded negatively while items concerning trust are worded positively. Thus researcher needs to be aware which of these constructs he or she is examining.

3 WORD-OF-MOUTH COMMUNICATION IN ONLINE CONTEXT

This chapter reviews word-of-mouth especially in online context. First the basis descriptions and origins of word-of-mouth are provided. Next, online word-of-mouth is described and differences between traditional and online word-of-mouth are discussed. Thirdly, various forms of online word-of-mouth are presented and the focus of this research, communities, is considered more thoroughly. Ultimately, research hypotheses are constructed in the basis of presented literature and theoretical model presented.

3.1 Word-of-mouth

As said, word-of-mouth is found to be is more trustworthy than information generated from marketers or companies (Silverman 2001, 24; Cheong & Morrison 2008). Compared to other marketing promotions, word-of-mouth is discovered to be 20-30 times more efficient in new customer acquisition (Trusov, Bucklin & Pauwels 2009). In recent years it has gained such significance that a separate organization Word of mouth Marketing Association was founded in 2004. Word-of-mouth conversations are tracked by Keller & Fay Group from 36 000 thousands Americans in order to gain understanding of this old phenomenon.

Word-of-mouth is information independent from companies or sponsor communicated between consumer and a friend, colleague or other acquaintance in a medium perceived to be independent of the company. Valence of the information can be positive, neutral, or negative. (American Marketing Association; Anderson 1998; Silverman 2001.) The key notion in all definitions is that word-of-mouth comes from people that are free of commercial interest in inducing someone else to use the product or service. Therefore the communicators do not have any particular motives to distort the truth in favor of the product or service. The communications can be statements or discussion,

happen in person, by telephone, by e-mail and between few or several people. (Silverman 2001.) However word-of-mouth does not necessarily need to be product, service or brand focused as it can extend to include organizations and companies as well (Buttle 1998).

Although there is some agreement of the definition of word-of-mouth, it has been suggested that it is not comprehensive enough. Word-of-mouth can stem from observation as well; seeing someone own a product or use it. In addition, the use of references in businesses is important aspect of today's marketing efforts and can be seen as a form of word-of-mouth. (Godes, Mayzlin, Chen, Das, Dellarocas, Pfeiffer, Libai, Sen, Shi & Verlegh 2005.)

Word-of-mouth has been examined through various aspects. The differing effects of the valence of word-of-mouth were first reported by Arndt (1967), who suggested that unfavorable word-of-mouth was more efficient than favorable word-of-mouth in case of buying a new product. Later Wilson & Petersen (1989) showed that the impact of positive or negative word-of-mouth is influenced by evaluative predispositions of the product. Anderson (1998) found that engagement in word-of-mouth behavior follows a U-shape, meaning that more satisfied and more dissatisfied customer engage more in word-of-mouth discussion.

As Buttle (1998) points out, it must be noted that word-of-mouth can or cannot be sought. It can be offered without recipient's particular inquiry or one can actively search information which in turn raises question concerning from who the information is sought and why. Also, it is sometimes hard to differentiate which word-of-mouth information is purely spontaneous and which has its roots on advertising or company's stimulation. For example, Goldenberg et al. (2001) found that advertising has stronger effect for information dissemination in the early stages but the effect diminishes in the latter stages where the importance of word-of-mouth increases. Keller and Fay (2009) suggest based on ongoing consumer studies that 20 % of word-of-mouth is based on advertising as a source.

A notable stream of research has focused on the role of networks and ties in dissemination of word-of-mouth. Granovetter (1973) was one of the first ones who suggested that information spreads more efficiently between groups through weak-tie sources. Weak-tie acquaintances act as a bridge between otherwise disconnected groups of strong-tie relationships (FIGURE 3). He also states that stronger ties tend to be between more similar individuals. This homophily between individuals' stems from similar personal attributes such as education, gender, age, beliefs, attitudes, and life experiences (Rogers 1995).

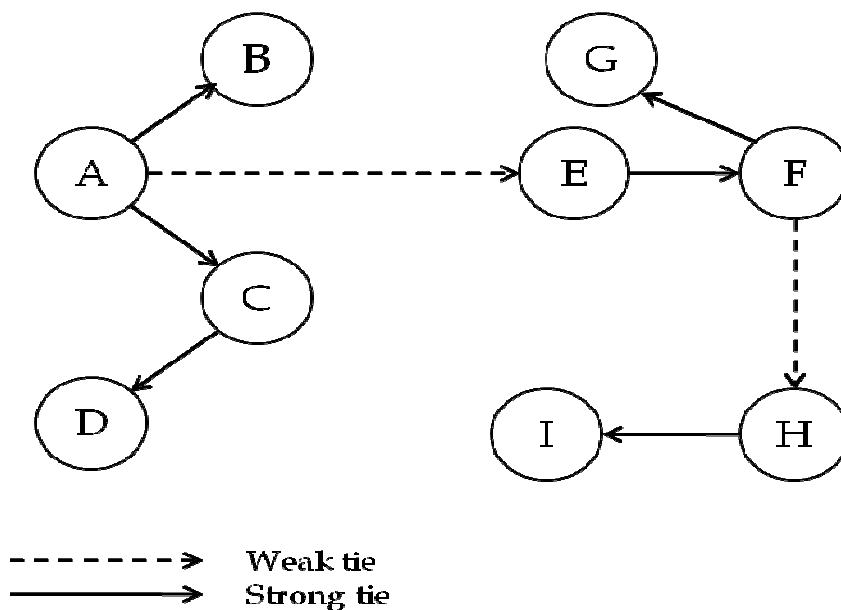


FIGURE 3 Offline Strong and Weak Network Flows (Brown et al., 2007)

People tend to have more weak-tie relationships than strong ones. Also, if strong-tie relationships are mostly between people alike, the opinions, attitudes, interests, etc. will be more alike. Thus the information attained outside the strong-tie network may be richer and more serendipitous due to the heterophily and the amount of the individuals. (Duhan, Johson & Wilcox 1997.) Brown and Reingen (1987) not only confirmed the idea of weak ties bridging different groups, but found out that if there is strong and weak tie referrals available, first ones are more likely to be solicited. In addition, strong ties were seen as more influential sources of information. Further analyzed, strong ties have been suggested to be more influential and desired for opinion seeking due to their abilities for evaluating the information seeker. Shared experiences, knowledge of personal taste and mutual respect may enhance the value of other's opinion. (Duhan et al. 1997.)

Assumption that activated weak-ties in information seeking would be more heterophilous than activated strong ties was not supported. In addition, the assumption that more homophilous ties would be more influential in decision making was rejected hence questioning the importance and measurement of homophily and heterophily. (Brown & Reingen 1987.) These have been examined through demographic factors but concerning especially today's social fragmentation and possibilities offered for information seeking it is necessary to question the appropriateness of education or income level as a predictor of homophily.

3.2 Online word-of-mouth

In today's connected world word-of-mouth does not need to be face to face, direct, oral or passing (Buttle 1998). While Silverman (2001) had already e-mail and listgroup included in the means of communication, the rapid change of technology has enabled new ways of communication to emerge online. Despite the puritanical view of word-of-mouth as a spoken form of communication which occurs in spontaneous manner and disappears as soon as it is articulated (Stern 1994), scholars have agreed in broadening the scope of accepted communication ways to answer the needs technology has set up.

Electronic word-of-mouth (eWOM) can be defined as all informal communications directed at consumers through Internet-based technology related to the usage or characteristics of particular goods and services, or their sellers (Litvin et al. 2008). It is available to multitude of people and institutions (Hennig-Thurau et al. 2004). Word-of-mouth in online context has been called online word-of-mouth (Brown et al. 2007) electronic word-of-mouth or eWom (Litvin et al. 2008) and word-of-mouse (Xia & Bechwati 2008). Some are using the term customer-to-customer, C2C, communications (Adjei et al. 2009; Libai, Bolton, Bugel, de Ruyter, Gotz, Risselada & Stephen 2009). It is suggested that online customer-to-customer communications may serve important role in reducing risk and move customer closer to a purchase decision (Adjei et al. 2009).

Compared to traditional, passing word-of-mouth, online conversations have differences which are due to the written nature of online word-of-mouth. It does not vanish, thus allowing people to acquire it in their own phase. It can also be more complete hence making the information to look more formal. (Sun, Youn, Wu & Kuntaraporn 2006.) When discussing the overall meaning of written language, Marshall McLuhan argues that it is more logical, easier to analyze, and gives the interpretation to individual: Words are always the same but the conducted reading is different. In an environment of spoken language, acoustic environment, words are more immediate, more present, and more concrete. Taking something out of context is almost impossible in contrast static, written words. "*Seeing it in writing' becomes proof that it's true.*" (Griffin 2003, 316.) Interaction executed mainly through written communication is missing the versatility of verbal and non-verbal cues used in spoken face-to-face interactions. In addition online settings can give a greater equality of participation through diminishing the face-to-face or phone conversation turn-taking aspect. (Ridings 2002.)

While online word-of-mouth has same characteristics as traditional word-of-mouth, it varies in many aspects. Steffes & Burgee (2009) recite these differences to three categories: eWom is an asynchronous process, it harnesses one-to-world platform to share opinions and experiences, and recipient's identity is unknown to receiver.

Previously word-of-mouth was heavily dependent on intimate conversation and face-to-face interaction. Online conversations however can happen regardless of time and space. (Steffes & Burgee 2009.) In the Internet opportunity to interact with others is generally available and thus lowers the barrier to exchange customer-to-customer know-how (Gruen, Osmonbekov & Czaplewski 2006). In contrast to spoken word-of-mouth, written word-of-mouth can be acquired in individuals own pace and in more detail, and retrieved later in its complete form (Bickart & Schindler 2001). In addition, mobile phones and more recently smartphones allow word-of-mouth to take place very closely to the decision point either by allowing a consultation of a friend or an internet connection to latest reviews about a restaurant.

Traditional word-of-mouth research has studied communication between dyads consisted of a sender and receiver. However, conversations and information flow can also happen among groups of people. (Libai et al. 2010.) Likewise, for the first time individuals can make their opinions and thoughts accessible to a significantly larger body of listeners than before (Dellarocas 2003,). Individuals can also be the mere observers of other's discussions like in the case of discussion forums where topics can be read by anyone without participating in it (Libai et al. 2010). Brown et al. (2007) suggest a one-to-many network flow to characterize online communication (FIGURE 4).

