# CONSUMER RESPONSES TO INTENSE NEGATIVE EMOTION IN ELECTRONIC WORD-OF-MOUTH: THE ROLE OF TIE-STRENGTH AND DIAGNOSTIC CUES

By

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# ABSTRACT

# CONSUMER RESPONSES TO INTENSE NEGATIVE EMOTION IN ELECTRONIC WORD-OF-MOUTH: THE ROLE OF TIE-STRENGTH AND DIAGNOSTIC CUES

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Social media have become widely used platforms for dissatisfied customers to express disappointment with failed goods and services. Referred to as an online "firestorm," negative eWOM spreads instantly and exponentially through people's social networks (Pfeffer, Zorbach, & Carley, 2014). Marketers may worry that strong emotional expression of a complaint would lead to negative brand consequences, but that is an empirical question.

Guided by Attribution theory and Accessibility-Diagnosticity model, this study examined how tie-strength and diagnostic information influence consumers' inference-making of intense negative eWOM sender motives which in turn leads to credibility perceptions. An online experiment manipulated tie strength and the behavioral patterns of diagnostic cues to address the as yet unstudied effects of negative eWOM on credibility perception, attitude toward the brand, and sharing intention.

This study used a 3 (Tie-strength: strong vs. weak vs. none) x 4 (Cues Present [high consistency/ medium consistency/ low consistency], Not Present) between-subjects, posttest only random assignment factorial experimental design. The results showed that the consistency of behavioral pattern manifested in previous posts of the eWOM sender influences attribution of sender's motives. That is, when the original negative eWOM and the previous posts show consistently high consistency (i.e., negative valence posts), receivers made more dispositional attributions compared to when the previous posts showed low consistency (i.e., positive valence

posts). Such impact of the previous posts was moderated by the tie-strength between the sender and the receiver. When the source is a close friend, receivers did not consider the cues of past behavioral pattern, unlike receivers who viewed a post from an acquaintance or a stranger as a sender of intense negative eWOM. Furthermore, indirect effects suggest that attribution of sender motives further influences persuasive outcomes such as brand attitude and sharing intention.

The results give some implications for brand managers and eWOM platform developers. First, those who manage social media consumer complaints should consider the network of eWOM senders. Second, eWOM platforms should consider ways to highlight diagnostic cues such as previous posts. Previous posts can be emphasized by showing the previous rating history of the reviewer. In this way, receivers would not necessarily visit the eWOM sender's profile page to gather more information on previous eWOM behaviors. Copyright by WONKYUNG KIM 2018

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#### CHAPTER 1

# INTRODUCTION

Consumer opinion sharing on social media occurs among people with diverse relationships, ranging from family and friends to acquaintances and even other consumers. Statistics show that 72% of consumers aged 25 to 34 look for social media contacts' posts about brand experiences and opinions when searching for product information (Mintel, 2015). Moreover, consumers often use social media to voice their opinions about negative brand experiences. It has been found that more than one-third of U.S. consumers have used social media to complain about a brand or its customer services (Statista, 2018).

Consumers' informal conversations about brands, such as product recommendations with a noncommercial purpose, are referred to as electronic word-of-mouth (eWOM). eWOM is defined as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet" (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004, p. 39).

While positive eWOM benefits businesses, negative eWOM is detrimental, especially when it occurs on social media. Social media have great potential to amplify negative eWOM through the recipient's social networks. Referred to as an online "firestorm," negative eWOM spreads instantly and exponentially through people's social networks (Pfeffer, Zorbach, & Carley, 2014). Moreover, due to a negativity spiral in eWOM environments, negative content engenders further negative eWOM from others (Hewett et al., 2016). Twenty-four percent of companies that have experienced a crisis due to negative eWOM reported a loss in revenue, while 30% of organizations saw a decrease in share prices (Booth & Matic, 2011). Brands and

firms are concerned about negative eWOM because of its deleterious effects on consumers' brand evaluations, brand choices, purchasing behaviors, and loyalty (Gafni & Golan, 2016).

While negative eWOM may always hold the same valence, it can differ in its intensity. Negative eWOM written with intense emotional expressions may frighten social media managers because content displaying intense emotions attracts attention (Ren & Nickerson, 2014; Vaish et al., 2008). Moreover, it is shared more often and rapidly (Stieglitz & Dang-Xuan, 2014). By triggering a high arousal level among recipients, intense emotion in negative eWOM can lead a negative message to go viral (Berger & Milkman, 2012). Given its prevalence, virality, and its huge influence on consumer behavior outcomes (Hewett et al., 2011), negative eWOM displaying intense emotion deserves more scholarly attention. In fact, to the best of my knowledge, no previous literature has investigated whether consumers actually believe negative eWOM with intense emotion on social media. Not all negative eWOM hurts brands' reputation and sales, however, because the recipients may not perceive the negative eWOM to be credible. Therefore, this study examined consumers' credibility perception of online content that can be classified as negative eWOM with intense emotion. Further, it explored the impact of credibility perception on consumers' brand attitude and eWOM sharing intention.

eWOM credibility, which refers to the extent to which eWOM is believed to be true and factual, is influenced by how recipients make inferences about the sender's negative eWOM motives (Kim & Gupta, 2012; Qiu, Pang, & Lim, 2012). eWOM recipients can believe that the sender's criticism is either motivated by a genuine, reliable observation about the product (external/situational motive) or that it may be the result of the sender's general negative disposition (i.e., internal/dispositional motive). Recipients perceive eWOM as credible (Qiu et

al., 2012) when they think that the eWOM sender was motivated by situational factors (i.e., product failure) rather than by dispositional factors (i.e., their complaining nature).

The inference-making process can be explained by Correspondent inference theory. According to Jones and Davis (1965), observers tend to make more extreme inferences about an actor's "internal or dispositional factors" than about "external or situational factors". This phenomenon becomes more salient when individuals view socially undesirable behavior than socially desirable behavior (Jones & Davis, 1965). Applying the same to eWOM, many recipients view an expression of negative eWOM that displays intense, negative emotions as socially undesirable behavior, particularly when it occurs within social media, where others can see the expression of negative emotion (Kim & Gupta, 2014). Therefore, negative eWOM accompanied by intense emotion in a public space like social media may lead to a dispositional inference in which the recipients attribute the negative eWOM to the sender's personal characteristics, rather than to a failed product experience, which would be a situational motivator.

Whether situational or dispositional attributions are made for intense negative eWOM can depend not only on the post containing the intense negative emotion but also on other cues, such as the sender's previous posts on social media. According to the Accessibility-Diagnosticity model, rather than count on accessible information that quickly comes to mind, people tend to rely on useful information, referred to as "diagnostic" information, to make judgments. The sender's previous posts can serve as useful diagnostic information owing to the fact that they can be reflective of the sender's general disposition. Kelley's (1967) co-variation model explains how observers use available behavioral information about an actor to make inferences. Kelley (1965) lists consistency of past behavior as a determinant of situational/dispositional attributions

and suggests that recipients are likely to make a dispositional inference if they find that a sender has a consistent behavioral history. By contrast, if a behavior stands out as unique from the sender's other behaviors, recipients are likely to attribute it to situational motives. That is, if recipients see numerous emotionally intense negative posts in the sender's history, they are likely to attribute the negative eWOM to a generally negative character, whereas if this piece of negative eWOM contrasts to past eWOM, which are positive, the recipient will attribute the complaint to product failure.

The effect of the consistency of past behavior on attribution types matters only when factors such as tie strength are weak or non-existent. Tie strength refers to the relationship between the sender and recipient; it can vary from strong to weak, to non-existent. When ties are strong, people do not consider diagnostic information, such as the consistency of the past posts. This is because there is an established relationship between the individuals, who perceive one another as trustworthy and reliable. When there is no prior relationship between the sender and the recipient (i.e., non-existent tie strength), eWOM recipients will rely on available diagnostic cues, such as the consistency of previous posts, to assess the credibility of eWOM.

If there are no cues available, in cases where the sender and recipient do not know each other and cannot find a cue that can be used for inference making, actor-observer bias is likely to occur. This bias is a phenomenon in which the observer attributes the actor's behavior to dispositional factors when there is no information about past behaviors (Jones & Nisbett, 1972). Messages expressing extreme anger may lead recipients to think that the actor is a chronic complainer, for example. In such cases, the recipient may miss the true motivation of the message, perhaps product failure, and the eWOM source would lose one's credibility, which further affects message credibility.

In summary, there is a high chance that any negative eWOM displaying intense emotions will not be perceived as credible; however, this may not hold true if diagnostic information about the sender is given; in other words, when recipients have access to senders' diagnostic information on social media, they will examine the behavioral pattern of a diagnostic cue (e.g., consistency of negative eWOM posting history) to determine whether the sender's disposition or situation caused the negative eWOM. Under the conditions of strong tie strength between the sender and the recipient, recipients will attribute the cause of intense, negative eWOM to the situation.

Negative eWOM displaying intense emotions has been a great concern for the management of corporations' reputations on social media. However, whether consumers trust highly emotional negative eWOM and how it affects their attitude and behavior is an empirical issue to be resolved. The traditional WOM and eWOM literature has remained oblivious to consideration of the social relationship between the sender and the recipient as well as the available cues of senders, which can be found on social media. Thus, the purpose of this study is to understand how the consistency of behavioral cues manifested in a sender's previous posts influences attribution types that lead to eWOM credibility. The study also examines whether the influence of consistency exists only when tie strength is weak or non-existent. In addition, the impact of eWOM credibility on attitudes toward a brand and intention to share will be studied. Results of this study will benefit social media managers in determining the kinds of negative post to which they should pay particular attention. Rather than trying to manage negative posts displaying intense emotion in general, they will be able to prioritize management of negative posts that recipients are more likely to attribute to situational factors.

This study will use a 3 x 4 (tie strength [strong/weak/none] and diagnostic cue [present (high, medium, low consistency)/absent]) post-test-only experimental design with random assignment to conditions. It is anticipated that by considering the strength of ties and diagnostic cues on social media, this study will identify several implications for marketing. These implications will benefit brand managers by informing them whether negative eWOM with intense emotions is perceived as credible by recipients and is consequently damaging the brand by affecting recipients' attitudes and sharing intentions. The study will also provide guidance for brand managers on social media by advising them how to respond to negative posts in a way that could reduce the product-related impact for recipients.

#### CHAPTER 2

#### BACKGROUND

#### WOM and eWOM

WOM has traditionally been defined as an oral form of interpersonal, noncommercial communication among acquaintances (Alreck & Settle 1995; Arndt, 1967). People engage in WOM during their typical social interactions. Several identified motives for WOM are to help others make good decisions (Dichter, 1966; Sundaram et al., 1998), bond with others, and inform the impressions that others have of them (Berger, 2014). Moreover, WOM is also a type of coping mechanism for negative product experiences, since people can vent their emotions and get feedback from other consumers (Sundaram et al., 1998).

WOM includes the discussion of products and the sharing of a product or brand-related content (Aaker, Batra, & Myers, 1992). Early research on WOM shows that consumers seek, as well as rely on, WOM information for their purchase decisions, such as choosing a car repair shop, physician, household items, and new goods or services (Engel, Blackwell, & Kegerries, 1969; Feldman & Spencer, 1962; Whyte, 1954).

WOM is more influential and trusted than information delivered by commercial businesses or salespersons (Gremler, Gwinner, & Brown, 2001; Katz & Lazarsfeld, 1955). This is because WOM is usually shared among people who know each other, such as friends and family, and who have an established history (Allsop, Bassett, & Hoskins, 2007; Arndt, 1967; Katz & Lazarfeld, 1955; Keller, 2007; Whyte, 1954). Research findings have demonstrated that, compared to marketer-initiated communication, information coming from friends or acquaintances is deemed more reliable and unbiased (Katz & Lazarfeld, 1955; Lazarsfeld, Berelson, & Gaudet, 1944). With the advent of the World Wide Web, WOM has evolved into a

new form of communication, namely electronic word-of-mouth (eWOM) (Litvin et al., 2008). There are several differences between eWOM and WOM. First, eWOM occurs asynchronously on various types of online platform, such as retailers' websites, review websites, and social networking sites. In contrast to those receiving WOM, which happens verbally and synchronously in a face-to-face manner, eWOM recipients have no time constraints in reading information (Daugherty et al., 2008). They also have a chance to reread eWOM and spend more time contemplating it. Second, while eWOM takes place and is shared within a broader range of people with different strengths of social tie on the Internet, WOM occurs among people who are in a close relationship or already acquainted with each other.

Another difference between WOM and eWOM arises from the credibility of the source. It is almost impossible for eWOM recipients to find out the real identity of eWOM communicators or their ulterior motives (Chatterjee, 2001) whereas WOM information, which comes from friends and acquaintances (Ditcher, 1966), is deemed trustworthy. There are growing concerns about eWOM credibility. The prevalence of fraudulent online reviews (Ott, Cardie, & Hancock, 2012) has caused consumers to refrain from taking others' advice online. Moreover, it is challenging to evaluate the credibility of brand or product recommendations, because only a limited number of cues exist that allow a user to judge the credibility of the eWOM. That said, on social media, where eWOM actively takes place, there *are* some types of cue, such as the emotions embedded in the message and senders' available information.

## Negative eWOM on Social Media

Given that dissatisfied customers are much more interested in sharing their negative experiences with as many people as possible (Chatterjee, 2001), the likelihood of encountering negative eWOM is higher than that of encountering its positive counterpart on social media. For those who have experienced intense negative emotions due to a product failure, social media have provided a useful outlet for the voicing of their opinions. In the past, dissatisfied consumers did not have many options other than complaining directly to the company, reporting to a third-party organization, or venting their dissatisfaction to friends by spreading negative WOM (Singh, 1990). However, consumers today can disseminate their negative experiences about a brand on social media in order to reach the blamed company as well as friends and acquaintances on social networks.

People often share their emotions with others on social media. The theory of the social sharing of emotion (Rimé, 2009; Rimé et al., 1992) explains that people express their emotions to others to achieve a sense of intimacy, as well as to receive attention and a feeling of comfort. Luminet and colleagues (2010) found that people are likely to share episodes that generated higher emotional intensity than low and non-emotional episodes. That is, events that are likely to trigger high emotional intensity have a higher chance of being shared through an individual's social media. Berger and Milkman (2012) have also found that content that facilitates high arousal has a greater likelihood of being shared. Moreover, due to social media's high speed of communication and extensive reach, a single negative post can bring about a higher volume of negative posts from others (Hewett et al., 2016). Therefore, it is logical to postulate that negative eWOM featuring intense emotions is likely to be shared by the original sender and that there is a high chance that recipients will forward it to others, under the condition that it is trusted.

# Emotions in Negative eWOM

Negative eWOM exerts a more powerful impact than does positive eWOM. Baumeister, Bratslavsky, Finkenauer, and Vohs (2001) found a "bad is stronger than good" phenomenon across a variety of subjects. This phenomenon applies in the context of negative information about a product, which is given greater weight than positive information when making purchasing decisions (Bae & Lee, 2010; Basuroy, Chatterjee, & Ravid, 2003; Chiou & Cheng, 2003; Park & Lee, 2009). Past studies have shown that eWOM is driven primarily by the emotions experienced during consumption (Debaix & Vanhamme, 2003; Söderlund & Rosengren, 2007). In particular, when consumers experience negative emotions, such as anger and disappointment, they are likely to spread negative WOM (Nyer, 1997) or eWOM (Verhagen, Nauta, & Feldberg, 2013; Zeelenberg & Pieters, 2004).

There are two dominant perspectives for studying emotions. The dimensional view regards emotion as an affectively transient response caused by motivational processes, such as appetitive and aversive systems (Lang, 1996; Lang & Bradley, 2008). Another dominant perspective stems from discrete emotion theory. According to this theory, emotion has a unique basic state that arises from individuals' cognitive appraisal of their environment (Frijda, 1986; Lazarus, 1991), and certain discrete emotions, such as anger and fear, elicit predictable judgments, intentions, and behaviors (Lazarus, 1991; Nabi, 2002). This view suggests that cognitive appraisal of a meaningful stimulus leads to a personal interpretation of the environment, thereby enabling different individuals to show different emotional responses to the same object or event.

Using the discrete emotion approach, the literature on consumer complaint behavior indicates that negative emotions caused by product failure can lead to two different types of emotion—anger and dissatisfaction—that result in idiosyncratic behaviors (Bougie et al., 2003).

Anger is associated with harm, threat, or insult and is a significant influencer for post-purchase behavior such as brand switching, complaint behavior, third-party complaining, and negative WOM (Bougie et al., 2003; Roseman, Wiest, & Swartz, 1994). Dissatisfaction is classified as an outcome-dependent emotion that arises as a result of an undesirable event (Weiner, 1986). Consumers who experience dissatisfaction are likely to remain passive (Oliver, 1996). It is notable that both anger and dissatisfaction are closely related to each other but result in different kinds of action.

When applied to the negative WOM context, disappointed customers may talk about their product failure in order to find the causes of the experience and to seek advice from others. On the other hand, angry customers may take advantage of social media platforms where they can display rage through posts.

#### Credibility

Social media abounds with negative eWOM, but the damage for brands exists only when it has the potential to influence consumer attitudes. When users perceive negative eWOM as credible, they will consider using that piece of negative information for making choices. However, there is no evidence in the domain of social media research that confirms the credibility of negative eWOM displaying intense emotion.

Credibility is an antecedent of attitudinal or behavioral change. An early conception of credibility can be found in Aristotle's work. Aristotle outlined three rhetorical components that can lead to persuasion: ethos, pathos, and logos. Ethos refers to the factors related to source characteristics such as the source's social status and their appearance. Pathos refers the emotional states of the audience. Logos refers to the logical foundation of the arguments embedded in a message.

Communication scholars have distinguished three types of credibility: source, medium, and message credibility. While source credibility refers to how believable the source of information is, message credibility is dependent on how receivers perceive message to be unbiased, accurate and believable. Medium credibility refers to how trustworthy the medium or media vehicle or channel by which message is being delivered (Sundar, 2008).

