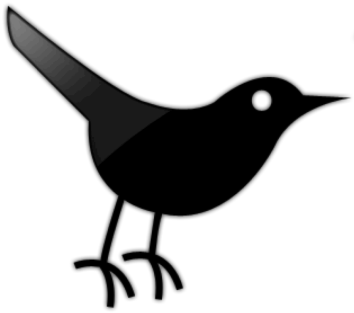
THE POWER OF 140 CHARACTERS

the impact of Twitter on consumer behaviour



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Abstract

This experiment explored how negative product-related electronic word-of-mouth (eWOM) messages on Twitter influence consumer behaviour. Each participant was exposed to a negative Tweet about CoffeeCompany and was manipulated in terms of message involvement, message quality and tie strength. The results showed significant differences between the effect of strong and weak tie sources. Consumers conform to online consumer reviews via Twitter and attitudes become unfavourable as the tie strength increases. The involvement level of the reader did not have a significant impact on the persuasiveness of the message. Also the quality of the message, i.e. whether it had arguments, was not leading in determining the impact of a negative Tweet. The findings that only tie strength was of significant importance led to the conclusion that in its core eWOM builds on the theories of offline WOM. Also, reading negative product-related content on Twitter only affects the short-term consumer behaviour. The power of 140 characters has a significant impact depending on strong ties and affects short-term consumer behaviour more than long-term brand attitudes.

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Introduction

> "Worldwide social media advertising budgets are estimated to rise 71.6% this year. An impressive total of $5.97 billon is expected to be spent on social networking sites."
>
> (eMarketer, January 18, 2011)

The Internet has forced almost every facet of our business and daily lives to change. The way customers and business come together is shifting away from the traditional model and this evolution is just beginning. The rise of social media plays a big role in this. Online social networks have emerged as the most popular application since the web began in the early 90s (Krishnamurthy, Gill and Arlitt, 2008). It enables customers to communicate directly to a company, and vice versa. Brands accepted into a user's social network enter the personal environment and are allowed to speak next to friends and family.

The digital age and its effect on word-of-mouth marketing

The rise of Internet has an important impact on word-of-mouth communication. WOM (word-of-mouth) is defined as interpersonal positive or negative communication between consumers about products and services and is considered one of the most influential sources of marketplace information for consumers (Arndt, 1967; Alreck and Settle, 1995; Laczniak et al, 2001; Nyer & Gopinath, 2005; Brown et al. 2005). WOM is also called eWOM when it takes place online. Although offline WOM research provides good insights in the eWOM area, there are a few differences (Park, Lee and Han, 2007). First, offline WOM is often limited to a local social network, whereas eWOM can spread all over the world via the Internet. Second, the sources of WOM as opposed to eWOM are from familiar people such as friends and family. Because most reviewers online are unfamiliar to the reader, the reviews may have less credibility than messages from a neighbour or friend. This characteristic of eWOM stresses the importance of the content in overcoming the lack of message credibility (Park, Lee and Han, 2007). The core difference between WOM and eWOM is that sender and receiver of information are separated by both space and time (Steffes and Burgee, 2009).

It has become easier for consumers to share their opinions about products, brands or services. Special review websites like Epinions.com or ConsumerSearch.com enable consumers to share product experiences with other (potential) consumers. Despite advertisers and marketers efforts, consumers generally have more trust in opinions of peer consumers (Blackshaw, 2008; Sen and Lerman, 2007). Also, messages spread by advertisers are easier to ignore as opposed to messages from friends. Given social norms, it

is much harder avoid listening to the same referral delivered in person (De Bruyn and Lilien, 2008).

Social media

eWOM is considered to be more influential than printed information on product judgement (Herr et al., 1991) and plays a major role in consumer buying decisions (Richins and Root-Shaffer, 1988). eWOM has become an important influence on consumers' product evaluation and thus is seen as increasingly important by businesses and organizations concerned with reputation management. Social media makes eWOM visible in even more instances. Social media can be defined as a "group of Internet-based applications that build on the ideological foundations of web 2.0, and that allow the creation and exchange of user generated content" (Kaplan and Haenlein, 2010). The most common forms of social media are Facebook, Twitter and Youtube. They all serve the desire to share thoughts, opinions and links with friends, or the whole world. The rise of social media has made it possible for eWOM to appear not only through the facilitating review websites, but also via these social media platforms. The platforms make eWOM even more important in the future as social networking applications become more widespread.

For marketing managers nowadays, social media has become a part of their daily activities in reputation and marketing management. Companies hire *community moderators* to control the messages spread on review websites and social media. They scan the web every day, searching for user-generated content that mention their brand or service, and respond to it. This response could be in the form of an apology or a follow-up where a colleague from the customer service will solve the problem. In doing so, customers get heard and corporate reputations get protected.

Another important part of reputation management nowadays is search. Whereas marketers used to make sure their brand would be in the top five when consumers searched online for something related to their product, nowadays they are worried about bad listings in search. A web search for a product could result in a list of bad product review sites, instead of the company website. Reputation management is becoming more and more important in this respect. Also, search and social media have become intertwined in the purchase path that consumers take across the Internet (comScore, 2011). A research from comScore found that 58% of their respondents start the purchase process with search, outpacing company websites (24%) and social media (18%). While search dominates social media among consumers making buying decisions, social media plays an increasingly important role during consideration and especially after a purchase is made. One of the platforms that is a popular place for sharing experiences with brands or products is the microblog Twitter. On the continuum of social media classification, Twitter stands halfway between traditional blogs and

social networking sites, and is characterized by a high degree of self-presentation and self-disclosure and a medium to low degree of media richness (Kaplan and Haenlein, 2010).

From its launch in 2006 till today Twitter is growing. The platform nowadays has over 175 million users (Twitter.com; 21 March, 2011). 30 million active users send over a billion Tweets a week. By Tweeting, a user answers the question “What’s happening?” A Tweet generally can contain anything; a description of what one is eating, what one is doing, important news updates or work related content. The Tweets will automatically appear in a follower’s *timeline*, when a follower chose to follow that person. The timeline is the screen where the updates are shown from the persons that are followed by the user, in chronological order. A person does not necessarily have to follow a person back, which makes the links of the Twitter social network directed. People use the microblog primarily to talk about their daily activities and to seek or share information (Java, Finin and Tseng, 2009). Messages on Twitter (Tweets) can be posted and read using a browser, special desktop applications, mobile applications on smart phones or even SMS on standard phones. Tweets can only contain 140 characters. It is precisely that that makes Twitter unique and different from any other eWOM medium.

The unique case of Twitter

In this study Twitter is treated as a single unit of analysis because it is a very different form of eWOM than any other social media platform. This is because of the *unsolicited*, *tie strength* and *swiftness* characteristics of the microblog. These three important factors of Twitter will be explained in the following paragraphs. The unique characteristics of Twitter are translated into factors for this study. The following paragraph discusses these features and the resulting factors. The factors will be further discussed in the literature review.

Most of the studies in eWOM focused on recipients who were searching for information, e.g. visited a product review website or do a search engine query prior to their purchase. This implies that these consumers were already interested in the product and were actively seeking to be influenced in their decision (De Bruyn and Lilien, 2008). This study investigates the unsolicited form of eWOM; Twitter. Via this microblog consumers usually are exposed to an unsolicited form of eWOM. When a Twitter user follows a person, all their Tweets appear in their *timeline* and thus people are exposed to all their thoughts, links, experiences and opinions about brand or product. They may not be explicitly looking for that kind of information but just fortuitously read the message. Consequently, the recipient is not necessarily willing to pay attention to them. The importance of this level of involvement is explained by the Elaboration Likelihood Model (ELM). The model teaches us that individuals who are highly involved with the message are more likely to engage in thoughtful and effortful processing of persuasive arguments. Consumers who are less involved are not affected by the arguments contents, but rather by non-content elements; peripheral cues (Petty et al., 1981). Thus, involvement and argument rich content are important factors in this unsolicited form of eWOM.

These features, in conjunction with the ELM, are translated into two Twitter-factors for this study; message involvement and message quality.

The second characteristic of Twitter that is important for eWOM research is the tie strength with the message source. Tweets are only showed in a timeline when a person follows the sender. Following a person creates an immediate (possibly one-way) connection. Because the recipient once *chose* to follow the sender there automatically is a social tie. The recipient cares about what the sender has to say and wants to read his or hers updates. As opposed to product review websites, eWOM messages on Twitter are less anonymous and thus could be seen as more credible and be trusted more. This relationship between sender and follower is defined as tie strength. Tie strength has been found to be one the most significant factors explaining the influence of offline WOM communication (De Bruyn and Lilien, 2008). Brown and Reingen (1987) showed that strong tie sources were perceived as more influential than weak tie sources. Studies in the area of eWOM have mixed findings concerning the importance of tie strength online. For example, Vilpponen et al. (2006) indicated that all connections in electronic environments are equal in their effectiveness and persuasiveness. This lack of consensus between WOM and eWOM together with the case of Twitter makes tie strength the third factor in this research.

The last unique characteristic of Twitter is its availability and swiftness. Several smart phones come with a standard Twitter application already installed. With 175 million users, including a variety of companies from all over the world one could say it has become an important communication tool. It has become easier to broadcast to the world. Also, Twitter is often the fastest news source.

Offline decisions on the basis of online information

Jansen et al. (2009) found that 19% of all Tweets contain mention of a brand. What are the effects of these Tweets mentioning a brand or product? Marketers try to control the stream of negative reviews because previous studies confirmed that negative messages were more influential than positive ones (e.g., Arndt, 1967; Laczniak et al., 2001; Mizerski, 1982; Yang and Mai, 2009). Other studies found that positive WOM is more credible than negative (The Keller Fay Group). Fewer than the half of their respondents believed negative buzz.

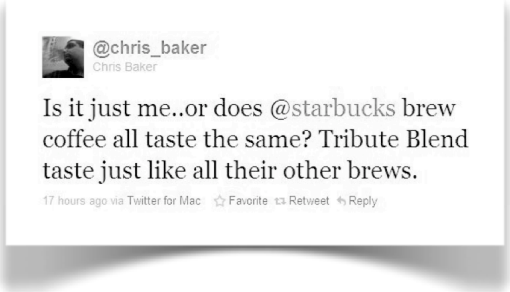


Figure 1 - Example of a product-related Tweet

The actual effect of these negative (or positive) product related Tweets has not been investigated thus far. Research in this area has been focused on the factors driving consumers to share knowledge or information, but little attention has been paid to the impact of these messages on Twitter. Understanding the impact of negative eWOM is essential for

companies to decide on how much to invest in eWOM management (Hennig-Thurau et al., 2010). Also, determining the impact of this unsolicited form of eWOM on Twitter could be the first academic steps towards determining return-on-investment of social media.

The focus of this study will be on negative product-related consumer Tweets. Negative Tweets seem to be the focus of reputation managers on Twitter nowadays, without having academic arguments. Negative information is considered more useful than positive information (Fiske, 1980). People tend to think of negative information as more reliable; this is called the "*Negativity Effect*" (e.g., Anderson, 1965; Chevalier & Mayzlin 2003; Fiske, 1980; Mizerski, 1982; Mittal, Ross and Baldasare, 1998). Positive information about a product or brand is often presumed and therefore people tend to assign more weight to negative information. Thus it is expected that negative information has more effect on consumer behaviour. However, some researchers found that people sometimes reacted against negative advice and became even more committed to the subjected brand (Laczniak et al, 2001; Wilson and Peterson, 1989; Fitzsimons and Lehmann, 2004). Doh & Hwang (2009) stated that a few negative messages can be helpful in promoting positive attitude toward website and credibility of eWOM messages. These mixed findings make this study relevant for the eWOM research field.

The objective of this study is to investigate how negative eWOM on Twitter affects consumer behaviour; short-term purchase intention and long-term brand attitude. Three variables are used to explain this impact; message involvement, tie strength and message quality. These variables are considered as unique Twitter-characteristics and thus are valuable for determining the power of 140 characters.

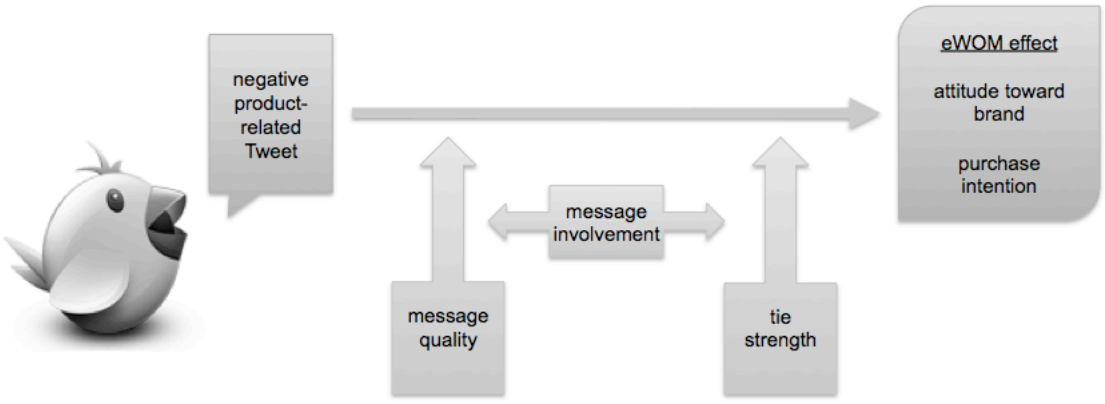


Figure 2 - Relationship between the variables and eWOM effect

Literature review

There has been little prior academic work in the microblogging area. The increasing popularity of Twitter makes the impact of microblogging an important research topic. In this study Twitter is treated as a unique social media platform and different from a review website because of the *unsolicited* nature and immediate *tie strength* sender and receiver on Twitter imply. Due to the fact that one receives only updates from a person when he or she chose to follow that person, the social cues are automatically there, an important factor in WOM research.

This study is focused on the effects of the exposure to one product-related Tweet, whereas most studies focus on review websites that contain multiple messages about a product. The product-related Tweet will appear in a follower's timeline but will also disappear after a while - there is a chronological order; only the latest ones are shown. The *swiftness* of Twitter makes it an interesting research subject. Due to the lack of research done in the eWOM area that holds these unique characteristics, this study builds on existing (e)WOM research on product review websites.

Tweets as eWOM

As social networking applications become more widespread it is apparent that eWOM becomes even more important in the future. 19% of all Tweets mention a brand (Jansen et al., 2009). 20% of these contained some expression of brand sentiments. Of these, more than 50% were positive and 33% were negative of the company or product (p. 2169). 80% of Tweets mentioning a brand but expressing no sentiment suggests people are also seeking information, asking questions, and answering questions about brands via microblogs. Thus, company microblogging accounts are probably a smart idea to both monitor brand community discussions and to push information to consumers (Jansen et al., 2009).

eWOM has been a popular research topic for the last decade, and this will further increase in the future (Cheung and Thanadi, 2010). The *impact* of eWOM communication has been the most researched topic. One of the first studies in the offline WOM research area is from Arndt (1967). He found that exposure to favourable WOM increased buying levels while exposure to unfavourable comments decreased this level. There is an abundance of research evidence that a satisfied customer may tell some people about his experience with a company, but a dissatisfied customer will tell everybody he meets (Chatterjee, 2001). Past research have also shown that people tend to weight negative information more than positive information during evaluation. Most studies in the eWOM field focus on negative online reviews and less on positive.

A number of studies investigated the effect of the proportion of negative and positive messages (Doh and Hwang, 2009; Lee, Park and Han, 2007; Park, Lee and Han, 2007). Involvement was seen as an important moderator in this respect. Low involved consumers were more persuaded by the proportion of reviews, regardless of the quality. Whereas high involved consumers focused more on the quality than on the quantity of the messages (Lee, Park and Han, 2007). Researchers also identified prior knowledge (Doh and Hwang, 2009) as an influencer of the impact of eWOM. Consumers with higher prior knowledge can be more sensitive to the negative messages than consumers without prior knowledge. Therefore, prior knowledge of the product and brand are proposed as control variables in this study.

Type of website (independent, brand's website of personal blog) (Lee and Youn, 2009) is also showed as an antecedent of WOM influence. Additionally, demographic similarity between sender and receiver (Brown and Reingen, 1987), perceptual affinity (Gilly et al., 1998) and source expertise (Bansal and Voyer, 2000; Gilly et al., 1998) are determinants of WOM effects. Credible sources are perceived to be useful and reliable and thus are good facilitators for knowledge transfer (Ko et al., 2005). Hennig-Thurau et al (2004) investigated the reasons for articulation on the Internet. They concluded that reviews are posted for several reasons: desire for social interaction, desire for economic incentives, their concern for other consumers and the potential to enhance their own self-worth.

Characteristics of the eWOM platform are also an important factor to determine the persuasiveness. According to the attribution theory, the perception of the platform determines whether the WOM is persuasive or not (Cheng and Zhou, 2010). Another study found that consumers seem to evaluate the credibility of eWOM information in relationship to the platform it is sourced from, as well as the source of the message (Brown and Lee, 2007). Thus, the attitude toward product reviews on Twitter, experiences and familiarity with the platform are included as control variables. Product involvement is identified (Lau and Ng, 2001) as a relevant factor to the process of negative WOM. This individual factor is also incorporated in this research as a control variable.