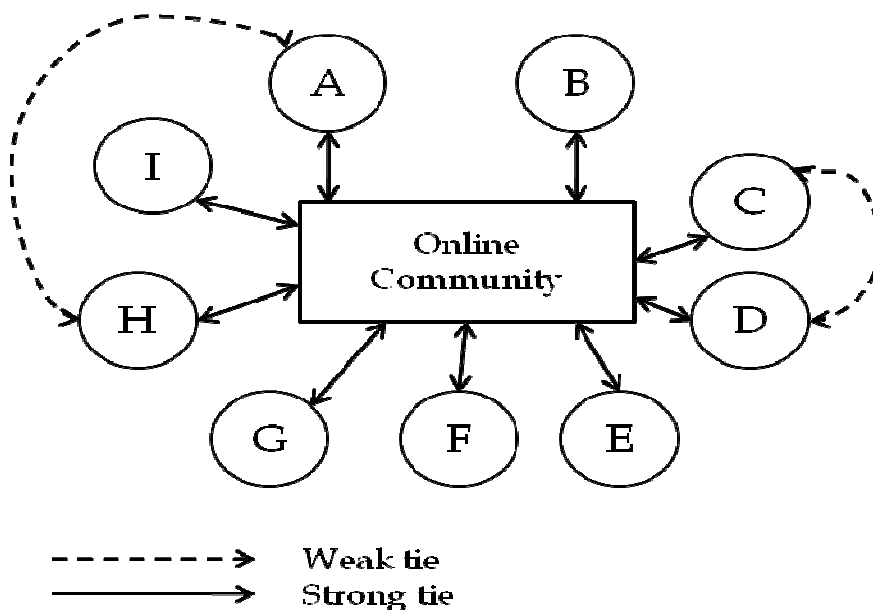


FIGURE 4 Online Strong One-to-Many Networks (Brown et al., 2007)

3.2.1 Challenges and opportunities provided by anonymity

Blurred relationships and identities have been especially linked to the studies of trust in online context. Identity can be seen as the basis of tie strength or of evaluating one's similarity and is dependent on social and contextual cues.

Offline cues such as gender, age, social and professional status and ethnicity can be missing, reduced, camouflaged, or intentionally falsified. (Brown et al. 2007.) In online interaction the nearly complete missing of contextual cues hinder the interpretation of subjective information. Even slightest facial expressions or way to dress can influence the evaluation of other person. (Dellarocas 2003.) In their study of informational influence on knowledge adoption, Sussman and Seagal (2003) excluded source likeability and source attractiveness from their model arguing that in computer-mediated communication peripheral cues used as basis for source evaluation are weakened.

Online word-of-mouth can take place more between individuals with little or no prior relationship in contrast to traditional word-of-mouth and extents outside of individual's immediate personal network of family, friends, and colleagues. (Davis & Kchazanchi 2008; Xia & Bechwati 2008.) As said, this may lead to more effective spread of ideas and information but sets challenges for evaluating the sender. Bruyn and Lilien (2008) studied the effect of tie strength, perceptual affinity, and demographical similarity in three word-of-mouth stages: Awareness, interest and decision making. Perceptual affinity is labeled as perceptual homophily and refers to the similarities between individuals' values, likes, dislikes, and experience. Demographic homophily is separated for its own category. Tie strength was found to have an effect for creating an awareness of the message; perceptual affinity to create interest; and demographical similarity to decrease the influence on every stage.

Brown et al. (2007) suggest that in online environment the homophily is evaluated more at a group level of shared interests and mind-set. Characteristics of an individual such as social class, education, and age are not seen as relevant. In addition, they conclude that tie strength does not play a big role in online settings; 80 % of the interviewees the online information source was the website itself, not any specific individual. In comparison, homophilic sources were found to be more influential and used more compared to heterophilic sources in case of choosing teaching professors. Same study shows that non-existent or weak-tie sources were referred more and were more influential in than strong-tie sources. (Steffes & Burgee 2009.) While online word-of-mouth has been criticized especially due to the weakness of relationships formed through Internet and possibilities of fraud, the anonymity is not necessarily an obstacle concerning the advantages offered by weak-tie connections (Pollach 2004).

3.2.2 Normative influence/exposure effect

An intriguing feature of online word-of-mouth studies is normative influence or volume effect. Cheung et al. (2007) discuss credibility of a recommendation itself excluding trusting beliefs about individuals or organizations. They argue that credibility of information, i.e. persuasiveness of information comes from two sources: Informational influence and normative influence. The latter refers to the level an individual conforms to the norms or expectations of others and is

familiar concept from the Theory of Reasoned Action and the Theory of Planned Behavior (Cheung et al. 2007). People tend to evaluate other's opinions and sometimes decide to comply with them.

Normative influence can be divided into recommendation consistency and rating. In online discussion forum where the amount of recommendations may be large, if the recommendation under evaluation is consistent with the majority of the recommendations it is likely to be perceived more credible than inconsistent recommendation. Rating displays the overall rating of the recommendation evaluated by other readers. High rating implies higher believability and thus credibility and vice versa. (Cheung et al. 2007.) The idea of normative influence is also presented in the social conformity studies. People may trust those speakers whom they see others trusting and this may be the case even if their own evaluations are contrary. (Giffin 1967.) It is normal for people to imitate others (Huang & Chen 2006).

Differing from Cheung et al. (2007) definition of informational influence, Huang and Chen (2006) use it to describe online herding behavior. In their article, informational influence is thought to be the tendency to accept information received from others as an indicator of reality and argued to be more significant than normative influence especially in the Internet. The cues for eliciting herding behavior are sales volume, customer reviews, and consumer recommendations. Informational and normative influences are referred as Consumer's susceptibility to interpersonal influence (CSII). Bailey (2010) found that more susceptible consumers attached more importance on product review websites.

Liu (2006) presents findings that the volume of word-of-mouth offers significant explanatory power for box office revenue. Duan, Gu and Winston (2008) found that the number of posts, not ratings, are significantly associated with movie sales calling that awareness effect. David and Khazanchi (2008) concluded that although volume of online word-of-mouth was not associated with product sales, the amount of product views was associated with product sales.

In conclusion, the discussion of normative or exposure effect has many facets. Is it just the pure amount of information which affects positively on intentions or behavior, is it the valence combined to the amount of information or is it the overall consistency and ratings given to the information?

3.2.3 Measuring online word-of-mouth

The transition of word-of-mouth communication into the Internet has provided new opportunities for companies and researchers to track and measure conversations. Traditional ways of examining word-of-mouth include surveys and self-reports, but easy to access online environment offers an option to purely observe articulations (Godes & Mayzlin 2004). The rise of social media and tools for straight communication with customers has lead professionals to develop different strategies for companies' participation. Kaplan and Haenlein

(2010) suggest that companies' can either plainly use social media or actually be social.

When all the information is already available on the Internet, companies' can choose from different options depending on the level of pro-activity needed. Companies' can act as a mere observer and majority are doing this already by surveys or online communities. Online conversations can be observed cheaply and quickly. Company still needs to know what data they need and why. Other option is to act as a moderator. Establishing own communities or customer recommendation programs require more participation and objectives from company. Thirdly, company can step up to be a mediator when it decides what information to disseminate and when. An example is references used in company's website: Customer gives the reference but company decides whether to make it public or not. The most active approach for managing social interactions is being a participant; taking part in conversations and creating word-of-mouth. This raises the ethical questions about misleading consumers or blackmailing competitors. (Godes, Mayzlin & Chen 2005; Miller, Fabian & Lin 2009.)

3.3 Forms of online word-of-mouth

The definition of online word-of-mouth included the notion of communication through *Internet-based technology* (Litvin et al. 2008).

The development from one-to-one to one-to-many communications in Internet has been labeled as web 2.0. The applications or tools of web 2.0 have been categorized in different ways (e.g. Constantinides & Fountain 2008; Kaplan & Haenlein 2010.) In this study the categorization of is adapted from Lehtimäki et al. (2009) (TABLE 1). The applications are divided into blogs and podcasts, social network sites, communities, virtual worlds and content aggregators. Although the definition of online word-of-mouth allows chat, instant messaging, and Skype calls to be included in it, those have been generally excluded from online word-of-mouth studies.

Blogs are "the personal websites of Social media", online journals which started as text-based but are taking new forms with photos, videos and voice. Blogs are usually handled by one person; entries are displayed in reversed chronological order, and provide opportunities for interaction through enabling other people to comment. (Constantinides & Fountain 2008; Kaplan & Haenlein 2010.)

TABLE 1 Categorization of Web 2.0 Applications (Lehtimäki et. al. 2009)

CATEGORY	TOOL	FOCUS	EXAMPLES
1. BLOGS AND PODCASTS	Traditional blogs, vlogs, podcasts, videocasts	Informing of current events and novelties	blondinbella.se
2. SOCIAL NETWORKS	Social networks	Content sharing, maintaining relationships	Facebook, LinkedIn, IRC-Gallery, MySpace
3. COMMUNITIES	<u>Online communities</u>		
	Member-initiated	Member's mutual interests and interaction	Communities formed around similar interests, brands
	Organization-sponsored	Brand building, interaction among organization and customers, co-creation of products	
	Third-party established	Enable communication and transactions between buyers and sellers	eBay, huuto.net
	<u>Content communities</u> Content sharing sites, wikis	Content sharing	YouTube, Flickr, Vimeo, Wikipedia
	<u>Forums/bulletin boards</u>	Discussion of mutual interests	relaa.com, eopinions.com
4. VIRTUAL WORLDS	Virtual worlds	Substitute for the real world	Second Life, Habb0
5. CONTENT AGGREGATORS	RSS, widgets, bookmarks, tagging services	Categorization and customization of web content	Delicious, Diigo

Social network sites are defined as “*web-based services that allows individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system.*” (Boyd & Ellison 2008, 211.) Some prefer using term social networking sites (e.g. Kaplan & Haenlein 2010) without regard to Boyd and Ellison’s notion (2008) of relationship emphasis on the word networking. Most-known examples to this date are Facebook, MySpace and LinkedIn.

Communities can be divided into three subcategories and will be discussed more thoroughly in chapter 3.4 since the focus of this research is on one community type, forums/bulletin boards.

Virtual worlds differ from communities by that they are actual substitutes for real world. Users can create their own avatars, move around in three-dimensional environment, chat, play, visit each others; do whatever they would in real life. Virtual worlds can be divided into virtual game worlds and virtual social worlds. First category includes World of Warcraft and EverQuest, and they have a set of rules, missions, and outline that guide thousands of players. The second category does not impose any limitations or objectives to users’ actions. Most famous example, Second Life, has 21,3 million accounts, own currency Linden Dollar and presence of actual companies such as Adidas, Dell, Reuters and Toyota. (Kaplan & Haenlein 2010, 64; Wikipedia – Businesses in Second Life 2010.)

Content aggregators are a new way of organizing web content. These include RSS feeds (Real Simple Syndication or Rich Site Summary), tagging services such as Delicious which allows users’ to share their bookmarks publicly and discover others’ bookmarks, and widgets that are real-time desk tools, presenting weather information, time, breaking news in users’ preferences. (Constantinides & Fountain 2008; Lehtimäki et al. 2009.)

Each form of online word-of-mouth offers different perspectives for researchers to investigate. When information is needed just from volume, valence and the impact those have on sales, pure online reviews sites offer information that has not been affected by social structures as much as in online communities (Duan et al. 2008). On the other hand it is argued that web-opinion sites are easy to operate and to access and that they provide information about almost every area of consumption (Hennig-Thurau et al. 2008). In addition, long-operating communities have rich information derived from relationships, interactions, shared experiences, and emotions (Bickart & Schindler 2001). Some employ e-mail or social networking sites to investigate the spreading of messages (e.g. Bruyn & Lilien 2008; Trusov et al. 2009) or to understand the development of sense of community (Reich 2010).

3.4 Online communities

Community has three key elements: Shared consciousness of a kind, shared rituals and traditions, and sense of moral responsibility. Consciousness of a kind refers to the feeling of belonging; members have an intrinsic connection towards another. Shared rituals and traditions maintain the community's culture, history and consciousness. Sense of moral responsibility is a felt perception of obligation or duty to the community as a whole, and to its individual members. If community faces a threat, sense of a moral responsibility produces collective action in order to defend community and its members. (Muniz & O'Guinn 2001.)