## *Source Credibility*

According to Hovland and Weiss (1951), the attitude toward the communicator plays a central role in persuasion. Ohanian (1991) defined source credibility as "a communicator's positive characteristics that affect the receiver's acceptance of a message" (p. 41). The positive characteristics are determined by subjective perceptions than the objective attributes that the source possesses (Hovland & Weiss, 1951). Source credibility has nothing to do with the message content but concerns the subjective perception of the communicator (Chaiken, 1980). Recipients tend to discount information from sources with low credibility and to value information from sources with high credibility. Source credibility is a determinant of the communication effectiveness (Amos, Holmes & Strutton, 2008; Hovland & Weiss, 1951; Ohanian, 1991; Yoon & Kim, & Kim, 1998; Wu & Wang, 2011).

Source credibility is a multi-dimensional construct. In the context of celebrity endorsers, Ohanian (1990) proposed a model of source credibility including three dimensions, namely, attractiveness, expertise, and trustworthiness. Expertise and trustworthiness dimensions are two commonly identified dimensions which have gained consensus among researchers (Pornpitakpan, 2004). Expertise refers to the perceived capacity of source to provide valid and accurate information (O'Keefe, 1990). Trustworthiness refers to the receivers' subjective perception of the source that the communicator is unbiased thus telling valid statements

(Hovland, Janis, & Kelly, 1953). In addition, another dimension of source credibility that has been studied widely is attractiveness. Source attractiveness usually refers to the physical attractiveness of the communicator. It can also refer to other aspects that make the source attractive such as likeability and similarity.

# Message Credibility

While source credibility deals with the characteristics of the source, message credibility refers to the extent to which receivers find the content of the message to be believable. Source credibility can influence message credibility (Mackenzie & Lutz, 1989). In order to test the effect of message on attitude change, researchers have investigated a number of message factors such as message comprehensibility, number of arguments, one-sided versus two-sided messages, and presentation style. Not only did these factors yield attitude change but they were also found to influence credibility assessments of message (Slater & Rouner, 1997). In relation to this topic, Metzger et al. (2003) categorized three message factors that influence message content, studies have found that when a message possessed high quality evidence that shows the message is logical, accurate, up-to-date, and reliable, participants rated the credibility of message to be high (Slater & Rouner, 1997).

Given that people have limited capacity to process information (Kahneman, 1973), they cannot effortfully process all aspects of messages they come across. Instead, people select and focus on certain message features to encode, store, and retrieve information (Lang, 2000). When people process information in an online setting, this tendency becomes more prominent in that only a few pieces of online information are verifiable (Metzger, 2007). In an online environment where the majority of information comes from anonymous sources, credibility judgment

becomes hugely dependent on heuristics. Sundar (2008) proposed a model for for web-based content credibility judgment by introducing the MAIN. The MAIN model is an acronym for modality, agency, interactivity and navigability. Modality refers to how easy it is to locate relevant information. Agency refers to how users perceived the source of information. Interactivity concerns how information is presented. Finally, navigability is dependent on whether receiver can also be a sender of information.

The MAIN model can be applied in the context of eWOM credibility perception on social media. On social media, cues regarding modality (how easily the eWOM message is accessed), interactivity (whether the user can respond to the eWOM sender), and navigability (how easily the eWOM message can be shared by the receiver) can influence message credibility. Agency of the information (which is prominent on social media where users can click the profile of the message source and navigate their walls) can also have a major impact on message credibility.

#### eWOM Credibility on Social Media

eWOM credibility is defined as the extent to which recipients believe a product recommendation to be true or factual (Tseng & Fogg, 1999). It is known to be an antecedent for brand attitude (Reichelt, Sievert, & Jacob, 2014), product evaluation and purchase intention (Moran & Muzellec, 2014; Qiu, Pang, & Lim, 2012), eWOM adoption (Cheung, Xiao, & Liu, 2014; Fan and Miao, 2012; Lee & Koo, 2012; McKnight & Kacmar, 2006), and sharing behavior (Leonhardt, Keller, & Pechmann, 2011; Mandel, 2003; Schlenker & Leary, 1982). Antecedents of eWOM credibility. There are several factors shaping eWOM credibility. The valence of eWOM is one of the essential factors. Doh and Hwang (2009) found that several negative product reviews among a majority of positive reviews are helpful in enhancing the credibility of a retailer's website. Although negative eWOM messages are toxic to brand

reputation and sales, a few negative eWOM messages about products on a retailer's website led to a greater perception of credibility among consumers on the website. eWOM recipients may question the credibility of information if they cannot find any negative comments from reviewers (e.g., Reichelt, Sievert, & Jacob, 2014). In addition, negative reviews are more valued than positive reviews are because of negativity bias, which leads consumers to rely more heavily on negative information than on positive information when they are making purchase decisions (Anderson, 1998; Herr, Kardes, & Kim, 1991). In addition to valence, the quality of argument of eWOM messages affects their credibility. Cheung, Luo, Sia, and Chen (2009) found that the quality of the eWOM information is a determinant of perceived eWOM review credibility.

eWOM messages' credibility is also affected by the platform on which it is shared. Consumers may gauge the credibility of eWOM messages on the basis of the different characteristics that eWOM platforms possess. Lee and Youn (2009) found that the channels on which eWOM is shared have an impact on consumer product judgment. Their results showed that consumers exposed to a product review posted on a personal blog were more likely to attribute the content of the review to product-related causes and less likely to recommend the product to friends than those who saw a review on an independent review website or the brand's website. Tsao and Hsieh (2015) found that eWOM platforms moderate the effect of eWOM quality on eWOM credibility, such that low-quality eWOM messages posted on independent platforms result in decreased eWOM credibility, whereas eWOM messages on corporate platforms showed high credibility.

eWOM message credibility influences persuasive outcomes such as attitudes and behavioral intention in the context of eWOM. eWOM sender's source credibility led to positive attitude and toward eWOM and intention to read eWOM (Reichelt, Sievert, & Jacob, 2014).

Similarly, the source's expertise and trustworthiness were found to influence perceptions of usefulness of information shared by the source (Sussman & Siegal, 2003) and the intention to share the information (Ha & Ahn, 2011). Moreover, Wu and Wang (2011) found that when eWOM recipients perceived eWOM senders as credible, they tended to have favorable brand attitudes and high purchase intention. Cheung and colleagues (2009) conducted a survey and found that an eWOM source's trustworthiness, as indicated by the ratings acquired as a reviewer, had a positive effect on perceived eWOM credibility.

H1: Greater source credibility will lead to greater message credibility.

H2: Greater message credibility will lead to more negative brand attitude.

H3: Greater message credibility will lead to greater sharing intention.

#### Social Relationship between Sender and Recipient of eWOM

On social media, credibility perceptions of eWOM may depend on various factors. A significant amount of eWOM on social media occurs among people with an existing relationship and who are connected through social networks. eWOM information that is shared among people in various relationships may be characterized along a continuum of strong to weak social ties (Chu & Kim, 2011; Ryu & Feick, 2007; Sweeney, Soutar, & Mazz, 2012; Wirtz & Chew, 2002). The strength of the relationship between senders and recipients of eWOM would likely yield different impacts on the recipients' acceptance of the message. Pan and Chiou (2011) found that information seekers perceive information from close social relationships to be trustworthy. Since perceived trustworthiness is found to be an antecedent of eWOM sharing behavior (Gibbons & Gerrard, 1991; Gilly et al., 1998; Lis, 2013), the social relationship between the sender and the recipient of eWOM is also expected to contribute to eWOM transmission. The following section explores the nature of tie strength and its impact on eWOM perception and transmission. *Tie Strength* 

A tie is a dyadic node that connects individuals in a complex social network. It refers to a bond between individuals which can lead them to influence each other. Tie strength is a latent construct that ranges from weak to strong (Marsden & Campbell, 1984; 2012). Tie strength refers to the strength of the bond between the individuals, such that stronger ties indicate a greater sense of intimacy and reciprocity. Granovetter (1973) proposed four dimensions of tie strength: the amount of time spent together; a sense of intimacy, such as mutual confiding; and reciprocal services. Other dimensions such as social structural components (Burt, 2004), emotional support (Wellman & Wortley, 1990), social distance (Lin et al., 1978) have been also proposed, expanding Granovetter's work.

According to Wasserman and Wellman (1993), there are three characteristics that make strong ties: "(a) a sense that the relationship is intimate and special, with a voluntary investment in the tie and a desire for companionship with the partner; (b) an interest in frequent interactions in multiple contexts; and (c) a sense of mutuality of the relationship, with the partner's needs known and supported" (p. 76). On a continuum of tie- strength, relationship roles, such as kin, friend, and acquaintance, can be placed (Lin, 2002). Strong ties often include family or close friends, whereas weak ties include acquaintances or loose connections (Granovetter, 1973, 1983). People who have strong ties trust each other, and their social circles tend to overlap significantly. Strong ties are often portrayed as identifying "people like me" in that they share similar interests, hobbies, and school affiliations, etc.

# Factors Predicting Tie strength-Offline and Online

In order to find the factors predicting tie strength, Marsden and Campbell (1984) surveyed people in three metropolitan areas by asking participants to recall their three closest friends and identify no more than ten features of their friendship. The results showed there to be two aspects of tie strength, which are time spent together and depth of relationship. The time spent together was indicated by frequency of communication, duration, and closeness. The depth of a relationship was implied by closeness, breadth of discussion, and mutual confiding.

To revisit Marsden and Campbell's (1984) seminal work, Gilbert and Karahalios (2009) built a model on factors predicting strong ties on social networking sites. With the analysis of participants' actual data retrieved from their accounts, the researchers found that a strong predictor for tie strength among social media users is intimacy, which is one dimension of tiestrength proposed by Granovetter. Intimacy was predicted by recent communication between two individuals on Facebook, posting intimate words on social media walls and inbox messages,

appearances together in a photo, and distance between hometowns. The study also confirmed that followed by intimacy, emotional intensity, duration of time known, and social distance were prominent factors predicting strong ties on social networking sites. Although Mardens and Campbell's (1984) and Gilbert and Karahalio's (2009) had different settings, their findings are similar in that both studies conclude that emotional closeness best reflects tie- strength. The Effect of Tie strength on Message. Tie strength is an influential factor in information transmission (Brown & Rein, 1987). Because people have regular conversations with their strong ties, they often share information. However, weak ties are also an important information source because they provide novel pieces of information circulated in a different social circle (Granovetter, 1973). As such, both strong and weak ties play a role in the provision and sharing of information.

Several studies have been conducted to determine the effect of tie strength on eWOM perception and transmission. Chu and Kim (2011) found that perceived tie strength with contacts in social networking sites encourages consumers to communicate with one another and disseminate information about a product. Pan and Chiou (2011) looked at the impact of tie strength on the perceived trustworthiness of online information. The results showed that negative online messages for "credence goods," which refers to goods that are difficult to assess before purchase and even after the purchase, such as health food, was perceived to be more credible when it came from a strong tie rather than a weak tie. Similarly, Cho, Huh, and Faber (2014) found that recipients show attitudes toward eWOM content that are more favorable and manifest higher sharing intention when it is shared by a strong tie than a non-existent tie. Shan and King's (2015) study also supports the substantial influence of the relationship between sender and

recipient on attitudes toward the message and intention to share, highlighting strong ties as an influential source for eWOM.

In sum, ample research has shown that eWOM recipients' responses to a message are dependent on the social relationship with the sender. An eWOM is seen as more trustworthy and more likely to be shared when it is received from a strong tie and less so from a weak or a nonexistent tie. Consumers can trust information from strong-tie senders since they have gained trust over time. However, under conditions of weak-tie strength, consumers may seek information to help them identify the motives of the source, which can be used to determine the credibility of the message. Although it is hard to find information about a weak or non-existent tie in a typical Internet environment, some of an eWOM sender's profile information or past posts are available on social media which can be used for finding motives of the sender.

#### CHAPTER 3

#### THEORETICAL DEVELOPMENT

#### **Diagnostic Information of eWOM Senders on Social Media**

Whether eWOM recipients utilize the available information on social media for a weak or non-existent tie eWOM sender in order to judge the credibility of the message is an empirical question. The Accessibility-Diagnosticity model and Attribution theory will be used to explain how and what type of sender's information leads to recipients' perception of credibility.

Negative eWOM characterized by intense emotion would harm brands under the condition in which recipients make situational attributions for the sender's motives. During the inference-making process, eWOM recipients utilize available cues. The accessibility-diagnosticity model explains this process: accessible information is not likely to be used for making a judgment (i.e., attributions of motives) when there is information that is perceived as more diagnostic. Therefore, it is not just the accessibility of the post, but also diagnostic information, such as previous posts written by the original sender, that will be utilized to make attributions.

# Accessibility-Diagnosticity Model

Feldman and Lynch (1988) proposed the accessibility-diagnosticity framework which explains that the likelihood for a piece of information to be used as an input for decision-making depends on the accessibility and diagnosticity of the information. Accessibility refers to the ease of activating attitudes toward an object stimulus formed by recently used or formed cognitions (Higgins, 1996; Scrull & Wyer, 1979). Diagnosticity refers to the importance of the information in that the information alone is adequate for making a decision (Aaaker & Maheswaran, 1997).

Often, available information that helps an individual arrive at a decision is ambiguous and suggests alternative interpretations. If the given information does not indicate alternative explanations, individuals perceive a piece of information as diagnostic (Dick, Chakravarti & Biehal, 1990; Herr, Kardes, & Kim, 1991). Simply put, the accessibility and diagnosticity of information is a function of choosing one piece of information over another for making judgments. When a piece of information is perceived as diagnostic, it will more likely be used as an input for making a decision than accessible information.

In making judgments, consumers are inclined to rely on information that is accessible. However, when there are diagnostic cues which are perceived as important, consumers tend to weight diagnostic information more heavily (Skowronski & Carlston, 1987). Herr et al. (1991) found that consumers give more weight to diagnostic information than accessible information when forming their brand attitudes. Their results showed that negative information about a product makes it easier for consumers to categorize a product as low-quality than positive information helps consumers categorize a product as high-quality.

On social media, negative eWOM recipients can find diagnostic information that goes beyond just the message provided by the sender. This is because eWOM recipients have access to not only the product information but also the information of the negative eWOM source. The poster's profile picture, the number of positive votes that the poster's review received (Xu, 2014), and the number of followers the poster had (Morris, Counts, Hoff, & Roseway, 2012) were found to have a significant impact on the credibility of the message. Moreover, depending on the privacy settings of users, recipients can discover older posts on social media once they click the sender's profile. If recipients find additional information about the source, such as the

past behavior patterns of the sender, they will find this information to be more diagnostic because it can rule out several possible reasons why such a message was written.

Therefore, under the circumstance in which ties between the sender and the recipient of eWOM are weak or nonexistent, if recipients find the sender's diagnostic information through publicly available profile pages and posts they will use this information to judge the credibility of negative eWOM. On the other hand, there may be cases where recipients cannot access past posts or previous posts do not give any clue on the sender's motives so that they cannot gather more diagnostic information than the original eWOM message.

Although previous studies have investigated the use of cues on credibility perception, the literature has given only slight attention to diagnostic cues to explain how motive-inference processes work in the context of negative eWOM. In the case of negative eWOM, one motive behind the behavior could be that the consumer experienced dissatisfaction with the product. That is, the situation stimulated the negative eWOM. Alternatively, that some consumers like to complain due to their disposition, which is negative personality. The following section uses attribution theory to explain the detailed process by which recipients judge the credibility of negative eWOM depending on the patterns of past behaviors shown in diagnostic information. Specifically, when there is no tie between the sender and the receiver of the eWOM, the patterns of past behaviors of the senders will be used for credibility assessment.

### **Consumer Attribution of eWOM Motives**

Once the recipient of the negative eWOM finds past posts of the sender, these past posts become more diagnostic than the accessible information available from the eWOM message itself. Attribution theory explains that, based on the behavioral patterns of diagnostic information, recipients will make inferences on the motives of the negative eWOM sender. Furthermore, it is expected that, depending on the attribution types, the credibility of the eWOM source will either be increased or decreased.

# Attribution Theory

Attribution theory is informed by a naive psychology which supposes that people are instinctively driven to find the causes of events around them. By finding a link between an event and the actor of the observed behavior, observers make causal inferences explaining the actor's underlying motives. Heider (1958) explained that the observer's inference activities concerning an event or an object are based upon the internal state of the actor, their external environment, or both. In accordance with a common belief that the behaviors of others are stimulated either by an internal or external factor, observers tend to make their decisions based upon their individual judgment which usually overvalues one factor over another (Gilbert & Malone, 1995). Simply put, when dispositional attributions are made, the observer believes that the actor's internal attributes, such as their personality traits, have caused the observed behavior. On the other hand, when situational attributions are made, observers ascribe the cause of the behavior to a specific situation (Heider, 1958; Jones & Davis, 1965; Kelley, 1967).

# Correspondent Inference Theory

Correspondent inference theory explains why observers tend to make more extreme inferences about the actor's internal or dispositional factors rather than external or situational

factors. Correspondence refers to "the extent that the act and the underlying characteristic or attribute are similarly described by the inference" (Jones & Davis, 1965, p. 223). Jones and Davis (1965) explain that the degree of correspondence is dependent on the social desirability of the observed behavior. Socially desirable behavior is attributed to situation rather than to disposition, since people tend to seek desirable social outcomes by acting in goodwill. On the other hand, when observers notice socially undesirable behavior, they are likely to locate the cause of the behavior within the sender's disposition.

Applying this to negative eWOM, recipients of negative eWOM that shows intense emotion will find the emotional expression of the sender socially undesirable, since a multitude of people on social media can read the message. Therefore, it is logical to postulate that recipients of emotionally intense negative eWOM will locate the cause of such behavior within the sender's disposition (i.e., negative character) rather than situation (i.e., product failure). However, this may hold true only when the receiver does not know the sender of the eWOM and there is no diagnostic information available on the sender. On social media, even if the sender does not know the receiver, one can still find information indicating the past behavioral patterns of the sender such as previously written posts.