Several scholars studied the effects of professional reviews in newspapers or websites on sales (Berger, Sorensen and Rasmussen, 2009; Chevalier and Myzlin, 2006; Liu, 2006). For example, the research of Berger et al. (2010) found when a book that had low prior awareness it was positively affected by professional negative reviews. This prior awareness is related to product familiarity. Recent research has shown that negative reviews can be a good thing for unfamiliar products. Ahluwalia (2002) found that when a brand is unfamiliar, negative information elicited more supporting arguments and is perceived to have more diagnosticity and weight. Also, when a brand is familiar, there are no significant differences in the impact of positive and negative information. This study supports earlier work by Wilson and Peterson (1989) and Sundaram and Webster (1999), which showed that the impact of advice was greatly reduced when the object of the advice was familiar. The product familiarity will be included as a control variable in this study. Sen and Lerman (2007) incorporated different

product types in their study to determine the effect negative consumer reviews on the web. They found that readers of negative hedonic products (versus utilitarian) are more likely to attribute the negative opinions expressed to the reviewers internal reasons and therefore are less likely to find the negative reviews useful. Also, readers of utilitarian product reviews are more likely to attribute the reviewer's negative opinions to external, product-related motivations and therefore find negative reviews more useful than positive ones. Their research suggested that marketers of hedonic products do not need be as concerned about negative reviews for their products as marketers of utilitarian products should be.

In accordance with most studies done in the field of eWOM, this study will measure the effect of negative product-related Tweets on purchase intention and brand attitude. By doing so this research seeks to cover short and long-term consumer behaviour effects that matter to both academic and marketer. The following paragraphs will discuss the main factors of this study; tie strength, message quality and message involvement, resulting in hypotheses. The research question is as follows:

What is the impact of negative eWOM via Twitter on consumer behaviour?

Tie strength

Tie strength is "a combination of the amount of time, the emotional intensity, the intimacy (mutual confiding) and reciprocal services which characterize the tie" (Granovetter, 1973). These social ties can also occur in an online environment; hence the name social networks. This Computer Mediated Communication (CMC) allows the researcher to overcome time and distance barriers difficulties in face-to-face research (Mann and Stewart, 2000). Petroczi et al. (2007) found that indicators in virtual social groups are similar to those in offline networks. Although researchers generally do not use quantitative, continuous measurements of tie strength, the intensity of the tie can greatly vary. However, researchers often use the notion of weak or strong ties (Petroczi et al, 2007).

Choosing to follow a person on Twitter automatically results in a (one-way) social tie which in turn implies trust (Coleman, 1990). Strong ties are perceived as more credible and trustworthy than weak tie sources (Rogers, 1995). In the case of Twitter a strong tie could represent a sender-follower connection, i.e. a person is exposed to the sender's messages. A weak tie occurs when there is no sender-follower relation; Tweets of this sender do not appear in the timeline of the other person. In other words, when there is a sender-follower relation (strong tie) the messages send should be perceived as less risky than from a weak tie. A person could also be exposed to a weak tie source by doing a search query on Twitter or by seeing a message *retweeted* by a person they do follow (retweeting: forwarding a message to your followers). Frenzen and Nakamoto (1993) found that through the social exchange theory

(Sahlin, 1972) strong ties were likely to transmit information of higher economic value than weak ties. Building on the literature, this study proposes the following hypothesis:

H1: A negative product-related Tweet from a strong tie source will have a greater impact on purchase intention and attitudes toward brand than from a weak tie source.

Message quality

The quality of online reviews has a positive effect on consumers' purchasing intention (Park, Lee and Han, 2007). A high quality review is more logical and persuasive and supports its evaluation with reasons based on the facts of the product. High quality messages are more effective because the information is relevant to evaluate the product and contains understandable, reliable and sufficient reasoning. Low quality messages are irrelevant, unreliable and difficult to understand with insufficient reasoning (Lee, Park and Han, 2007).

There are generally two types of negative product-related Tweets. Tweets like "*ugh this hamburger at McDo was disgusting, we should sue them!*" or "*I am never going to BestBuy again. They suck!*" are subjective, emotional and do not make reasoned arguments. High quality Tweets like *"I didn't have a good night sleep in my new IKEA bed, too hard, feels synthetic and I woke up all sweaty*" are specific, clear and back up arguments with reasons.

In this study, message quality is defined as the quality of a Tweet's contents from the perspective of information characteristics: understandability, reliability and usefulness (McKinney, Yoon and Zahedi, 2002). If a Tweet contains more understandable and objective comments with sufficient reasons of disapproval, it is relatively more persuasive than a comment that expresses feelings and recommendations without specific reasons (Park, Lee and Han, 2007). Although the effect of a high quality Tweet is expected to be higher, the effects of a low quality Tweet cannot be ignored. As with a high quality Tweet, a low quality Tweet is based on consumers' experiences with a product and is still expected to have an effect on consumers' behaviours and perceptions. The following hypothesis is proposed:

H2: A high quality negative product-related Tweet will have a greater impact on purchase intention and attitudes toward brand than a low quality Tweet.

Moderating role of message involvement

Involvement can be defined as "a person's perceived relevance of the object based on inherent needs, values and interests" (Zaichkowsky, 1985). The literature suggests a plethora of different involvement applications. For example, a person can be involved with advertisements, products, purchase decisions, a task or activity or event or a service (Zaichkowsky, 1985; Michealidou and Dibb, 2008). The most common three forms of

involvement are (Zaichkowsky, 1985): 1) Personal: inherent interests, values or needs that motivate one toward the object; 2) Physical: characteristics of the object that cause differentiation and increase interest and 3) Situational: something that temporarily increases relevance or interest toward the object. This study employs the notion of message involvement as a moderator. Message involvement has a considerable impact on how brand attitudes are formed or changed (Laczniak et al., 1989). A consumer is high involved with a message when that message is of personal relevance.

The Elaboration Likelihood Model (ELM) explains how people process information in different ways through involvement (Petty et al., 1983). There are two different persuasion routes that consumers follow when exposed to persuasive communication: 1) the central route and 2) the peripheral route. A high involvement or high MAO (Motivation, Ability and Opportunity) consumer is willing or able to exert a lot of cognitive processing effort, called high elaboration likelihood. Central cues such as existing beliefs, argument quality and initial attitudes are important in determining persuasion effect in this situation. Consumers with low MAO or low involvement are either not willing or unable to exert a lot of processing effort. In this situation, peripheral persuasion cues such as attractive sources, music, humour and visuals are determining factors of persuasion effects. The role of message involvement in persuasion is consistent with the principles of ELM. The endless stream of Twitter updates a user is exposed to makes message involvement a relevant factor for this research. Building on the ELM it is expected that a high message involved consumer would put greater weight on a negative product-related Tweet than a low involved consumer. Thus the following hypothesis is proposed:

H3: The effect of a negative product-related Tweet will be greater for a high message involved consumer than for a low involved consumer.

Involvement and the message quality

Previous research has found an interaction between message quality and involvement (e.g. Johnson and Eagly, 1989; Park, Lee and Han, 2007). According to ELM, issue-relevant arguments and product-relevant attributes are more influential under high involvement conditions while peripheral cues are more influential under low involvement conditions (Petty et al., 1983). The Elaboration Likelihood Model also suggests that message quality is of primary importance for high-involved consumers, and message quantity to be crucial for low involved consumers (Park, Lee and Han, 2007). This study is focused on the appearance of one Tweet; therefore the quantity is automatically low. Thus, this study proposes that the message quality of a negative product-related Tweet influences a high-involved consumer more than a low involved consumer.

H4: A high quality negative product-related Tweet will have a greater impact on high involved consumers than low involved consumers.

Involvement and tie strength

The ELM suggests that consumers that are low involved process information through the peripheral route to attitude change. These attitude changes do not occur because an individual has personally considered the pros and cons of the issue, but because the attitude issue or object is associated with positive or negative cues. For example, rather than diligently considering the issue relevant arguments, a person may accept a message simply because the source is a friend, or it ways presented in a pleasant way. These cues may shape attitudes or allow a person to decide what attitudinal position to adopt without the need for engaging in any extensive thought about issue- or product relevant arguments. One could say that these peripheral routes where a person is low involved are more likely to start from strong ties than from weak ties. People trust strong ties, perceive them as more credible and trustworthy than weak ties (Rogers, 1995). Thus, a low involvement consumer is more persuaded by strong than weak tie sources.

H5: A negative product-related Tweet from a strong tie source will have a greater impact on low involved consumers than on high involved consumers.

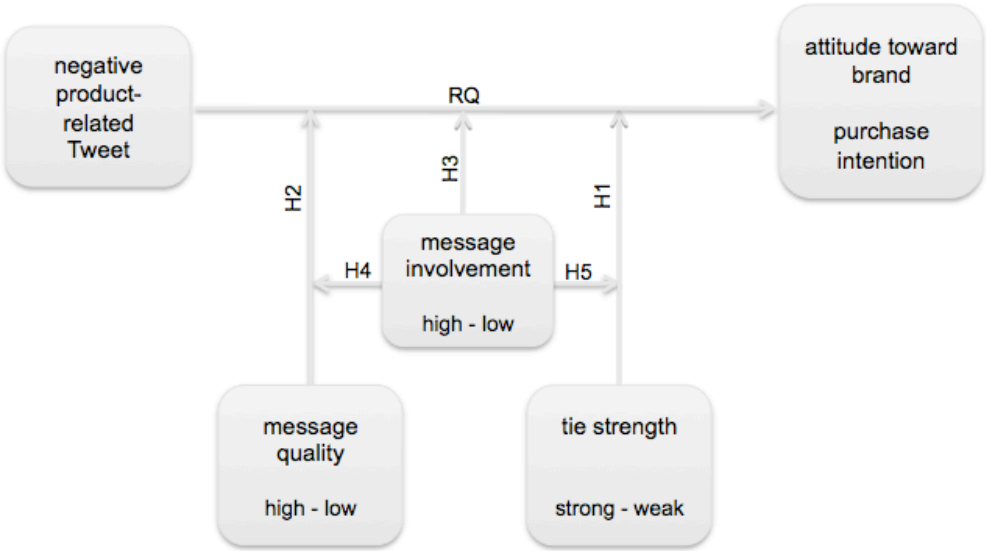


Figure 3 - Research model

Methodology

Design

This study investigated the impact of a negative product-related Tweet on purchase intention and attitude toward brand. A 2 x 2 x 2 factorial experimental design was employed to test the proposed hypotheses. The three independent variables are message involvement (high and low), tie strength (strong and weak/non existent) and message quality (high and low). The dependent variables are purchase intention and attitudes toward brand. Tie strength and message quality were expected to influence eWOM impact and message involvement was expected to moderate this effect.

Respondents were exposed to a negative Tweet in a Twitter timeline. Eight different versions of the Twitter stimuli material were developed. All eight versions were identical in terms of look and feel of the Twitter-page, with the exception of three factors. Manipulations were made in terms of message involvement, tie strength and message quality. Respondents were asked to evaluate the brand and purchase intention in a questionnaire.

Stimuli

To test the impact of a product-related Tweet, subjects were exposed to a Tweet about coffee from CoffeeCompany. This product and brand were chosen for the experiment for two reasons. First, it had to be a product that appealed to the respondents and that had characteristics the respondent could easy understand. Second, coffee is a much-discussed subject on Twitter. CoffeeCompany is a well-known coffee bar chain in the Netherlands. There are 27 branches, located primarily in the centre of the country. CoffeeCompany sells all different kinds of coffee and other hot and cold beverages. The coffee bar is considered a common eWOM topic.

To create a realistic situation where subjects are exposed to a product-related Tweet, an image was created with an exact copy of how a real Tweet would look. The manipulation images are attached in appendix 1. The Tweets differed on three points; filler information (message involvement manipulation), sender (tie strength manipulation) and message content (message quality manipulation).

Message involvement

The goal of the involvement manipulation was to control the personal relevance of the message. Respondents in the high involvement manipulation were asked to ”*please pay close attention to the Tweet that is highlighted with a red line. Read it carefully and pay attention to the claims. After you finish reading, I will ask you questions about the content.*” The high

involvement group was shown a page with a series of Tweets, where one was highlighted with a red line. The other Tweets were from random other senders, with different subjects. Respondents under the low involvement condition were also exposed to the page with a series of Tweets. They were not instructed on which Tweet to focus, only that they had to "*scan through the Tweets*". By exposing the respondent to this filler information they were expected to be less involved in reading the message. The respondents under the high involvement condition were also exposed to filler information, but were instructed in which Tweet to read. Through this manipulation the respondents in the high involvement group were expected to read and process the Tweet more carefully than the participants in the low involvement group.

The instructions were formulated in accordance with the study of Laczniak et al. (1989) in manipulating message involvement. According to his research, the goal of a high message involvement manipulation should be 1) to direct subject's attention to message aspects of an ad, 2) for the purpose of evaluating the advertised brand or product. When a respondent is manipulated to be low involved the goal is to 1) limit attention to and processing of message points, and 2) restrict the possibility that subjects will attempt to evaluate the merits of the message based upon the claims (Laczniak et al., 1989).

Tie strength

The respondent was either exposed to a Tweet from a strong or weak tie. To manipulate this variable the sender of the Tweet was a friend or an anonymous sender without name or other information. Respondents in the strong tie strength condition were asked to imagine that the following Tweet was from a friend: "*Please try to imagine that the following Tweet is from one of your closest friends. You have frequent interaction with this friend and you follow his or hers updates on Twitter. Keep this friend in mind when answering the following questions.*" The name in the Tweet was changed to "*YourFriendsName*". The respondents that were assigned to the low tie strength condition were told that the Tweet was from a stranger; "*The sender of this Tweet is someone you do not know. You do not follow his or hers updates on Twitter. Keep this stranger in mind when answering the following questions*." The Tweet showed a Twitter user without name and no further information.

This study distinguished two kinds of tie strength: weak or strong. Although in real life social ties could vary in strength, on Twitter a Tweet from a very strong tie is shown the same way as a moderate strong tie. Twitter treats all users the same, trusted friends or total strangers, all Tweets will appear in the same way in the timeline. That is, if one chose to follow that person.

Message quality

The respondents were randomly assigned to a high or low message quality. The low quality message had no arguments, was not informative and used a non-professional language. The message with a high quality message contained several arguments. The messages were

tested on readability with the Flesh-Kincaid formula (Kincaid et al., 1975). This formula combines the number of syllables or words in the text (syntactic complexity) with the number of sentences (semantic complexity). This method is widely used and provides a rough estimation of the difficulty of text. The formula results in a minimal age group that is able to comprehend the text. The high and low quality Tweets resulted in respectively 4.3 and 3.5, which means that at least a third grader can comprehend the message.

Table 1 - Message quality manipulation

		Words	Characters	Flesh-Kincaid Grade Level
High quality	Just had a very disappointing coffee from CoffeeCompany. It was cold and tasted like strong tea. Should have saved my 2,47 euros!	21	129	4.3
Low quality	Just had a very bad coffee from CoffeeCompany. My grandma can do better. Should have saved my 2,47 euros!	20	106	3.5

Pre-test

A pre-test was conducted to determine whether the manipulations were perceived as intended. 32 respondents (four in each scenario) cooperated with the pre-test, 48% male and with an overall average age of 27. Respondents were randomly assigned to one of the eight scenarios. The following questions assessed the perceived involvement, tie strength and message quality.

Manipulation check

Message involvement was measured with three questions regarding the level of attention of the respondent. They were asked to describe the degree to which they agreed with three statements regarding the attention level and message involvement, on a 7 point Likert scale. Also, respondents were asked to recall the amount of money the sender of the Tweet paid for the coffee. Respondents under the high involvement condition were expected to remember this amount (€ 2,47) better than the low involvement group. Message involvement was a difficult condition to manipulate. A Tweet can only consist 140 characters, which makes it easy to remember the entire content. To determine if the manipulation was executed successful and if the two groups differed in levels of involvement, an independent t-test was computed. The pre-test showed that the involvement manipulation was not significant. Subsequently, adjustments were made to the manipulation. Another pre-test was conducted to assess the new manipulation, with success.

To measure the perceived message quality this study used parts of the methods of Petty et al. (1981). Respondents were asked to indicate their opinion about the quality of the arguments used in the Tweet and if the arguments were credible on a scale from 1 (“strongly disagree”) to 7 (“strongly agree”). Tie strength was measured with three items regarding the relationship between sender and receiver. The measurement methods will be further discussed in

following paragraphs. The manipulations of message quality and tie strength were also measured with an independent t-test and turned out to be successful. After making small adjustments the questionnaire was ready for distribution.

Procedure

The survey was distributed between 14 April and 3 May 2011. Respondents without any usage knowledge of Twitter were considered unusable and thus were not allowed to contribute. Therefore respondents were primarily gathered through Twitter. People were asked to '*retweet*' the message (forward it to followers). The Tweet contained a link to the online survey, where participants were randomly assigned to one of the scenarios. When participants entered their email address at the end of the survey they could enter a drawing for gift vouchers. Other than the requirement that respondents had to be Twitter-users there were no further conditions for participating in this research. When a person indicated that they did not know CoffeeCompany, they were shown a short, neutral introduction of the coffee bar chain.