Muniz and O'Guinn (2001) discuss briefly the development of community thought. Community has been viewed being the phase before society existed; the formation of society diminished and destroyed communities that had been the order of civilization. Modern society is depicted through anonymity, dislocation and disconnectedness which are all opposites of traditional familiar, emotional, and customary community. Individualism, the concentration on one person's own materialistic desires is said to be part of the loss of community. However, the change in consumption habits gave rise to new form of communal bonding; consumption communities. Muniz and O'Guinn (2001, 213) argue that due to these changes, brands should have a prominent place in the discourse of modernity, society and community.

It is important to note what other factors facilitated the birth of new kinds of communities. The rise of mass media enabled the dissemination of information regardless of time and location. This allowed the community to be produced efficiently and quickly compared to previous means of slow communication. Same transition has happened with computer-mediated communication; it is even more efficient and fast and has changed the concept of community permanently. (Muniz & O'Guinn 2001; Toral, Martínez-Torres, Barrero & Cortés 2009.)

Online communities brought the concept of a traditional geographically limited community into a new level. These allow interaction and creation of ties between people who may never have met or will meet in person. Individuals can access information, expertise, and empathy regardless of time, place or local culture. They can engage in knowledge sharing, problem solving, and learning through posting and responding activities. All the activities enable a creation of weak structural links, which have proven to be efficient in spreading and acquiring information. (Toral et al. 2009; Granovetter 1973; Brown & Reingen 1987.) Online communities also offer the freedom of choice whether to belong and participate in community or not (Bagozzi & Dholakia 2002).

Participation in online communities does not just mean posting and commenting which requires user being active. Participation thus includes also passive behavior, lurking. (Shang, Che & Liao 2006.) Lurkers are non-contributors in opposite to users who generate majority of the content (Steffes &

Burgee 2009, 56). Furthermore, Huang and Farn (2009) found that lurkers can be divided into two groups based on how they value the information provided by the community. "Information shoppers" have little confidence in information in community while "advice seekers" believe information more often. Lurking is somewhat unique characteristic of online word-of-mouth; in traditional settings listening to conversation usually means making oneself visible to others.

Hence online communities embrace all the three differences between traditional and online word-of-mouth: They are asynchronous, communication flows from one-to-world, and identities and relationships within communities may be blurred (Steffes & Burgee 2009, 43).

Hagel and Armstrong (1996) divided virtual communities into four categories: Communities of transaction, communities of interests, communities of fantasy and communities of relationships. Characteristics of communities of fantasy include all that are nowadays characteristics of virtual worlds and thus separated from other online communities. Categorization of communities is based on the needs they serve and different communities can serve several needs. Transaction-oriented communities focus on facilitating a business transaction between members without addressing any social needs. Communities of interest have more interaction between member possibly through several mediums such as chat rooms, message boards and forums and typically focus around a certain topic. These are characterized by a significant amount of user-generated content. Relationship-focused communities are built around a meaningful life experience and thus have higher involvement and emotional aspects than other communities. (Kannan, Chang & Winston 2000.) However, today as the development of technologies and new business models has taken a step forward, some customer-to-customer interaction websites and communities are harder to identify and classify.

3.4.1 Types of online communities

Categorization used by Lehtimäki et al. (2009) divides online communities into five types: Member-initiated, company-sponsored, third-party established, content communities, and forums/bulletin boards.

Member-initiated communities can also develop around a brand, product or a company. Well-known examples are different Apple- communities (iPhone, Mac) or www.ferrarichat.com which has no official relationship with Ferrari. These are not maintained or funded by a company. On the other hand, communities can also build emerge around a common interest or a hobby, such as cellular phones (matkapuhelininfo.com), photography (aukea.net), and climbing (slouppi.com). Member-initiated communities are established and maintained by their members but can include advertisement or other revenue models (Kannan et al. 2000, 418).

Company-sponsored communities are organized and controlled by a commercial firm. These can be hosted under company's own website or externally with a link to a separate website. In either case, community is identified with sponsoring company's name or logo. (Porter & Donthu 2008,

115.) Company also has commercially oriented goals in building and maintaining its community (Hagel & Armstrong 1997).

Third-party established communities enable buyers and sellers to gather together in effective manner. Most-known examples are probably online auction sites eBay.com and Finnish equivalent huuto.net which let individuals to sell, others to buy and everyone to post reviews and comments about others and their products. Dellarocas (2003) points out that the deals made in eBay are not based on any formal contracts but on a simple feedback mechanism. History of received ratings and comments is available to the whole community to evaluate.

Content communities are focused on sharing user-generated content. This can be videos (YouTube and Vimeo), pictures (Flickr, Picasa), or information (Wikipedia). Although these include the opportunity to interact, discuss, and network, the focus is on specific type of content. Companies also can establish their own accounts and channels, and provide content for other users. The word "wiki" has developed to encompass any website that allows people to edit and contribute content in a collective way. (Lietsala & Sirkkunen 2008.)

Communities can vary significantly in their interaction elements. Some provide only basic discussion forum features, some implement also photo sharing, tagging, private messaging, chat rooms, games, archives, and news-like stories.

3.4.2 Forums/ bulletin boards

Categorization of web 2.0 application (TABLE 1) lists forums/bulletin boards under online communities. Practically all websites that include written communication between users can be classified under this category which leads to a vague definition of forums, discussion forums or bulletin boards. Websites focusing mainly on product reviews such as eopinions.com and dvdplaza.fi are one type of forum. On the other hand online communities can have a discussion section as a part of the community or discussion forum can be stand-alone entity as in case of relaa.com. Corporate websites can also employ a discussion forum thus allowing customers to post comments about their products and services (Dholakia, Bagozzi & Pearo 2004). Often examined forum is Usenet newsgroups which are focused around a specific interest such as hobby, technical issues, specific products and brands, or leisure activity (e.g. Okleshen & Grossbart 1998; Godes & Mayzlin 2004; Bagozzi et al. 2004).

What differentiates forums/bulletins boards from other form of online word-of-mouth is the preservation of changed messages. The messages can be kept for days, months or indefinitely, depending on forum thus allowing members and non-member to access those anytime they prefer. Forums also offer a chance for observation; in majority of cases forums, bulletin boards and newsgroups do not require registration for browsing and reading the messages. Posting and commenting may require a registration and becoming an actual member of the community. (Ridings 2002.)

Lee, Sheung, Lim and Sia (2006) describe web-based discussion board as a "socio-technical" system consisting of characteristics of individuals users, user groups and the systems. Attitudes, values, and perceptions form attributes of individuals which together with relationships among users, the culture and the structure of user groups constitute the social system. The technical system refers to processes, tasks, and technology needed in the interactions. Hennig-Thurau et al. (2004) state that web-based opinion forums are relatively easy to use, and thus lower the barrier for customer to obtain information.

Forums can have several categories depending on the breadth of the area of interest. Single messages are organized to "topics" and these topics under categories they belong to. Usually forums employ some method of search-tool which allows fairly thorough way to retrieve information from the archives. Forums may also use different kind of reputation or credibility mechanism, varying from actual ratings to number of messages posted, location, duration of membership, picture, personal quote, contact information, and access to previous messages a member has posted. Interactions are moderated by appointed members or founders with title "moderator" or equivalent. Usually a set of general rules is laid out and ill-behaving members can be banned from forum. These kinds of procedures and practices aim to ensure safe and welcoming surroundings for individuals to exchange ideas and opinions and can see as contributing to all dimensions of trust.

Relationships between members can grow and foster over a time thus creating a feeling of a community (Lehtimäki et al. 2009). Compared to online auction sites or pure product review sites discussion forums can possess more social elements and offer rich environment for examining trust which is affected by actors involved.

3.5 Model of trust in online word-of-mouth in discussion forums

Based on the literature analysis, the proposed model of trust in online word-of-mouth is depicted in figure 5.

Online word-of-mouth is a multidimensional concept which includes the people who are disseminating the information through internet-based technology (Litvin et al. 2008). The effect of information itself has been separated from the effect of the source; source credibility affecting directly on attitude (Bhattacharjee & Sandford 2006). The source in this case is the community as a whole because users do not necessarily evaluate the trustworthiness of individuals in online community context. Hence it is proposed that antecedents of trust in online word-of-mouth are trustworthiness of a community, perceived information quality and perceived website quality.

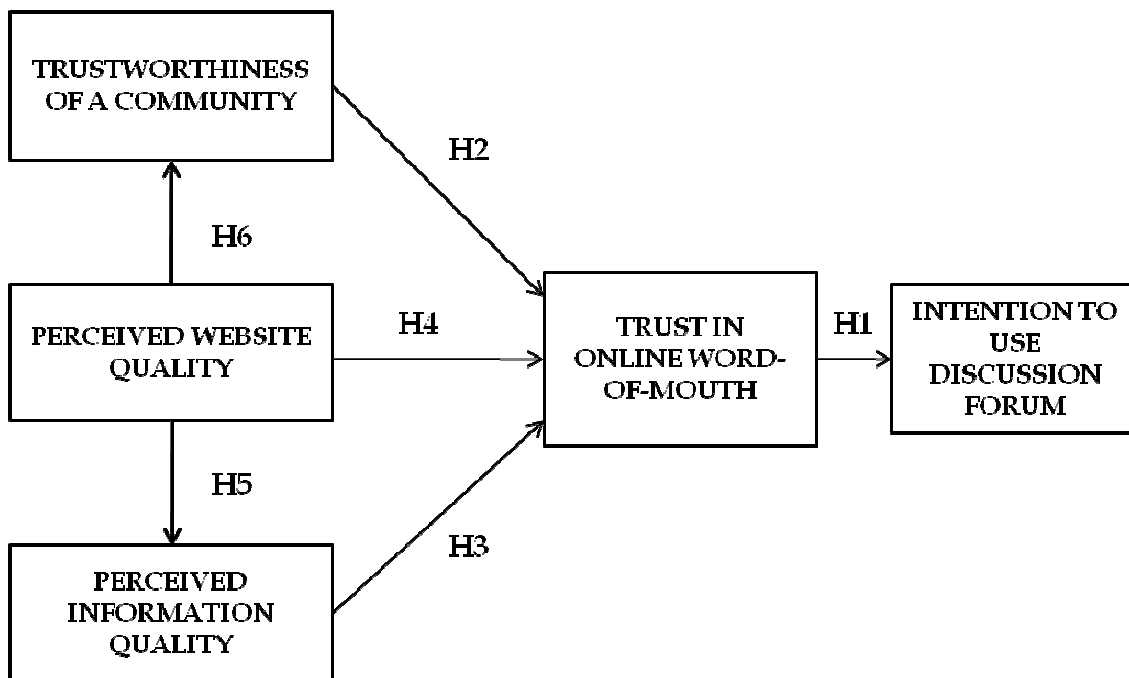


FIGURE 5 The Research Model

Trust has been proven to affect purchase intention (Gefen 2003; Kim et al. 2008), intention to continue using a community-driven knowledge site (Kim & Han 2009), intention to adopt information as a decision aid (Huang & Farn 2009) and desire to give and get information (Ridings 2002). Therefore it is hypothesized that:

H1. Trust in online word-of-mouth is positively related to continuance intention use the discussion forum.