# Kelley's Co-Variation Model

To evaluate the credibility of the post, recipients may rely on diagnostic cues of information on social media. Social media users can rely on diagnostic information such as previous posts, profile information, and more. Kelley's (1967) co-variation model explains how the three principles of consensus, consistency, and distinctiveness are used in the causal inference-making process. Consensus is the variation of behaviors across different individuals. If other people agree with the person with respect to one's position on the target object, then

consensus is high. For instance, if the recipient of negative eWOM for a specific brand can find others' negative eWOM posts about the brand, the consensus is high. As a result, situational attributions, rather than dispositional attribution, will take place. While consensus deals with the behavior of the vast majority, consistency and distinctiveness can be observed within an individual actor's behavior. Consistency is the degree to which an actor's behavior shows the same pattern across time. When an actor only performs a behavior at specific times, consistency is low. For example, if the intense emotional negative eWOM poster has a history of writing emotionally intense posts on social media, then recipients will consider the negative eWOM highly consistent. Thus, they will likely to make more dispositional attributions than situational attributions. Distinctiveness refers to the degree to which the behavior of the actor is unique to a particular situation. If a behavior occurs only for one specific event, we can say distinctiveness is high. For instance, if the negative eWOM sender has a history of posting negative reviews on restaurants in general but post a positive review only for a specific restaurant, recipients will find a negative eWOM message from this person to be highly distinctive. In this case, recipients will likely to make situational attributions than dispositional attributions. The principles of consensus, consistency, and distinctiveness help recipients to attribute senders' eWOM motives to either disposition or situation.

Under the conditions of strong tie-strength, consumers do not need to rely on diagnostic cues, since they perceive the strong-tie eWOM sender as a credible information source. In contrast, under the weak tie-strength condition, consumers would rely on diagnostic cues to identify the motives of the source. The consistency of behavioral patterns will result in different types of attributions. Therefore, patterns of cues will shape the consumers' attributions of the sender's motives.

In this study where the effect of an original eWOM sender's previously written posts are examined, only the effect of consistency will be considered. This is because consistency is the most salient behavioral pattern that can be observed within an individual's social media profile page. For instance, in our study, the consistency pattern can be manipulated as either high or low by the varying valence of the previous posts. Recipients would perceive high consistency between negative eWOM and a history of negative posts.

When applying consistency principle on intense negative eWOM on social media, the eWOM receiver will likely to make situational attributions when one can observe inconsistent behavioral patterns in the senders' previous posts. In comparison to a condition where no diagnostic cue exists where the receiver is likely to make dispositional attributions, a cue suggesting that the sender does not consistently exhibit intense emotion in their eWOM behavior will make receiver attribute negative eWOM to situation, not disposition of the sender.

The eWOM receiver will likely to make dispositional attributions for eWOM motives when one can observe highly consistent behavioral patterns (i.e. intense negative emotion in eWOM) in the senders' previous posts. Due to behavioral cues implying that intense emotion was exhibited from sender's disposition, not sender's situation, the receiver would assume that the eWOM sender is an angry person who chronically complains on social media.

H4: A cue showing low consistency will generate a) stronger situational attributions b) weaker dispositional attributions than a cue showing high consistency.

H5: A cue showing high consistency will generate a) weaker situational attributions b) stronger dispositional attributions than an absence of cue.
## Actor-observer Bias

Actor-observer bias is a form of attribution error that occurs as a result of the over- or underestimation of one of the two types of attribution causes (Ross, 1977). According to actorobserver bias, actors tend to believe that situational factors impact their behavior, while observers tend to assign the cause to the senders' disposition to explain the behavior of actors (Jones & Nisbett, 1972). Such discrepancies between actor and observer were tested in a number of experiments (e.g., Jones et al., 1968; Jones & Goethals, 1971; Jones & Nisbett, 1972; McArthur, 1970). The findings were consistent in that a lack of information about actors caused observers to make dispositional attributions, while actors attribute their own behaviors to an external cause.

Actor-observer bias explains how the social tie between the sender and the recipient plays a role in the recipient's inference of the sender's negative eWOM motives. When the tie between the sender and the recipient is strong, the recipient is less likely to make an attribution error, since s/he has valid knowledge about the sender. On the other hand, under the condition of a weak or nonexistent relational tie, the recipient may have no valid knowledge of the sender, and therefore the recipient is more likely to make dispositional attributions than situational attributions.

H6: A stronger tie with the source will make receivers generate a) stronger situational attributions b) weaker dispositional attributions than would weaker tie.

When there is a strong tie between the eWOM sender and the receiver, the lack of consistency in behavioral pattern will not deteriorate credibility perception since they trust each other (e.g., strong tie). However, receivers will make attributions toward the eWOM motives of the sender who they do not know (e.g., weak tie, non-existent tie). In that case, they will use

diagnostic cues, if available, to make attributions on sender's eWOM motives. Thus, only under the weak or non-existent tie condition, behavioral patterns would influence perceptions of attribution of motives.

H7: Under the condition where the tie-strength is none, the pattern of cues showing low consistency will more likely to generate a) stronger situational attributions and b) weaker dispositional attributions than a cue showing high consistency.

H8: Under the condition where the tie-strength is none, the pattern of cues showing high consistency will more likely to generate a) stronger situational attributions and b) weaker dispositional attributions than absence of cue.

## Attribution Types and eWOM Source Credibility

The type of attribution made in a given situation will depend on the credibility that the eWOM recipient ascribes to the sender. The eWOM receiver perceives negative eWOM sender as credible when they think that the eWOM sender was motivated by situational factors (i.e., product failure). Conversely, eWOM sender would lose one's credibility if the receiver believes that dispositional factors (i.e., their complaining nature) caused the negative eWOM. Qiu and Li (2012) tested the impact of aggregated ratings on the attribution of individual online reviews. The presence of conflicting aggregated ratings leading to low consensus decreased the situational attribution of the individual reviewer's motives, which in turn decreased the credibility. The results demonstrated that situational attribution leads to higher credibility, whereas dispositional attribution results in low credibility. Thus, it is expected that attributional thinking on motives behind eWOM will influence the level of source credibility of the sender.

H9: Stronger situational attributions will lead to a higher level of source credibility.

H10: Stronger dispositional attributions will lead to a lower level of source credibility.





Table 1. Predictions for each condition

Tie		Diagnostic Cues			
Strength	None	High	Medium	Low	
		Consistency	Consistency	Consistency	
None	More	More	More	More	
	Dispositional	Dispositional	Dispositional	Situational	
	attributions	attributions	attributions	attributions	
Weak	More	More	More	More	
	Dispositional	Dispositional	Dispositional	Situational	
	attributions	attributions	attributions	attributions	
Strong	More Situational	More	More	More	
	attributions	Situational	Situational	Situational	
		attributions	attributions	attributions	

#### **CHAPTER 4**

## METHOD

This study examined whether tie-strength moderates the effect of diagnostic cues on attribution types subsequent outcomes. Before the main experiment which tests the hypothesized effects, two studies were done. First, a pretest was done to come up with the stimuli. In addition, a survey was administered for developing scales for causal attribution items.

## **Participants**

Participants was recruited through the Amazon Mechanical Turk online survey system (MTurk, https://www.mturk.com). MTurk users are demographically diverse (Buhrmester, Kwang, & Gosling, 2011). Thus, MTurk has been a popular and reliable venue among social science researchers for data collection. American Facebook users on MTurk with 95% HIT acceptance rates (the number of tasks that have been approved by the requesters) were screened to participate in the study. Participants in the experiment were compensated with 1 U.S. dollar.

Among the participants, 53.2% were male and 45.8% were female. Their age ranged from 18 to 74 years old (Mean=38, SD=11). The majority of the participants were Caucasian (69.8%), followed by Asian American (9.3%), African American (8.3%), and Hispanic (6.3%). More than a half off the participants had a household income between \$20,000 and \$59,999 (51.3%). Lastly, participants indicated that they received an average of 15 years of education (SD=3.364).

#### **Stimuli Development**

In order to come up with a negative eWOM message with intense negative emotion, textbased cues, such as semantic and parasemantic cues and paralinguistic cues will be manipulated.

Since eWOM takes place in computer-mediated communication (CMC) environments, emotion in negative eWOM is expressed via written texts. Along with the verbal emotional expression (e.g., semantic cues), one way to display intense emotion is by using paralinguistic cues such as emoticons. Parasemantic features, such as the overuse of punctuation marks and capital letters, also signal intense emotion (Pollach, 2006).

When confined explicitly to text-based online communication, people often reveal their emotional states through emoticons. Rezabeck and Cochenour (1998) defined emoticons as "visual cues formed from ordinary typographical symbols that when read sideways represent feelings or emotions" (p.201). As illustrated in the definitions, a rich mode of communication in online environments can be made available through textual expression through the utilization of graphic or textual emoticons. Emoticons are commonly followed by the textual message and serve to clarify and intensify the textual meaning of the message (Derks, Bos, & Grumbkow, 2008; Walther & D'Addario, 2001).

The use of semantic cues such as expletives is another way to exhibit strong emotion to other online users since the primary purpose of swearing is to express anger or frustration (Jay & Janschewitz, 2008). The use of expletives is regarded as extraordinarily emotive and provocative (Jay & Janschewitz, 2008). The speaker may benefit from using expletives by releasing nervous, emotional energy that accompanies anger, frustration, and surprise (de Klerk, 1991). A paralinguistic cue was operationalized by using an emoticon with three levels of intensity: none/no emoticon, weak (e.g., frown face emoticon), and strong (e.g., angry face emoticon). The second factor, semantic expression, was manipulated by stating either "I am enraged" to represent strong emotion or "I am disappointed" to represent weak emotion. The third factor, the

parasemantic cue, was manipulated either by the use of the expletive "F#\$%" to express strong emotion, or by not using an expletive.

A 3 (Paralinguistic cue) x 2 (Semantic cue) x 2 (Parasemantic cue) between-subjects, posttest-only experimental design was used. In operationalizing these factors, cues commonly used to express valence and intensity of emotion in eWOM posts were chosen. After participants read the message, they will be asked to rate how upset the sender looks by using a 7-point Likert scale for the following items: enraged, angry, irritated, frustrated, annoyed, in a bad mood, and upset. Among twelve stimuli which complains about the restaurant, the one which resulted in the highest score for the was selected for the main study. The negative eWOM post was chosen to be about a restaurant. There are two reasons for choosing restaurant as a topic of negative eWOM in this study. First of all, restaurant is a common topic of eWOM (e.g., Yelp, Zomato). Second, eWOM regarding intangibles such as restaurant services are especially sought by people before they make decisions (Lewis & Chambers, 2000).

#### **Scale Development**

Although there are studies which examined motives for negative eWOM (e.g., Laczniak et al., 2001), no studies examined the motives for negative eWOM written with intense emotion. Therefore, it is hard to capture the negative eWOM motives with existing scales for situational and dispositional attribution.

Items were created to assess situational and dispositional attributions for the cause of writing negative eWOM with intense emotion on social media. First, a pool of 28 items was generated by two experts based on an extensive literature review on eWOM or WOM motives. Items were from Laczniak et al. (2001), Sundaram et al. (1998), and Phelps, Lewis, Mobilio, Perry, Raman (2004). In addition, through brainstorming sessions, more attributions items were

generated and included in the pool as shown in Table 2. After this, two experts reworded the 28 items such that each appeared to be a specific *motive* for spreading negative eWOM with intense emotion on social media. All items were reworded such that they followed and completed the phrase: "The reviewer of the message wrote this post because...". Response category was on 7-point scales ranging from 1 (strongly disagree) to 7 (strongly agree). Following this, the reliability of the items were tested with a survey. Two hundred and thirty-eight participants from M-Turk took a survey in exchange for 71 cents.

Types of Motives	Label	Item
	Food_1	True Taco served terrible food.
Situational_Food	Food_2	True Taco offers awful food.
	Food_3	True Taco's food has inferior quality.
	Service_1	True Taco offered poor service.
	Service_2	True Taco's service is inferior.
Situational_	Service_3	True Taco's service is unpleasant.
Service		
	Service_4	True Taco's service is unsatisfactory.
	Service_5	True Taco's service is unreliable.
	Service_6	True Taco lacked the features that the reviewer wanted.
Dispositional_	Noexp_1	The reviewer doesn't know enough about restaurants.
No expertise	Noexp_2	The reviewer does not appear to have the expertise to evaluate the restaurant properly.
	Noexp_3	The reviewer wanted to look smart.

Table 2. Lists of milital 20 nems	Table 2.	Lists	of	Initial	28	items
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	Noexp_4	The reviewer is the type of person who always says bad things about restaurants.
	Noexp_5	The reviewer tends to find fault with others or companies.
	Noexp_6	The reviewer just needed to post something
	Noexp_7	The reviewer wants to get away from what sh/e was doing.
	Noexp_8	The reviewer feels less lonely by writing a post.
	Noexp_9	The reviewer wants someone to do something for her/him.
	Noexp_10	The reviewer had nothing better to do.
	Negative emo_1	The reviewer has a tendency to overreact.
	Negative emo_2	The reviewer likes to be a drama queen.
Dispositional_	Negative emo_3	The reviewer was in a terrible mood.
Strong negative	Negative emo _4	The reviewer wants attention from others.
emotion	Negative emo _5	The reviewer enjoys writing complaints.
	Negative emo _6	The reviewer wants revenge.
	Alt_1	The reviewer wants to help others to avoid the same experience.
Dispositional_ altruistic	Alt_2	The reviewer wants other people to benefit from his/her advice.
	Alt_3	The reviewer doesn't want other people to make the mistake of eating at the restaurant.

Table 2 (cont'd)

Exploratory factor analysis of the 28 causal attribution items yielded five factors with eigenvalues grater than 1, accounting for the 70% of the variance. Twelve items that had either

factor loadings lower than .69 or cross loadings were removed. As shown in Table 3, A principal component factor analysis with varimax rotation analysis of this 16-item scale revealed five factors with eigenvalues greater than 1, and explained a total of 71.2% variance. Table 3 shows the factor loadings in Exploratory Factor Analysis, the reliability of each factor.

Item	1	2	3	4	5	Cronbach's
Food_1	0.82					
Food_2	0.84					0.86
Food_3	0.81					
Service_1		0.69				
Service_3		0.83				0.84
Service_4		0.77				
Service_5		0.82				
Service_6		0.69				
No expertise_1			0.87			
No expertise_2			0.83			.90
No expertise_3			0.88			
Altruism_1				0.84		
Altruism_2				0.85		0.83
Altruism_3				0.84		
Negative emotion_3					0.70	0.61

Table 3. EFA and Reliability Results of the 16- Item Scale

#### Table 3 (cont'd)

Negative emotion_6			0.78	

## Main Study Design

The main study uses a 3 (Tie-strength: strong vs. weak vs. none) x 4 (Cues Present [high consistency/ medium consistency/ low consistency], Not Present) between-subjects, posttest only random assignment factorial experimental design.

## **Treatment Manipulations**

## Tie-strength

Participants were asked to imagine that the emotionally intense negative eWOM was by 1) their best friend (strong tie) )or 2) an acquaintance (weak tie) or 3) a stranger who is named Patt Williams (non-existent tie). The name was chosen since it is a gender neutral name as well as a common name in the U.S. This tie-strength manipulation is adopted by Frezen and Nakamoto (1993) where they conducted experiment examining the tie-strength between the source and receiver. For the nonexistent-tie condition, participants was told that the message is from a stranger on Facebook. The choice of selecting one name provided by participants and putting them as a source of message brings trade offs between internal and external validity. Having participants to name their strong-ties and weak-ties and asking them to imagine if the source was from one of their friends or acquaintances threatens external validity. However, using real-life messages from their contacts can lead to a variety of messages of differing lengths and forms to be included thus introducing possible confounding factors that can threaten the internal validity of the message. Thus, to standardize the messages and keep them free from confounding elements (thereby strengthening internal validity), respondents were provided with pre-written messages of standard length and format, and asked to imagine as though it were written by a person who is a strong, weak, or non existent tie.

#### Diagnostic Cues

Diagnostic cue was manipulated to be either present or absent of behavioral pattern found in previous posts.

## Behavioral Patterns of Diagnostic Cues

In the conditions where behavioral patterns of diagnostic are present, participants saw posts showing either high or moderate or low consistency to the original eWOM post with negative emotion. In the high-consistency condition, all previous posts displayed intense negative emotions, in keeping with the negative eWOM post that was shown before. Thus, the user's negative eWOM post seemed *highly consistent* with his/her previous posts. Participants in the medium-consistency condition saw posts with mixed valence. Participants in the lowconsistency condition saw posts with only positive valence. Therefore, the user's negative eWOM post will lack consistency with previous posts. In an absence of behavioral pattern condition, posts had a neutral valence. The content of the previous posts were (a) a movie s/he watched, (b) cellular service, (c) weather. Among three conditions, messages stayed parallel but have different emotional valence.

## Stimuli – Main study

To manipulate diagnostic cues on social media, four versions of screenshots of social media pages with different types of valence in posts were created. Diagnosticity was present (behavioral pattern: high consistency, medium consistency, low consistency) for three versions of stimuli whereas one stimulus had neutral valence. Consistency of behavior was manipulated

as valence (all positive vs. both positive and negative vs. all negative) of posts that the eWOM sender has written in the past.

#### **Procedure- Main Study**

After consenting to take part in the study, participants were directed to the online experiment on Qualtrics.com. To come up with a name for the source of the post displaying intense negative emotion, participants were asked to think of their friends and acquaintances on their Facebook. Then, they typed in the name of their friend and acquaintance.