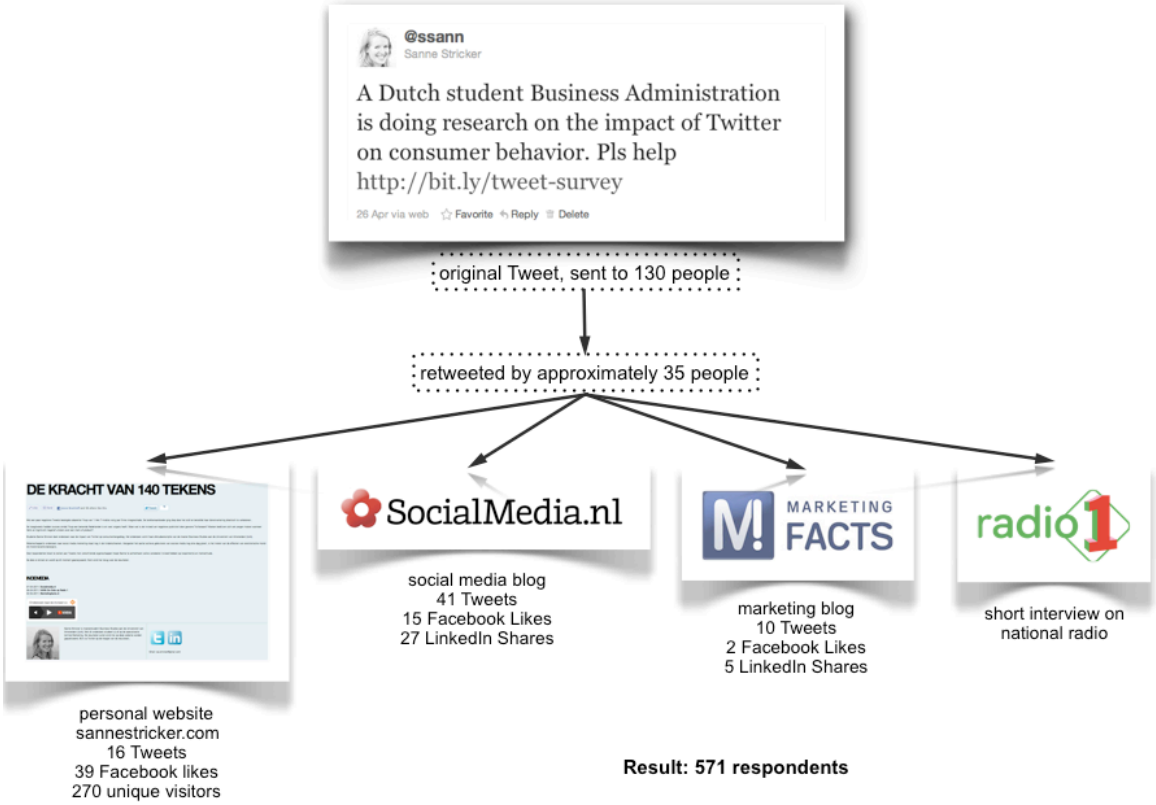
In the online questionnaire respondents were randomly assigned to one of the eight scenarios, see table 2. The first question was whether they were familiar with Twitter. If the answer was no, the questionnaire was terminated. The next question measured the initial brand attitude toward CoffeeCompany. In the next introduction instructions were given and respondents were exposed to one of the scenarios. The questions that followed measured the dependent variables. After this, a few questions were asked to test whether the manipulations were perceived the way they were intended. Control variables were used to measure if the impact of eWOM was affected by other factors. These were general attitude toward product reviews on Twitter, product involvement and Twitter usage characteristics. Also, a question to check the realistic character of the scenario was incorporated. The questionnaire ended with questions about age and gender. The entire questionnaire is attached in appendix 1.

Table 2 - Different survey versions

		Message involvement	
Tie strength	**Message quality**	*High*	*Low*
Strong	*High*	HI-HQ-ST One Tweet; from friend; with arguments	LI-HQ-ST One Tweet in a series of Tweets; from friend; with arguments
Weak	*High*	HI-HQ-WT One Tweet; from stranger; with arguments	LI-HQ-WT One Tweet in a series of Tweets; from stranger; with arguments
Strong	*Low*	HI- LQ-ST One Tweet; from friend; without arguments	LI-LQ-ST One Tweet in a series of Tweets; from friend; without arguments
Weak	*Low*	HI-LQ-WT One Tweet; from stranger; without arguments	LI-LQ-WT One Tweet in a series of Tweets; from stranger; without arguments

The dispersion of the survey

The dispersion of the Tweet about the research is a striking example of the power of Twitter. The original Tweet with the call for respondents was sent out to approximately 130 people. Many people retweeted (forwarded) the message. Also, people with a lot of followers were asked to retweet. After a week the marketing blog SocialMedia.nl wanted to publish an article about the study. The publication triggered many comments, emails and most important, respondents. Soon after the appearance on the social media blog, Dutch national radio, Radio 1 called. The next day they broadcasted a short interview about the research and a call for respondents. A special website was launched (SanneStricker.com) for more information about the research and with a link to the survey. Finally, a well-known Dutch marketing blog called Marketingfacts.nl also wanted to write an article on the subject. The two articles and the short interview on Radio can be found on the website SanneStricker.com. This media attention could not have been accomplished without the magnifying effect of Twitter. The table below shows the process and statistics that were the result of the initial Tweet to 130 people.



Measurements

Dependent variables

This study assessed two variables relating to consumer behaviour: purchase intention and attitudes toward brand. By doing this, the short and long-terms effects of Twitter were covered.

Considering it is complicated to measure realistic long term effects in a short survey, the dependent variables can also be described as direct (purchase intention) and indirect (brand attitude) effects of negative eWOM.

Purchase intention

Purchase intention was measured with two items: "*How likely is it that you will buy a coffee from CoffeeCompany the next time you have the opportunity*?" and "*How likely is it that you will be interested in purchasing a coffee from CoffeeCompany when offered to you?*" Answers were scaled from 1 to 7, 1 being "very unlikely'" and 7 "very likely". The scale items were taken from previous studies in the marketing literature (e.g. Fishbein & Ajzen, 1975).

Attitudes toward brand

Attitudes toward CoffeeCompany were asked before and after exposure to the negative Tweet. Thus the impact of the negative eWOM could be measured. To determine the attitude toward the brand CoffeeCompany, the respondents were asked to describe their overall feelings toward CoffeeCompany, using the items from the study of Spears and Singh (2004). Five items were given; "*I think CoffeeCompany is a good brand*", "*I am positive toward CoffeeCompany*", "*I like CoffeeCompany*", "*I think CoffeeCompany is a high quality brand*" and "*I think CoffeeCompany is appealing*". Answers varied from "strongly disagree" to "strongly agree" on a 7 point Likert scale.

Independent variables

Message quality

The perceived message quality was measured with 4 items from the work of McKinney, Yoon and Zahedi (2002) on a 7 point Likert scale. A high quality message defines itself by containing several arguments, credibility and an overall high quality. Thus, the statements were "*The Tweet I just read had several arguments*", "*The quality of the argument in the Tweet were high*", "*The arguments in the Tweet were credible*" and "*The overall quality of the message was high*".

Tie Strength

Respondents under the strong tie strength condition were exposed to a Tweet from a friend, and were asked to imagine that the sender was one of their closest friends. Having a close friend is subjective and thus measuring the manipulation was a challenge. Tie strength was measured by a two-item version of the scale developed by Frenzen and Davis (1990)*:* "*I trusted the sender of the Twee*t", "*The Tweet was trustworthy*" and "*The opinion of the sender matters to me".*

Moderating variable

Message involvement

Message involvement was the most difficult variable to manipulate. Since a Tweet can only contain 140 characters, manipulating the length was not an option. As described in the previous chapter, the respondents under high involvement were instructed on which Tweet to focus whereas the low involvement group was not. The next challenge was measuring the manipulation. This study employed three items from previous studies: "*I was interested in the content of the Tweet*", "*I perceived the information in the Tweet with attention*" and "*I read the information in the Tweet carefully*". In addition to these obvious questions, respondents were also asked if they could remember the amount of money the sender of the Tweet spent on the coffee.

Control variables

The impact of a negative product-related Tweet could be affected by the characteristics of the participants and stimulus. The control variables used in this study were extracted from previous literature, as discussed in the literature review. The individual differences of general attitude toward product reviews on Twitter, product involvement, Twitter and CoffeeCompany familiarity were measured by several items, which are reported below.

General attitude toward product reviews on Twitter

People that are reluctant to eWOM are not easy to manipulate by exposing them to a positive or negative message on Twitter. To check this characteristic of the respondent, there were two questions asked: "*In general I believe information in Tweets I read*" and "*In general I think product-reviews on Twitter are trustworthy*". The items were previously used in the study of Park, Lee and Han (2007).

Product involvement

The extent to which a subject is involved with the product could greatly influence the results of the questionnaire. To measure the involvement level of the respondent to coffee, 4 statements from the study of Zaichkowsky (1985) were proposed: "*I usually take many factors into account before purchasing this produc*t", "*I usually spend a lot of time choosing what kind to buy*", "*I usually seek advice from other people prior to purchasing this product*" and "*I have a most preferred brand of this produc*t". The respondent was also asked how often he or she drinks coffee on average (Never, less than once a week, 1-7 times a week, 1-5 times a day, or more than 5 times a day).

CoffeeCompany visit frequency/familiarity

The visit frequency was assessed with one question that asked straight forward how often the respondent visits the coffee bar chain (never, less than once a month, once a month, 2-3 times a month, once a week, 2-3 times a week, daily).

Twitter familiarity/experience

The average Twitter usage of the participant was measured with 4 questions. The amount of followers the person has, the amount of persons the subject follows in return, the average use of Twitter per day and the length of their Twitter subscription were part of the measurement. Although the amount of followers/following can characterize a respondent, the usage frequency and subscription duration are considered key in determining the experience level.

Realism

The manipulations were aimed at creating a realistic scene in which the respondents could imagine it was real life. The realism question tested if this goal was achieved. Participants were asked if they agreed with the statement that "*The scenario in this questionnaire could happen in real life (the scenario in which you read a Tweet about CoffeeCompany)*" on a 7 point Likert scale varying from "strongly disagree" to "strongly agree".

Analysis

To prepare the data for analysis, Cronbach's Alpha determined if the scales used in the survey are reliable and if items need to be deleted. One-way analysis of variance tests assessed if the characteristics of the respondents are equally distributed over the different manipulation groups. Independent-samples t-tests followed, showing if the manipulations were executed successful. The final step before the hypotheses testing was checking whether the characteristics of the respondents affect the dependent variables. Found covariates will be included in the hypothesis testing. New variables will be computed that represent the means of the scales in the survey. Also, the difference between the brand attitude before and after will result in a new variable that represents the change in brand attitude. This variable will be used in the final hypothesis testing, since the point of interest is the change in brand attitude and not brand attitude itself.

Together with the tested covariates, the fixed factors message involvement, message quality and tie strength, the impact on the dependent variables were measured with an analysis of (co)variance. The dependent variables were purchase intention and brand attitude change. The test will show if there are main effects, two- and three-way interactions between the variables.

Results

The survey was available online for 19 days and this resulted in a dataset of 571 respondents. 71 of these were not familiar with Twitter and were prohibited to fill out the entire questionnaire. Another 163 did not fill out more than 75% of the questionnaire and were deleted. The final dataset contained 337 respondents.

Data preparation

After eliminating the unusable cases from the dataset, new variables had to be computed in order to conduct analysis. First, the internal consistency of the items had to proof whether the items measured the same concept. Cronbach's Alpha was used as an indicator of the scales reliability. A score above 0.7 was considered acceptable. All scales were tested reliable; only one item in the product involvement scale had to be excluded for a better Cronbach's Alpha.

Table 3 - Scale reliability

	Cronbach's Alpha α	Items in scale	Items eliminated
Brand attitude before	0.924	5	0
Brand attitude after	0.959	5	0
Purchase intention	0.918	2	0
Message involvement	0.869	3	0
Message quality	0.861	4	0
Tie strength	0.926	3	0
General attitude toward product reviews	0.875	2	0
Product involvement	0.817	3	1

Sample profile

The dataset consisted of 55% man, with an overall age range from 14 to 69. There was no significant difference in the distribution of gender among the 8 surveys (χ^2 = 6.82, p = .45). The average age was 32.7 (SD = 11.58). A one-way ANOVA indicated that there were no significant age differences between the surveys (F (50, 229) = 1.05, p = .397). The survey software took care of the distribution of the respondents over the different scenarios. This resulted in a scattered pattern, to some extent. The smallest group consisted of 22 respondents, compared to the largest two groups with 52 cases. The distribution table is available in appendix 2.

64.2% of the respondents said to be familiar with CoffeeCompany. Nevertheless, 40% never visits the coffee bar chain, 35% less than once a month. 46% of the respondents drink coffee 1 to 5 times day. 11% indicated that they never drink coffee. The product involvement

measurement pointed out that more than half of the respondents are high involved with coffee (M = 3.85, SD = 1.41).

An overwhelming 24% of the respondents use Twitter more than 10 times a day, followed by 18% that checks the microblog 1 to 5 times a day. Seemingly, the dataset contained two kinds of Tweeters; heavy and light users. 21.5 % of the respondents indicated to follow 51-100 people, and another 21.5% follows more than 250 people (M = 3.23, SD = 2.02, N = 248). Please see appendix 2 for the full report.

The relationship between personal attitude toward product reviews on Twitter and the usage frequency of the respondents was investigated using Pearson product-moment correlation coeffiecient. There was a small, positive correlation between the two variables (r = .299, n = 290, p < .0005), with high levels of Twitter usage frequency associated with high levels of personal attitude toward product reviews on Twitter. To check whether the scenarios were perceived as realistic, respondents were asked straightforward if they think the scene could happen in real life. A one-sample t-test with a test value of 3.5 proved the outcome significant (M = 5.56, SD = 1.47, t (295) = 24.13, p < .005).

Manipulation checks

To assess the success of the three different manipulations, independent-samples t-tests were computed. The test compared the measurement scores between the two groups of each variable. The full manipulation check tables are attached in appendix 3. The group means of the message involvement manipulation were significantly different; the low involvement group (M = 4.16, SD = 1.38) was indeed less involved in the message than the high involvement group (M= 5.00, SD = 1.28; t (312) = -5.65, p < .005). Also, the question about the amount of money that the sender of the Tweet spent on the coffee was answered better by the high involvement group (63.6% correct) than the low involvement group (45.4% correct; $\chi^2 = 10.52$, p = .001. The group under the low message quality condition assed the quality significantly lower (M = 3.1635, SD = 1.19) than the high quality group (M= 4.1027, SD = 1.24455; t (299) = -6.63, p < .005). The tie strength manipulation was also executed successful (t (298) = -11.70, p < .005) since the mean for the weak tie strength (M = 3.21, SD = 1.25) was significantly lower than the strong tie strength condition (M = 4.96, SD = 1.31). The eta squared represents the proportion of variance of the dependent variable is explained by the independent variable. In this case it tells if the manipulations are responsible for the scores or that they have occurred by chance. The results show that the values are all acceptable (varies from 0 to 1, minimum of .06 is acceptable; Cohen, 1988). The magnitude of the differences in the means of tie strength was the largest ($\eta^2 = 0.31$).

Control checks

All control variables were checked for differences between groups and covariance with the dependent variables. Subsequently, the variables tested significant for covariance will be included as covariate in further analyses.

General attitude toward product reviews on Twitter

The general attitude toward product reviews on Twitter of the participant was assessed with a 2 items scale. A one-sample t-test (test value = 3.5) showed that the respondents are generally positive toward product reviews on Twitter ($M = 4.18$, $SD = 1.26$, $t(295) = 9.343$, $p < .005$).

Product involvement

With a mean of 3.85 the respondents in the dataset are significantly involved with coffee ($M = 3.85$, $SD = 1.41$, $t(289) = 4.182$, $p < .005$). Also, the differences between the groups were not significant, proved by means of a one-way ANOVA test ($F(7, 282) = .736$, $p = .642$), this means that there is no significant difference between the levels of product involvement between the manipulation groups.

Twitter experience

14% of the respondents indicated to be familiar with the microblog, but never use it (n = 41). 58% use Twitter daily, varying from 1-5 times a day (n = 54), 5-10 times a day (n = 45) to more than 10 times a day (n = 70). A Kruskal-Wallis test showed that the usage frequency was equally distributed among the groups ($p = .970$).

CoffeeCompany visit frequency

Most of the respondents in the dataset never visit CC (n=87; 40%). The second largest group visits the coffee bar less than once a month (n=77, 35.6%). 24% does visit CC, varying from once a month (7,4%) to daily (3,7%). A Kruskal-Wallis test showed that the groups differed on a significant level in terms of visit frequency ($p < .05$).

Five variables were tested for covariance. The first step in conducting this test was to determine the correlations among the covariates. The results are presented in table 4. None of the variables related stronger than r = .8 with each other.