Source credibility has been found to have an effect on perceived online word-of-mouth credibility (Cheung et al. 2003), information usefulness (Cheung et al. 2008), perceived usefulness and ease of use of a community (Lin 2007). In the case of discussion forums, the source is the community rather than individuals separately. It can be hard to articulate whether information seeker trusts specifically in one individual within the community giving advices, especially when normative or exposure effect is present in case of large body of messages. Brown et al. (2007) state that each individual adds some of their own credibility to the community. Trustworthiness is constituted of three separate elements: Competence, benevolence, and integrity (Gefen 2003; Serva et al. 2005). Thus, following hypothesis is suggested:

H2 Trustworthiness of a community has a positive impact on trust in online word-of-mouth in discussion forum

Due to the differences between offline and online word-of-mouth, absence of social and contextual cues, the quality of information facilitates information sharing and exchange (Lin 2007). High quality information enhances trust and reduces risk (Kim et al. 2008). Information quality has found to have an effect on perceived usefulness of information (Sussman & Siegal 2003; Lin 2007). Adjei et al. (2009) suggest that online communication quality is the most fundamental driver of uncertainty reduction. Finally, Kim and Han (2009) show that information quality is an antecedent of trust. Information quality is evaluated through accuracy, comprehensiveness, and relevance (Wixom & Todd 2005; Cheung et al. 2008). So, following hypothesis is tested:

H3 Perceived information quality has a positive impact on trust in online word-of-mouth

When offline social and contextual cues are missing, Jones and Leonard (2008) argue that website quality is used as such and find support for it being an antecedent of trust. On the other hand, because inoperable systems can hamper carrying out needed activities, perceived website quality can affect trust indirectly through perceived information quality and trustworthiness of the community. This leads to following hypotheses:

H4 Perceived website quality has a positive impact on trust in online word-of-mouth

H5 Perceived website quality has a positive impact on trust in online word-of-mouth through perceived information quality

H6 Perceived website quality has a positive impact on trust in online word-of-mouth through trustworthiness of the community

4 METHODOLOGY

In this chapter the positivist, nomothetic research approach is discussed with the elucidation of quantitative method used in this study. Next the data collection is described and the data analysis explained.

4.1 Research approach

Humans explanations about the surrounding environment or happenings can be divided into two categories: idiosyncratic and nomothetic. Idiosyncrasy means unique, peculiar or distinct in contrast to nomothetic which is more general explaining class or set of situations instead of just single case. Nomothetic also entails the idea of explanation being economic by decreasing the amount of explaining factors. It is also accepted that it gives more partial than full explanation. (Babbie 2010.) Traditionally sciences that are seen as nomothetic are physics and mathematics while cultural studies are seen as idiosyncratic. In nomothetic sciences research subjects are seen as recurrent, replicable and generalizable. (Niiniluoto 1980.)

The approach of this study is nomothetic, it seeks to find generalizations from a large group of observations and causal relationships between them. This view emphasizes the analytical and explanatory nature of this research when not only the bare description of research subjects is enough but the interest is in describing why or how something is happening. (Hirsjärvi et al. 2009.) The main problem of this research is to examine *how* the antecedents of trust affect trust in online word-of-mouth hence calling for conceptualization, hypotheses development and testing.

Nomothetic approach is linked to deductive theory (Neilimo & Näsi 1980). Deductive theory is a common view to the nature of the relationship between theory and research. Hypotheses are developed on the basis of theoretical foundations in relation to the studied subject. (Bryman & Bell 2007.) It is important to understand the amount and nature of the theory, because in order

to develop hypotheses previous findings or a common knowledge about expected findings are needed (Metsämuuronen 2005).

Deductive theory and nomothetic approach are derived from epistemological considerations referred as positivism. Positivist science has been claimed to be the true nature of reality, viewing world and its phenomena external and neutral to the scientist. Measurement is not affected by scientist or measurement procedures and produces objective data for further testing of theories. However, the limitations and adjustments are taken in notion in this study. While the research process, method and interpretation of data follow the ideas posited in positivist view, in the case of social, behavioral sciences the division to positivism and interpretivism is not always strict (Bryman & Bell 2007).

This study is conducted with quantitative method because it has the abilities to answer the needs of the explanatory, causal research (Cohen, Manion & Morrison 2005). Quantitative method emphasizes previous theory, definition of constructs, developing hypotheses, and statistical analysis (Hirsjärvi et al. 2009). Literature and research concerning trust in its various forms is acknowledged to be extensive and concepts have been tested in multiple settings (Grabner-Kräuter & Kaluscha 2003). The online context has established its significance and though there is some uncertainty about precise definitions (for example social media and online communities), the best possible understanding of the context can be achieved through extensive literature review. Hence the hypotheses and theoretical model can be developed and tested in selected environment.

4.2 Constructs and measures

When carrying out quantitative analysis searching for causal linkages as in this study, one cannot emphasize enough the proper definition of constructs related to the study. If the starting point is vague, it is not necessarily clear what is measured. This may lead to include unrelated factors or for those to underrepresent the underlying domain. (MacKenzie 2003.) MacKenzie (2003, 325) states criteria for definitions: *“Good definitions should a) specify the construct's conceptual theme b) in unambiguous terms, c) in a manner that is consistent with prior research d) that clearly distinguishes it from related constructs”*. She further states that failing to clearly define the construct complicates specifying how the construct should relate to its measures.

Relationship between construct and measures can be either reflective or formative (FIGURE 6). Reflective measures are thought to literally reflect the underlying latent variable; measures are manifestations of that variable. Formative measures in contrast are seen as causing the underlying latent variable and changes within it. Reflective measures are interchangeable because they come from the same domain; removing one does not affect the latent

variable. Conversely removing one of the formative measures would change the meaning of the latent variable. (MacKenzie, Podsakoff & Jarvis 2005.)

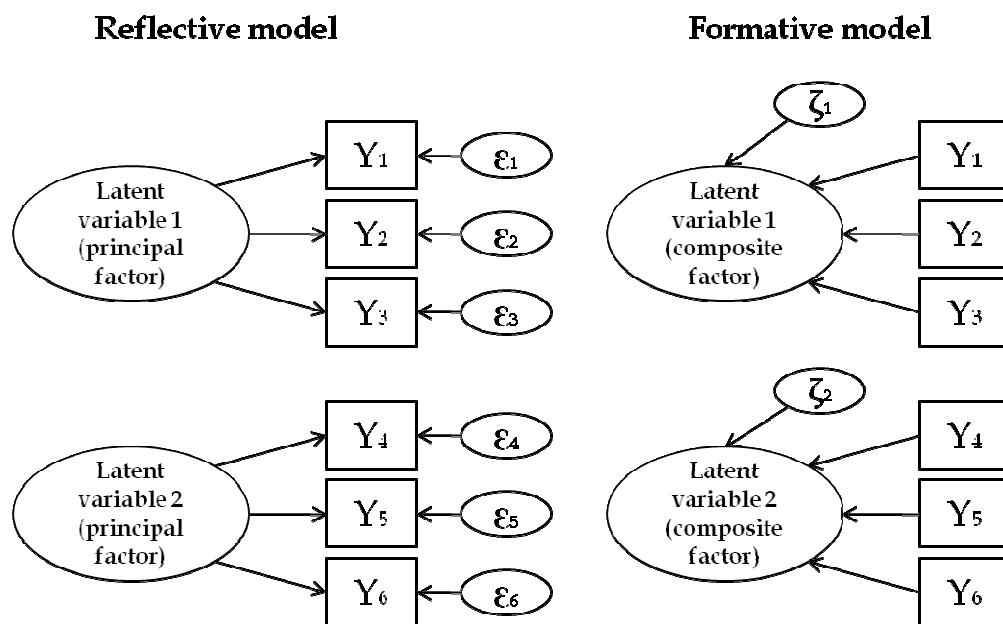


FIGURE 6 Reflective Versus Formative Model (Jarvis et al., 2003)

Petter, Straub and Rai (2007) present equations first published by Bollen and Lennox (1991) that further depict the difference between reflective and formative measures. In first equation, Y is calculated for every single reflective measure separately and error term for that measure is included. Thus the indicators (Y_i) are defined by the latent variable (X_i). Reflective measures have generally high correlations because every indicator (Y_i) has the same latent variable (X_i) behind them (Jarvis et al. 2003). Observed score is true score plus error term (ε_i).

$$1) Y_i = \beta_{i1}X_i + \varepsilon_i$$

Where

Y_i = the i^{th} indicator

β_{i1} = coefficient representing effect of latent variable on indicator

X_i = latent variable (or reflective construct)

ε_i = measurement error for indicator i

The second equation shows the relationship between formative construct and measures. Y is a sum of all weighted measures and a disturbance term. Here, in contrast to first equation, latent variable (Y) is defined by the indicators (X). Formative measures can, but are not required to correlate; they do not have the same source of variation as reflective measures do. In fact, high correlations may hint that the indicators are measuring the same thing which should not be

the case with formative measures because each of those is thought to tap to a unique feature of the construct. (Jarvis et al. 2003.) Causes of latent variables that are represented by the indicators included to the model try to explain the whole latent variable; however, the disturbance term depicts the impact of all other remaining causes. Theoretically, if one is sure that all possible indicators are included to the model, disturbance term would be 0. (Diamantopoulos 2006.)

$$2) Y = \beta_1 X_1 + \dots \beta_n X_n + \zeta$$

Where

Y = the construct being estimated

β_i = beta weights for items

X_i = item scores/observations

ζ = a disturbance term

Contribution of these equations is the understanding of choosing the right amount of indicators. With reflective measures, loadings of items are examined and number of items possibly reduced. That is not a problem for reflective measures, because as said earlier, those are interchangeable and dropping one item does not change the definition or content of the construct. However, formative measures are thought to capture the whole construct and dropping one indicator could alter the meaning of the construct. (MacKenzie et al. 2005.) With formative indicators, greater number of indicators will result in a greater possibility that weights (β_i) will be low and statistically nonsignificant. Explaining the construct is a competition for formative indicators. (Cenfetelli & Bassellier 2009.) Hence the researcher must consider if the amount of indicators is sufficient to capture the whole nature of the construct and limited enough to achieve the best possible statistical explanatory power.

Choosing between reflective and formative measures is a decision dependent on researcher. Although Jarvis et al. (2005) state that some constructs are essentially reflective or formative in nature, Wilcox, Howell and Breivik (2008) criticize this view and conclude that researcher always has a choice. Jarvis et al. (2005) provide criteria for evaluating whether construct should have reflective or formative indicators and provide listing of constructs that have been modeled with formative indicators. Likewise, Petter et al. (2007) provide examples of properly specified formative, reflective and multidimensional construct.

Poorly defined concepts that may lead to misinterpretation of the relationship can result in inadequate measurement and structural models. Jarvis, Podsakoff and MacKenzie (2003) found that almost 30 % of studies published in top-four marketing journals were modeled wrong and in majority of these formative constructs had incorrectly reflective measures.

4.3 Data collection

Data collection was executed in February 2011 with web-based survey. Survey was targeted to ten randomly selected Finnish discussion forums. Ten chosen forums were picked because obtaining answers equally from every possible discussion forum would have been out of the scope of this research. Choosing only ten forums allowed the query for the survey to be placed on each forum separately. One forum refused to participate in the survey later during the data collection period so it could not be removed from the survey; instead its name was replaced with "empty".