Next, participants saw a negative eWOM post showing negative intense emotion about the restaurant. Participants in a strong-tie condition saw a name of a friend who they consider as one of their best friends. A name of a friend who they regarded as an acquaintance shown to participants in a weak-tie condition. Participants in a nonexistent-tie condition saw a fictitious name, Patt Williams, as a source of the post. Following the manipulation used by Ryu and Feick (2007), participants were asked to imagine that the source of the negative eWOM post is one of the names that they have provided. After reading the post, they read another screenshot which includes three posts previously written by the negative eWOM source with the negative eWOM they just read showing on the top of the page. Participants in the presence of diagnostic cues condition were exposed to either a high consistency condition (i.e., all posts are showing intense negative emotions) or moderate consistency condition (i.e., all posts are positive and the other half was negative) or a low consistency condition (i.e., all posts are positive). Participants under a condition of no diagnostic cue read a post with neutral valence.

Next, a series of questions regarding product involvement, source credibility, eWOM message credibility, situational attribution, dispositional attribution, brand attitude, and intention

to share were presented. Finally, cognitive list tasks asking for participants to make a counterargument for the negative eWOM was be followed.

Manipulation check items were asked to ensure that the study manipulation was successful. Participants will answer 1) emoji (e.g., angry vs. frown) 2) verbal labeling of emotion (e.g., enraged vs. disappointed) 3) expletive 4) valence of the diagnostic cue (e.g., positive vs. negative) 5) tie-strength. After responding to demographic questions, participants were thanked, debriefed, and compensated by Amazon Mechanical Turk.

#### CHAPTER 5

#### RESULTS

#### Manipulation Checks: Tie Strength and Diagnostic Cue Valence

A manipulation check for the valence of the post and the tie-strength was done. Manipulation check items for tie-strength were based on the 7-point Likert scale from Frezen and Nakamoto (1993) and Feick (2007). An example of tie-strength manipulation check item would be "How likely would you be to share personal confidences with [NAME]? To examine whether the tie-strength manipulation was successful, a one-way ANOVA was performed. The results showed that the manipulation was successful. Participants in a different tie condition significantly differed in their perception of a sender, F(2,488) = 254.70, p < .005, partial  $\eta 2 = .51$ . Post hoc comparisons using the Scheffe test revealed that the mean score for the strong tie, weak tie, and non-existent tie conditions were all significantly different from each other. The strong tie condition had the highest mean (M=6.02) followed by weak tie (M=3.52) and non-existent tie condition (M=2.52), effectively creating high, medium, and low perceptions of relationship tie to the message sender. Fifty-one percent of participants correctly remembered the valence of the previous posts of the sender (e.g., all positive, all negative, mixed, neutral). Moreover, to make sure that people deem the message plausible, they were asked to indicate the extent to which the post sounded like their friend or acquaintances in real life. Mean and standard deviation values for participants in the strong tie condition was M=3.71, SD=2.23 and a weak tie condition was M=3.79, SD=1.96. There was no significant difference between the two conditions, t(299)=.34, *p*<.01.

#### **Descriptive Statistics for Measures**

To reduce measurement error, factor scores were calculated and used for all the hypotheses testing.

#### Product Involvement

Participants were asked to indicate their involvement with the reviewed product. Ten items on a 7-point Likert scale were used (Zaichkowsky, 1994) (*Cronbach's*  $\alpha$ =.95). "To me, the restaurant is important/unimportant, irrelevant/relevant, means a lot/nothing, valuable/worthless to me, interesting/boring, exciting/unexciting, appealing/unappealing, needed/not needed, mundane/fascinating, involving/uninvolving to me (Zaichkowsky, 1994)." The mean and standard deviation values of the composite score were M= 4.51, SD=1.28 (*Skewness* =-.26, *Kurtosis*=-.14).

## Situational Attributions on Food

Situational attributions regarding food of the restaurant were measured by 3 items on a 7point Likert scale created through scale development for the main study (*Cronbach's*  $\alpha$ =.85). "[NAME] wrote this post because True Taco served terrible food, True Taco offers awful food, True Taco's food has inferior quality." The mean and standard deviation values of the composite scores were *M*= 5.15, *SD*=1.26 (*Skewness* =-.59, *Kurtosis*=.23).

## Situational Attributions on Service

Situational attributions regarding service of the restaurant were measured by 5 items on a 7-point Likert scale developed for the main study (*Cronbach's*  $\alpha$ =.89). "[NAME] wrote this post because True Taco offered poor service, True Taco's service is unpleasant, True Taco's service is unsatisfactory, True Taco's service is unreliable, True Taco lacked the features that the

reviewer wanted." The mean and standard deviation values of the composite score were *M*= 5.49, *SD*=1.14 (*Skewness* =-.92, *Kurtosis*=.83).

#### Dispositional Attributions on the Reviewer's Lacked Expertise

Dispositional attributions on reviewer's lack of expertise were measured by 3 items on a 7-point Likert scale created through scale development (*Cronbach's*  $\alpha$ =.75). "[NAME] wrote this post because the reviewer doesn't know enough about restaurants, the reviewer does not appear to have the expertise to evaluate the restaurant properly, the reviewer wanted to look smart." The mean and standard deviation values of the composite score were *M*= 3.15, *SD*=1.32 (*Skewness* =.32, *Kurtosis*=-.53).

## Dispositional Attributions on the Reviewer's Altruism

Dispositional attributions on the reviewer's altruism were measured by 3 items on a 7point Likert scale created through scale development (*Cronbach's*  $\alpha$ =.85). "[NAME] wrote this post because the reviewer wants to help others to avoid the same experience, the reviewer wants other people to benefit from his/her advice, the reviewer doesn't want other people to make the mistake of eating at the restaurant." The mean and standard deviation values of the composite score were *M*= 5.22, *SD*=1.28 (*Skewness* =-.90, *Kurtosis*=.65).

#### Dispositional Attributions on the Reviewer's Emotion

Dispositional attributions on the reviewer's emotion were measured by 2 items on a 7point Likert scale created through scale development (*Cronbach's*  $\alpha$ =.51). "[NAME] wrote this post because the reviewer was in a terrible mood, the reviewer wants revenge." The mean and standard deviation values of the composite score were *M*= 4.68, *SD*=1.39 (*Skewness* =-.67, *Kurtosis*=.01).

## Message Credibility

Message credibility item consisted of six 7-point scale (1= not at all, 7= extremely), adapted from Flanagin and Metzger (2000) and Choi and Rifon (2002). "I find that the review is believable, accurate, trustworthy, bias, complete." (*Cronbach's*  $\alpha$ =.92). The mean and standard deviation values of the composite score were *M*= 4.52, *SD*=1.52 (*Skewness* =-.41, *Kurtosis*=-.56).

## Source Attractiveness

Source attractiveness was measured by using a 7- point, semantic differential scale developed by Ohanian (1990) for measuring celebrity endorser's perceived attractiveness (*Cronbach's*  $\alpha$ =.92). Following Lafferty and Goldsmith (1999), items were reduced to fit our study context. In addition, their familiarity and likeability will be measured on a single-item, 7- point semantic differential scale (Choi & Rifon, 2012). "I find that [NAME] is Attractive-Unattractive, Classy- Not Classy, Pleasant- unpleasant, Familiar- Unfamiliar, Likeable-Dislikeable." The mean and standard deviation values of the composite score were *M*= 4.04, *SD*=1.55 (*Skewness* =.03, *Kurtosis*=-.75).

## Source Trustworthiness

Source trustworthiness dimension was measured with five items: dependable/undependable, honest/dishonest, reliable/unreliable, sincere/insincere, trustworthy/untrustworthy (Ohanian, 1990) (*Cronbach's*  $\alpha$ =.95). The mean and standard deviation values of the composite score were *M*= 4.65, *SD*=1.51 (*Skewness* =-.44, *Kurtosis*=-.23).

## Source Expertise

Source expertise dimension was measured with five items: expert/not an expert, experienced/inexperienced, knowledgeable/unknowledgeable, qualified/unqualified, skilled/unskilled (Ohanian, 1990) (*Cronbach's*  $\alpha$ =.95). The mean and standard deviation values of the composite score were *M*= 4.24, *SD*=1.43 (*Skewness* =-.21, *Kurtosis*=-.26).

## Attitude Toward the Brand

Attitude toward the brand was assessed with three semantic scale items, anchored by positive/negative, good/bad, and favorable/unfavorable on a 7-point scale (Aaker & Lee, 2001) (*Cronbach's*  $\alpha$ =.97). The mean and standard deviation values of the composite socre were *M*= 42.83, *SD*=1.37 (*Skewness* =.63, *Kurtosis*=.25).

#### Intention to Share

Intention to share measure on a 7-point scale was adapted from Ajen and Fishbein (1980), asking how likely participants will forward the negative eWOM if they saw the message in their feed (*Cronbach's*  $\alpha$ =.94). The mean and standard deviation values of the composite score were *M*= 2.56, *SD*=1.77 (*Skewness* =1.09, *Kurtosis*=.09). All scales and related items are listed in Table 11.

	Tie-strength	Valence	М	SD
		All positive	5.60	1.19
Situational attribution on food	None	All negative	4.02	1.23
		mixed	4.61	1.45
		Neutral	5.49	1.11
		Total	4.95	1.39
		All positive	5.47	1.26
		All negative	4.31	.95
	Weak	mixed	5.20	1.21
		Neutral	5.15	1.16
		Total	5.03	1.22

 Table 4. Descriptive Statistics by Experimental Condition

Table 4 (cont'd)						
		All positive	5.67	.92		
		All negative	5.35	1.06		
	Strong	mixed	5.44	1.15		
		Neutral	5.41	1.16		
		Total	5.47	1.07		
		All positive	5.58	1.12		
		All negative	4.56	1.23		
	Total	mixed	5.07	1.32		
		Neutral	5.37	1.14		
		Total	5.15	1.26		
		All positive	5.76	.10		
		All negative	4.50	1.29		
	None	mixed	5.17	1.30		
		Neutral	5.69	.86		
		Total	5.29	1.22		
Situational attribution		All positive	5.89	1.13		
on service		All negative	4 71	1.08		
	Weak	mixed	5.40	1.26		
		Neutral	5.83	.91		
		Total	5.45	1.19		
	Strong	All positive	5.90	.10		
		All negative	5.59	1.04		
		mixed	5.86	.81		
		Neutral	5.59	.91		
		Total	5.74	.95		
		All positive	5.85	1.03		
	Total	All negative	4.93	1.23		
		mixed	5.47	1.17		
		Neutral	5.70	.89		
		Total	5.49	1.14		
		All positive	2.84	1.44		
	None	All negative	3.89	1.01		
		mixed	3.30	1.17		
		Neutral	3.63	1.39		
		Total	3.42	1.31		
Disposition attribution		All positive	2.65	1.07		
on low expertise		All negative	3.63	1.05		
	Weak	mixed	3.33	1.47		
		Neutral	2.95	1.43		
		Total	3.15	1.31		
		All positive	2.79	1.24		
		All negative	2.85	1.22		
	Strong	mixed	2.81	1.30		
		Neutral	2.94	1.34		

	Table	$\frac{4}{2}$ (cont'd)		
		Total	2.84	1.26
		All positive	2.76	1.24
		All negative	2.85	1.22
	Total	mixed	2.81	1.30
		Neutral	2.94	1.34
		Total	2.84	1.26
		All positive	4.49	1.41
		All negative	5.30	1.09
	None	mixed	5.11	1.16
		Neutral	4.99	1.30
		Total	4.97	1.27
Disposition attributions		All positive	4 09	1 48
on emotion		All negative	5.17	82
on emotion	Weak	mixed	4 69	1 41
	weak	Neutral	4 78	1.11
		Total	4.78	1.41
		All positive	3.08	1.55
		All positive	1.83	1.03
	Strong	mixed	4.83	1.43
		Noutral	4.13	1.24
		Total	4.40	1.34
		All positivo	4.33	1.49
		All positive	4.20	1.31
	Total	All liegative	3.10	1.10
	Total	IIIIXeu Novtrol	4.03	1.52
		Tetel	4.70	1.42
			4.68	1.39
		All positive	5.79	.88
	ЪТ	All negative	3.92	1.42
	None	mixed	4.84	1.37
		Neutral	5.48	.84
		Total	5.02	1.34
Disposition attribution		All positive	5.85	1.16
on altruism	Weak	All negative	4.27	1.28
		mixed	5.09	1.22
		Neutral	5.68	1.20
		Total	5.21	1.35
		All positive	5.59	1.05
		All negative	5.21	1.12
	Strong	mixed	5.58	1.22
		Neutral	5.54	.98
		Total	5.48	1.10
		All positive	5.74	1.03
	Total	All negative	4.46	1.39
		mixed	5.17	1.30
	1			

Table 4 (cont'd)					
	Neutral	5.55	.995		
	Total	5.23	1.28		

## **Hypotheses Testing**

H1 stated that source credibility is associated with message credibility. A multiple regression model was run to test the hypothesis. The dependent variable was message credibility and the independent variables were attractiveness, trustworthiness, and expertise. The results showed that source credibility influenced message credibility, F(3,482)=138.33, p<.000), with an  $R^2$  of .46. Attractiveness (B=.05, t=.09, p>.05) did not play a significant role in explaining the variation in the message credibility. The results give a support for H1 as expertise (B=.22, t=2.32, p<.05) and trustworthiness (B=.48, t=4.92, p<.00) had statistically significant contributions to explaining variations in message credibility (See Table 5). Thus, H1 was partially supported.

Variables	Message Credibility				
	В	b	Sig. (p-value)		
Constant	.01		.86		
attractiveness	.05	.01	.93		
expertise	.22	.21	.02		
trustworthiness	.48	.48	.00		
$\mathbb{R}^2$	.46				
Adjusted R <sup>2</sup>	.46				
F	138.33				
Note: *p<.05 **p<.01					

Table 5. Multiple Regression Analysis on Message Credibility

To test H2, a single linear regression was run to test participants' brand attitude based on the credibility of the eWOM message. The dependent variable was brand attitude and the independent variable was message credibility. Product involvement was used as a covariate. The results showed that message credibility was significantly associated with brand attitude, F(2,383)=168.46, p<.00), with an  $R^2$  of .70. Message credibility had a statistically significant association with brand attitude (B=-71, t=-18.3, p<.00) (See Table 6). The more the negative eWOM message is perceived credible, more likely be the participants form negative attitudes on the brand.

Variables	Brand attitude				
	В	b	Sig. (p-value)		
Constant	.01		.68		
Involvement	.14	.12	.00		
Message	70	68	.00		
credibility					
$\mathbb{R}^2$	.46				
Adjusted R <sup>2</sup>	.46				
F	207.70				
Note: *p<.05 **p<.01					

Table 6. A Single Linear Regression Analysis on Brand Attitude

To test H3, a single linear regression was run. The dependent variable was sharing intention and the independent variable was message credibility. Product involvement was used as a covariate. The results showed that message credibility (B=.46, t=11.16, p<.05) positively influenced sharing intention, F(2,383)=69.12, p<.00, with an  $R^2$  of .26. Therefore, H3 was supported (See Table 7). The more eWOM message is perceived credible, the participants developed greater sharing intention.

Variables	Sharing intention				
	В	b	Sig. (p-value)		
Constant	.06		.06		
Involvement	.14	.13	.00		
Message	.41	.43	.00		
credibility					
$\mathbb{R}^2$	.22				
Adjusted R <sup>2</sup>	.21				
F	66.46				
Note: *p<.05 **p<	<.01				

Table 7. A Single Linear Regression Analysis on Sharing Intention

To test H4a and H5a, a one-way ANOVA was performed which had consistency condition as an independent variable and situational attributions as a dependent variable. The results showed that people in a different consistency cue condition had differences in making situational attributions, F(3, 483)=20.91, p<.001, partial  $\eta 2 = .12$ . A low level of consistency (M=.32) had stronger situational attributions than high consistency condition (M=-.42). Post hoc comparisons using the Scheffe test revealed the significant mean differences between low and high consistency condition. Therefore, H4a was supported. High consistency had significantly weaker situational attributions (M=-.42) than the absence of cue (M=.32) confirming H5a.

To test H4b and H5b, a one- way ANOVA was performed with consistency as an independent and dispositional attributions as a dependent variable. There was difference between consistency conditions for dispositional attributions, F(3, 483)=19.92, p<.001, partial  $\eta 2 = .11$ . Low consistency condition generated significantly weaker dispositional attributions (M=.26) than high consistency condition (M=.28). Therefore, H4b was supported. High consistency conditions attributions (M=.28) than no cue (M=.01), supporting H5b.

H6 hypothesized that a stronger tie with the source will make receivers generate stronger situational attributions as well as weaker dispositional attributions than would weaker tie. To test H6, a MANOVA was performed which had tie-strength as an independent variable and situational and dispositional attributions as dependent variables. There was a significant difference between situational as well as dispositional attributions among participants in different tie-strength conditions, F(4, 958) = 16.56, p < .00, Wilk's  $\Lambda = .88$ , partial  $\eta^2 = .07$ . Follow-up univariate analyses indicated that there was a significant main effect of tie-strength on situational attributions, F(2, 483) = 9.66, p < .05, partial  $\eta^2 = .04$ . Participants in a strong tie condition made

greater situational attributions (M= .21) than a weak tie (M= -.06) and non-existent tie (M= -.15). Post hoc comparisons using the Scheffe test revealed that mean score for a strong tie and weak tie, strong tie and non-existent tie were significantly different from each other. Thus, H6a was supported. Moreover, there was a main effect of tie-strength on dispositional attributions, F(2, 483) = 31.53, p < .00, partial  $\eta^2 = .12$ . Participants in a strong tie condition (M=-.26) made significantly weaker dispositional attributions than a weak tie (M= .06) and no tie condition (M= .21). Post hoc comparisons indicated a significant mean difference between a strong tie and no tie condition, supporting H6b.