Table 4 - Pearson Product-Moment Correlations between covariates

	CC visit frequency	Twitter usage frequency	Twitter age	Product involvement	Attitude toward product reviews
CC visit frequency	-	.071	.056	.199**	-.093
Twitter usage frequency		-	.393**	.072	.299**
Twitter age			-	.076	.110
Product involvement				-	.013
Attitude toward product reviews					-

** p <.05

An analysis of covariance was conducted to find possible predictors for the dependent variables purchase intention and attitude toward brand (see appendix 4). Of the five variables mentioned, only CoffeeCompany visit frequency was significant ($F (1, 140) = 22.09$, $p < .0005$, $\eta^2 = .136$) for the dependent variable purchase intention. The same test was conducted for the dependent variable brand attitude change. Two variables were indicated as covariates; attitude toward product reviews ($F (1, 140) = 5.432$, $p = .02$, $\eta^2 = .04$) and CoffeeCompany visit frequency ($F (1, 140) = 5.863$, $p = .017$, $\eta^2 = .04$). Past research showed that trust and relationship to the website is a fundamental element for eWOM (Brown and Lee, 2007). The importance of trust has been emphasized and has a positively significant effect in previous studies on the topic (Rieh, 2002; Cheung et al., 2008). Therefore, only respondents with a general positive attitude toward product reviews on Twitter were included in the dataset for hypotheses testing purposes. A total of 68 respondents scored below 3.5 on this scale and thus did not think product reviews on Twitter are trustworthy. The dataset resulted in respondents that have a general trust in product reviews on Twitter (score above or equal to 3.5). Furthermore, CoffeeCompany visit frequency is used as a covariate in further analyses.

Dependent variables

Purchase intention

Immediately after reading the negative Tweet, two items measured the purchase intention of the respondents. A one-sample t-test revealed that the overall purchase intention was significantly positive, above 3.5 ($M = 4.17$, $SD = 1.58$, $t (336) = 7.76$, $p < .005$). 17% said that they were undecided if they were going to visit CoffeeCompany the next time they have the opportunity. According to an independent-samples t-test the purchase intention of the group that did know CoffeeCompany ($M = 4.43$, $SD = 1.55$) was significantly higher than the group that was not familiar with CoffeeCompany ($M = 3.69$, $SD = 1.52$; $t (335) = 4.22$, $p < .005$).

Attitude toward brand

To check if the brand attitude differed between the before and after measurement, a paired-samples t-test was performed. The brand attitude before was significantly lower than brand attitude after ($t (323) = 8.73$, $p < 0.005$). Before exposure to the Tweet the mean brand attitude was 4.82 ($SD = 0.93$) and decreased to 4.49 ($SD = 1.16$). The eta squared showed that there was a large effect ($\eta^2 = .19$), with a substantial difference in the brand attitude scores obtained before and after the exposure. A new variable was computed that represented the brand attitude change for further analysis. The values for this variable were significantly different between the groups ($F (1, 322) = 5.038$, $p = .025$).

Hypotheses testing

To determine the power of 140 characters, this study investigated which factors of a negative product related Tweet have the most impact on purchase intention and attitude toward brand. The table below describes the means of the different manipulation groups. This paragraph will determine whether the differences between the groups are significant and test the hypotheses. Statistics tables are attached in appendix 5.

Table 5 - Descriptive statistics

Manipulations				Purchase intention	Brand attitude change
High involvement	High quality	Strong tie	Mean	3.93	.49
			SD	1.48	.58
			Cell size	22	22
	High quality	Weak tie	Mean	4.94	.24
			SD	.89	.66
			Cell size	16	16
	Low quality	Strong tie	Mean	4.48	.43
			SD	1.46	.69
			Cell size	21	21
	Low quality	Weak tie	Mean	5.44	.29
			SD	1.16	.76
			Cell size	9	9
Low involvement	High quality	Strong tie	Mean	4.16	.33
			SD	1.37	.54
			Cell size	19	19
	High quality	Weak tie	Mean	3.78	.28
			SD	1.28	.33
			Cell size	16	16
	Low quality	Strong tie	Mean	4.18	.39
			SD	1.67	.72
			Cell size	22	22
	Low quality	Weak tie	Mean	4.77	.31
			SD	1.29	.33
			Cell size	11	11
Total			Mean	4.36	.36
			SD	1.42	.59
			Cell size	136	136

Considering the goal is to determine which characteristics have the most impact, the *lowest* purchase intention and *highest* brand attitude change are focus points. The group that has been affected the most is expected to have the lowest purchase intention and highest brand attitude change. Building on the literature, this would be respondents that read the message under high message involvement circumstances, with a high message quality from a strong tie sender. Whereas the group that have been the least affected presumably has the highest purchase intention and lowest brand attitude change.

H1: Tie strength

H1a: A negative product-related Tweet from a strong tie source will have a greater impact on purchase intention than from a weak tie source.

H1b: A negative product-related Tweet from a strong tie source will have a greater impact on attitudes toward brand than from a weak tie source.

The first hypothesis proposed that a message from a friend has more impact on the dependent variables than from a stranger. In other words, the purchase intention will be lower and the brand attitude change will be higher when the respondent was exposed to a message from a strong tie source.

A statistically significant difference was found between the two levels of tie strength on purchase intention ($F (1, 127) = 5.813$, $p = .017$). The mean purchase intention for the weak tie strength group was 4.63 ($SD = 1.28$) and 4.18 ($SD = 1.49$) for the strong tie group. In other words, reading the negative Tweet had more impact on purchase intention of the strong tie group than for the weak tie group. The effect size, calculated using eta squared, was small: .03. Hypothesis 1a is accepted. The change of attitude toward brand was greater for the strong tie group ($M = .42$, $SD = .63$) than the weak tie group ($M = .27$, $SD = .52$). The difference between the groups was not significant ($F (1, 127) = 1.46$, $p =$ n.s.). Hypothesis 1b is not supported.

H2: Message quality

H2a: A high quality negative product-related Tweet will have a greater impact on purchase intention than a low quality Tweet.

H2b: A high quality negative product-related Tweet will have a greater impact on attitudes toward brand than a low quality Tweet.

A high quality message was expected to have a larger effect on consumer behaviour than a low quality message. The group that was exposed to a high quality message scored lower ($M = 4.18$, $SD = 1.34$) on purchase intention that the low quality group ($M = 4.56$, $SD = 1.49$), this difference between means was not significant ($F (1, 127) = .252$, $p =$ n.s.). Hypothesis 2a is not supported.

There was also an expected difference between the low and high quality group in terms of brand attitude change (low quality: $M = .37$, $SD = .65$; high quality: $M = .35$, $SD = .54$). But this difference was not significant ($F (1, 127) = .656$, $p =$ n.s.). Thus, hypothesis 2b is not supported.

H3: Message involvement

H3a: The effect of a negative product-related Tweet on purchase intention will be greater for a high involvement consumer than for a low involvement consumer.

H3b: The effect of a negative product-related Tweet on attitudes toward brand will be greater for a high involvement consumer than for a low involvement consumer.

It is expected that respondents who read the message under high involvement circumstances are more affected by the negativity of the content, thus have a lower purchase intention and higher brand attitude change. The numbers did not support this assumption. The purchase intention of the high involvement was surprisingly high (M = 4.65, SD = 1.39) compared to the low involvement group (M = 4.18, SD = 1.44). The difference between the two was not significant (F (1, 127) = 1.763, p = n.s.). The brand attitude change was higher for the high involvement group (M = .39, SD = .65) than for the low involvement group (M = .33, SD = .53) but did not reach statistical significance (F (1, 127) = .376, p = n.s.). Hypotheses 3a & 3b are not supported.

H4: Message quality and message involvement

H4a: A high quality negative product-related Tweet will have a greater impact on purchase intention for high involved consumers than low involved consumers.

H4b: A high quality negative product-related Tweet will have a greater impact on attitude toward brand for high involved consumers than low involved consumers.

A 2 by 2 between-groups analysis of variance was conducted to impact of two involvement groups on purchase intention and brand attitude change for high and low quality messages. The independent variables were the involvement level (high or low) and message quality (high or low). The dependent variable for hypothesis 4a was purchase intention, and brand attitude change for hypothesis 4b.

The test revealed that there is no significant interaction effect (F (1, 127) = .847, p = n.s.) for the first hypothesis. The interaction effect between message involvement and message quality for the dependent variable brand attitude change did also not reach statistical significance (F (1, 127) = .009, p = n.s.). Hypotheses 4a and 4b are not supported.

H5: Tie strength and message involvement

H5a: A negative product-related Tweet from a strong tie source will have a greater impact on purchase intention for low involved consumers than high involved consumers.

H5b: A negative product-related Tweet from a strong tie source will have a greater impact on attitude toward brand for low involved consumers than high involved consumers.

By conducting a two-way analysis of variance, the interaction effect of tie strength and message involvement on the dependent variables purchase intention and brand attitude change was measured.

The effect of tie strength and message involvement on purchase intention was not significant (F (1, 127) = 3.89, p = n.s.). The interaction effect of tie strength and message involvement on brand attitude change was also not significant (F (1, 127) = .37, p = n.s.). Hypotheses 5a & b are not supported.

Table 6 - Results ANOVA

Dependent variables		F-value	p-value	η^2
Purchase intention				
Main effects	Message involvement	1.763	.187	.014
	Message quality	.252	.617	.002
	Tie strength	5.813	.017	.044
Two-way interactions	Message involvement × message quality	.847	.359	.007
	Message involvement × tie strength	3.889	.051	.030
Three-way interaction	Message involvement × message quality × tie strength	4.205	.042	.032
Brand attitude change				
Main effects	Message involvement	.376	.541	.003
	Message quality	.656	.419	.005
	Tie strength	1.461	.229	.011
Two-way interactions	Message involvement × message quality	.009	.924	.000
	Message involvement × tie strength	.366	.547	.003
Three-way interaction	Message involvement × message quality × tie strength	.449	.504	.004

Discussion

This study was aimed at investigating the impact of a negative product related Tweet on purchase intention and brand attitude change. Although only one hypothesis is supported, four major findings emerge from this research. The results of this study have several implications, limitations and recommendations for future research. They will be discussed in the following paragraphs.

Findings

Tie strength

First, the results point toward the importance of strong ties in determining the impact of negative eWOM communication. Several scholars argue that eWOM is more powerful than offline WOM because people tend to trust strangers online as much as they trust friends or family (e.g. Steffes and Burgee, 2009). In this experiment only tie strength had a significant impact on purchase intention. This implicates that only messages from known, trusted people have an impact on one's purchase intention. Subjects put more weight on opinions from friends than from strangers. This finding is in accordance with traditional WOM research findings.

Difference between WOM and eWOM

This leads us to the second finding of this study. With the rise of the Internet and being able to communicate with the entire world, it is often assumed that every individual on the Internet can influence perceptions and intentions of consumers toward brands and products. Some scholars even argue that all connections in electronic environments are equal in their effectiveness and persuasiveness (Vilpponen, Winter and Sundqvist, 2006). This study found the opposite. Only strong ties were able to influence the purchase intentions of the respondents. This finding is different from previous studies in this area. It should be kept in mind that this finding could be the result of the evolution of Internet and human behaviour. Internet and eWOM are relatively new concepts compared to offline WOM communications. Therefore it could be possible that Internet users initially trusted strangers on the Internet, but time made them sceptical toward these unknown contributors.

Short and long-term effects

The third major finding comprises the different results between the two dependent variables. The impact was measured for both purchase intention and brand attitude change. These two variables relating to consumer behaviour represent noth short and long-term effects of

negative eWOM. The effects of the negative Tweet in this research have been supported for the dependent variable purchase intention, and in none of the cases for attitude toward brand. Although brand attitude changes were visible, no significant differences were measured. These findings point toward the short-term effects of reading negative Tweets about a brand or product. The short-term effects were supported in this study but proof for long-term effects was not found. This finding has some managerial implications, which will be discussed in following paragraphs.

Message involvement

Finally, this study reveals that message involvement does not have a (moderating) effect on the impact of negative Tweets. Spending more time and attention to reading a message did not affect the processing of the content. The moderating effect of message involvement was not found in this study. Based on the (e)WOM literature it was expected that a high-involved reader would be influenced more by the content of the Tweet. Subsequently, the effects of a high quality message or strong tie strength would be moderated by message involvement. This hypothesis is not supported in this research. This could be caused by several reasons. First, a Tweet can only contain 140 characters and therefore it is hard to be either high or low involved. A timeline can be compared to reading the headlines in the newspaper, scrolling down the paper to see if there is something of interest. It is hard to avoid reading such a short message when scrolling through the timeline on Twitter. Apparently, the swiftness of Twitter makes involvement an irrelevant factor. The involvement manipulation was executed successful and therefore the question arises if someone can be genuinely high or low involved on Twitter. More research on message involvement levels on Twitter is needed to fully understand how engaged people are in reading the Twitter stream.

Message quality

This length limitation of 140 characters could also be the cause of finding no support for the hypotheses regarding message quality. Although differences among groups were found, no significant results were computed. The high quality message contained two arguments instead of none. These arguments were short and because of space limitations they could not be elaborated on. The message quality manipulation was executed successful but it may not have made the impact it was expected to have. Park et al. (2007) stressed the importance of content in overcoming the lack of persuasiveness, but in this experiment the quality did not have that effect.

Brand attitude changes

None of the variables had a significant effect on brand attitude changes. As mentioned before, this could point toward the conclusion that negative eWOM only affects short-term consumer behaviour. It should also be taken into account that the absence of significant brand attitude changes could be the result of insufficient knowledge of the brand. 64% of the respondents indicated to be familiar with the coffee bar chain, but 40% never visited the company.

Assessing attitudes toward a brand without actual knowledge can be difficult. Respondents could have had the feeling that they did not have enough knowledge to determine their attitude toward the brand, but did know if they had intentions to buy there when they had the chance.

Limitations and future research

Inevitably, this research has some limitations. First, asking respondents about their purchase intentions and attitude toward a brand can be difficult. The short interval between exposure to the Tweet and measurement of the response gives no time for the impact of information to fade or develop. In real life, there is usually a substantial interval between the occurrence of eWOM and the purchase intention. This could be an explanation for the lack of supported hypotheses found for brand attitude change.

Second, the respondent in the strong tie strength condition were told that the sender of the Tweet was one of their closest friends. Of course, in real life people have different degrees of friendships. Respondents in the weak tie condition were told that the sender of the Tweet was someone they did not know nor follow on Twitter. On Twitter it is plausible that a *Twitterer* follows a person he or she does not know. This tie could be described as weak, but the *Twitterer* chose to follow this person and this implies a relationship of some kind. This study did not have the scope and time to incorporate different kinds of relationships on Twitter. The complex relationships people can have on Twitter make it an interesting topic for future research. Also the importance of demographic similarities could be a starting point for future research.

Source characteristics like expertise or experience were not included in this research. One could imagine a Tweet about coffee could have more impact from a professional barista than from a construction worker. The sender of the Tweet in both cases had no avatar picture. It has been proven that Tweeters with 48 x 48 pixel avatar have more influence than without picture (Zarrella, 2010). Following studies could study the impact of using a picture in the Tweet. A picture could possibly make even weak ties look personal and therefore could have an effect. Also exposing more characteristics about the source could be interesting for future research. The effects of negative eWOM vary per product category. The product in this study has low switching costs and thus consumers are expected to be less loyal. The results of this study are limited to the product type used in the Tweet. Coffee is a fast moving consumer good with low switching costs. One can imagine that Tweeting about a brand new car that broke down can have much more impact than Tweeting about coffee.

68 respondents in the dataset were not used for hypotheses testing purposes because of their low trust in online product reviews. Therefore the group was virtually divided in *believers*

and *non-believers*. The measurement of this attitude toward online product reviews lead to a finding that initially was not the focus of this study. Trust in online product reviews was positive correlated with the duration of their Twitter membership. Thus, the longer a person had experience with Twitter, the more trust they had in product reviews on the microblog and therefore could be influenced the most.

Theoretical implications

The findings of this study point toward the similarities between WOM and eWOM. The results contribute to the debate regarding the difference between the offline and online word of mouth communications. Several scholars argue that individuals can create fully formed impressions of others based solely on the linguistic content of written electronic messages (Brown, Broderick and Lee, 2007). Some go even as far by claiming that in an online environment people trust weak tie sources as more influential than strong tie sources (Steffes and Burgee, 2008). This study shows that in the end the most important factor remains to be tie strength.

This study contributed to research on eWOM communications by using the unique Twitter characteristics communication in an eWOM context. One factor was considered valuable for determining the power of 140 characters; tie strength. As opposed to the presumed importance of message involvement, this study shows that being high or low involved in the message does not significantly affect the impact.

While several studies focus on positive eWOM communication, this study used only negative online consumer reviews to consider how negative message affect the purchase intention and brand attitude. Being one of the first studies that focused on Twitter, this research contributed unique insights in product reviews on this microblog. Twitter is still growing in terms of registered users and messages posted per day, hence the increasing need for research in this area. The findings in this study are the first steps in determining the return-on-investment of social media activities.

Managerial implications

The outcome of this research has managerial implications. Online brand presence on Twitter is almost compulsory these days and social media can be a great medium for increasing lifetime value of a customer. Yet, the impact of negative eWOM communication is not as significant as often imagined. Twitter makes it easier for consumers to distribute dissatisfaction widely, but this study showed that the effects are not as harsh as expected.

Tie strength is an important factor in affecting consumer's purchase intention. This effect was not found for attitude toward brand. Thus, the negative Tweet only affected the short-term

consumer behaviour. Long-term effects were not found. This finding has implications for marketers. Products that rely on these day-to-day sales and less on long-term attitudes toward brand are subjected to this finding. Less focus should be put on anonymous eWOM messages, considering they have significantly less impact than close relationships. This could imply that marketers need to put more weight on controlling only the messages from senders with numerous followers, as they presumably have more strong-tie contacts that could be influenced by their negative content.