Link to the survey was distributed through the chosen ten forums, Facebook-event which included more detailed instructions of eligible answerers and through a link to the Facebook-event in Twitter. Motivation to answer was encouraged by offering a 50 (fifty) euro gift card to chosen shop. During a 25-day period, 443 answers were obtained.

Survey was constituted of items adapted from previous studies and items were measured on 1-5 Likert scale (1= strongly disagree, 5= strongly agree). Questions relating to trustworthiness of a community were adapted from McKnight et al. (2002) which have been used by Kim and Han (2008) and Serva et al. (2005). Original measures were developed to evaluate trustworthiness of an e-commerce provider but were further successfully harnessed in investigation of trustworthiness of a community-driven knowledge site (Kim & Han 2008). Despite the recent debate on trust and trustworthiness as a unidimensional or multidimensional, first-order or second-order model with reflective or formative indicators (e.g. Jarvis et al. 2003; Serva et al. 2005; Söllner, Hoffmann, Hirdes, Rudakova, Leimeister & Leimeister 2010), trustworthiness is here treated as unidimensional with reflective indicators due to the limitations of Master's Thesis level research. Other option would have been treating trustworthiness as a multidimensional construct with formative indicators competence, benevolence and integrity which in turn would have been constituted of reflective items, and modeling trust as a second-order causal model (Serva et al. 2005).

Modification of wording needs to be done carefully so that items are measuring what is theorized (MacKenzie 2003). Thus it was decided not to use the word "community" in items because all answerers do not necessarily treat discussion forums yet as a community. For questions related to website quality (systems quality), word "discussion forum" was used. People in discussion forums were referred as "users" not members, aiming to capture unregistered people as well.

Questions concerning information quality, accuracy, and comprehensiveness were adopted from Wixom and Todd (2005), relevance from Cheung et al. (2008). Measures for website quality originally developed by DeLone and McLean (2003) were taken from Lin (2007). The items measuring overall trust were adapted from Gefen (2003), Serva et al. (2005) Kim et al.

(2008). Measures for intention to use were adopted from Taylor and Todd (1995).

All modified questions were translated to Finnish in cooperation with native English speaker to ensure that no associations were lost in translation (see appendix 1 for survey in Finnish and appendix 2 for modified questions in English). Demographic measures of age, gender, and education were asked. In addition, further interest is directed at the participation level in discussion forum and this was evaluated through posting activity, checking activity, involvement with discussion forum measured in years, and whether answerer is registered user or not.

4.4 Data analysis

Data analysis was conducted using factor analysis and structural equation modeling (SEM) technique. Factor analysis seeks to group variables into smaller sub-groups which are coherent within but independent among each other. Variables that form a factor share more correlation between themselves than with other variables. Explanatory factor analysis tries to uncover underlying processes that have produced the correlations among the variables. In contrast, confirmatory factor analysis pursues to discover whether hypothesized factor structures are in accordance with the correlations of the variables. (Tabachnick & Fidell 2007.)

In order to execute factor analysis, certain conditions have to be met. It is recommended that sample size should exceed 300, although some differing views have been presented (Metsämuuronen 2005). While some statistical methods require distribution of variables to be normal, factor analysis can be done even if normality assumptions are not met. Finally, enough correlation between variables is needed in order to find meaningful factors; if no correlation surpasses 0.30, factor analysis as a method should be reconsidered. (Tabachnick & Fidell 2007.)

Steps of factor analysis include selecting and measuring the variables, producing the correlation matrix and choosing factoring extraction technique. For the purposes of this study, commonly used principal axis factoring was chosen. Next the factors are rotated to ensure better interpretation and rotation technique is decided based on the desired correlations between factors. Orthogonal rotation methods do not allow correlation between factors. Oblique rotation not only allows the correlation between factors but offers researcher a chance to define how much correlation is actually desired by changing the value of delta (Tabachnick & Fidell 2007). Here, often used orthogonal Varimax technique is chosen because no assumption of correlation between factors has been made. After rotation, item loading on factors are examined and factors named. Reliability of factors is analyzed with Cronbach's alpha. (Karjaluoto 2007.)

Objective of this research was to examine the relationships between defined variables. For this purpose, SEM has several advantages due to the greater interplay between theory and data. Modeling relationships among multiple variables and criteria, constructing latent variables, and statistically testing a priori made assumptions of theory and measures against empirical data (confirmatory factor analysis) are made possible with structural equation modeling. (Chin 1998.)

Available analyses for SEM are covariance-based and component-based methods. First one is normally done with LISREL (or e.g. AMOS) and it attempts to explain the covariation of all the indicators. Component-based methods using Partial Least Squares (PLS) seek to minimize the variance of all dependent variables (constructs). LISREL is chosen for the purposes of this research because no specific reasons such as small sample size or large number of constructs that require using PLS. (Chin 1998.)

Structural equation modeling uses either correlation or covariance matrix produced from the variables for later analysis. Thus there are issues to be aware when estimating the factor structure, alike in SPSS. Analysis depends on the normality of variables; different methods for estimation are used whether there exists none, moderate or high non-normality. Often used Maximum Likelihood (ML) method is chosen if variables are distributed normally, choosing it if variables are ordinal or other non-normal variables may result in incorrect standard errors and evaluations of goodness-of-fit of structural models. Other methods for estimation are provided in LISREL but as those require large sample size in order to produce accurate asymptotic covariance matrix, usage of ML is justified in some cases even if the variables are non-normal. (Jöreskog & Sörbom 1996.) Because the sample size of this study is not very large (n=442), variables are first transferred to normal scores, and ML method is used to estimate covariance matrix based on those normal scores (Du Toint, Du Toint & Hawkins 2001).

5 RESULTS

5.1 Description of studied online communities

Despite the categorization of web 2.0 applications, online communities in this study refer to discussion forums as well due to vague division of those two. Pre-selected nine communities all have a separate discussion forum- category, some describe themselves as "... discussion forum". However, slouppi.net, nousukunto.com, juoksufoorumi.net and lumitykki.net employ other actions as well, such as blogs, reviews, stories, articles, and galleries. When considering trust in online word-of-mouth in these communities, it is specified to trust in information found in the discussion forum part. All studied discussion forums have different ways of presenting member information which may give clues about homophily, expertise, attractiveness, and role within community. Almost in every case, information posted is available for anyone to read but posting and commenting requires registration.

The specific characteristics of these communities were not examined and thus are not reported in high detail because presumption of this study is that the discussion forum itself is not an explaining factor in trust formation. To ensure this, discussion forums with varied interests and type of activity were chosen. For example vauva.info and oikeuttaelaimille.fi are communities formed around strong emotions - children and animal rights - while relaa.com is focused around outdoor activities and lifestyle, and juoksijafoorumi.fi more specifically on running. Size of the studied nine forums varies from few hundred members or less to tens of thousands of members. All but one forum (vauva.info) required registration for commenting. Browsing topics and messages was usually allowed to unregistered users also, some areas or topics were restricted to registered users only.

5.2 Data preparation

Data was transferred from Webropol to SPSS 18.0 for further analyses. Data was cross-checked with Webropol and SPSS descriptives for every item to ensure that no data was lost in transfer.

Due to the disengagement of one forum and re-naming that option as "empty", one case with this as an answer had to be removed from the data. This left 442 valid cases for analysis. Next item SYQ3 measuring website quality was reverse coded into new variable SYQ31. Tests for normality were made, but as usually when using Likert-scales, assumptions of normality had to be rejected (Karjaluoto 2007). Examination of the correlation matrix reveals that there are good preconditions for factor analysis as majority of the correlations exceed 0.30.

Before other analyses it is recommended to check data for missing answers, outliers, and especially in the case of factor analysis, for multicollinearity and singularity (Tabachnick & Fidell 2007). All 32 questions required answer so there were missing data only in some demographic questions which were not replaced by means. Outliers were checked from boxplot which resulted in multiple outliers. Dropping cases however needs to be considered thoroughly after confirming that values are correct and not due to any input error (Tabachnick & Fidell 2007). Randomly selecting cases and checking values with Webropol indicated that values in SPSS are correct. In addition, the cases seemed to include rational answers (for example not only one single answer to all 32 questions) and thus were retained for further examinations although it was noted that keeping outliers might distort the regression curves (Metsämuuronen 2005).

Multicollinearity indicates that variables correlate highly with each other. This suggests overlapping in theoretical sense thus questions factor analysis. (Tabachnick & Fidell 2007.) Multicollinearity can be checked with VIF- and tolerance values. All VIF- values for 32 variables were between 1,5 and 4, and tolerance values differed from 0 hence indicating absence of multicollinearity.

5.3 Summary of the study material

From the obtained 442 answers, 64,5 % were men and 34,4 % women while 5 participants did not disclose their gender. Majority of answerers were 35-years old or younger and most had finished upper secondary school or higher education. When exploring visiting, experience, commenting, and registration, findings differ.

Whereas commenting activity and experience with the discussion forum is divided more equally between options, visiting and registration stand heavily

on fewer options (see TABLE 2). Experience with the forum divided almost equally between “1-3 years”, “3-5 years” and “5 years or more” while minority of 8 % had “1 year or less” experience. Approximately 40 % leave comments “never” or “rarely”, leaving 60 % of the answerers as content generators in contrast to general rule of thumb 1-9-90 (1% create, 9% comment and 90% consume quietly) (Nielsen 2006).

TABLE 2 Demographic characteristics

Demographic characteristics		
	n	Percent
Gender		
Male	285	64,5 %
Female	152	34,4 %
Total	437	98,9 %
Missing	5	1,1 %
Age		
15 or under	11	2,5 %
16-24	146	33,0 %
25-34	186	42,1 %
35-44	66	14,9 %
45-54	32	7,2 %
55-64	1	0,2 %
65 or more	0	
Total	442	

(continues)

TABLE 5 (continues)

Education		
Elementary school	49	11,1 %
Vocational school	49	11,1 %
Upper secondary school	113	25,6 %
Undergraduate	126	28,6 %
Graduate	104	23,6 %
Total	441	
Missing	1	
Commenting		
Never	40	9,1 %
Rarely	131	29,8 %
Occasionally	165	37,6 %
Often	103	23,5 %
Total	439	
Missing	3	0,7 %
Visiting		
Very rarely	7	1,6 %
Rarely	14	3,2 %
Occasionally	79	18,0 %
Often	339	77,2 %
Total	439	
Missing	3	0,7 %
Experience		
Under 1 year	35	8,0 %
1-3 years	154	35,0 %
3-5 years	120	27,3 %
Over 5 years	131	29,8 %
Total	440	
Missing	2	0,5 %
Registration		
Yes	400	90,5 %
No	42	9,5 %
Total	442	

Only 9,5 % were not registered users of the discussion forums that would be considered as members and likewise only 4,8 % reported visiting the discussion forums “very rarely” or “rarely”. It is notable that 76,7 % report visiting the chosen discussion forum “often” thus representing a group that interacts quite much with the forum. These characteristics can offer further insights to the

survey analysis later. Item details for 32 questions measuring trustworthiness, information quality, website quality, accuracy, relevancy, comprehensiveness, trust and intention to use can be found in appendix 3.

5.4 Factor analysis

All variables were transferred to LISREL version 8.72 in order to conduct confirmatory factor analysis. Factor extraction technique used was maximum likelihood (ML) method and covariance matrix was produced from normalized scores as recommended when using ML (Du Toit et al. 2001, 143). First measurement model specified according to the theory was not a good fit and needed modifications.