H7-8 hypothesized the moderating role of tie-strength on the effect of consistency of cue on the attribution of motives. A two-way ANOVA revealed that the interaction effect between tie strength and consistency on situational attribution was significant, F(6,483)=3.74, p<.05; partial  $\eta 2 = .05$ . Under the non-existent tie condition, low consistency (M=.24) had stronger situational attributions than high consistency (M=..73), supporting H7a. Moreover, under the no tie condition, weaker situational attributions were made in high consistency condition (M=..73) compared to no cue condition (M=..11), confirming H8a.

Moreover, the interaction effect between tie-strength and consistency of cue was found on dispositional attributions, F(6,483)=2.86, p<.05; partial  $\eta 2 = .04$ . Under the non-existent tie condition, cues showing low consistency (M=-.09) had weaker dispositional attributions than high consistency (M=.58), supporting H7b. High consistency condition (M=.58) had significantly stronger dispositional attributions than absence of cue (M=.13). Therefore, H8b was supported. Additionally, simple main effect has shown that the consistency of the cue influenced situational attributions for participants in a non-existent tie condition, F(3,471)=15.95, p<.001, partial  $\eta 2 = .09$ , as well as weak tie condition, F(3,471)=13.14, p<.001, partial  $\eta 2 = .08$ . In contrast, the consistency of cue did not influence strong tie for making situational attributions, F(3,471)=1.19, p>.05; partial  $\eta 2 = .01$ . Additionally, simple main effect has shown that the consistency of the cue influenced dispositional attribution in non-existent tie condition F(3,471)=13.17, p<.001, partial  $\eta 2 = .08$ , as well as weak tie condition, F(3,471)=14.96, p<.001, partial  $\eta 2 = .09$ . However, it did not yield significant influence on strong tie condition F(3,471)=1.20, p>.05; partial  $\eta 2 = .01$ .



Figure 2. Interaction Between Tie and Behavioral Pattern on Situational Attributions



Figure 3. Interaction Between Tie and Behavioral pattern on Dispositional Attributions

To test H9-10, simple linear regressions were run to test the influence of attribution type on source credibility for situational and dispositional attributions. The model predicting the effect of situational attribution on source credibility was significant, F(1,482)=193.97, p<.00, with an  $R^2$  of .29. Moreover, the model predicting the effect of dispositional attribution on source credibility was significant, F(1,482)=658.40, p<.00, with an  $R^2$  of .58. The results support H9-10 as situational disposition (B=.01, t=13.93, p<.00) and dispositional attributions (B=-.13, t=-25.66, p<.00) had a statistically significant contribution in explaining variations in source credibility. As expected, dispositional attribution negatively influences source credibility whereas situational attributions positively influence source credibility, supporting H9 and H10.

Number	Hypothesis	Results
H1	Greaer source credibility will lead to greater message credibility.	Partially supporte
H2	Greater message credibility will lead to more negative brand attitude.	Supported
H3	Greater message credibility will lead to greater sharing intention.	Supported
H4a	A cue showing low consistency will generate stronger situational attributions than would a cue showing high consistency.	Supported
H4b	A cue showing low consistency will generate weaker dispositional attributions than would a cue showing high consistency.	Supported
H5a	A cue showing high consistency will generate stronger dispositional attributions than an absence of cue.	Supported
H5b	A cue showing high consistency will generate weaker situational attributions than an absence of cue.	Supported
Нба	A strong tie will make receivers generate stronger situational attributions than would weaker tie.	Supported
H6b	A strong tie with the source will make receivers generate weaker dispositional attributions than would weaker tie.	Supported
H7a	Under the condition where the tie-strength is none, the pattern of cues showing low consistency will more likely to generate stronger situational attributions than would a cue showing high consistency.	Supported
H7b	Under the condition where the tie-strength is none, the pattern of cues showing low consistency will more likely to generate weaker dispositional attributions than would a cue showing high consistency.	Supported
H8a	Under the condition where the tie-strength is none, the pattern of cues showing high consistency will more likely to generate stronger situational attributions than absence of cue.	Supported
H8b	Under the condition where the tie-strength is none, the pattern of cues showing high consistency will more likely to generate weaker dispositional attributions than absence of cue.	Supported

# Table 8. Summary of Results

H9	Stronger situational attributions will lead to a higher level of source credibility	Supported
H10	Stronger situational attributions will lead to a lower level of source credibility	Supported

## Structural Equation Modeling Results

Structural equation modeling with Mplus was used to test the whole model. In this process, no-tie and weak tie were merged into one condition in order to effectively compare the differences between tie conditions. The initial model (Model 1) that included all the indicators for attribution items did not have a satisfactory model fit. Therefore, two other models were run with several modifications. Model 2 did not include dispositional attributions for emotion due to the load factor loadings. Model 3 did not include altruism items since it was distinctive from other negative types of dispositional items. Model fit information for each model is shown in Table 9. Mplus outputs for each model are attached (See Appendix C, D, E).

Table 9. Model Fit of Three Models

	df	$\chi^2$	RMSEA	CFI	TLI
Model 1	1431	81838.01	.13	.86	.85
Model 2	1248	15637.08	.16	.82	.81
Model 3 (final)	1632	70318.80	.07	.94	.94

The structural model can be found in Figure 4. A structural regression model was built to estimate the measurement model and the structural model together. The measurement model was specified through confirmatory factor analysis. Table 10 includes indicators as well as factor loadings for each construct. Weighted least square adjusted for sample mean and variance

(WLSMV) was used as the estimator. To estimate, the standard errors for the indirect effects, bootstrapping technique (the number of bootstraps=2,000) was used.



Figure 4. Structural Model

## Table 10. Estimates of Measurement Model

-

			Std.		Cronbach's
	Est.	SE	Est.	р	alpha
Product involvement					
To me, restaurant is	1.00	.00	.77	-	
important/unimportant					
Irrelevant/ relevant	1.01	.03	.78	.00	
Means a lot/ nothing	1.07	.02	.84	.00	
Valuable/ worthless	1.09	.02	.83	.00	
Interesting/ boring	1.04	.02	.79	.00	.95
Exciting/ unexciting	1.11	.02	.85	.00	(AVE=.82)
Appealing/ unappealing	1.07	.02	.82	.00	
Needed/ not needed	1.11	.02	.85	.00	
Mundane/ fascinating	1.02	.02	.84	.00	
Involving/uninvolving	1.03	.02	.79	.00	
Situational attributions on Food					
True Taco served terrible food	1.00	.00	.92	-	
True Taco served awful food	.96	.02	.88	.00	.85
True Taco's food has inferior quality	.82	.02	.73	.00	(AVE=.85)
Situational attributions on Service					
True Taco offered poor service	1.00	.00	.87	-	
True Taco's service is unpleasant	1.01	.02	.88	.00	
True Taco's service is unsatisfactory	1.01	.02	.88	.00	.89
True Taco's service is unreliable	1.03	.02	.89	.00	(AVE=.82)
True Taco lacked the features that the	.66	.04	.58	.00	
reviewer wanted					
Dispositional attributions on the					
reviewer's lacked expertise					

	Table 1	0 (cont'd)			
The reviewer doesn't know enough	1.00	.00	.84	-	
about restaurants					
The reviewer does not appear to have	1.07	.05	.90	.00	.75
the expertise to evaluate the					(AVE=.72)
restaurant properly					
The reviewer wanted to look smart	.49	.05	.41	.00	
Dispositional attributions on the					
reviewer's emotion					
the reviewer was in a terrible mood	1.00	.00	.05	-	
the reviewer wants revenge	.77	.11	.05	.00	.51
Message credibility					(AVE=.05)
believable	1.00	.00	.92	-	
accurate	1.01	.01	.93	.00	
trustworthy	1.02	.01	.94	.00	.92
Bias (r)	0.66	.03	.60	.00	(AVE=.86)
Complete	.91	.02	.83	.00	
Convincing	1.03	.01	.95	.00	
Source attractiveness					
Attractive- Unattractive	1.00	.00	.87	-	
Classy- Not Classy	.91	.02	.79	.00	
Pleasant- unpleasant	1.06	.01	.91	.00	.92
Familiar- Unfamiliar	.95	.02	.82	.00	(AVE=.87)
Likeable- Dislikeable	1.11	.02	.96	.00	
Source trustworthiness					
Dependable/undependable	1.00	.00	.88	-	
Honest/dishonest	1.03	.01	.90	.00	
Reliable/unreliable	1.06	.01	.93	.00	.95
Sincere/insincere	1.02	.01	.90	.00	(AVE=.91)
Trustworthy/untrustworthy	1.06	.01	.93	.00	
Source expertise					
expert/not an expert	1.00	.87	.00	.00	
experienced/inexperienced	1.06	.95	.02	.00	.95
knowledgeable/unknowledgeable	1.14	1.04	.02	.00	(AVE=.97)
qualified/unqualified	1.14	1.03	.02	.00	
skilled/unskilled	1.08	.95	.02	.00	
Attitude toward the brand					
positive/negative	1.00	.00	.95	-	
good/bad	1.02	.01	.96	.00	
favorable/unfavorable	1.01	.01	.96	.00	.97
Like-Dislike	0.98	.01	.93	.00	(AVE=.95)
Intention to forward					
Likely-Unlikely	1.00	.00	.97	-	
Probable-Improbable	.99	.02	.96	.00	.94
Possible- Impossible	.88	.02	.85	.00	(AVE=.93)

The model fit was satisfactory ( $\chi^2$  (1632)=70318.80, p<.01; CFI=.94, TLI=.94, RMSEA=.07). Source credibility had a positive influence on message credibility ( $\beta$ =.81, *s.e.*= .03, p<.01). Message credibility had a negative influence on brand attitude ( $\beta$ =-.74, *s.e.*= .04, p<.05) and positive influence on sharing intention ( $\beta$ =.44, *s.e.*= .06 p<.01). Attribution of motives had a significant impact on source credibility in that dispositional attributions were negatively associated with source credibility ( $\beta$ =-.69, *s.e.*= .04 p<.05) whereas situational attributions were positively associated with source credibility ( $\beta$ =.59, *s.e.*= .04, p<.01).

In comparison with a weak tie, a strong tie did not show significant impact on situational attribution ( $\beta$ =.03, *s.e.*= .07, p>.05). However, as for the dispositional attributions, people in a strong tie condition showed less dispositional attribution (a decrease of .50) than weak tie condition ( $\beta$ =-.50, *s.e.*= .08, p<.05).

High consistency cue made less situational attributions (a decrease of .44) than no cue condition ( $\beta$ =-.44, *s.e.*= .05, p<.05). Moreover, medium consistency condition had less situational attributions (a decrease of .19) than no cue condition ( $\beta$ =-.19, *s.e.*= .06, p<.05). The interaction between tie-strength and high consistency ( $\beta$ =.27, *s.e.*= .07, p<.01) as well as medium consistency ( $\beta$ =.18, *s.e.*= .07, p<.01) on situational attributions were significant.

Having a no cue condition as a reference group, people in a low consistency cue condition made less dispositional attributions (a decrease of .19) than no cue condition ( $\beta$ =-.19, *s.e.*= .06, p=.17). The interaction between tie-strength and high consistency ( $\beta$ =-.02, *s.e.*=.08, p=.79) as well as medium consistency ( $\beta$ =-.04, p=.85) and low consistency ( $\beta$ =.10, *s.e.*=.07, p=.17) on situational attributions were not significant.

Although not hypothesized, the indirect effect was tested to see the influence of tie strength on multiple dependent variables. The mediation effect of tie strength through

attributions, source credibility, message credibility to (a) attitude toward the brand and (b) sharing intention were tested. Further, the mediation effect of source credibility between message credibility and (a) attitude toward the brand and (b) sharing intention were tested.

As for brand attitude, the tests for the indirect effects showed that both tie-strength had a significant indirect effect. Strong tie had more negative impact on brand attitude ( $\beta$ =-.46, *s.e.*= .10, p<.01, 95% CI[-.69, -.28]). Moreover, source credibility also had a significant indirect effect on brand attitude ( $\beta$ =-.74, *s.e.*= .07, p<.05, 95% CI [-.87, -.59]).

For sharing intention, the indirect effects indicated that strong tie ( $\beta$ =.27, s.e.= .07, p<.05,

95% CI [.03, .19]) had statistically significant indirect effects on sharing intention. Moreover,

source credibility had an indirect effect on sharing intention ( $\beta$ =.43, s.e.= .07, p<.01, 95% CI

[.31, .57]).

	Est.	SE	Std.	р
			Est.	
Source credibility >> Message credibility	1.02	.07	.81	.00
Message credibility >> Attitude toward the brand	73	.05	74	.00
Message credibility >> Sharing intention	.43	.06	.44	.00
Situation attributions >> Source credibility	.55	.04	.59	.00
Dispositional attribution >> Source credibility	80	.15	69	.00
Tie >> Situational attributions	.05	.14	.03	.72
Consistency of cue (low) >> Situational attributions	.14	.12	.07	.26
Consistency of cue (medium)>> Situational attributions	39	.13	.54	.00
Consistency of cue (high)>> Situational attributions	90	.12	.27	.00
Tie x Consistency of cue (low) >> Situational attributions	.08	.20	.03	.68
Tie x Consistency of cue (medium) >> Situational attributions	.59	.21	.18	.00
Tie x Consistency of cue (high) >> Situational attributions	.09	.21	.27	.01
Tie >> Dispositional attributions	75	.16	49	.00
Consistency of cue (low) >> Dispositional attributions	32	.11	19	.01
Consistency of cue (medium) >> Dispositional attributions	02	.11	01	.84
Consistency of cue (high) >> Dispositional attributions	.26	.11	.16	.02
Tie x Consistency of cue (low) >> Dispositional attributions	.26	.20	.10	.18
Tie x Consistency of cue (medium) >> Dispositional attributions	04	.20	01	.85
Tie x Consistency of cue (high) >> Dispositional attributions	05	.20	02	.79

Table 11. Coefficient Estimates of Structural Model

Indirect effects				
Source credibility >> Message credibility >> Brand attitude	84	.07	60	.00
Source credibility >> Message credibility >> Sharing intention	.48	.07	.36	.00
Strong tie>> Source credibility>> Message credibility >> Brand attitude	17	.07	45	.01
Strong>> Source credibility>> Message credibility >> Sharing intention	.10	.04	.27	.01

#### CHAPTER 6

#### DISCUSSION

#### **Sumary of Findings**

Although negative eWOM in social media is becoming a huge challenge to brands, experimental studies which specifically examine consumer responses to negative eWOM messages are scarce. The present study investigated how the tie-strength with the source and diagnostic information of negative eWOM influence the consumer's perceptions of the message credibility and subsequent brand evaluation. Drawing upon Attribution theory and Accessibility-Diagnosticity model, this study proposed that negative eWOM receivers' inference making on the sender's motives will be determined by the pattern of the past eWOM behaviors (i.e. valence of the previous posts). Moreover, it was hypothesized that such impact will be moderated by the relationship between the receiver and the sender. Finally, this study proposed that attribution of motives will influence source credibility, which in turn leads to message credibility and further persuasive outcomes.

This experimental study used a 3 x 4 (tie strength [strong/weak/none] and diagnostic cue [present (high, medium, low consistency)/absent]) post-test-only experimental design with random assignment to conditions. Through the pretest, a negative eWOM message with intense emotion was created in the form of a Facebook review post. Moreover, dispositional as well as situational attributions scales were developed through another pretest. In the main experiment, consistency of behavioral pattern was manipulated as four different patterns of valence in past posts. Overall, the findings indicate when the original negative eWOM post and the previous posts show high consistency, receivers tend to generate dispositional attributions rather than situational attribution. However, participants in a strong tie condition were not influenced by the

diagnostic cue when they were making inferences on the sender's motives. Attribution type influenced message credibility which affected brand attitude and sharing intention.

### Measuring eWOM attributions of motives

The practice of treating dispositional and situational attributions as a continuum being on opposite endpoints (e.g., Qiu, Pang, & Lim, 2012) cannot fully illustrate the phenomenon under which people make inferences on the motives behind negative eWOM with intense emotion. Therefore, this study explored and measured how consumers infer the motives behind negative eWOM senders. The findings indicate that the inference of negative eWOM motives were 5 different types: situational food, situational service, dispositional low expertise, dispositional negative emotion, and dispositional altruism. To illustrate, people may think that the reason for writing negative eWOM about restaurant would be caused by situational factors such as bad food and service. Conversely, people may also find the cause of writing negative eWOM from sender's dispositions, such as having a low expertise to evaluate the restaurant, or their emotional nature, or their altruism.

#### The Impact of Behavioral Pattern on Attribution Motives

The results showed that diagnostic cues determine the extent to which people make attributions on the eWOM sender's disposition and situation. In particular, when the original negative eWOM and the previous posts are showing consistently negative valence, receivers made more dispositional attributions compared to when the previous posts showed positive valence.

The results once again confirm Kelly's model in that consistency of past behavior is a determinant of situational/dispositional attributions. Recipients made a dispositional inference such as general negative character when they found that the eWOM sender has a consistent

behavioral history. By contrast, when the consistency was low thus indicate that a behavior stands out from the sender's other behaviors, recipients were more likely to attribute negative eWOM to situational motives such as product failure.

The results give implications for eWOM platform developers. Those who manage eWOM platforms should consider ways to highlight behavioral patterns such as valence of the previous posts. For example, in review platforms, one way to emphasize the behavioral pattern of the reviewer can be disclosing one's average of the previous ratings. In this way, the eWOM behavior can be considered either unique or consistent from the past eWOM messages. Then receivers would not need to put an effort to visit the eWOM sender's profile page to gather more information on previous eWOM behaviors.

#### **Role of Tie-strength**

Tie-strength, the strength of the relationship or level of intimacy between the eWOM sender and the receiver, appears to have a crucial impact on receivers' inference-making. It was found that when there is a stronger tie between the sender and the receiver, situational attributions are made more than dispositional attributions. People in a non-existent tie condition inferred motives behind negative eWOM were driven by the eWOM sender's disposition rather than the situation. In contrast, people in a strong-tie condition were more likely to infer that negative eWOM was generated due to situational attributions such as bad food and service rather than dispositional attributions (i.e., strong temper or lack of expertise).