As social media presence for brand almost is inevitable in this digital age, Twitter is a tool for engaging in close communications with customers. As this study shows, the impact of one negative Tweet about a brand or product did not have the impact as one initially expected. Marketers tend to focus on the spreading of eWOM, assuming that every individual on the Internet can make an impact on one's consumer behaviour. This study found that the focus should not be so much on the spreading, but on the source. Strong ties turned out to be the most influential factor in this research.

Conclusion

Social media increasingly becomes a part of our daily activities. The Netherlands has the highest Internet penetration worldwide for two of the key global social networking sites; Twitter and Linkedin (comScore, 27 April 2011). This progress has also led marketing managers to believe that they should have community managers to scan the web every day, searching for positive or negative messages about their brand or product. The prevailing idea behind this is that negative electronic word of mouth communication (eWOM) on social media has a great impact on consumer behaviour. The damage negative product-related messages on the web can do is often intuitively estimated enormous but academic research in this field yet has to confirm or reject this claim. The need for research in this area is increasingly necessary.

The objective of this research is to investigate the impact of negative eWOM via Twitter on consumer behaviour. Twitter is treated as a single unit of analysis in this study, considering the unique characteristics the microblog holds. Compared to a product review website, the eWOM that appears on Twitter is *unsolicited*. Consumers just happen to 'bump' into the eWOM exposed on Twitter. That is, if they chose to *follow* the sender of the Tweet. This follow-relationship does not occur on professional product review websites, where most eWOM studies are focused on. The immediate one-way tie that this follow-relationship implies is an important characteristic of Twitter and thus incorporated in this research. Another characteristic that makes Twitter unique is its *swiftness*. An average Twitter visitor was expected to be generally low involved in reading the message. The endless stream of updates makes it almost impossible to read all of them, and it is expected that users just scroll through the timeline. This characteristic is translated to message involvement and is included in this study. The third main variable in determining the power of eWOM on Twitter is message quality. The literature indicated that a high quality message could elicit more than a low quality message. This study investigated the impact of negative eWOM via Twitter on consumer behaviour depending on message involvement, message quality and tie strength. The dependent variables are short and long-term consumer behaviour: purchase intention and brand attitude. This study proposed several hypotheses and conducted an experiment to test these hypotheses. The research question of this study is as follows:

What is the impact of negative eWOM via Twitter on consumer behaviour?

To answer the research question and test the hypothesis this study employed a 2 x 2 x 2 factorial experimental design. The three independent variables are message involvement (high and low), tie strength (strong and weak/non existent) and message quality (high and

low). The dependent variables are purchase intention and attitudes toward brand. 571 respondents took part in the online survey, from 14 April to 3 May 2011.

Since social media is a relatively new phenomenon, there is a lack of academic studies on the impact of these platforms. This research builds on the theories of both WOM and eWOM to investigate the impact of negative eWOM on Twitter. Previous studies found that tie strength is one of the most significant factors explaining the influence of offline WOM communications (De Bruyn and Lilien, 2008). In eWOM the tie strength is usually considered weak because anyone can post their opinions about a product to various online platforms (Granitz and Ward, 1996; Chatterjee, 2001). The scope of eWOM is not constrained by the receivers' social circle and therefore the strength of weak sources is an important factor in eWOM research. In offline WOM research, strong ties are perceived as more credible and trustworthy than weak tie sources (Rogers, 1995). Especially in the case of Twitter where it is considered normal to *follow* a person you do not know it is important to investigate the impact of this relationship. Message quality could also influence the effect of reading a negative message about a product. The quality of online reviews has a positive effect on consumer's purchasing intention (Park, Lee and Han, 2007). High quality messages are more effective because the information is relevant to evaluate the product and contains understandable, reliable and sufficient reasoning. An understandable and objective Tweet with sufficient reasons of disapproval, it is relatively more persuasive than a low quality Tweet. The message involvement level of the reader is expected to moderate the effects of tie strength and message quality. Consumers with a low involvement level are either not willing or unable to exert a lot of processing effort. Therefore, high involvement is likely to increase the effect of a strong tie or high quality message.

Four major findings arise from this research. Tie strength was the most important factor in determining the impact a negative Tweet had on purchase intention. Respondents that were exposed to a Tweet from a strong tie were affected more in their purchase intention than from a weak tie source. This impact was also visible in the brand attitude change, yet not significant. This finding is different from what was often assumed regarding electronic word-of-mouth. The idea was that since anyone can post content on a brand or product on Twitter and the Internet, these opinions and product experiences influence consumers. This study showed that only close relations can make this impact in one's consumer behaviour. Marketers should focus less on these anonymous content generators, and more on traditional word-of-mouth theories. Also, the reach of Twitter and the fact that it can be used anywhere has caused marketers to believe that the impact of eWOM on itself is enormous and different than from its offline equivalent. This study found that in its core, eWOM builds on the same theory as offline WOM. That is, the source is the primary factor in influencing people in their purchase intentions.

Message quality and message involvement did not have a significant influence on the dependent variables. This could be because of the length limitation of 140 characters. It is hard to distinctively have a high or low quality message when you are limited to a few lines of text. The expected effect took place; high quality messages affected purchase intention significantly more than low quality messages, yet not significant. The moderating effect of message involvement was not found in this study. The presence of the ELM was not supported. This study showed that high and low involved people were not significantly affected differently by the negative Tweet. No significant proof was found for the effect of message involvement on consumer behaviour in this case. The matrix below shows how the different manipulation groups were affected in their consumer behaviour. As expected, the group that had the highest brand attitude change and low purchase intention is the group under the high involvement, high quality and strong tie condition. The same group but different in tie strength was affected less. The group that read the message from a weak tie was less affected by the content of it, whereas the strong tie strength group changed their brand attitude was less willing to buy the product after reading the negative Tweet. Thus, consumers conform to online consumer reviews via Twitter and attitudes become unfavourable as the tie strength increases.

The impact of a negative Tweet was more apparent for purchase intention than brand attitude. This points toward the conclusion that reading negative product-related content on Twitter only affects the short-term consumer behaviour. Consumers may decide to not buy the product, but eventually the attitude toward brand does not change significantly. Considering community managers scan the web every day to search for negative content about their company, this results shows that the impact of these messages is less harsh than expected.

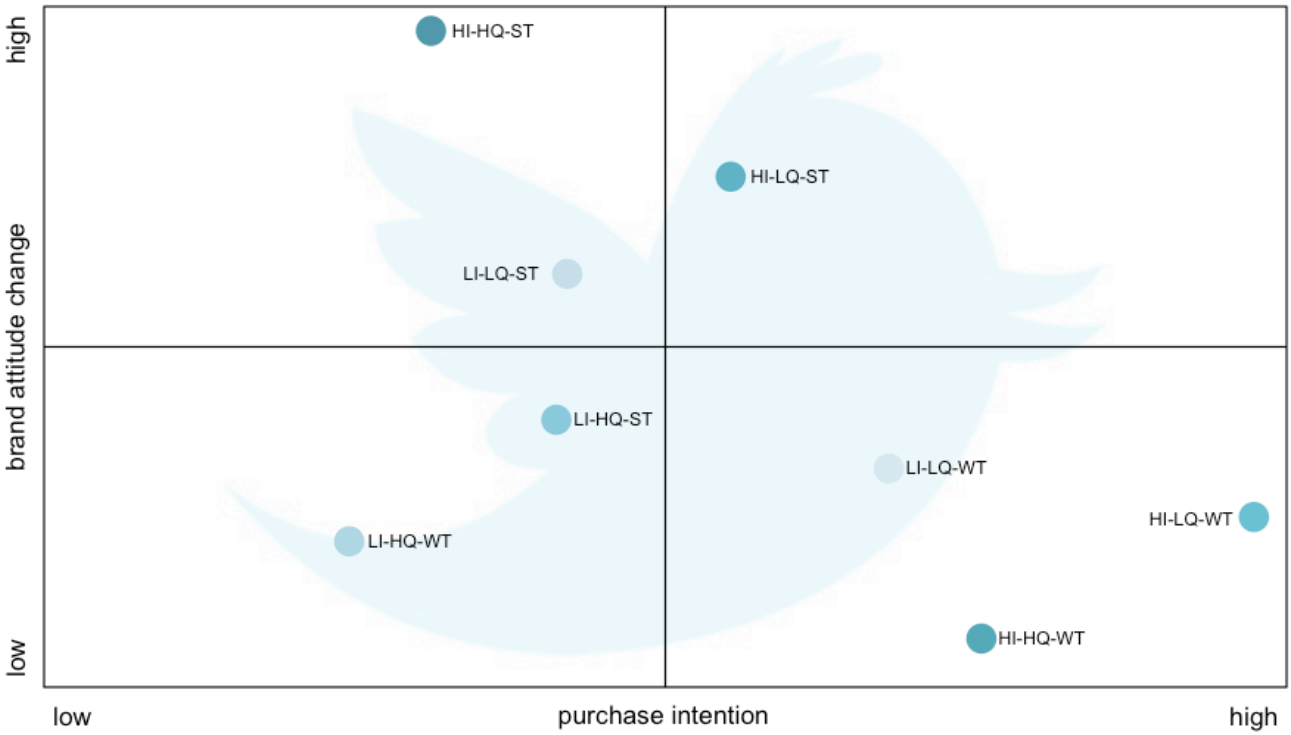
This study showed that being high or low involved in reading the message does not influence the impact a negative Tweet has on consumer behaviour. Whether a short, 140 characters long Tweet has arguments or not, was also not proved in this research. The impact of Twitter is predominantly determined by tie strength. The fundaments of offline WOM are still visible in an online context. The strength of the tie between sender and receiver only had an impact on purchase intention. Long-term effects of reading a negative Tweet were not significantly apparent. Twitter can have a considerable impact on consumer behaviour in a negative context when the source is closely related to the reader.

Overview of impact on different manipulation groups

HI = High message involvement
LI = Low message involvement

HQ = High message quality
LQ = Low message quality

ST = Strong tie strength
WT = Weak tie strength



References

Ahluwalia, R. (2002). How Prevalent Is the Negativity Effect in Consumer Environments? *The Journal of Consumer Research*, 29, (2), p. 270-279.

Alreck, P.L. and R.B. Settle (1995). The importance of Word-of-Mouth communications to service buyers. *Proceedings of American Marketing Association*, Winter, p. 188-193.

Anderson, N.H. (1965). Averaging vs. adding as a stimulus-combination rule in impressing formation. *Journal of Experimental Psychology*, 70, p. 394-400.

Arndt, J. (1967). Role of product-related conversations in the diffusion of a new product. *Journal of Marketing research*, 4, (3), p. 291-295.

Bansal, H.S. and P.A. Voyer (2000). Word-of-Mouth Processes within a Services Purchase Decision Context. *Journal of Service Research*, 3, (2), p. 166-177.

Berger, J., A.T. Sorensen and S.J. Rasmussen (2009). Positive Effects of Negative Publicity: When Negative Reviews Increase Sales. *Marketing Science*, 29, (5), p. 815-827.

Brown, T.J., T.E. Barry, P.A. Dacin and R.F. Gunst (2005). Spreading the word: investigating antecedents of consumers' positive word-of-mouth intentions and behaviours in a retailing context. *Journal of the Academy of Marketing Science*, 33, (2), p. 123-138.

Brown, J., A.J. Broderick and N. Lee (2007). Word of Mouth Communication Within Online Communities: Conceptualizing the Online Social Network. *Journal of Interactive Marketing*, 21, (3), p. 2-20.

Brown, J.J., and P.H. Reingen (1987). Social ties and word-of-mouth referral behaviour. *Journal of Consumer Research*, 14, (3), p. 350-362.

Bruyn, De, A. and G.L. Lilien (2008). A multi-stage model of word-of-mouth influence through viral marketing. *International Journal of Research in Marketing*, 25, p. 151-163.

Blackshaw, P. (2008). Satisfied Customers Tell Three Friends, Angry Customers Tell 3,000: Running a business in Today's Consumer-Driven World. *Broadway Business,* New York.

Cha, M., H. Haddadi, F. Beneventuo and K. P. Gummadi (2010). Measuring User Influence in Twitter: The Million Follower Fallacy. *Proceedings of the Fourth International AAAI Conference on Weblogs and Social Media.*

Chatterjee, P. (2001) Online consumer reviews: do consumers use them? *Advances in Consumer Research*, 28, (1), p. 129-133.

Cheung, C.M.K. M.K. Lee and N. Rabjohn (2008). The impact of electronic word-of-mouth: The adoption of online opinions in online customer communities. *Internet Research*, 18, (3), p. 229-247.

Cheung, C.M.K. and D.R. Thadani (2010). The State of Electronic Word-of-Mouth Research: A literature Analysis. *Pacis 2010 Proceedings*, 151, p. 1580-1587.

Cheung, Z. and M. Zhou (2010). Study on Effect of eWOM: A Literature Review and Suggestions for Future Research. *International Conference on Management and Service Science,* p. 1-4.

Chevalier, J.A. and D. Mayzlin (2003). The Effect of Word of Mouth on Sales: Online Book Reviews. *NBER Working Paper no. 10148.*

Cohen, J. (1988). Statistical power analysis for the behavioural sciences. Hillsdale, NJ: Erlbaum.

Coleman, J.S. (1990). Foundations of social theory. *Cambrigde, MA: Harvard University Press.*

comScore (2011). Homepage (www.comscore.com), 15 February.

Doh, S.J. & J.S. Hwang (2009). How Consumers Evaluate eWOM (Electronic Word-of-Mouth) Messages. *CyberPsychology & Behaviour*, 12, (2), p. 93-197.

eMarketer (2011). Facebook Ad Revenues Forecast to Reach $4.05 Billion in 2011 (www.emarketer.com), 18 January.

Frenzen, J.K. and H.L Davis (1990). Purchasing behaviour in embedded markets. *Journal of Consumer Research*, 17.

Frenzen J. and K. Nakamoto (1993). Structure, Cooperation, and the Flow of Market Information. *The Journal of Consumer Research*, 20, (3), p. 360-375.

Fishbein, M., and I. Ajzen (1975). Beliefs, attitude, intention, and behavior: An introduction to theory and research. *Reading, MA: Addison-Wesley.*

Fiske, S.T. (1980). Attention and weight in person perception: The impact of negative and extreme behaviour. *Journal of Personality and Social Psychology*, 38, p. 889-908.

Fitzsimons, G.J. and D. R. Lehmann (2004). Reactance to Recommendations: When Unsolicited Advice Yields Contrary Responses. *Marketing Science*, 23, (1), p. 82-94.

Gilly, M.C., J.L. Graham, M.F. Wolfinbarger and L.J. Yale (1998). A dyadic study of interpersonal information search. *Journal of the Academy of Marketing Science*, 26, (2), p. 83-100.

Granovetter, M.S. (1973). Tie strength of weak ties. *American Journal of Sociology*, 78, p. 1360-1380.

Granitz, N.A., J.C. Ward (1996). Virtual Community: A sociocognitive analysis. *Advances in Consumer Research*, 23, p. 161-166.

Hennig-Thurau, T., K.P. Gwinner, D.D. Gremler (2004). Electronic Word-of-Mouth via consumer-opinion platforms: What motivates consumers -to articulate themselves on the Internet? *Journal of Interactive Marketing*, 18, (1), p. 38-52.

Hennig-Thurau, T., E.C. Malthouse, C. Friege, S. Gensler, L. Lobschat, A. Rangaswamy and B. Skiera (2010). The Impact of New Media on Customer Relationships. *Journal of Service Research*, 13, (3). p. 311-330.

Herr, P.M., F.R. Kardes and J. Kim (1991). Effects of word-of-mouth and product attribute information on persuasion: an accessibility-diagnosticity perspective. *Journal of Consumer Research*, 17, p. 454-462.

Jansen, B. J., M. Zhang, K. Sobel, A. Chowdury (2009). Twitter Power: Tweets as Electronic Word of Mouth. *Journal of the American Society for Information Science and Technology*, 60, (11), p. 2169 - 2188.

Java, A., X. Sjong, T. Finin and B. Tseng (2007). Why We Twitter: An analysis of a Microblogging Community. *WebKDD*

Johnson, B.T. and A.H. Eagly (1989). The effects of involvement on persuasion: a meta-analysis. *Psychological Bulletin*, 106, p. 290 – 314.

Kaplan, A.M. and M. Haenlein (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, 53, (1), p. 59 - 68.

Keller, K.L. (2001). Building Customer-Based Brand Equity: A Blueprint for Creating Strong Brands. *Marketing Science Institute*, 01-107.

Keller Fay Group, Word-of-Mouth Research and Consulting (2010). Homepage (www.kellerfay.com), 14 November.

Kincaid, J.P., R.P. Fishburn, R.L. Rogers and B.S. Chissom (1975). Derivation of new readability formulas for navy enlisted personnel. *Technical Report Research Brand Report* 8-75, Millington, Tenn, Naval Air Station.

Ko, D.G., L.J. Kirsch and W.R. King (2005). Antecedents of knowledge transfer from consultants to clients in enterprise system implementations. *Mis Quarterly*, 29, (1), p. 59-85.