Theorized factor "Website quality" received high loading from only one of its items (0.68). Squared multiple correlations were weak for all other three items (below 0.25) which implies insignificant accounted variance (Metsämuuronen 2005). Factor "Trust" in the measurement model correlated significantly ($r > 0.80$, $t > 25$) with all other factors and especially strong connection was found with "Information quality" ($r = 0.91$, $t = 43.39$). Closer investigation of the wording of these items combined to the theory suggests that information quality and trust are seen as same in this study context.

Because it appeared that a lot of modifications of original empirical model were needed, analysis was continued in SPSS. This was done for the reason of confirmatory nature of LISREL; it is not meant for explanatory tests unless those are heavily rooted on theory (Metsämuuronen 2005). Explanatory factor analysis was conducted in order to find better fitting model.

First explanatory factor analysis done with SPSS yielded good results concerning the factorability of 32 examined variables. Kaiser-Meyer-Olkin Measure of Sample Adequacy (KMO) was 0.953, when values above 0.6 are regarded as acceptable, and result of Bartlett's Test of Sphericity rejected the null hypotheses which states that correlations in the correlation matrix are zero (Tabachnick & Fidell 2007). However, some signs of multicollinearity were obtained from correlation matrix determinant value (6,87E-009) which was under 0.00001 suggesting that at least one of the items could be a linear combination of some group of other items (Leech et al. 2005).

Communalities for items measuring website quality were low or very low (0.142-0.370) when > 0.30 is recommended (Karjaluoto 2007) and the items did not correlate among each other highly. In addition, items did not correlate significantly with any other of the 32 variables and correlations are mostly insignificant ($\text{sig} > 0.05$). This is in line with preliminary LISREL- analysis which suggested that such a factor was not recognizable. In addition, three items related to "Trust" loaded on separate factors and on multiple factors which suggested dropping those (Karjaluoto 2007).

Factor analyses were run several times to ensure that optimal factor structure is obtained. The number of factors can be either decided on the basis

of eigenvalues which results a set of factors that all have values above 1. However, researcher can use screeplot to evaluate whether less or more factors should be included into the analysis and set the number of factors. (Tabachnick & Fidell 2007.) In the final analysis the number of factors was set to four after examining the screeplot. The four factors accounted for 60,53% of all the variance. Factors with loadings are presented in table 3.

TABLE 3 Factor loadings

	FRIENDLINESS OF A COMMUNITY	INFORMATION VALUE	TRUST IN INFORMATION	INTENTION TO USE	COMMUNALITY
BEN3	0,712				0,614
BEN2	0,688				0,595
BEN1	0,683				0,569
INT1	0,573				0,494
INT4	0,559				0,417
COP1		0,882			0,515
COP3		0,603			0,883
ACC1		0,549			0,441
COP2		0,413			0,458
INF2			0,689		0,644
INF3			0,633		0,738
INF1			0,581		0,708
ITU1				0,797	0,723
ITU3				0,753	0,677

Items measuring competence did not correlate among suggested counterparts when instead items measuring benevolence and integrity form factor "Trustworthiness" presented in previous literature. However, as numerous authors argue and prove (e.g. Mayer et al. 1995; McKnight & Cervany 2000; Gefen 2003) trustworthiness is constituted of three separate dimensions and thus this factor found here should not be called trustworthiness; instead it is renamed as "Friendliness of a community". "Information value" included items measuring comprehensiveness and accuracy of the information; items related to relevance were found to receive low communalities (below 0.4) and loaded on separate factors. "Intention to use" retains two items. Items measuring trust loaded all in separate factors and on multiple factors and thus were removed. Items measuring how trustworthy the information is are named as "Trust in information (online wom)" which represents overall trust in the empirical model.

5.5 Measurement model

New confirmatory factor analysis with LISREL 8.72 was conducted with factors derived from explanatory factor analysis. While measurement model and structural model could be assessed simultaneously (e.g. in PLS), it is recommended to do it in two steps. First, confirmatory measurement model specifies proposed relationships between items and latent variables. (Anderson & Gerbing 1988.) Before testing significance of theorized relationships between latent variables i.e. constructs, the measurement model has to be evaluated in terms of validity and reliability (Fornell & Lacker 1981).

TABLE 4 Factor loadings, Cronbach's alphas and t-values

FACTOR	CRONBACH'S ALPHA	ITEM	STANDARDIZED LOADINGS	T-VALUE
		BEN1	0.79	18.78
		BEN2	0.76	17.80
Friendliness	0,845	BEN3	0.73	16.81
		INT1	0,71	16.24
		INT4	0.64	14.31
		ACC1	0.73	16.71
Information value	0,809	COP	0.84	20.24
		COP	0.66	14.60
		COP	0.68	15.32
Trust in information	0,869	INF	0.78	18.75
		INF	0.83	20.36
		INF	0.83	20.48
Intention to use	0,814	ITU1	0.82	18,09
		ITU3	0.85	18.84

Goodness of a model is evaluated through fit-tests and reliabilities of the factors and items. Even when model would be a good fit in its whole, some measures included in hypothesized relationships can be insignificant on low in reliability. First factor loadings and significances (t-values) are evaluated (TABLE 4). All items loaded satisfactorily on factors (>0.6) and loadings were significant (all t-values >14). (Bagozzi & Yi 1988.)

Next, Cronbach's alpha was examined to test the reliability of the factors. High values imply that a large proportion of the variance can be pointed to the factor (Cortina 1993). Values for four factors were all >0.8 and could not be improved by reducing items thus indicating good reliability. Furthermore, convergent validity was analyzed through average variance extracted (AVE). Acceptable values for AVE are above 0.50 in which cases less than 50% of the

variance is due to error. (Fornell & Larcker 1981.) In this study, AVE values for all factors were acceptable (TABLE 5).

Discriminant validity was used to examine whether factors can be identified as independent from each others. To reveal this, squared average variance extracted should exceed the correlation between constructs. (Fornell & Larcker 1981.) Values for squared average variance and correlations between factors for “Friendliness”, “Information value” and “Trust in information” are close (see TABLE 5) but approach the acceptable limit.

TABLE 5 AVE, squared AVE and factor correlation matrix

FACTOR	AVE	SQUARED AVE	FRI	INV	TIF	ITU
Friendliness	0,5277	0,726	1	0.70	0.76	0.51
Information value	0,5333	0,730	0.70	1	0.78	0.53
Trust in information	0,5811	0,762	0.76	0.78	1	0.68
Intention to use	0,5458	0,739	0.51	0.53	0.68	1

5.6 Structural model

The explanatory power of model is examined through various goodness-of-fit indexes. Because traditionally used chi-square test is dependent on sample size, it is recommended to include other fit indexes into analysis as well (Bagozzi, Yi & Philips 1991).

Proposed model was a good fit (chi-square 206.01 (df=73), $p = 0.00$, CFI = 0.98, NNFI = 0.98, IFI = 0.98, GFI = 0.94. AGFI = 0.91) when chi-square is recommended to be above twice the degrees of freedom and other indices over 0.90. RMR and SRMR were 0.037 and 0.045 respectively, also indicating good fit. Finally, commonly used RMSEA = 0.064 was below the suggested criteria 0.08. (Tabachnick & Fidell 2007.)

Relationships between factors are examined through path coefficients. As can be seen from figure 8, all relationships were significant and positive. As Chin (1998) argues, all standardized paths should be over 0.20 or 0.30 to be considered meaningful even if significance is high. Next these will be evaluated in the light of hypotheses set in the beginning of this study.

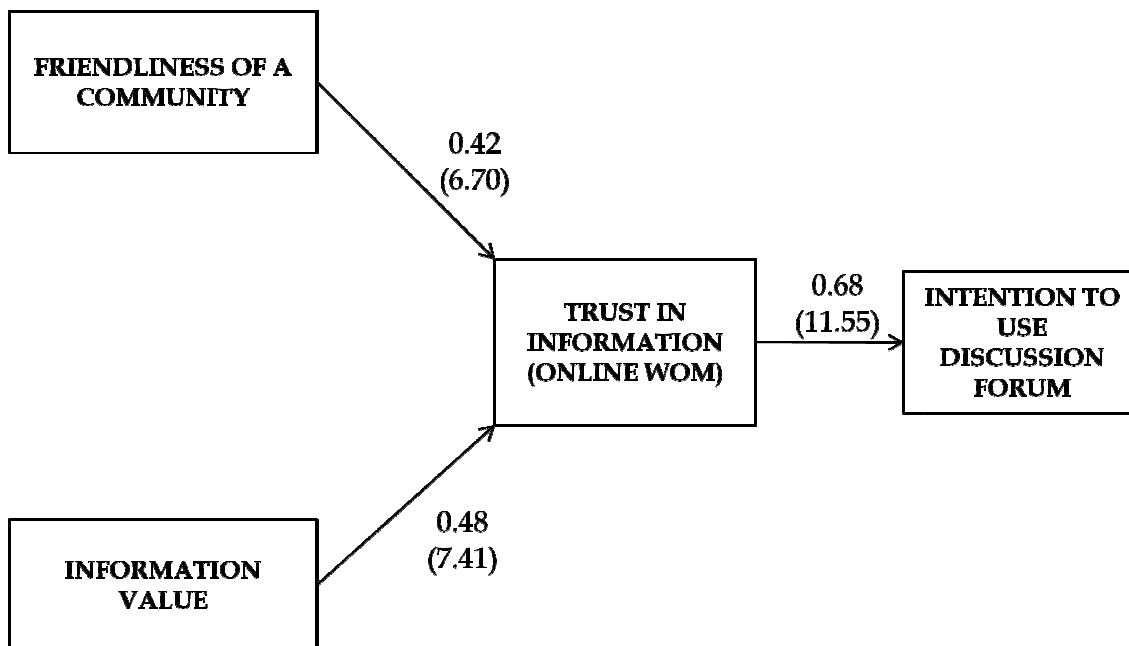


FIGURE 7 Empirical model (*t*-values in parentheses)

H1. Trust in online word-of-mouth is positively related to continuance intention use the discussion forum.

H1 is partially accepted. Path coefficient (0.68) with *t*-value 11.55 demonstrates that trust in information has a significant positive relation with intention to use discussion forum. Still, as the content of “trust in online word-of-mouth” has been modified, hypothesis cannot be fully accepted.

H2 Trustworthiness of a community has a positive impact on trust in online word-of-mouth in discussion forum

H2 is also partially accepted. Relationship from Friendliness of a community to Trust in information is significantly positive (path coefficient = 0.42, *t*-value = 6.70). However “Friendliness” is not equal to “Trustworthiness” and thus hypothesis cannot be fully accepted.

H3 Perceived information quality has a positive impact on trust in online word-of-mouth

H3 is only partially accepted. There is a positive relationship from Information value to Trust in information (path coefficient 0.48, *t*-value 7.41) but as in previous hypotheses, dimension of “perceived information quality” was modified and does not match the original.

H4 Perceived website quality has a positive impact on trust in online word-of-mouth

H5 Perceived website quality has a positive impact on trust in online word-of-mouth through perceived information quality

H6 Perceived website quality has a positive impact on trust in online word-of-mouth through trustworthiness of the community

All hypotheses 4-6 are rejected because no such dimension as "Website quality" could be identified from the data.