The interaction effect between tie strength and consistency of the cue suggests that impact of consistency on attributions only mattered when tie-strength was weak or non-existent. It was interesting to report that in the strong tie condition participants' inferences were not influenced by the behavioral patterns of diagnostic cues. The results are in line with actor-
observer bias where observers who do not have valid knowledge of actors are likely to attribute the cause of behaviors to internal factors. When participants in a stranger condition were provided with neutral valenced previous posts (which do not offer a pattern of past posts), more dispositional attributions and weaker situational attributions were made compared to the strong tie condition.

Those who manage social media consumer complaints should consider the network of those eWOM senders. Coping with all people exposed to complaint messages would be impossible in social media due to its indefinite reach; however, dealing with dissatisfied consumers and their close friends would be much more efficient. Moreover, it would be beneficial for eWOM receivers to find the sender's motives if more cues which signal past behavioral patterns are implemented on the eWOM platform.

#### The Impact of Source Credibility on Message Credibility

In this study, source trustworthiness and expertise were found be significant influencers of eWOM message credibility perception among other dimensions. Previous studies on information adoption research also found that source's expertise and trustworthiness influence perceptions of the usefulness of information (Sussman & Siegal, 2003) and intention to share information (Ha & Ahn, 2011). One possible explanation for insignificant findings on the impact of attractiveness deals with the topic of the negative eWOM which was restaurants. Since restaurants have little to do with the appearance of the source, source attractiveness would not greatly influence the credibility of eWOM in the context of the restaurant.

#### **Role of Message Credibility on Persuasive Outcomes**

The results indicate that message credibility influences persuasive outcomes such as brand attitude and sharing intention. Participants exhibited negative brand attitude toward

TrueTaco as they perceive negative eWOM as credible. Therefore, the results of the study strengthen the previous findings in that the message credibility is a function of brand attitude and sharing intention (Ha & Ahn, 2011; Wu & Wang, 2011). Specifically, source credibility has shown to have an indirect effect on persuasive outcomes such as brand attitude and sharing intention, through message credibility.

The results once again highlight the importance of message credibility for people's sharing intention. Since sharing unbiased and useful information on social media would benefit fellow consumers and enhance one's social status (e.g., the sender is a trendy and knowledgeable person), receivers would share negative eWOM if they perceive it as credible. In contrast, receivers would not share negative eWOM which they do not perceive credible since sharing false or biased information is associated with social risk (Mandel, 2003; Schlenker & Leary, 1982; Leonhardt, Keller, & Pechmann, 2011).

The results offer brand managers some respite from worry regarding intense negative eWOM on social media. If the negative eWOM is not perceived as credible, it will not affect people's attitude toward the brand nor sharing intention.

#### **Limitation and Future Research Directions**

There are some limitations of this study. First, the manipulation pass rate for people in a positive condition was less than 50 percent. Such a low pass rate could have been caused by a failure of the measure for the manipulation check. People in a positive valence (low consistency of the behavioral pattern) condition could have answered that they saw negative posts by taking into account the original eWOM post that contained negative intense emotion. Thus, participants in a positive condition who did not pass the manipulation check question were included in the hypotheses testing. This is because even under the circumstances where the manipulation check

item was not problematic, dropping subjects who did not pass the manipulation would not strengthen the results of the study. Indeed, Aronow, Baron, and Pinson (2016) replicated the study of Press, Sagan, and Valentino (2013) with a design that does not drop participants who failed manipulation check and reported stronger findings than one that excluded failed subjects for manipulation check.

Moreover, this experiment had a single product category. A restaurant was chosen as a topic of eWOM in the experiment because reviews on restaurants are not only prevalent on social media but also widely sought by consumers, enhancing external validity. Moreover, restaurants belong to experience goods which possess attributes that can only be evaluated after consumption, enhancing internal validity. Future studies should also examine whether search goods, which can be evaluated prior to purchase, also produce similar results to ensure the generalizability of the findings.

#### Conclusion

The present study is one of the few studies which considered the tie-strength between sender and receiver of negative eWOM communication in social media. Unlike traditional platforms for eWOM, there is a higher chance that stranger's dispositional information is accessible on social media, such as previous posts. The results showed that the consistency of behavioral pattern in previous posts of the eWOM sender influences attributions of sender's motives. Under the condition which the original negative eWOM and the previous posts are showing consistently high consistency (i.e., negative valence posts), receivers made more dispositional attributions compared to when the previous posts showed low consistency (i.e., positive valence posts). Such impact of the pattern of the cue was moderated by the tie-strength between the sender and the receiver. When the source is a close friend, the behavioral pattern did

not influence the inference making. Furthermore, indirect effects suggest that attribution of sender motives further influences persuasive outcomes such as brand attitude and sharing intention.

The findings provide an implication for theory as well as marketing implications. Studies using attribution theory on eWOM communication limited themselves by manipulating the source of eWOM as total strangers, however, with varying manipulation on tie-strength, this study provides some evidence that attribution error can be surmounted by diagnostic information such as message sources' information available in social media. Furthermore, marketers who worry about negative eWOM on social media should consider the findings that credibility perception of negative eWOM is a crucial factor influencing brand attitude and sharing intention. Unless the negative eWOM with intense emotion is coming from a strong tie it is less likely to trigger serious consequences such as negative brand attitude and going viral on social media. Furthermore, it is a rare case that negative eWOM sender has a substantial number of strong ties on their social network. In conclusion, when brand managers detect negative eWOM with intense emotion on social media, they should consider the network of sender as well as their diagnostic information presented on their profiles. By implementing cues that indicate the behavioral patterns of the posts, they may help receivers distinguish chronic complainers from those who are sharing critical comments on products.

APPENDICES

### APPENDIX A. Examples of Stimuli An original message seen on the restaurant's Facebook page



When diagnostic cue is present:

Behavioral patterns showing low consistency vs. high consistency



### APPENDIX B. Main Study Questionnaire

1. There are number of posts you read on social media. Some posts can be from close friends of yours while other posts are from someone you don't really know. Take a moment to think about the people on your friend's list on Facebook.

Among people who you are friends with on Facebook, please write 1) the name of your best friend AND 2) the name of someone who is just an acquaintance.

2. You will be shown a post that looks like one you might see on any social media platform. The post will describe a consumer's reaction to visiting a restaurant called True Taco. Please imagine that you read a post from [NAME]

## [Insert stimuli]

2-1. Please briefly summarize the content of the post that you just saw.

3. Below is a list of emotions that [NAME] might be feeling. For each emotion, click on the button that best describes the weakness or strength of the [NAME]'s emotions.
(1= very weak, 7= very strong)
Enraged
Angry
Irritated

4. Imagine that you clicked on [NAME]'s profile after reading his/her True Taco post. You will

find the following posts written by [NAME]'s social media page.

CONDITION 1: NO AFFECT EWOM BEHAVIOR (NEUTRAL TONE) CONDITION 2: HIGH CONSISTENCY (NEGATIVE EWOM BEHAVIOR) CONDITION 3: LOW CONSISTENCY (POSITIVE EWOM BEHAVIOR) CONDITION 4: MEDIUM CONSISTENCY (MIXED EWOM BEHAVIOR)

5. Please tell us how much you agree or disagree with the following statements regarding the reasons why the reviewer wrote the post by clicking the button associated with your response next to each statement.

[NAME] wrote this post because ...

(1= Strongly Disagree, 7= Strongly Agree)

True Taco served terrible food. True Taco offers awful food. True Taco's food has inferior quality. True Taco offered poor service. True Taco's service is unpleasant. True Taco's service is unsatisfactory. True Taco's service is unreliable. True Taco lacked the features that the reviewer wanted. The reviewer doesn't know enough about restaurants. The reviewer does not appear to have the expertise to evaluate the restaurant properly. The reviewer wanted to look smart. The reviewer wants to help others to avoid the same experience. The reviewer wants other people to benefit from his/her advice. The reviewer doesn't want other people to make the mistake of eating at the restaurant. The reviewer was in a terrible mood. The reviewer wants revenge. (Will be randomized)

6. Please indicate your opinions by clicking the button associated with your response next to each statement.

I find that [NAME] is \_\_\_\_\_\_. (7-point, semantic differential scale)

Attractive- Unattractive Classy- Not Classy Pleasant- unpleasant Familiar- Unfamiliar Likeable- Dislikeable Dependable- Undependable Honest- Dishonest Reliable- Unreliable Sincere- Insincere Trustworthy- Untrustworthy Expert- Not an expert Experienced- Inexperienced Knowledgeable- Unknowledgeable Qualified- Unqualified Skilled- Unskilled

7. Please indicate your opinions about the True Taco review.

I find that the review is \_\_\_\_\_. (1= not at all, 7= extremely)

Believable Accurate Trustworthy Bias Complete

8. To me (restaurant) is:

Important-Unimportant\* Boring-Interesting Relevant-Irrelevant\* Exciting-Unexciting\* Means nothing- Means a lot to me Appealing- Unappealing\* Fascinating- Mundane\* Worthless- Valuable Involving-Uninvolving\* Not needed- Needed

9. What do you think of True Taco?

Good-Bad Favorable-Unfavorable Positive-Negative Like-Dislike

10. If you saw this in your feed, how likely is it that you would forward it to your friends?

Likely-Unlikely Probable-Improbable Possible-Impossible

11. Cognitive listing task

Please list five thoughts you had while reading complaint post about the restaurant.

## 12. [STRONG, WEAK TIE ONLY] To what extent did the True Taco post sound like [NAME] in real life? (1=Very Unlikely, 7= Very Likely)

[Manipulation Check]

1. Which of the following emoticons did you see in the post?

2. Which of the following words did you see in the post?

Disappointed Enraged I didn't see either word

3. Did the reviewer use a swear word like F%#&? Yes/NO/ Don't know

4. Previous posts of [NAME] were \_\_\_\_\_.

Negative/ Positive/ Neutral/Both positive and negative/ Don't know

5. Please tell us about your relationship with [NAME].

There are some people in our daily lives with whom we are willing to share personal confidences. How likely would you be to share personal confidences with with [NAME]?

There are some people in our daily lives with whom we would gladly spend a free afternoon socializing. There are others with whom we would rather not spend our free time. How likely would you be to spend some free time socializing with [NAME]?

How likely would you be to perform a LARGE favor for [NAME]?? Examples of "LARGE" favors are lending the person your car for a few days, typing a paper for this person because he/she is too ill, going on a blind date with his/ her roommate, etc.

On a scale of 0 to 10, rate your closeness to [NAME].

[DEMOGRAPHIC QUESTIONS]

Finally, we would like to know a few things about you.

What year were you born? 19

What is your gender?

Female Male

What is your race?

African-American

Asian

Caucasian

Hawaiian Nation or Pacific Islander
Hispanic, Latino or Spanish origin
Native American or Alaskan native
Multiracial
Other

Please indicate the answer that includes your entire household income in (previous year) before taxes.

Less than \$10,000

\$10,000 to \$19,999

\$20,000 to \$29,999

\$30,000 to \$39,999

\$40,000 to \$49,999

\$50,000 to \$59,999

\$60,000 to \$69,999

\$70,000 to \$79,999

\$80,000 to \$89,999

\$90,000 to \$99,999

\$100,000 to \$149,999

\$150,000 or more

Not including kindergarten, how many years of formal education have you completed? (PLEASE ENTER THE NUMBER OF YEARS OF FORMAL EDUCATION IN THE BOX BELOW). APPENDIX C. M-plus Output for CFA (Model 1)

Mplus VERSION 8.1 (Mac) MUTHEN & MUTHEN 11/03/2018 7:22 PM

INPUT INSTRUCTIONS

TITLE: CFA MODEL V1 10-31-2018;

DATA: FILE IS "Diss\_data\_valence\_mc.csv";

VARIABLE:

NAMES = Progress Duration Id Enraged Angry Irritated A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 SC1 SC2 SC3 SC4 SC5 SC6 SC7 SC8 SC9 SC10 SC11 SC12 SC13 SC14 SC15 MC1 MC2 MC3 MC4 MC4R MC5 MC6 I1 I1R I2 I3 I3R I4 I4R I5 I6 I6R I7 I7R I8 I9 I9R I10 AB1 AB2 AB3 AB4 AB1R AB2R AB3R AB4R V1 V2 V3 V1R V2R V3R Mword Memoticon Mswear Mvalence Mrealbf Mrealacq MCCHECK3 MCCHECK2 MCCHECK1 Mtie1 Mtie2 Mtie3 Macqtie1 Macqtie2 Macqtie3 Mstrtie1 Mstrtie2 Mstrtie3 Mbftie4 Macqtie4 Mstrtie4 gender ethinc income education SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R birthyear TieStrength VALENCE MvalR Mawordf Mallf MCTie MCallval MCposneg;

MISSING ARE ALL (-99);

USEV = A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R MC1 MC2 MC3 MC4R MC5 MC6 AB1R AB2R AB3R AB4R V1R V2R V3R I1R I2 I3R I4R I5 I6R I7R I8 I9R I10;

CATEGORICAL ARE A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R MC1 MC2 MC3 MC4R MC5 MC6 AB1R AB2R AB3R AB4R V1R V2R V3R I1R I2 I3R I4R I5 I6R I7R I8 I9R I10;

USEOBS Mallf EQ 0;

DEFINE:

IF (TieStrength NE 2) THEN TIE\_S = 0; IF (TieStrength EQ 2) THEN TIE\_S = 1; IF (Valence EQ 1) THEN VAL\_P = 1; IF (Valence NE 1) THEN VAL\_P = 0; IF (Valence EQ 2) THEN VAL\_N = 1; IF (Valence NE 2) THEN VAL\_N = 0; IF (Valence EQ 3) THEN VAL\_M = 1; IF (Valence NE 3) THEN VAL\_M = 0; IF (Valence EQ 4) THEN VAL\_NU = 1; IF (Valence NE 4) THEN VAL\_NU = 0; TSVP = TIE\_S \* VAL\_P; TSVN = TIE\_S \* VAL\_P; TSVM = TIE\_S \* VAL\_N;

ANALYSIS: !BOOTSTRAP IS 2000;

MODEL:

FOOD BY A1 A2 A3; SERVICE BY A4 A5 A6 A7 A8; DISEX BY A9 A10 A11; EMOTION BY A15 A16; ALTRUISM BY A12 A13 A14; ATTRA BY SC1R SC2R SC3R SC4R SC5R; TRUST BY SC6R SC7R SC8R SC9R SC10R; EXPERTISE BY SC11R SC12R SC13R SC14R SC15R; SCREDIBLE BY ATTRA TRUST EXPERTISE; MCREDIBLE BY MC1 MC2 MC3 MC4R MC5 MC6; ATTB BY AB1R AB2R AB3R AB4R; SINTENT BY V1R V2R V3R; INVOLVE BY I1R I2 I3R I4R I5 I6R I7R I8 I9R I10; TRUST@0.1; SCREDIBLE@0.01;

OUTPUT: STANDARDIZED TECH4 CINTERVAL(BCBOOTSTRAP);

MODEL FIT INFORMATION

Number of Free Parameters 424

Chi-Square Test of Model Fit

Value	12545.859*	
Degrees of Freedom	1331	
P-Value	0.0000	

\* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used

for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.132	
90 Percent C.I.	0.130	0.134
Probability RMSEA <=	.05	0.000

# CFI/TLI

CFI	0.861
TLI	0.850

Chi-Square Test of Model Fit for the Baseline Model

Value	81838.014
Degrees of Freedom	1431
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value 0.076

Optimum Function Value for Weighted Least-Squares Estimator

Value

0.17967033D+02

### MODEL RESULTS

			Two-Tailed			
	Es	timate	S.E. E	st./S.E.	P-Value	
FOOD	BY					
A1		1.000	0.000	999.000	999.000	
A2		0.969	0.017	57.100	0.000	
A3		0.825	0.020	40.853	0.000	
SERVIC	E BY	7				
A4		1.000	0.000	999.000	999.000	
A5		1.011	0.019	53.960	0.000	
A6		1.005	0.019	53.937	0.000	
A7		1.019	0.020	51.973	0.000	
A8		0.676	0.033	20.214	0.000	
DISEX	BY					
A9		1.000	0.000	999.000	999.000	

A10 A11	1.064 0.488	0.046 0.052	23.122 9.349	0.000 0.000
EMOTION B	BY			
A15	1.000	0.000	999.000	999.000
A16	0.776	0.109	7.123	0.000
ALTRUISM	BY			
A12	1.000	0.000	999.000	999.000
A13	0.945	0.024	39.265	0.000
A14	0.992	0.024	40.676	0.000
ATTRA BY	7			
SC1R	1.000	0.000	999.000	999.000
SC2R	6.880	0.215	32.049	0.000
SC3R	7.932	0.161	49.232	0.000
SC4R	7.200	0.202	35.591	0.000
SC5R	8.512	0.123	68.958	0.000
TRUST BY	-			
SC6R	1.000	0.000	999.000	999.000
SC7R	1.001	0.011	89.580	0.000
SC8R	1.040	0.010	103.228	0.000
SC9R	1.002	0.013	79.732	0.000
SC10R	1.037	0.011	96.064	0.000
EXPERTIS B	Y			
SC11R	1.000	0.000	999.000	999.000
SC12R	1.071	0.017	61.668	0.000
SC13R	1.138	0.019	59.367	0.000
SC14R	1.141	0.019	60.341	0.000
SC15R	1.097	0.018	59.530	0.000
MCREDIBL	BY			
MC1	1.000	0.000	999.000	999.000
MC2	1.031	0.009	116.654	0.000
MC3	1.055	0.009	123.902	0.000
MC4R	0.665	0.033	19.952	0.000
MC5	0.906	0.015	60.171	0.000
MC6	1.031	0.009	108.879	0.000
ATTB BY				
AB1R	1.000	0.000	999.000	999.000
AB2R	1.004	0.009	113.769	0.000
AB3R	1.011	0.006	167.460	0.000
AB4R	0.973	0.008	129.196	0.000