Krishnamurthy, B., P. Gill and M. Arlitt (2008). A few chirps about Twitter. WOSP '08 *Proceedings of the first workshop on Online social networks.*

Lau, G.T. and S. Ng (2001). Individual and situational factors influencing negative word of mouth behaviour. *Revue Canadienne des Sciences de l'Administration*, 18, (3), p. 163-78.

Lee. J., D.H Park and I. Han (2007). The effect of negative online consumer reviews on product attitude: An information processing view. *Electronic Commerce Research and Applications*, 7, p. 341-352.

Laczniak, R.N., T.E. DeCarlo and S.N. Ramaswami (2001). Consumers' Responses to Negative Word-of-Mouth Communication: An Attribution Theory Perspective. *Journal of Consumer Psychology*, 11, (1), p. 57-73.

Laczniak, R.N., D.D. Muehling and S. Grossbart (1989). Manipulating Message Involvement in Advertising Research (1989). *Journal of Advertising*, 18, (2), p. 23-38.

Mann, C. and F. Stewart (2000). Internet Communication and Qualitative Research. *Sage,* London.

McKinney, V., K. Yoon and F.M. Zahedi (2002). The Measurement of Web-Customer Satisfaction: AN Expectation and Disconfirmation Approach. *Information Systems Research*, 13, (2), p. 296-315.

Mittal, V., W.T. Ross and P.M. Baldasare (1998). The Asymmetric Impact of Negative and Positive Attribute-Level Performance on Overall Satisfaction and Repurchase Intentions. *The Journal of Marketing*, 62, (1), p. 33-47.

Mizerski, R.W. (1982). An Attribution Explanation of the Disproportionate Influence of Unfavourable Information. *The Journal of Consumer Research*, 9, (3), p. 301-310.

Nyer, P.U. and M. Gopinath (2005). Effects of complaining versus negative word-of-mouth on subsequent changes in satisfaction: the role of public commitment. *Psychology and Marketing*, 22, (12), p. 937-953.

Park, D., J. Lee and I. Han (2007). The Effect of Online Consumer Reviews on Consumer Purchasing Intention: The Moderating Role of Involvement. *International Journal of Electronic Commerce*, 11, (4), p. 125-148.

Petty, R.E., J.T. Cacioppo and R. Goldman (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology*, 41, (5), p. 847-855.

Petty, R.E., J.T. Cacioppo and D. Schumann (1983). Central and peripheral routes to advertising effectiveness: the moderating role of involvement. *Journal of Consumer Research*, 10, (2), p. 135-146.

Petroczi, A., T. Nepusz and F. Bazso (2007). Measuring tie-strength in virtual social networks. *Connections*, 27, (2), p. 39-52.

Richins, M.L. and T. Root-Shaffer (1988). The role of evolvement and opinion leadership in consumer word-of-mouth: An implicit model made explicit. *Advances in Consumer Research,* 15, p. 32-36.

Rieh, S.Y., (2002). Judgment of information quality and cognitive authority in the Web. *Journal of the American Society for Information Science and Technology*, 53, (2), p.145-161.

Sahlin, M. (1972). Stone age economics. *Chicago: Aldine Atherton.*

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

Spears, N. and S.N. Singh (2004). Measuring Attitude Toward the Brand and Purchase Intentions. Journal of Current Issues and Research in Advertising, 26, (2), p. 53-66.

Steffes, E.M. and L.E. Burgee (2008). Social ties and online word of mouth. *Internet Research*, 19, (1), p. 42-59.

Sundaram, D.S. and C. Webster (1999). The role of brand familiarity on the impact of word-of-mouth communication on brand evaluations. *Advances in Consumer Research*, 26, p. 664-670.

Twitter (2011). Homepage (www.twitter.com), 21 March.

Vilpponen, A., S. Winter and S. Sundqvist (2006). Electronic word-of-mouth in online environments: referral network structure and adoption behaviour. *Journal of Interactive Advertising*, 6, (2), p. 71-86.

Wilson, R. and R.A. Peterson (1989). Some limits on the potency of word-of-mouth information. *Advances in Consumer Research*, 16, p. 23-29.

Yang, J. and Enping (Shirley) Mai (2009). Experiential goods with network externalities effects: An empirical study of online rating system. *Journal of Business Research,* 63, (9-10), p. 1050-1057.

Zaichkowsky, J.L. (1985). Measuring the Involvement Construct. *Journal of Consumer Research,* 12, (3), p. 341-352.

Zarella, D. (2011). Homepage (www.danzarella.com), 1 May.

Appendix 1: Questionnaire

Hi,

Thank you for taking the time to fill out this short questionnaire. It should take you no more than 5 minutes.

I am a master student at the Amsterdam Business School and I am currently working on my thesis regarding the impact of Twitter on consumer behaviour. Your answers will provide me great insights in this matter. You are doing me a great favour in helping me graduate!

I am giving away €20 gift vouchers to participants. If you are interested in entering the drawing, please enter your email address at the end of this survey.

There are no right or wrong answers and all information will be treated as strictly confidential.

Good luck!

Click 'next' to continue.

1. Are you familiar with Twitter?
   1.1. Yes
   1.2. No [abort questionnaire]

2. Do you know CoffeeCompany?
   2.1. Yes [continue]
   2.2. No [short introduction is shown]

Introduction CoffeeCompany – Shown when Q2=No
CoffeeCompany is a coffee bar chain in the Netherlands.

They have 27 branches, located primarily in the centre of the country (Amsterdam, Utrecht, Den Haag, Rotterdam, Groningen, Delft).

CoffeeCompany sells all different kinds of coffee and other hot and cold beverages

2a. How often do you visit CoffeeCompany?
- Never
- Less than once a month
- Once a month
- 2-3 times a month
- Once a week
- 2-3 times a week\
- Daily

3. [Attitude toward brand - before]

Please describe your overall feelings toward CoffeeCompany 3
[7-point Likert scale; strongly disagree – strongly agree]

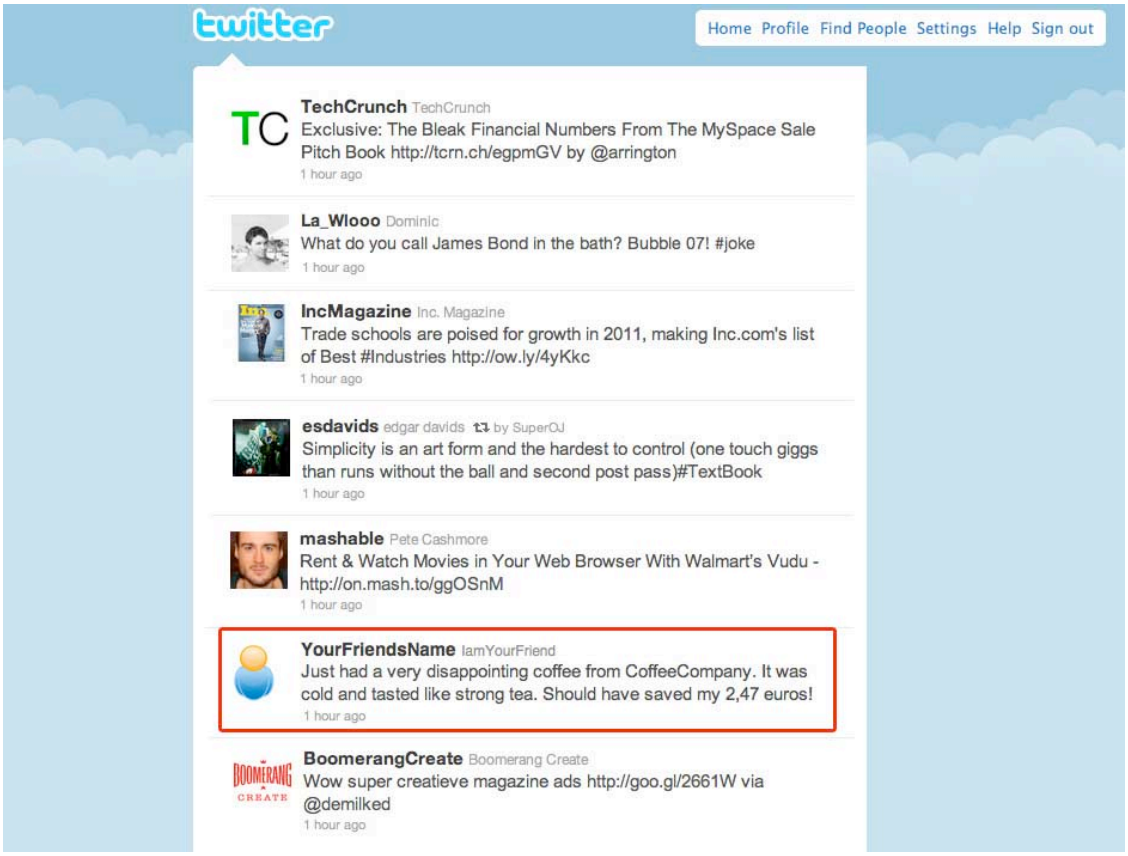
3.1 I think CoffeeCompany is a good brand
3.2 I am positive toward CoffeeCompany
3.3 I like CoffeeCompany
3.4 I think CoffeeCompany is a high quality brand
3.5 I think CoffeeCompany is appealing

[MANIPULATIONS]
Respondents are randomly assigned to one of the 8 scenarios

High involvement – High quality – Strong tie
On the next page I will display a list of Tweets on Twitter.
Please pay close attention to the Tweet that is highlighted with a red line. Read it carefully and pay attention to the claims.

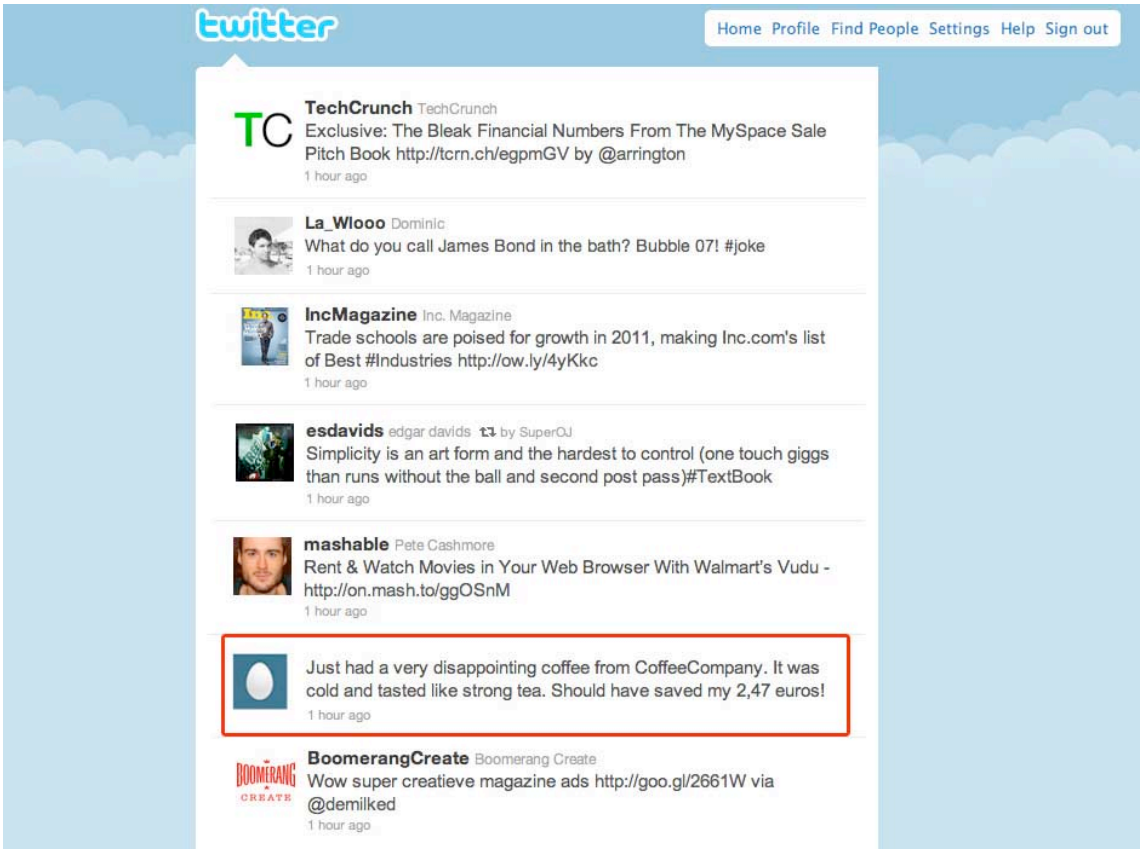
After you finish reading, I will ask you questions about the content.

Please try to imagine that the following Tweet is from one of your closest friends.
You have frequent interaction with this friend and you follow his or hers updates on Twitter.
Keep this friend in mind when answering the following questions.



High involvement – High quality – Weak tie
On the next page I will display a list of Tweets on Twitter.
Please pay close attention to the Tweet that is highlighted with a red line. Read it carefully and pay attention to the claims.
After you finish reading, I will ask you questions about the content.

The sender of the Tweet is someone you do not know. You do not follow his or hers updates on Twitter.
Keep this stranger in mind when answering the following questions.



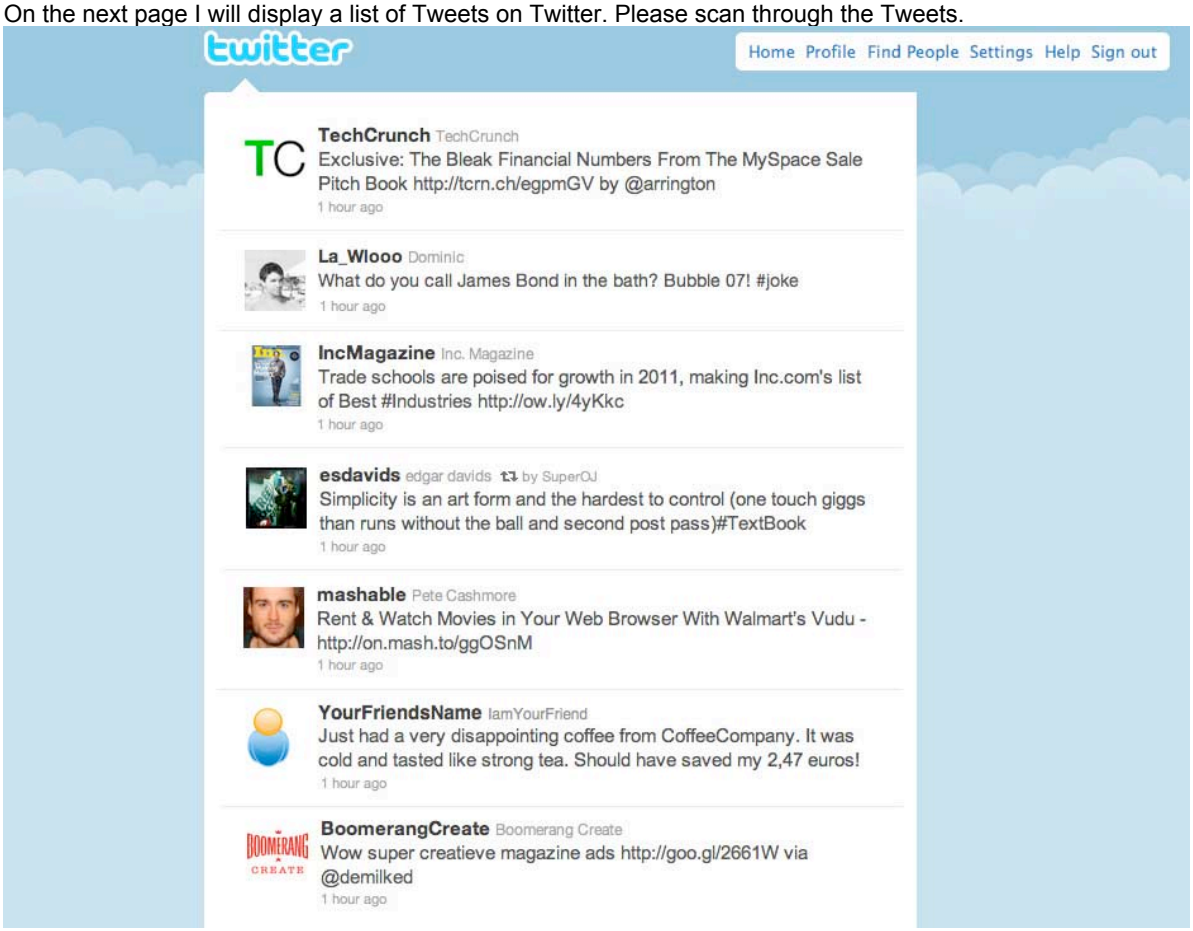
High involvement – Low quality – Strong tie
On the next page I will display a list of Tweets on Twitter.
Please pay close attention to the Tweet that is highlighted with a red line. Read it carefully and pay attention to the claims.
After you finish reading, I will ask you questions about the content.

Please try to imagine that the following Tweet is from one of your closest friends.
You have frequent interaction with this friend and you follow his or hers updates on Twitter.
Keep this friend in mind when answering the following questions.

High involvement – Low quality – Weak tie
On the next page I will display a list of Tweets on Twitter.
Please pay close attention to the Tweet that is highlighted with a red line. Read it carefully and pay attention to the claims.
After you finish reading, I will ask you questions about the content.