6 DISCUSSION

6.1 Theoretical conclusions

Objectives for this study were to understand why trust in online word-of-mouth is important and what does it consist of.

Main research problems were:

- How the trust in online word-of-mouth affects consumers' intention to use a discussion forum?
- What are the antecedents of trust in online word-of-mouth?

Other research problems assisting to answer the main problems were:

- What is trust constituted of in online context?
- What is online word-of-mouth?

First the two latter research problems were assigned through a comprehensive literature analysis of two head topics; trust and online word-of-mouth. On basis of the literature analysis, a research model was developed to provide answers to the main problem. Survey with Finnish discussion forum users provided 442 answers for analysis.

Empirical analysis confirmed that trust in online word-of-mouth has a role on intention to use a discussion forum and that antecedents of trust in online word-of-mouth can be divided into characteristics of a community and its users, and to characteristics of information itself. Surprisingly website quality, competence of discussion forum users and relevance of information were not found to be antecedents of trust.

Findings of trust in online word-of-mouth affecting intention to use are in line with previous research (e.g. Huang & Farn 2009). Interestingly, although habitual usage was not an interest of this research, findings are similar to Kim and Han's (2009) who found that as trusting relationships develop between

users and a community, users use community repeatedly. Usage activity revealed by the participants of this study was very high (76,8% visited forum “often”) and relationship between “Trust in information” and “Intention to use” was significantly positive.

As in Kim and Han (2009) and Cheung et al. (2009), overall trust in this study was found to be constituted of “Information value”, i.e. argument quality, and characteristics of community users, i.e. source credibility. However, in contrast to previous trust studies, competence or ability of the source was not recognized in this study. Because almost unified view is that trustworthiness is constituted of three separate aspects – competence, benevolence and integrity – (Mayer et al. 1995, Gefen 2003; Serva et al. 2005), the dimension found affecting trust in information here is named as “Friendliness” of a community. It describes users being sincere, genuine, interested in well-being of others and keeping their promises. These findings of competence or ability forming one group and benevolence and integrity another, follow separation suggested by Ridings (2002). Support to this can be found examining the theory of trust beliefs; benevolence and integrity focus more on morality and ethics, on common goodwill of humans (Mayer et al. 1995; McKnight & Cervany 2000). Goodwill and sincerity are found in Cheung and Morrison’s (2008) study of credible content as well; consumers are thought to have nothing to gain from posting information.

Expert knowledge or special skills are not part of goodwill. Cheung and Morrison (2008) discover that other users value personal experiences of the person providing user-generated content as an important part of credibility of that content. Further, the authors relate these personal experiences to opinion leadership. Knowledge as an antecedent of source credibility has been treated separately from benevolence and integrity by Brown et al. (2007) and source expertise as a part of source credibility by Cheung et al. (2008) as well. The reason for not being able to show the importance of competence on trustworthiness in this study can be that in the context of discussion forums, the user’s ability to provide information is very much different to i.e. online vendor’s ability to provide adequate service (Gefen 2002). While there is almost a uniform view of ability or competence being unchangeable part of trustworthiness it is suggested here to evaluate whether expertise or knowledge would better capture this dimension of special skills affecting trustworthiness or credibility of a community.

Information value was found to have an important role in trust in information, in line Cheung et al. (2007) who confirmed that argument strength affected overall perceived eWom credibility. Correct and accurate information has an important role in building trust in online context. In addition, it was confirmed that comprehensiveness of information was important aspect of information value. However, this finding should be evaluated in the light of usage activity. Because almost all participants reported high usage activity, they might be familiar with the completeness of the content and ways to acquire as much as information as possible. In contrast to theorized significance of

relevance on information value, it was not recognized in the empirical analysis. High usage activity combined to strong intention to use might imply that usage is not dependent of relevancy of information and thus it is not important to information value either. When relevancy was described as “acquired information being significant to the decision process” (Adjei et al. 2009), heavy users may not always possess an active decision process when interacting with online community.

Dimension of website quality was proposed to affect trust in online word-of-mouth directly and through trustworthiness of community and perceived information quality. However, such dimension was not found in this study. Possible reasons could be that when hygiene attributes that are essential for the website’s functionality are in place, basic trust already exists (Ou & Sia 2009). Because trust and distrust are found to be separate constructs, not bipolar, website quality could play more important role if focus was on distrusting situation (Lewicki et al. 1998). Also, quality of systems that enable interactions online have been traditionally linked to high risk situations as internet banking and e-commerce (Papadopoulou et al. 2001; Suh & Han 2003) while relatively casual discussions over internet-enabled mediums postulate quite different, more informal context.

6.2 Managerial implications

As for basic rules for managers and marketers it is recommended to know your online environment. Different forms of online word-of-mouth listed in more detail in chapter 3.3 have all their own characteristics and possibilities to explore. Recognizing that consumers may create and relate to one’s business even when the owner does not maintain any official pages gives the opportunity to at least provide correct business details and contact information. Important lesson from previous studies is the contradictory nature of negative online reviews or opinions: Those do not always hurt overall credibility. On the contrary, purely positive and praising comments might be seen as suspicious depending on the context. Thus companies need to be aware of the dangers of too strict moderating of un-solicited comments.

It might be reassuring and also surprising to know that vast majority of internet and different community users are lurkers; interested of searching and consuming but not creating information. Thus the number of people reading a company blog or anonymous reviews can be much higher than the amount of comments or members in the review site. For satisfying the needs of every type of internet users, from highly active to “quiet consumers” the trust-focused part of this study gives starting points and insights.

This study gives a picture of trust formation towards online word-of-mouth. It is important for managers and marketers to understand the specific features and logic of online word-of-mouth communication in order to harness the power of information online. Trust in online word-of-mouth comes from

three sources; people producing it, systems enabling it, and from created information itself. Although website quality was not recognized here as trust building dimension, realization of trust hampering elements of websites can at least help preventing distrust. The dimension of friendliness of community applies to company's marketing communications as well; sincere and honest attitude towards customers and showing genuine care for their problems matter in faceless online interactions as well as in traditional encounters.

It is essential to keep information provided by company, customer servants, recommendation agents, and possibly independent forums accurate, up-to-date and complete. Missing specifications or other information is quickly searched elsewhere if product or service provider does not provide it. Comprehensiveness of information might include aspects beyond basic technical or process descriptions, aspects that users search from online communities and discussion forums; stories, experiences, consumption situations and support from other users.

6.3 Evaluation of the research

Quantitative, statistical research is evaluated through its constructs' and measures' validity and reliability. Often the terms reliability and validity are differentiated from those used in evaluation of qualitative research and refer to more mechanical calculations. (Tuomi 2007.) However, as because constructs and measures are derived from previous literature, more thorough evaluation of research process is in order to reveal value and limitations of this study.

Yin (2003) lists four categories that help to assess the overall validity and reliability of research. Construct validity and reliability refer to data collection process, internal validity to data analysis phase and external validity to research design step. In general terms, validity described whether what is described has been measured. Reliability is the credibility or trustworthiness of the research; are the findings replicable and constant? (Tuomi 2007.)

Construct validity is ensured when evidence is obtained from multiple sources, chain between questions asked to data collection and to findings is established and report is reviewed by main informants. Evidence does not only refer to collected data, in this case data obtained from the survey, but to evidence on which survey questions were build on. (Yin 2003.) Due to the breadth of research related specifically to trust the aim was to include as much previous literature as possible to the literature review. All most cited peer-reviewed articles from trust-field are included, and publication dates vary from 1967 to recent years. Included articles also have differing views and these views are discussed in this study. Finally, selections of constructs and measures are justified in basis of choices made in previous studies.

Furthermore, literature from other phenomena under investigation, online word-of-mouth, is relatively new and all theories and even definitions do not yet have consensus. It was noted that this context is under rapid change and

thus sources were checked along the research process for any critical changes or new contributions. Although trust-related research is quite grounded nowadays, new context may affect constructs and measures derived from previous research which has focused on different environment.

Chain of evidence mean that any reader can follow the reasoning between questions developed to data collection and to reporting results. It should be easy to evaluate that for example no data was lost during the process or no results were manipulated. A clear path from theory to methodology and to findings should be found. (Yin 2003.) In this study, the methodological choices were thoroughly discussed and options for data analysis were noted as well.

A second criterion, internal validity, is relevant when study is explanatory and causal. Internal validity ensures a claim of something leading to another thing, i.e. confirming a valid causal relationship between two constructs. It includes explanation and evaluation of rival models. (Yin 2003.) Because the original empirical model of this study was modified and majority of survey items were dropped, one can question the internal validity of this study. Hence it was pursued to provide possible reasons and clarifications from previous studies for the findings of this study in chapter 6.2.

External validity refers to generalization. In the case of quantitative, statistical analysis, it is statistical generalization. Although the sample size here was relatively high ($n=442$), findings should be taken as advisory and not universally tenable. The skewed demographics were noted in the theoretical discussion as possible reasons for surprising findings.

Reliability assures that the study can be repeated and it can be ensured with proper documentation and description of research process. This is especially familiar in qualitative research, where comprehensive notes about research process are more common than in quantitative research. (Tuomi 2007.) In the case of structural equation modeling, proper documentation and clear reporting are also demanded in order to enable replication and easy understanding. Here, as much information as considered critical is provided within the research report and other, additional important information can be found in appendices. The population from which the participants were derived is described, as well as the distribution of the data. Computer software version numbers are reported. (Chin 1998.)

In more detail, when conducting quantitative research, reliability and validity of the study can be evaluated through a set of tests executed in chapter 5.2 and 5.3. Validity of measures is examined with content validity, i.e. if all the facets of the construct are measured, if the measures belong together, i.e. convergent validity, and discriminant validity, i.e. measures are distinguishable from measures of other constructs. Especially in the case of formative measures which assume to capture the whole idea of underlying construct, content validity is crucial because missing facets would question the validity of the whole research. (Petter & Straub 2007.) Tests for evaluating convergent validity concluded that validity was ensured: Cronbach's alpha was good for all measures and AVE- values were above the suggested limit of 0.50. However,

discriminant validity tests suggested that constructs are not fully distinguishable. Latter can be seen as expected when referring to the theory of trust and its related concepts; those and especially the wordings of questions are close.

6.4 Limitations of the research

This study focused on ten Finnish discussion forums only. As Zhang and Watts (2008) note, there are numerous online communities that differ in ways of technology used in communication, defining members, allowing commenting, keeping archives, and providing other ways to interact and create content. Thus the significance of trust antecedents and their relation to actual usage may differ between different community types. Also, discussion forums were not picked purely randomly out of total population of discussion forums which may limit the nature of participants of this study.

Participants of the study reported being highly active users of discussion forums. Less active or random users might provide different answers and opinions about trust formation and usage intention and were missing in this study. Additionally while the number of older internet users has been in rise (Statistics Finland 2010), participants of this study represent younger population (majority were under 34-years). The study is also limited in a sense that no questions regarding other characteristics of the users (e.g. previous relationship with each other, location, similar interests) were asked.

Usage situations or objectives for information search were not controlled and were defined quite generally. Different findings could be expected whether situation under investigation would be focused on searching specific product information or on actual purchase situation.

During the research process, notions made by Metsämuuronen (2005) and (MacKenzie 2003) about proper conceptualization and defining of constructs came evident and claimed a lot of attention in every step of the process. It is essential to form requisite enough knowledge of the phenomena under scrutiny and revisit those basic ideas along the way.