SINTENT BY	7			
V1R	1.000	0.000	999.000	999.000
V2R	0.989	0.013	75.673	0.000
V3R	0.909	0.014	64.364	0.000
INVOLVE B	Y			
I1R	1.000	0.000	999.000	999.000
I2	1.012	0.024	41.848	0.000
I3R	1.069	0.020	52.137	0.000
I4R	1.091	0.022	50.489	0.000
15	1.035	0.021	50.295	0.000
I6R	1.104	0.021	51.350	0.000
I7R	1.070	0.021	51.340	0.000
I8	1.109	0.021	51.710	0.000
I9R	1.100	0.022	49.080	0.000
I10	1.022	0.023	43.807	0.000
SCREDIBL B	Y			
ATTRA	1.00	0.0	00 999.0	00 999.000
TRUST	8.54	3 0.11	2 76.49	0 0.000
EXPERTISE	E 7.	762 0	.179 43.	.438 0.000
SERVICE W	ITH			
FOOD	0.722	2 0.02	0 35.660	0.000 0
	T T			
DISEX WII	H		0 12.05	0 0 0 0 0
FOOD	-0.374	4 0.02	8 -13.25	8 0.000
SERVICE	-0.4	22 0.0	027 -15.7	98 0.000
EMOTION W				
EMOTION W		1 0.02	1 1 212	0.000
FUUD	-0.144	$\frac{1}{20}$ 0.05	-4.212	<i>45</i> 0.000
SERVICE	-0.1	29 0.0 7 0.02	JSS -3.94 5 0.200	45 0.000
DISEX	0.297	0.03	5 8.380	0.000
ALTRUISM	VITH			
FOOD	0.616	5 0.02	5 24 630	9 0 0 0 0
SERVICE	0.010	31 0.02	2 - 2 + .05	07 0.000
DISEX	_0.0	51 0.0 5 0.02	$7 -11/13^{\circ}$	3 0,000
EMOTION	-0.570	177 0.02	034 -5	
LIVIOTION	-0.	1// 0	.054 -5.	170 0.000
SCREDIBL W	/ITH			
FOOD	0.044	5 0.00	3 13 926	5 0.000
SERVICE	0.0	43 00	003 140	56 0.000
DISEX	-0.042	2 0.00	3 -13 05	0 0 000
~ ~ ~ ~ ~ ~ ~	5.014	_ 0.00	- 15.00	

ALTRUISM	0.048	0.003	15.570	0.000
MCREDIBL WI	TH			
FOOD	0 539	0.025 2	1 545 0	000
SERVICE	0.543	0.025 2	22 088	0.000
DISEX	-0 431	0.020	4 897 (	0.000
EMOTION	-0 294	0.027 1	-8 432	0.000
ALTRIJISM	0.274	0.035	10 375	0.000
SCDEDIDI E	0.010	0.020	17.373 24.727	0.000
SCREDIBLE	0.001	0.003	24.737	0.000
ATTB WITH				
FOOD	-0 543	0.021 -2	5 4 3 1 (	000
SERVICE	-0.602	0.021 2	-30 112	0.000
DISEY	0.432	0.020	-50.112 4577 0	0.000
EMOTION	0.432	0.030	+. <i>311</i> 0 51/7	0.000
	0.190	0.038	J.147 19 740	0.000
	-0.4/2	0.023	-16.740	0.000
SCREDIDLE MCDEDIDLE	-0.040	5 0.005	-10.343	0.000
MCKEDIBLE	-0.57	5 0.021	-27.924	0.000
SINTENT WIT	н			
FOOD	0 211	0.039 5	× 420 0	000
SERVICE	0.134	0.037 3	3 449	0.001
DISEY	0.134	0.039	106 0	260
EMOTION	-0.042	0.030 -1	2 064	0.000
	-0.133	0.039	-5.904	0.000
	0.23/	0.03/	0.939	0.000
SCREDIBLE	0.040	0.004	10.000	0.000
MCREDIBLE	0.3/	0 0.035	10./63	0.000
ATTB	-0.118	0.034 -3	<b>5.434</b> 0.	001
INVOLVE WIT	Ч			
FOOD	0.110	0.029 3	764 0	000
SERVICE	0.061	0.02	2 020	0.00
DISEX	-0.047	0.030	2.020 1 710 0	0.045
EMOTION	-0.047	0.020 -1	0.276	0 707
	-0.011	0.030	-0.370	0.707
ALIKUISM	0.053		1.140	0.234
SCREDIBLE	0.003	0.003	1.000	0.314
MCREDIBLE	0.07	1 0.029	2.492	0.013
ATTB	0.027	0.026 1	.056 0.1	291
SINTENT	0.129	0.033	3.918	0.000
STANDARDIZE		I RESULT	27	

STDYX Standardization

Two-Tailed

	Est	timate	S.E. Es	t./S.E. P-	Value
FOOD	BY				
A1		0.913	0.010	91.184	0.000
A2		0.885	0.013	70.334	0.000
A3		0.753	0.019	40.205	0.000
SERVICI	E BY	<b>,</b>			
A4		0.875	0.014	64.278	0.000
A5		0.884	0.014	64.449	0.000
A6		0.879	0.015	59.529	0.000
A7		0.891	0.012	75.276	0.000
A8		0.592	0.031	19.012	0.000
DISEX	BY				
A9		0.848	0.022	38.882	0.000
A10		0.902	0.022	41.800	0.000
A11		0.413	0.042	9.768	0.000
EMOTIO	N B	Y			
A15		0.660	0.053	12.487	0.000
A16		0.511	0.049	10.420	0.000
ALTRUI	SM B	Y			
A12		0.868	0.016	55.239	0.000
A13		0.820	0.017	47.964	0.000
A14		0.861	0.016	52.844	0.000
ATTRA	BY				
SC1R		0.117	0.002	77.894	0.000
SC2R		0.805	0.019	42.353	0.000
SC3R		0.928	0.010	89.109	0.000
SC4R		0.843	0.019	44.114	0.000
SC5R		0.996	0.007	141.052	0.000
TRUST	BY				
SC6R		0.911	0.010	86.971	0.000
SC7R		0.912	0.010	93.832	0.000
SC8R		0.948	0.006	147.029	0.000
SC9R		0.913	0.010	88.612	0.000
SC10R		0.945	0.007	130.153	0.000
EXPERT	IS BY	ł			
SC11R		0.827	0.015	56.994	0.000
SC12R		0.886	0.010	87.900	0.000
SC13R		0.942	0.006	153.181	0.000

SC14R	0.944	0.006	155.955	0.000
SC15R	0.908	0.009	105.056	0.000
MCREDIRI I	av			
MC1	0.915	0.008	115 477	0.000
MC2	0.913	0.008	151 612	0.000
MC3	0.945	0.000	180 57/	0.000
MC4R	0.705	0.005	10 2.574	0.000
MC5	0.007	0.051	60 186	0.000
MC6	0.828	0.014	150 497	0.000
Meo	0.745	0.000	150.477	0.000
ATTB BY				
ABIR	0 958	0.005	181 990	0.000
AB2R	0.962	0.006	159.734	0.000
AB3R	0.969	0.006	173.142	0.000
AB4R	0.932	0.007	136.640	0.000
SINTENT BY	ζ.			
V1R	0.975	0.008	125.058	0.000
V2R	0.965	0.007	136.366	0.000
V3R	0.886	0.013	68.090	0.000
INVOLVE B	Y			
I1R	0.773	0.016	48.053	0.000
I2	0.783	0.017	46.567	0.000
I3R	0.827	0.014	61.097	0.000
I4R	0.843	0.012	67.960	0.000
15	0.801	0.015	54.672	0.000
I6R	0.854	0.012	73.033	0.000
I7R	0.827	0.013	65.487	0.000
18	0.858	0.011 ′	75.554	0.000
I9R	0.850	0.012	70.824	0.000
I10	0.791	0.016	49.852	0.000
	• •			
SCREDIBL B	Y 0.05	- 0.01	1 77.00	
ATIKA	0.853	0.01	1 //.894	+ 0.000
IKUSI	0.938	5 0.001	634.702	2 0.000
EXPERTISI	± 0.9	938 0.0	09 106.	648 0.000
SERVICE W	ІТН			
FOOD	0 003	0 000	96 518	0.000
1000	0.903	0.009	70.310	0.000
DISEX WIT	Н			
FOOD	-0 484	0.031	-15 408	0.000
SERVICE	-0.56	58 0.021	28 -20.62	29 0 000
~	0.00			

EMOTION WITH FOOD -0.239 0.056 -4.294 0.000 0.000 SERVICE -0.224 0.055 -4.065 DISEX 0.531 0.050 10.672 0.000 ALTRUISM WITH FOOD 0.777 0.019 40.620 0.000 **SERVICE** 0.831 0.015 54.160 0.000 DISEX -0.538 0.030 -18.160 0.000 **EMOTION** -0.309 0.056 -5.503 0.000 SCREDIBL WITH 0.496 0.034 14.714 0.000 FOOD 0.032 15.330 **SERVICE** 0.492 0.000 DISEX -0.490 0.034 -14.598 0.000 -0.533 0.053 -10.050 0.000 EMOTION ALTRUISM 0.554 0.033 16.910 0.000 MCREDIBL WITH FOOD 0.645 0.024 26.350 0.000 SERVICE 0.678 0.023 29.923 0.000 0.030 -18.363 DISEX -0.556 0.000 -0.4870.052 -9.318 0.000 EMOTION ALTRUISM 0.646 0.026 24.526 0.000 **SCREDIBLE** 0.685 0.025 27.266 0.000 ATTB WITH FOOD -0.621 0.020 -30.486 0.000 SERVICE -0.718 0.017 -41.100 0.000 DISEX 0.532 0.031 17.160 0.000 0.313 0.058 5.385 EMOTION 0.000 ALTRUISM -0.5680.026 -21.486 0.000 **SCREDIBLE** -0.498 0.030 -16.699 0.000 **MCREDIBLE** -0.656 0.020 -33.613 0.000 SINTENT WITH 0.000 FOOD 0.237 0.043 5.526 **SERVICE** 0.045 0.157 3.469 0.001 DISEX -0.051 0.046 -1.108 0.268 -0.237 0.058 -4.091 EMOTION 0.000 ALTRUISM 0.304 0.043 7.057 0.000 **SCREDIBLE** 0.411 0.041 10.080 0.000 **MCREDIBLE** 0.421 0.038 11.027 0.000 ATTB -0.126 0.037 -3.445 0.001

INVOLVE WITH

FOOD	0.155	0.041	3.782	0.000
SERVICE	0.090	0.044	2.020	0.043
DISEX	-0.072	0.042	-1.728	0.084
EMOTION	-0.022	0.060	-0.376	6 0.707
ALTRUISM	0.053	0.046	5 1.14	3 0.253
SCREDIBLE	0.043	<b>0.04</b>	3 1.00	6 0.314
MCREDIBLE	0.10	1 0.04	10 2.49	0.013
ATTB	0.037	0.035	1.057	0.290
SINTENT	0.172	0.044	3.946	0.000

APPENDIX D. M-plus Output for CFA (Model 2)

Mplus VERSION 8.1 (Mac) MUTHEN & MUTHEN 11/03/2018 7:25 PM

INPUT INSTRUCTIONS

TITLE: CFA MODEL V2 10-31-2018;

DATA: FILE IS "Diss\_data\_valence\_mc.csv";

VARIABLE:

NAMES = Progress Duration Id Enraged Angry Irritated A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 SC1 SC2 SC3 SC4 SC5 SC6 SC7 SC8 SC9 SC10 SC11 SC12 SC13 SC14 SC15 MC1 MC2 MC3 MC4 MC4R MC5 MC6 I1 I1R I2 I3 I3R I4 I4R I5 I6 I6R I7 I7R I8 I9 I9R I10 AB1 AB2 AB3 AB4 AB1R AB2R AB3R AB4R V1 V2 V3 V1R V2R V3R Mword Memoticon Mswear Mvalence Mrealbf Mrealacq MCCHECK3 MCCHECK2 MCCHECK1 Mtie1 Mtie2 Mtie3 Macqtie1 Macqtie2 Macqtie3 Mstrtie1 Mstrtie2 Mstrtie3 Mbftie4 Macqtie4 Mstrtie4 gender ethinc income education SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R birthyear TieStrength VALENCE MvalR Mawordf Mallf MCTie MCallval MCposneg;

MISSING ARE ALL (-99);

USEV = A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R MC1 MC2 MC3 MC4R MC5 MC6 AB1R AB2R AB3R AB4R V1R V2R V3R I1R I2 I3R I4R I5 I6R I7R I8 I9R I10;

CATEGORICAL ARE A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R MC1 MC2 MC3 MC4R MC5 MC6 AB1R AB2R AB3R AB4R V1R V2R V3R I1R I2 I3R I4R I5 I6R I7R I8 I9R I10;

USEOBS Mallf EQ 0;

DEFINE:

IF (TieStrength NE 2) THEN TIE\_S = 0; IF (TieStrength EQ 2) THEN TIE\_S = 1; IF (Valence EQ 1) THEN VAL\_P = 1; IF (Valence NE 1) THEN VAL\_P = 0; IF (Valence EQ 2) THEN VAL\_N = 1; IF (Valence NE 2) THEN VAL\_N = 0; IF (Valence EQ 3) THEN VAL\_M = 1; IF (Valence NE 3) THEN VAL\_M = 0; IF (Valence EQ 4) THEN VAL\_NU = 1; IF (Valence NE 4) THEN VAL\_NU = 0; TSVP = TIE\_S \* VAL\_P; TSVN = TIE\_S \* VAL\_P; TSVM = TIE\_S \* VAL\_N;

ANALYSIS: !BOOTSTRAP IS 5000;

MODEL:

FOOD BY A1 A2 A3; SERVICE BY A4 A5 A6 A7 A8; EXTER BY FOOD SERVICE; DISEX BY A9 A10 A11; ALTRUISM BY A12 A13 A14; INTER BY ALTRUISM DISEX: ATTRA BY SC1R SC2R SC3R SC4R SC5R; TRUST BY SC6R SC7R SC8R SC9R SC10R; EXPERTISE BY SC11R SC12R SC13R SC14R SC15R; SCREDIBLE BY ATTRA TRUST EXPERTISE; MCREDIBLE BY MC1 MC2 MC3 MC4R MC5 MC6; ATTB BY AB1R AB2R AB3R AB4R; SINTENT BY V1R V2R V3R; INVOLVE BY I2 I3R I4R I5 I6R I7R I8 I9R I10; SCREDIBLE@0.01;

OUTPUT: STANDARDIZED TECH4 CINTERVAL(BCBOOTSTRAP);

MODEL FIT INFORMATION

Number of Free Parameters390

Chi-Square Test of Model Fit

Value	15637.083*
Degrees of Freedom	1248
P-Value	0.0000

\* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used

for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV,

and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.155	
90 Percent C.I.	0.152	0.157
Probability RMSEA <=	.05	0.000

## CFI/TLI

CFI	0.818
TLI	0.806

Chi-Square Test of Model Fit for the Baseline Model

Value	80303.171
Degrees of Freedom	1326
P-Value	0.0000

## SRMR (Standardized Root Mean Square Residual)

Value 0.092

Optimum Function Value for Weighted Least-Squares Estimator

Value 0.25547794D+02

## MODEL RESULTS

		Two-Tailed				
	Estimate	S.E. E	st./S.E.	P-Value		
FOOD	BY					
A1	1.000	0.000	999.000	999.000		
A2	0.970	0.017	57.775	0.000		
A3	0.827	0.020	41.155	0.000		
SERVIC	CE BY					
A4	1.000	0.000	999.000	999.000		
A5	1.011	0.019	53.863	0.000		
A6	1.005	0.019	54.061	0.000		
A7	1.017	0.020	51.759	0.000		
A8	0.673	0.033	20.099	0.000		

DISEX	BY				
A9		1.000	0.000	999.000	999.000
A10		1.062	0.046	22.910	0.000
A11		0.474	0.052	9.168	0.000
ALTRUIS	SM B	Y			
A12		1.000	0.000	999.000	999.000
A13		0.943	0.024	39.061	0.000
A14		0.993	0.024	40.653	0.000
ATTRA	BY				
SC1R		1.000	0.000	999.000	999.000
SC2R		6.803	0.213	31.917	0.000
SC3R		7.831	0.161	48,776	0.000
SC4R		7.110	0.201	35.332	0.000
SC5R		8.382	0.123	67.963	0.000
TRUST	BY				
SC6R		1 000	0.000	999 000	999 000
SC7R		1.000	0.000	86 831	0.000
SC8R		1.020	0.012	101 849	0.000
SC9R		1.000	0.013	78 020	0.000
SC10R		1.017	0.013	93 798	0.000
SCION		1.055	0.011	)).//0	0.000
EXPERTI	S BY	7			
SC11R		1.000	0.000	999.000	999.000
SC12R		1.068	0.017	61.993	0.000
SC13R		1.134	0.019	59.928	0.000
SC14R		1.136	0.019	60.826	0.000
SC15R		1.094	0.018	59.916	0.000
MCREDI	BL B	Y			
MC1		1.000	0.000	999.000	999.000
MC2		1.031	0.009	117.089	0.000
MC3		1.054	0.008	124.161	0.000
MC4R		0.660	0.034	19.700	0.000
MC5		0.905	0.015	60.175	0.000
MC6		1.031	0.009	109.273	0.000
ATTB 1	BY				
ARIR		1 000	0.000	999 000	999 000
AR2R		1 004	0.000	113 704	0.000
AR3R		1 011	0.007	167 373	0.000
AR4R		0.973	0.000	129 521	0.000
		0.715	0.000	127.321	0.000