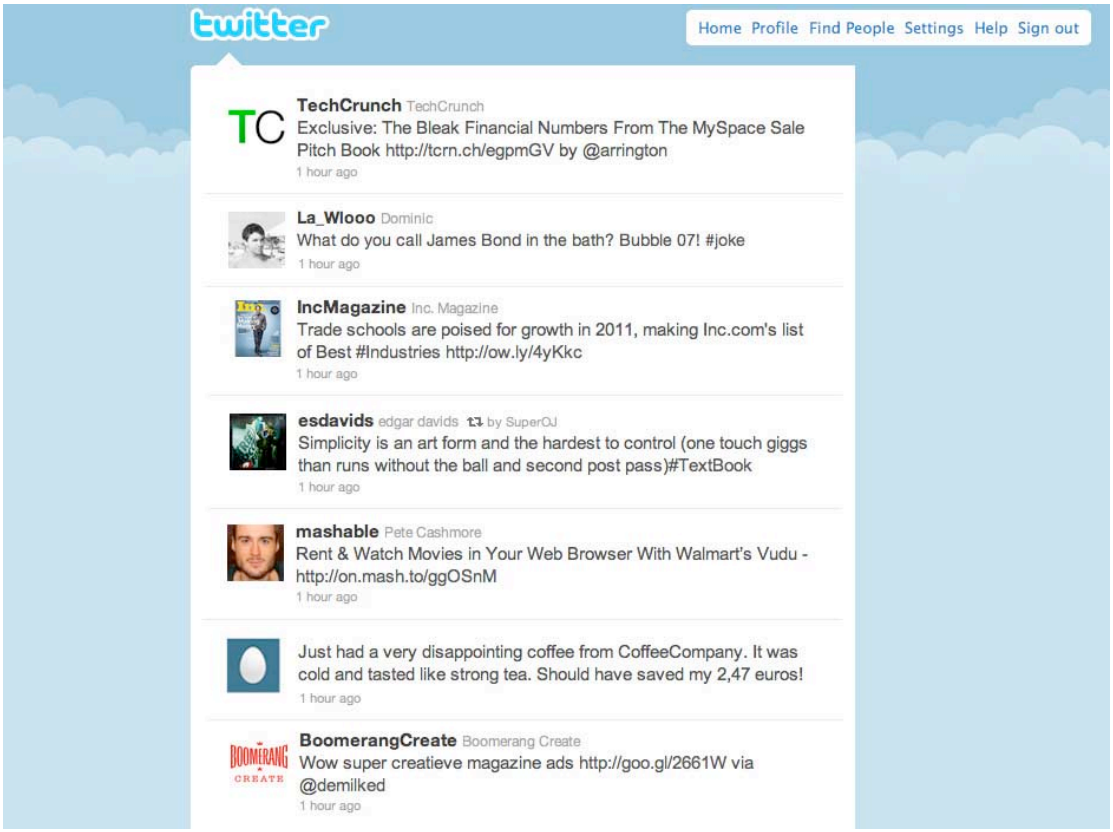
The sender of the Tweet is someone you do not know. You do not follow his or hers updates on Twitter.
Keep this stranger in mind when answering the following questions.

Low involvement – High quality – Strong tie
On the next page I will display a list of Tweets on Twitter. Please scan through the Tweets.



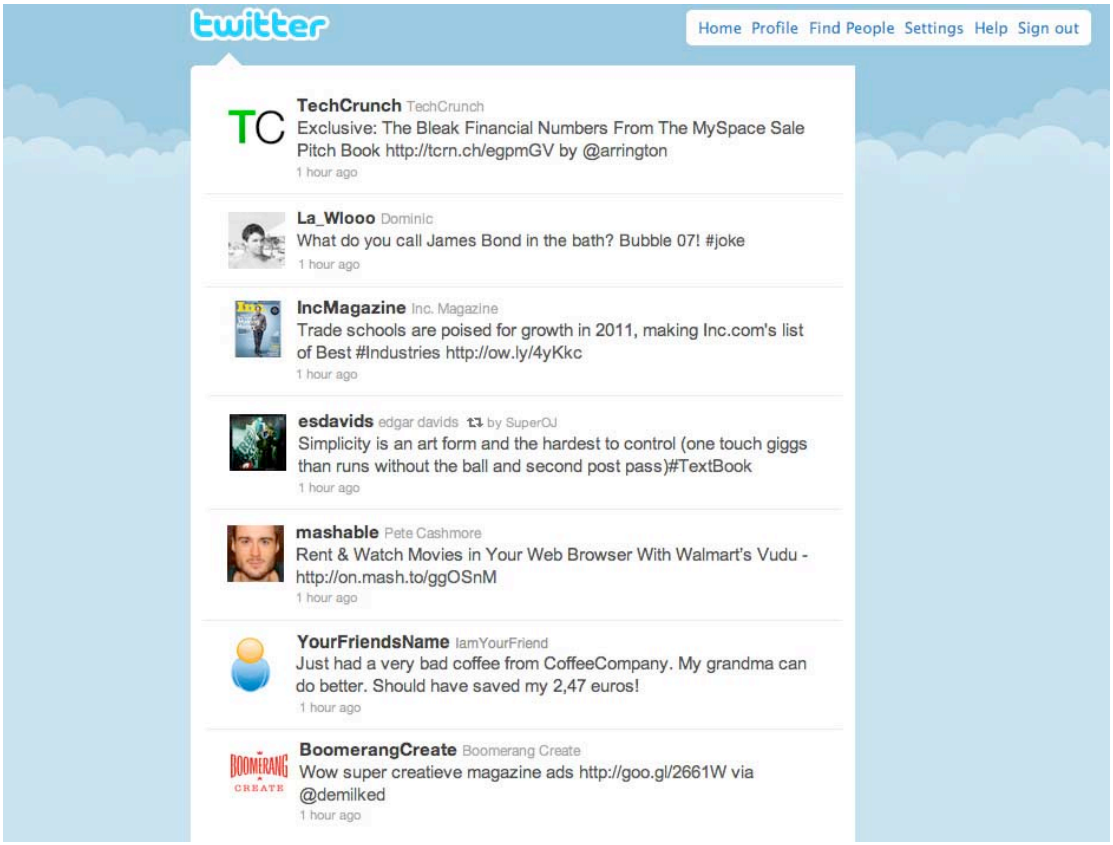
One of the Tweets you just read was about coffee.
Please try to imagine that this Tweet is from one of your closest friends.
You have frequent interaction with this friend and you follow his or hers updates on Twitter. Keep this friend in mind when answering the following questions.

Low involvement – High quality – Weak tie
On the next page I will display a list of Tweets on Twitter. Please scan through the Tweets.



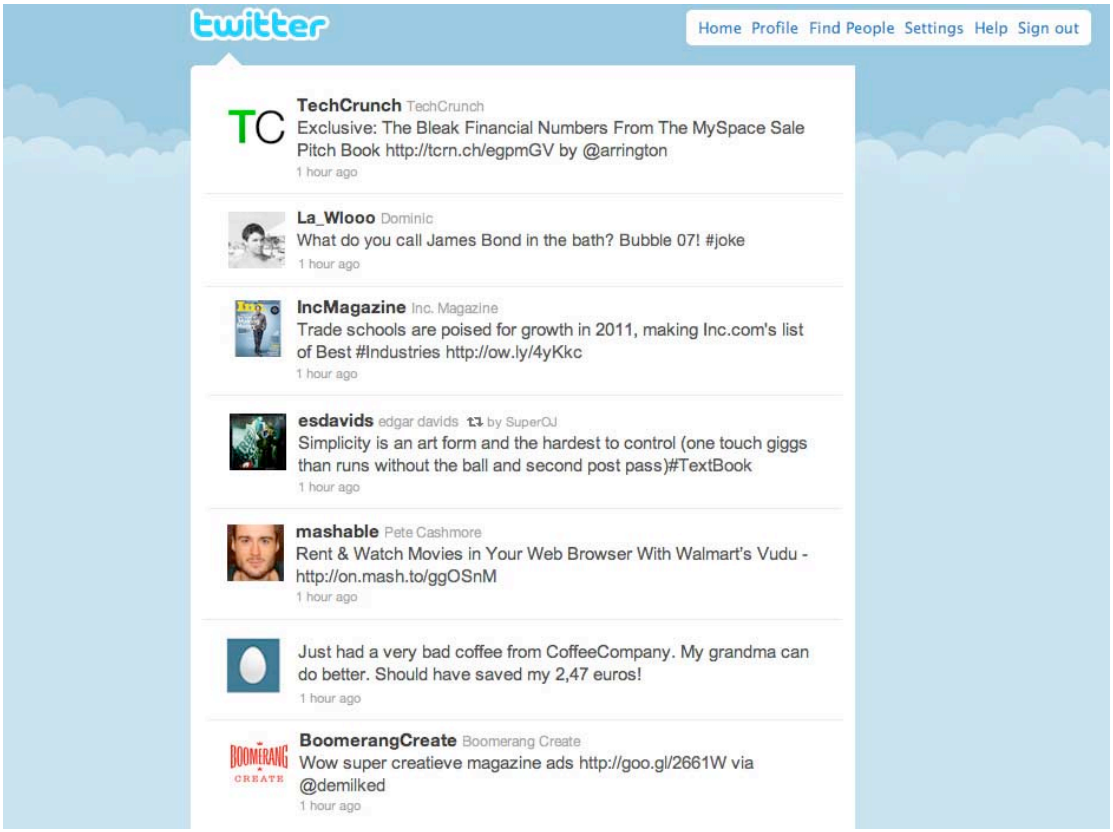
One of the Tweets you just read was about coffee.
The sender of this Tweet is someone you do not know.
You do not follow his or hers updates on Twitter.
Keep this stranger in mind when answering the following questions.

Low involvement – Low quality – Strong tie
On the next page I will display a list of Tweets on Twitter. Please scan through the Tweets.



One of the Tweets you just read was about coffee.
Please try to imagine that this Tweet is from one of your closest friends.
You have frequent interaction with this friend and you follow his or hers updates on Twitter. Keep this friend in mind when answering the following questions.

Low involvement – Low quality – Weak tie
On the next page I will display a list of Tweets on Twitter. Please scan through the Tweets.



One of the Tweets you just read was about coffee.
The sender of this Tweet is someone you do not know.
You do not follow his or hers updates on Twitter.
Keep this stranger in mind when answering the following questions.

---

4. [Purchase intention]
Please answer the following questions

4.1 How likely is it that you will buy a coffee from CoffeeCompany the next time you have the opportunity? [7-point Likert scale; very unlikely – very likely]
4.2 How interested would you be in purchasing a coffee from CoffeeCompany when offered to you? [7-point Likert scale; not interested at all – very interested]

5. [Attitude toward brand - after]
Taking everything into account, please describe your overall feelings toward CoffeeCompany [7-point Likert scale; strongly disagree – strongly agree]

5.1 I think CoffeeCompany is a good brand
5.2 I am positive toward CoffeeCompany
5.3 I like CoffeeCompany
5.4 I think CoffeeCompany is a high quality brand
5.5 I think CoffeeCompany is appealing

6. [Manipulation check – message involvement]
6. How much did the sender of the Tweet pay for the coffee?

[7-point Likert scale; strongly disagree – strongly agree]
7.1 I am interested in the content of the Tweet
7.2 I perceived the information in the Tweet with attention
7.3 I read the information in the Tweet carefully

Congratulations! Only a few questions left!
You are doing great!

8. [Manipulation check – message quality]

[7-point Likert scale; strongly disagree – strongly agree]

8.1 The Tweet I just read had several arguments
8.2 The quality of the argument in the Tweet were high
8.3 The arguments in the Tweet were credible
8.4 The overall quality of the message was high

9. [Manipulation check – tie strength]

[7-point Likert scale; strongly disagree – strongly agree]
Please keep the sender of the Tweet you just read in mind

9.1 I trusted the sender of the Tweet
9.2 The Tweet was trustworthy
9.3 The opinion of the sender matters to me

10. [Reality check]

[7-point Likert scale; strongly disagree – strongly agree]
10.1 The scenario in this questionnaire could happen in real life

11. [General attitude toward product-reviews on Twitter]

[7-point Likert scale; strongly disagree – strongly agree]
11.1 In general I believe information in Tweets I read
11.2 In general I think product-reviews on Twitter are trustworthy

12. [Product involvement]

The following questions are about your attitudes toward coffee in general, from the supermarket or coffee bar. Please note that the questions are not about CoffeeCompany, but about your existing believes and attitudes toward coffee.
[7-point Likert scale; strongly disagree – strongly agree]
12.1 I usually take many factors into account before purchasing this product
12.2 I usually spend a lot of time choosing what kind to buy
12.3 I usually seek advice from other people prior to purchasing this product
12.4 I have a most preferred brand of this product

13. How often do you drink coffee, on average?
    - Never
    - Less than once a week
    - 1-7 times a week
    - 1-5 times a day
    - More than 5 times a day

[Twitter usage]

14. How often do you use Twitter, on average?
    - Never [go to Q18]
    - Less than once a week
    - 1-7 times a week
    - 1-5 times a day
    - 5-10 times a day
    - More than 10 times a day

15. How many people do you follow on Twitter?
    - 1-50 people
    - 51-100 people
    - 101-150 people
    - 151-200 people
    - 201-250 people
    - More than 250 people

16. How many followers do you have on Twitter?
    - 1-50 people
    - 51-100 people
    - 101-150 people
    - 151-200 people
    - 201-250 people
    - More than 250 people

17. When did you join Twitter?
    - Less than a month ago
    - 1 - 6 months ago
    - 7 months - one year ago
    - 1 - 2 years ago
    - 2 - 3 years ago
    - 3 - 4 years ago
    - Longer than 4 years ago

[General questions]

18. What is your gender?
    - Female
    - Male

19. What is your age?
    ...

You're finished!

Again, thank you very much for your help.

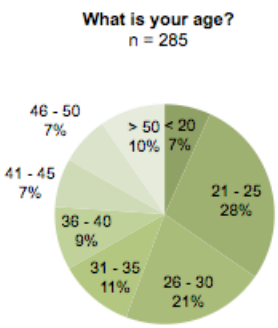
Submit your email address below to win one of the €20 gift vouchers

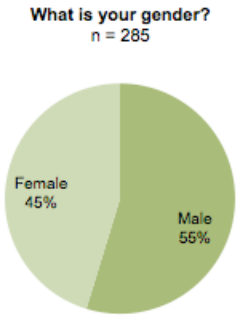
Hope to see you on Twitter!

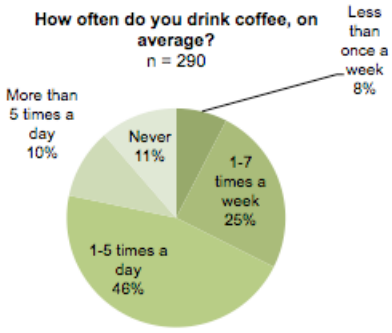
twitter.com/ssann
sannestricker.com
sa.stricker@gmail.com

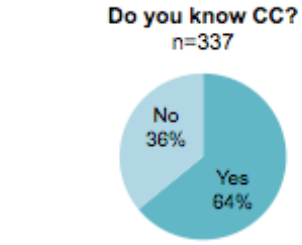
END

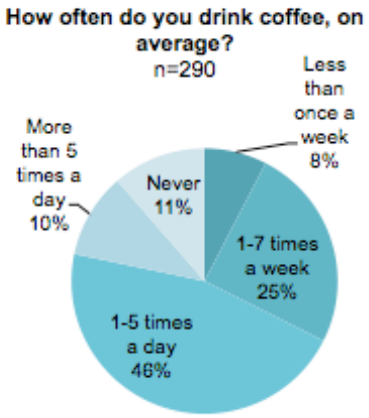
Appendix 2: Profile and distribution

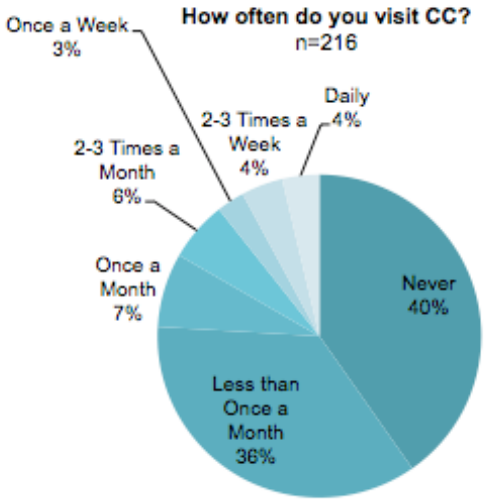


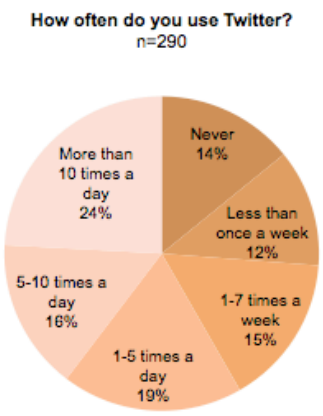


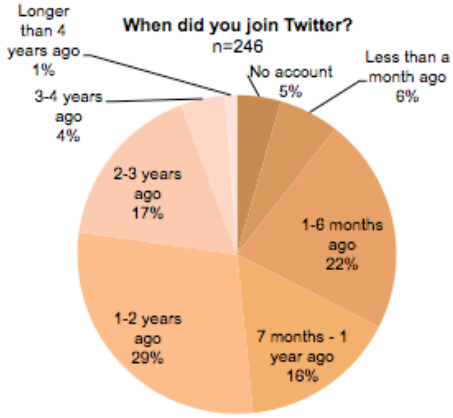


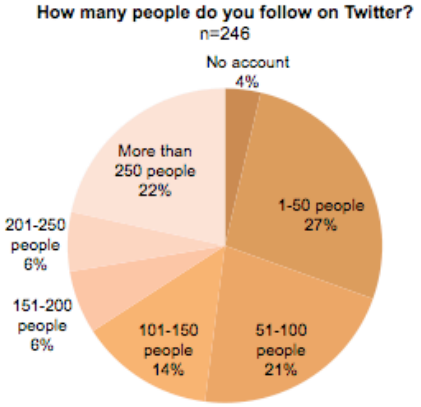


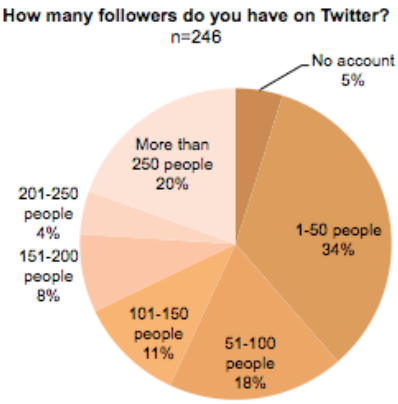












Distribution of respondents

N=337		**Message involvement**	
Tie strength	**Message quality**	*High*	*Low*
Strong	*High*	HI-HQ-ST N = 43 12.8 % of total	LI-HQ-ST N = 52 15.4 % of total
Weak	*High*	HI-HQ-WT N = 52 15.4 % of total	LI-HQ-WT N = 48 14.2 % of total
Strong	*Low*	HI- LQ-ST N = 37 11.0 % of total	LI-LQ-ST N = 51 15.1 % of total
Weak	*Low*	HI-LQ-WT N = 22 6.5 % of total	LI-LQ-WT N = 32 9.5 % of total