Notion about variables relating to trust correlating strongly with other variables implied the presence of multicollinearity (Tabachnick & Fidell 2007) and that those constructs might include meanings too close with each other despite the preliminary examination of multicollinearity showing opposite results.

Decision about treating trustworthiness as a unidimensional construct with reflective indicators allowed the modification of original empirical model and dropping "Competence" out of the factor analysis. This would not have been allowed if trustworthiness would have been modeled as multidimensional, consisting of three formative dimensions (competence, benevolence and integrity). As discussed in 4.2, formative measures cannot be dropped out because it changes the definition of underlying constructs;

formative measures are thought to capture the whole idea of underlying construct (MacKenzie et al. 2005). Here, although all items measuring trustworthiness were reflective and thus strictly thinking interchangeable, construct left after dropping items measuring competence was not understood as “trustworthiness” even though it would have been possible when concerning applied measures. Hence if there is a strong theoretical consensus about a construct under examination, it is suggested that researcher should reflect his or hers findings back to theory and not just follow methodological guidelines.

Another issue that needs more concentration is translation of used questions into study language. Here, no previous items in Finnish were able to be obtained hence forcing researcher to translate globally used survey questions herself. Reliability of the process was trying to ensure by checking translations with a native English speaker. However, questions may be inappropriate to certain culture or include words that do not have as much equivalents in study language.

6.5 Future research suggestions

Some interesting topics for further research related to trust in online word-of-mouth rose during the study process. As suggested in theoretical discussion, the role of website quality could be different if research focus was on distrust formation and antecedents. As a whole, examination of distrust in online communities would bring harming behaviors to managers’ knowledge; those hygiene attributes that are fundamental for preventing distrust from arising.

Further research is needed on the role of ability or competence or expertness of a community. While the significance of opinion leaders and pure experts has been studied in various settings, the results of this study suggest that competence differs slightly from other theorized aspects of trustworthiness and might approach the concept of “expert”. Should there be separate questions related to special skills of content providers in addition to competence dimension in trustworthiness could be examined in more detail.

In addition, as found through literature review, online settings provide challenges and possibilities for evaluating of homophily, development of tie strength, and assessing overall credibility of information. Including evaluations of community user’s characteristics or features that help establish strong relationships or build credibility should be mapped out with qualitative interviews and tested in larger setting.

Normative or exposure effect which was discussed only in limited sense in this study could be researched more especially in situations where point of purchase is near, or in purely experimental situations where buying decision has to be made after reviewing consumer reviews sites. The amount of positive versus negative reviews amounting to overall credibility could help companies to develop logical moderating policies (tolerating of negative comments and reviews) for online forums.

As usual, when examining intention to use, adding more independent variables enhances the explaining power of the model. Together with trust in online word-of-mouth, user satisfaction or user loyalty could help to explain the intention to use even better.

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APPENDIX 1

SURVEY ITEMS IN ENGLISH

COMPETENCE (Kim & Han 2008)

- COM1* Users in the discussion forum have much knowledge about the topic they posted.
COM2 Users in the discussion forum have specialized capabilities in the topic they posted.
COM3 Users in the discussion forum are very capable of posting information.

BENEVOLENCE (McKnight & Choudhury 2005)

- BEN1* I believe that users in the discussion forum would act in my best interests.
BEN2 If I required help, users in the discussion forum would do its best to help me.
BEN3 Users of the discussion forum are interested in my well-being, not just their own.

INTEGRITY (McKnight et al., 2002)

- INT1* Users in the discussion forum are truthful in its dealings with me.
INT2 I would characterize the users of the discussion forum as honest.
INT3 Users in the discussion forum would keep its commitments.
INT4 Users in the discussion forum are sincere and genuine.

ACCURACY (Wixom & Todd 2005)

- ACC1* This discussion forum produces correct information
ACC2 There are few errors in the information I obtain from this discussion forum
ACC3 The information provided by this discussion forum is accurate

COMPREHENSIVENESS (Wixom & Todd 2005)

- COP1* This discussion forum provides me with a complete set of information
COP2 This discussion forum produces comprehensive information
COP3 This discussion forum provides me with all the information I need

RELEVANCE (Cheung et al., 2008)

- REL1* The comments in this discussion forum are relevant
REL2 The comments in this discussion forum are appropriate
REL3 The comments in this discussion forum are applicable

INFORMATION QUALITY (Wixom & Todd 2005)

- INF1* Overall, I would give the information from this discussion forum high marks
INF2 Overall, I would give the information provided by this discussion forum
 a high rating in terms of quality
INF3 In general, this discussion forum provides me with high-quality information

SYSTEMS QUALITY (Lin 2007)

- SYQ1* The discussion forum operates reliably
SYQ2 The discussion forum allows information to be readily accessible to me
SYQ3 It takes too long for the discussion forum to respond to my requests*
SYQ4 The discussion forum can be adapted to meet a variety of needs

TRUST IN DISCUSSION FORUM (Gefen 2003; Serva et al., 2005; Kim et al., 2008)

- TRU1* I trust this discussion forum.
TRU2 I can always rely on this discussion forum whenever I need information
TRU3 This discussion forum is trustworthy

INTENTION TO USE (Taylor & Todd 1995)

- ITU1* I intend to use this discussion forum frequently
ITU2 I intend to use this discussion forum to search information
ITU3 I intend to use this discussion forum
-

APPENDIX 2

SURVEY IN FINNISH

Sukupuoli

Mies

Nainen

Ikä

15 tai alle

16-24

25-34

35-44

45-54

55-64

65 tai yli

Mikä on ylin suorittamasi koulutusaste?

Peruskoulu

Ammattikoulu

Lukio

Alempi korkeakoulu

Ylempi korkeakoulu

Valitse keskustelufoorumi jota koskien vastaat kyselyyn:

relaa.com

pakkotoisto.com

muusikoiden.net

nousukunto.com

juoksufoorumi.fi

lumitykki.net

slouppi.net

oikeuttaeläimille.fi

tyhjä

vauva.info/foorumi

Kuinka usein lisäät omia kommentteja keskustelufoorumille?

En koskaan

Harvoin

Silloin tällöin

Usein

Kuinka usein käyt keskustelufoorumilla?

Hyvin harvoin

Harvoin

Silloin tällöin
Usein

Kuinka kauan olet ollut tekemisissä keskustelufoorumin kanssa?

Alle vuoden
1-3 vuotta
3-5 vuotta
yli 5 vuotta

Seuraavaksi esitetään joukko väittämiä, joita sinun tulisi miettiä koskien edellä mainittua keskustelufoorumia. Valitse asteikolla yhdestä viiteen (1-5) kuinka samaa mieltä olet väittämän kanssa.

(5= täysin samaa mieltä, 1= täysin eri mieltä)

1/5

Kuvailisin keskustelufoorumin käyttäjiä rehellisiksi.
Kommentit keskustelufoorumilla ovat relevantteja.
Luotan tähän keskustelufoorumiin.
Aion käyttää tätä keskustelufoorumia.
Kaiken kaikkiaan, antaisin keskustelufoorumilla olevalle tiedolle hyvän arvosanan.

2/5

Keskustelufoorumin käyttäjillä on paljon tietämystä liittyen aihealueeseen
Keskustelufoorumilta saadussa tiedossa on vähän virheitä.
Keskustelufoorumi toimii luotettavasti
Keskustelufoorumi tarjoaa minulle kaiken tiedon mitä tarvitsen
Aion käyttää tätä keskustelufoorumia etsiäkseni tietoa.
Yleisesti ottaen, arvioisin keskustelufoorumin tiedon laadukkaaksi
Keskustelufoorumin käyttäjät ovat erittäin kyvykkäitä tiedon tuottamisessa

3/5

Keskustelufoorumi sallii tiedon olevan helposti saatavilla
Keskustelufoorumin käyttäjät ovat vilpittömiä ja aitoja
Jos tarvitsisin apua, keskustelufoorumin käyttäjät tekisivät parhaansa auttaakseen minua
Voin aina luottaa tähän keskustelufoorumiin saadakseni tietoa
Keskustelufoorumi mukautuu monenlaisiin tarpeisiin
Keskustelufoorumin käyttäjät ovat kiinnostuneita hyvinvoinnistani, eivät vain omastaan.
Keskustelufoorumilla tarjottu tieto on totuudenmukaista.
Keskustelufoorumin käyttäjät pitävät lupauksensa

4/5

Keskustelufoorumin käyttäjillä on erityisiä kykyjä liittyen aihealueeseen
Keskustelufoorumi tarjoaa kokonaisvaltaista tietoa
Kommentit keskustelufoorumilla ovat hyödynnettävissä olevia.
Uskon, että keskustelufoorumin käyttäjät toimisivat etujeni mukaisesti
Keskustelufoorumilta menee liian kauan vastata pyyntöihini

Kaiken kaikkiaan, keskustelufoorumi tarjoaa minulle laadukasta tietoa
Keskustelufoorumi tarjoaa minulle täydellisen setin tietoa

5/5

Keskustelufoorumin käyttäjät ovat rehellisiä tekemisissä kanssani

Keskustelufoorumi tarjoaa virheetöntä tietoa

Kommentit keskustelufoorumilla ovat tarkoituksenmukaisia

Tämä keskustelufoorumi on luotettava.

Aion käyttää tätä keskustelufoorumia säännöllisesti.

Oletko keskustelufoorumin rekisteröitynyt käyttäjä?

Kyllä - en

APPENDIX 3

ITEM DETAILS

ITEM	MEAN	MODE	MEDIAN	SKEWNESS	KURTOSIS
BEN1	3,37	4	3	-0,320	-0,088
BEN2	3,67	4	4	-0,335	-0,436
BEN3	3,12	3	3	-0,226	-0,528
COM1	4,31	4	4	-1,271	2,177
COM2	4,19	4	4	-0,995	1,238
COM3	3,55	4	4	-0,648	0,197
INT1	3,79	4	4	-0,438	0,123
INT2	3,93	4	4	-0,876	1,423
INT3	3,42	3	3	0,170	0,131
INT4	3,70	4	4	-0,603	0,092
ACC1	2,90	3	3	-0,166	-0,845
ACC2	3,52	4	4	-0,600	-0,005
ACC3	3,71	4	4	-0,756	0,758
COP1	2,95	4	3	-0,115	-0,092
COP2	3,78	4	4	-0,807	0,572
COP3	2,86	4	3	-0,040	-1,045
REL1	3,63	4	4	-0,547	-0,011
REL2	3,55	4	4	-0,690	0,276
REL3	4,01	4	4	-0,832	1,452
INF1	4,16	4	4	-1,060	1,399
INF2	3,86	4	4	-0,806	0,516
INF3	3,85	4	4	-0,911	1,023
SYQ1	4,11	4	4	-0,733	1,150
SYQ2	4,05	4	4	-0,885	0,611
SYQ31	3,62	4	4	-0,285	-0,162
SYQ4	3,77	4	4	-0,616	0,175
TRU1	3,99	4	4	-0,876	1,220
TRU2	3,46	4	4	-0,463	-0,426
TRU3	3,89	4	4	-1,060	2,009
ITU1	4,44	5	5	-1,823	3,786
ITU2	3,95	4	4	-0,963	0,525
ITU3	4,46	5	5	-1,403	2,299