Appendix 3: Manipulation checks

Message involvement - Independent-samples t-test

	N	Mean	SD	
Low message involvement	171	4.1637	1.37597	
High message involvement	143	5.0047	1.23397	
	t - value	df	p - value	η^2
Message involvement	-5.651	312	.000	0.09

Message involvement – Chi-Square

	How much did the sender of the Tweet pay for the coffee?		
	Wrong	Right	Total
Low message involvement	100 (54.6% of row)	83 (45.4% of row)	183
High message involvement	56 (36.4% of row)	98 (63.6% of row)	154
Pearson Chi-Square	11.241	p = .001	
Continuity Correction	10.518	p = .001	

Message quality - Independent-samples t-test

	N	Mean	SD	
Low message quality	133	3.1635	1.18474	
High message quality	168	4.1027	1.24455	
	t - value	df	p - value	η^2
Message quality	-6.634	299	.000	0.13

Tie strength - Independent-samples t-test

	N	Mean	SD	
Strong tie strength	135	3.2123	1.25094	
Weak tie strength	165	4.9556	1.30951	
	t - value	df	p - value	η^2
Tie strength	-11.703	298	.000	0.31

Appendix 4: Covariate testing

Three-way ANOVA - Purchase intention

	F-value	p-value	η^2
Twiter usage frequency	.165	.686	.001
Twitter age	.084	.773	.001
Product involvement	1.385	.241	.010
Attitude toward online product reviews	2.315	.130	.016
Visit frequency CC	22.085	.000	.136

Three-way ANOVA – Brand attitude change

	F-value	p-value	η^2
Twiter usage frequency	.157	.693	.001
Twitter age	.031	.860	.000
Product involvement	.618	.433	.004
Attitude toward online product reviews	5.432	.021	.037
Visit frequency CC	5.863	.017	.040

Appendix 5: Hypothesis testing

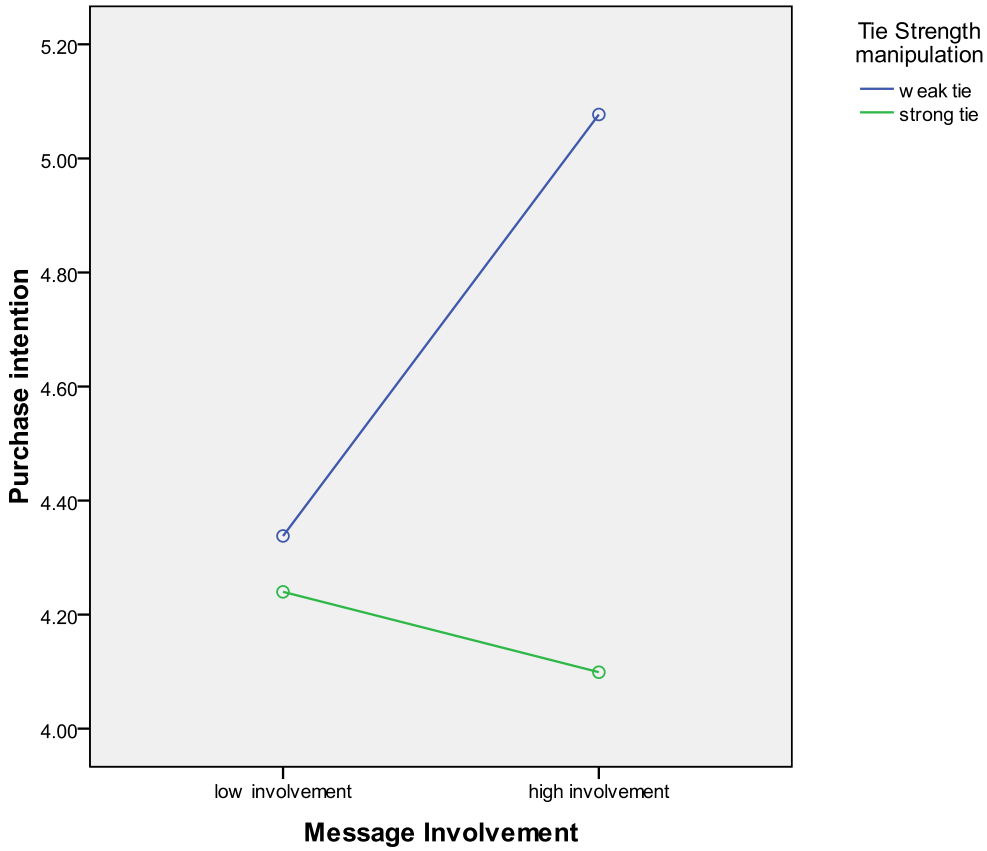
Three-way ANOVA - Purchase intention

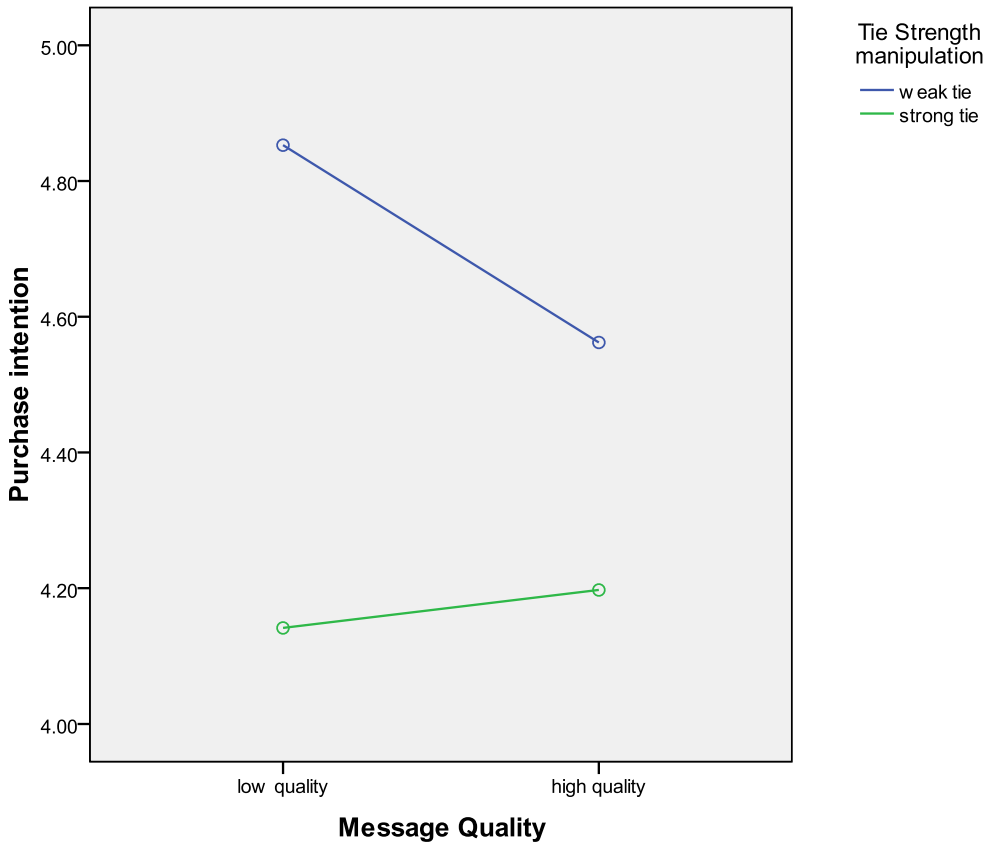
Tests of Between-Subjects Effects

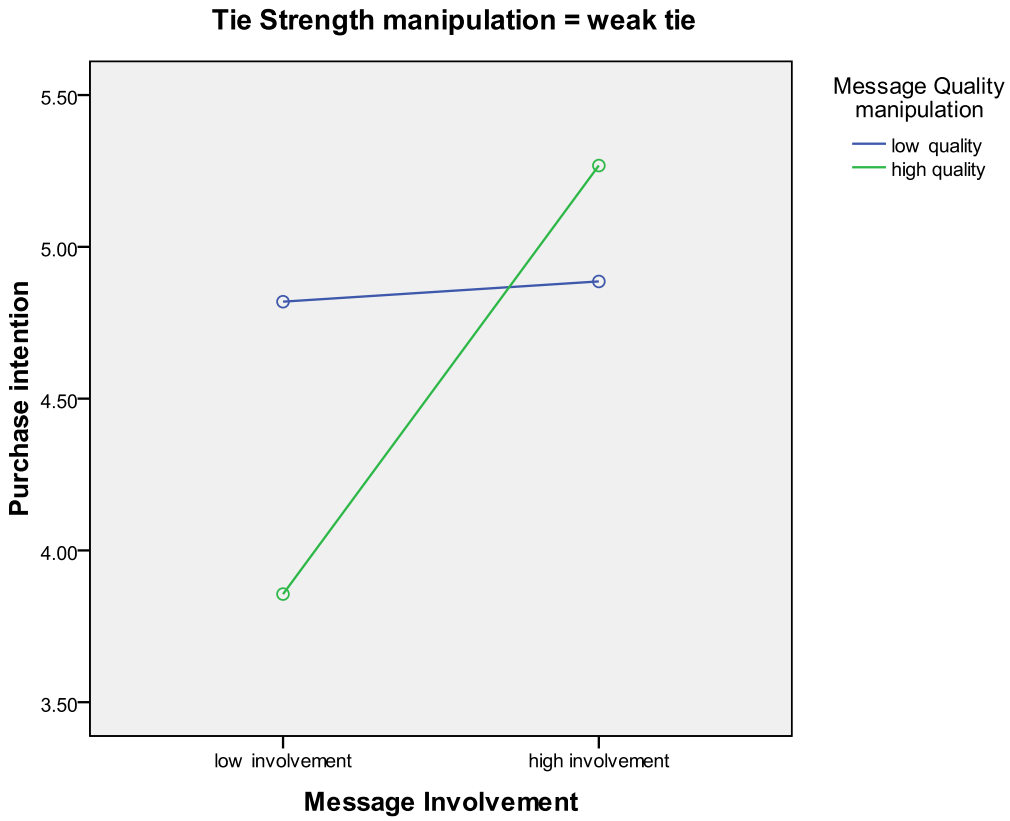
Dependent Variable:Mean purchase intention (PI1-2)

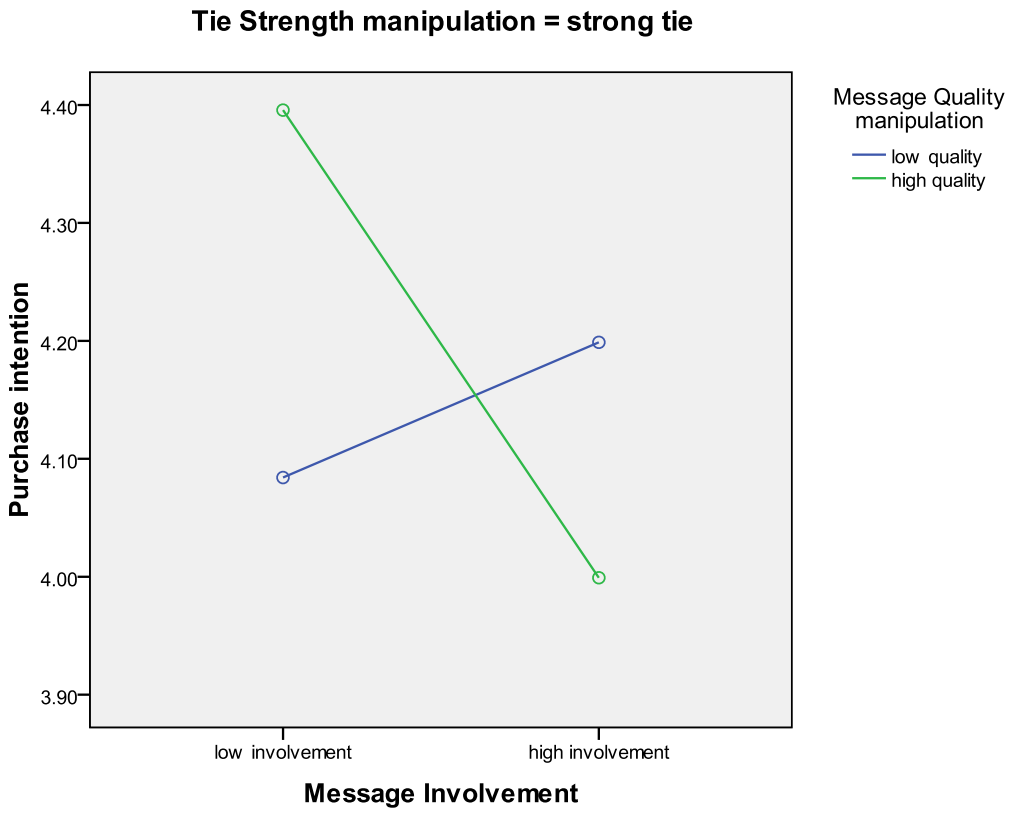
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	78.224[a]	8	9.778	6.361	.000	.286
Intercept	442.446	1	442.446	287.817	.000	.694
VisitFreqCC	49.281	1	49.281	32.058	.000	.202
MI	2.710	1	2.710	1.763	.187	.014
MQ	.387	1	.387	.252	.617	.002
TS	8.936	1	8.936	5.813	**.017**	.044
MI * MQ	1.303	1	1.303	.847	.359	.007
MI * TS	5.978	1	5.978	3.889	.051	.030
MQ * TS	.926	1	.926	.602	.439	.005
MI * MQ * TS	6.464	1	6.464	4.205	**.042**	.032
Error	195.230	127	1.537			
Total	2854.750	136				
Corrected Total	273.454	135				

a. R Squared = .286 (Adjusted R Squared = .241)


Purchase intention
5.20
5.00
4.80
4.60
4.40
4.20
4.00
low involvement
high involvement
Message Involvement
Tie Strength manipulation
weak tie
strong tie


Purchase intention
5.00
4.80
4.60
4.40
4.20
4.00
low quality
high quality
Message Quality
Tie Strength manipulation
weak tie
strong tie


Tie Strength manipulation = weak tie
Purchase intention
5.50
5.00
4.50
4.00
3.50
low involvement
high involvement
Message Involvement
Message Quality manipulation
low quality
high quality


Tie Strength manipulation = strong tie
Purchase intention
4.40
4.30
4.20
4.10
4.00
3.90
low involvement
high involvement
Message Involvement
Message Quality manipulation
low quality
high quality

Three-way ANOVA - Brand attitude change

Tests of Between-Subjects Effects

Dependent Variable:BA Change (Before - After)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2.437[a]	8	.305	.854	.558	.051
Intercept	9.596	1	9.596	26.884	.000	.175
VisitFreqCC	1.489	1	1.489	4.173	.043	.032
MI	.134	1	.134	.376	.541	.003
MQ	.234	1	.234	.656	.419	.005
TS	.522	1	.522	1.461	.229	.011
MI * MQ	.003	1	.003	.009	.924	.000
MI * TS	.130	1	.130	.366	.547	.003
MQ * TS	.030	1	.030	.083	.773	.001
MI * MQ * TS	.160	1	.160	.449	.504	.004
Error	45.332	127	.357			
Total	65.280	136				
Corrected Total	47.769	135				

a. R Squared = .051 (Adjusted R Squared = -.009)