SINTENT BY

V1R	1.000	0.000	999.000	999.000
V2R	0.990	0.013	75.334	0.000
V3R	0.910	0.014	64.709	0.000
INVOLVE BY				
I2 1.	000	0.000	999.000	999.000
I3R 1	.031	0.023	44.977	0.000
I4R 1	.077	0.023	47.492	0.000
I5 1.	020	0.023	45.285	0.000
I6R 1	.099	0.023	48.292	0.000
I7R 1	.058	0.022	48.235	0.000
I8 1.	106	0.023	48.568	0.000
I9R 1	.094	0.023	48.294	0.000
I10 1	.017	0.024	42.321	0.000
EXTER BY				
FOOD	1.000	0.00	0 999.00	0 999.000
SERVICE	1.03	32 0.0	027 37.8	53 0.000
INTER BY				
ALTRUISM	1.	000 0	0.000 999	9.000 999.000
DISEX	-0.777	0.04	4 -17.60	4 0.000
SCREDIBL BY				
ATTRA	1.00	0 0.0	00 999.0	00 999.000
TRUST	8.841	l 0.12	21 73.09	0 0.000
EXPERTISE	7.0	633 0	.178 42	.769 0.000
INTER WITH				
EXTER	0.588	8 0.02	25 23.07	9 0.000
SCREDIBL WI	ГН			
EXTER	0.043	3 0.00	)3 14.48	0.000
INTER	0.050	0.00	3 17.766	6 0.000
MCREDIBL WI	TH			
EXTER	0.53	1 0.02	25 21.66	0.000
INTER	0.526	0.02	6 20.545	5 0.000
SCREDIBLE	0.	062 (	0.003 24	.780 0.000
ATTB WITH				
EXTER	-0.57	0 0.02	21 -26.51	6 0.000
INTER	-0.497	0.02	5 -19.94	7 0.000
SCREDIBLE	-0.	.047 (	0.003 -16	6.417 0.000
MCREDIBLE	-(	).575	0.021 -2	7.933 0.000

# SINTENT WITH

EXTER	0.162	0.036	4.53	<b>3</b> 0 0.	000
INTER	0.191	0.035	5.48	3 0.0	000
SCREDIBLE	0.04	0.0	04 9	9.978	0.000
MCREDIBLE	0.37	76 0.0	035	10.759	0.000
ATTB	-0.117	0.034	-3.43	4 0.0	001

# INVOLVE WITH

EXTER	0.077	0.028	2.727	0.006
INTER	0.041	0.028	1.496	0.135
SCREDIBLE	0.00	3 0.00	3 0.90	6 0.365
MCREDIBLE	0.06	68 0.02	29 2.3	0.020
ATTB	0.025	0.027	0.937	0.349
SINTENT	0.126	0.034	3.739	0.000

# STANDARDIZED MODEL RESULTS

# STDYX Standardization

			,	Two-Tail	led
	Est	timate	S.E. E	st./S.E.	P-Value
FOOD	BY				
A1		0.913	0.010	91.408	0.000
A2		0.885	0.012	70.888	0.000
A3		0.755	0.019	40.417	0.000
SERVIC	E BY	<b>r</b>			
A4		0.875	0.014	64.211	0.000
A5		0.885	0.014	64.606	0.000
A6		0.879	0.015	59.712	0.000
A7		0.891	0.012	74,722	0.000
A8		0.589	0.031	18.903	0.000
DISEX	BY				
A9	21	0.849	0.022	38.735	0.000
A10		0.902	0.022	41.481	0.000
A11		0.403	0.042	9.559	0.000
	ISM B	v			
A12		0.868	0.016	55 206	0.000
A13		0.819	0.017	47 678	0.000
Δ1Δ		0.867	0.017	52 010	0.000
1117		0.002	0.010	52.710	0.000

# ATTRA BY

0.119	0.002	76.257	0.000
0.807	0.019	42.407	0.000
0.929	0.010	89.246	0.000
0.844	0.019	44.181	0.000
0.995	0.007	142.654	0.000
0.881	0.010	88.071	0.000
0.898	0.009	97.010	0.000
0.934	0.006	153.119	0.000
0.896	0.010	91.282	0.000
0.928	0.007	135.610	0.000
Y			
0.830	0 014	57 293	0 000
0.886	0.010	88,196	0.000
0 941	0.006	154 231	0 000
0.943	0.006	157 222	0.000
0.908	0.009	105.011	0.000
BY			
0.915	0.008	115.893	0.000
0.944	0.006	151.956	0.000
0.965	0.005	189.740	0.000
0.604	0.031	19.598	0.000
0.828	0.014	60.103	0.000
0.943	0.006	150.772	0.000
0.058	0.005	181 7/0	0.000
0.050	0.005	150 016	0.000
0.902	0.000	172 707	0.000
0.909	0.000	172.707	0.000
0.952	0.007	130.970	0.000
Y			
0.975	0.008	124.500	0.000
0.965	0.007	136.121	0.000
0.887	0.013	68.394	0.000
Y			
0.782	0.017	46.406	0.000
0.806	0.015	55.294	0.000
0.843	0.012	67.532	0.000
0.798	0.015	53.673	0.000
0.860	0.011	74.928	0.000
0.828	0.013	65 519	0.000
	0.119 0.807 0.929 0.844 0.995 0.881 0.898 0.934 0.896 0.928 Y 0.830 0.886 0.941 0.943 0.908 BY 0.915 0.944 0.965 0.604 0.828 0.943 0.965 0.604 0.828 0.943 0.958 0.965 0.965 0.965 0.887 Y 0.782 0.806 0.843 0.798 0.860 0.828	0.119 0.002 0.807 0.019 0.929 0.010 0.844 0.019 0.995 0.007 0.881 0.010 0.898 0.009 0.934 0.006 0.896 0.010 0.928 0.007 Y 0.830 0.014 0.886 0.010 0.941 0.006 0.943 0.006 0.943 0.006 0.908 0.009 BY 0.915 0.008 0.944 0.006 0.965 0.005 0.604 0.031 0.828 0.014 0.943 0.006 0.965 0.005 0.604 0.031 0.828 0.014 0.943 0.006 0.965 0.005 0.962 0.006 0.962 0.006 0.969 0.006 0.969 0.006 0.965 0.007 0.887 0.013 Y 0.782 0.017 0.806 0.015 0.843 0.012 0.798 0.015 0.860 0.011 0.828 0.013	0.119 0.002 76.257 0.807 0.019 42.407 0.929 0.010 89.246 0.844 0.019 44.181 0.995 0.007 142.654 0.881 0.006 153.119 0.898 0.009 97.010 0.934 0.006 153.119 0.896 0.010 91.282 0.928 0.007 135.610 Y 0.830 0.014 57.293 0.886 0.010 88.196 0.941 0.006 154.231 0.943 0.006 157.222 0.908 0.009 105.011 BY 0.915 0.008 115.893 0.944 0.006 151.956 0.965 0.005 189.740 0.604 0.031 19.598 0.828 0.014 60.103 0.943 0.006 150.772 0.958 0.005 181.749 0.962 0.006 159.916 0.969 0.006 159.916 0.969 0.006 159.916 0.969 0.006 159.916 0.969 0.006 159.916 0.969 0.006 159.916 0.969 0.006 159.916 0.965 0.007 136.121 0.887 0.013 68.394 Y 0.782 0.017 46.406 0.806 0.015 55.294 0.843 0.012 67.532 0.798 0.015 53.673 0.860 0.011 74.928 0.828 0.013 65.519

I9R       0.856       0.012       72.007       0.000         I10       0.795       0.016       51.079       0.000         EXTER BY       FOOD       0.916       0.010       100.084       0.000         INTER BY       ALTRUISM       0.823       0.022       37.490       0.000         DISEX       -0.654       0.028       -23.597       0.000         SCREDIBL BY       ATTRA       0.843       0.011       76.257       0.000         TRUST       1.004       0.006       158.425       0.000         INTER WITH       EXTER       0.920       0.009       99.150       0.000         INTER WITH       EXTER       0.983       0.021       46.552       0.000         INTER WITH       EXTER       0.693       0.030       22.947       0.000         INTER       0.693       0.022       31.364       0.000       INTER       0.804       0.025       27.296       0.000         INTER       0.804       0.025       27.296       0.000       INTER       0.000         SCREDIBL WITH       EXTER       0.711       0.018       -38.769       0.000         INTER       0.804       0.029	I8 0	.865 0.	.011 7	8.534	0.000	
110       0.795       0.016       51.079       0.000         EXTER BY FOOD       0.916       0.010       89.079       0.000         SERVICE       0.986       0.010       100.084       0.000         INTER BY ALTRUISM       0.823       0.022       37.490       0.000         DISEX       -0.654       0.028       -23.597       0.000         SCREDIBL BY ATTRA       0.843       0.011       76.257       0.000         TRUST       1.004       0.006       158.425       0.000         INTER WITH EXTER       0.920       0.009       99.150       0.000         INTER WITH EXTER       0.693       0.031       16.532       0.000         INTER       0.693       0.030       22.947       0.000         NCREDIBL WITH EXTER       0.694       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         INTER       0.111       0.018       -38.769       0.000         INTER       0.029       -25.056       0.000       SCREDIBLE       -0.493       0.029       -3.614       0.000	I9R	0.856 (	0.012	72.007	0.000	
EXTER BY FOOD 0.916 0.010 89.079 0.000 SERVICE 0.986 0.010 100.084 0.000 INTER BY ALTRUISM 0.823 0.022 37.490 0.000 DISEX -0.654 0.028 -23.597 0.000 SCREDIBL BY ATTRA 0.843 0.011 76.257 0.000 TRUST 1.004 0.006 158.425 0.000 EXPERTISE 0.920 0.009 99.150 0.000 INTER WITH EXTER 0.983 0.021 46.552 0.000 SCREDIBL WITH EXTER 0.693 0.031 16.532 0.000 INTER 0.693 0.030 22.947 0.000 MCREDIBL WITH EXTER 0.694 0.022 31.364 0.000 INTER 0.693 0.025 27.296 0.000 SCREDIBLE 0.677 0.025 27.296 0.000 INTER 0.804 0.026 31.014 0.000 SCREDIBLE 0.677 0.025 27.296 0.000 INTER -0.726 0.029 -25.056 0.000 SCREDIBLE -0.493 0.029 -16.777 0.000 MCREDIBLE -0.493 0.029 -16.777 0.000 MCREDIBLE -0.656 0.020 -33.614 0.000 INTER 0.273 0.049 5.605 0.000 SCREDIBLE 0.421 0.038 11.024 0.000 MCREDIBLE 0.421 0.038 11.024 0.000 ATTB WITH EXTER 0.118 0.043 2.740 0.006 INTER 0.118 0.043 2.740 0.006 INTER 0.074 0.049 1.491 0.136 SCREDIBLE 0.039 0.043 0.908 0.364	I10 (	).795 0	0.016	51.079	0.000	
INTER BY ALTRUISM       0.823       0.022       37.490       0.000         DISEX       -0.654       0.028       -23.597       0.000         SCREDIBL BY ATTRA       0.843       0.011       76.257       0.000         TRUST       1.004       0.006       158.425       0.000         EXPERTISE       0.920       0.009       99.150       0.000         INTER WITH EXTER       0.983       0.021       46.552       0.000         SCREDIBL WITH EXTER       0.510       0.031       16.532       0.000         INTER WITH EXTER       0.693       0.030       22.947       0.000         MCREDIBL WITH EXTER       0.694       0.022       31.364       0.000         INTER       0.694       0.025       27.296       0.000         INTER       0.694       0.025       27.296       0.000         INTER       0.677       0.025       27.296       0.000         INTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         INTER       0.19	EXTER BY FOOD SERVICE	0.916 0.986	0.010 0.010	89.079 0 100.0	9 0.000 084 0.0	) )00
SCREDIBL BY ATTRA       0.843       0.011       76.257       0.000         TRUST       1.004       0.006       158.425       0.000         EXPERTISE       0.920       0.009       99.150       0.000         INTER WITH EXTER       0.983       0.021       46.552       0.000         SCREDIBL WITH EXTER       0.510       0.031       16.532       0.000         MCREDIBL WITH EXTER       0.693       0.030       22.947       0.000         MCREDIBL WITH EXTER       0.694       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB <with </with  EXTER       -0.711       0.018       -38.769       0.000         SCREDIBLE       -0.677       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.493       0.020       -33.614       0.000         SINTENT WITH EXTER       0.198       0.043       4.652       0.000         SINTENT WITH EXTER       0.273       0.049       5.605       0.000	INTER BY ALTRUISM DISEX	0.82 -0.654	23 0.0 0.028	22 37 -23.59	.490 0 7 0.00	.000 0
INTER WITH EXTER       0.983       0.021       46.552       0.000         SCREDIBL WITH EXTER       0.510       0.031       16.532       0.000         INTER       0.693       0.030       22.947       0.000         MCREDIBL WITH EXTER       0.694       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB <with </with  EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.493       0.029       -33.614       0.000         SINTENT WITH EXTER       0.198       0.043       4.652       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE	SCREDIBL BY ATTRA TRUST EXPERTISE	0.843 1.004 0.92	0.011 0.006 0 0.0	76.25 158.42 09 99.	57 0.00 25 0.00 .150 0.	)0 )0 .000
SCREDIBL WITH         EXTER       0.510       0.031       16.532       0.000         INTER       0.693       0.030       22.947       0.000         MCREDIBL WITH       EXTER       0.694       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB       WITH       EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.726       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         SINTENT WITH       EXTER       0.198       0.043       4.052       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.126       0.037	INTER WITH EXTER	0.983	0.021	46.55	0.00	0
EXTER       0.510       0.031       16.532       0.000         INTER       0.693       0.030       22.947       0.000         MCREDIBL WITH       EXTER       0.694       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB       WITH       EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.421       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006      <	SCREDIBL WI	ТН				
INTER       0.693       0.030       22.947       0.000         MCREDIBL WITH       EXTER       0.694       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB       WITH       EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         NCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.118       0.043       2.740       0.006         INVOLVE WITH       EXTER       0.118       0.043       0.908       0.364	EXTER	0 510	0.031	16 53	2 0.00	0
MCREDIBL WITH         EXTER       0.694       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB       WITH       EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         NCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.118       0.043       2.740       0.006         INVOLVE WITH       EXTER       0.118       0.043       0.908       0.364	INTER	0.693	0.030	22.947	7 0.000	)
MCREDIBL WITH         EXTER       0.694       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB       WITH       EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         NTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.126       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136       SCREDIBLE       0.039       0.043       0.908       0.364 </td <td>MCDEDIDI W</td> <td>ITH</td> <td></td> <td></td> <td></td> <td></td>	MCDEDIDI W	ITH				
EXTER       0.094       0.022       31.364       0.000         INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB       WITH       EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         NTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.126       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136       SCREDIBLE       0.039 </td <td>MCKEDIBL W</td> <td></td> <td>0.022</td> <td>21.26</td> <td>1 0.00</td> <td>0</td>	MCKEDIBL W		0.022	21.26	1 0.00	0
INTER       0.804       0.026       31.014       0.000         SCREDIBLE       0.677       0.025       27.296       0.000         ATTB       WITH       EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         ATTB       -0.126       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136       SCREDIBLE       0.039       0.043       0.908       0.364	EATER	0.094	0.022	21.01	1 0.00	0 1
ATTB       WITH         EXTER       -0.711       0.018       -38.769       0.000         INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.118       0.043       2.740       0.006         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136	INTEK SCREDIDI E	0.804	0.026	31.014 25 27	+ 0.000	)
ATTB WITH EXTER -0.711 0.018 -38.769 0.000 INTER -0.726 0.029 -25.056 0.000 SCREDIBLE -0.493 0.029 -16.777 0.000 MCREDIBLE -0.656 0.020 -33.614 0.000 SINTENT WITH EXTER 0.198 0.043 4.652 0.000 INTER 0.273 0.049 5.605 0.000 SCREDIBLE 0.406 0.040 10.060 0.000 MCREDIBLE 0.421 0.038 11.024 0.000 ATTB -0.126 0.037 -3.445 0.001 INVOLVE WITH EXTER 0.118 0.043 2.740 0.006 INTER 0.074 0.049 1.491 0.136 SCREDIBLE 0.039 0.043 0.908 0.364	SCREDIBLE	0.67	// 0.0	125 27	.296 0	.000
EXTER -0.711 0.018 -38.769 0.000 INTER -0.726 0.029 -25.056 0.000 SCREDIBLE -0.493 0.029 -16.777 0.000 MCREDIBLE -0.656 0.020 -33.614 0.000 SINTENT WITH EXTER 0.198 0.043 4.652 0.000 INTER 0.273 0.049 5.605 0.000 SCREDIBLE 0.406 0.040 10.060 0.000 MCREDIBLE 0.421 0.038 11.024 0.000 ATTB -0.126 0.037 -3.445 0.001 INVOLVE WITH EXTER 0.118 0.043 2.740 0.006 INTER 0.074 0.049 1.491 0.136 SCREDIBLE 0.039 0.043 0.908 0.364	ATTB WITH	-				
INTER       -0.726       0.029       -25.056       0.000         SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         ATTB       -0.126       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136         SCREDIBLE       0.039       0.043       0.908       0.364	EXTER	-0.711	0.018	-38.76	69 0.00	)0
SCREDIBLE       -0.493       0.029       -16.777       0.000         MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.421       0.037       -3.445       0.001	INTER	-0.726	0.029	-25.05	6 0.00	0
MCREDIBLE       -0.656       0.020       -33.614       0.000         SINTENT WITH       EXTER       0.198       0.043       4.652       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         MCREDIBLE       0.421       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136         SCREDIBLE       0.039       0.043       0.908       0.364	SCREDIBLE	-0.49	93 0.0	)29 -16	6.777 (	0.000
SINTENT WITH         EXTER       0.198       0.043       4.652       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         ATTB       -0.126       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136         SCREDIBLE       0.039       0.043       0.908       0.364	MCREDIBLE	-0.6	<b>5</b> 6 0.	020 -3	3.614	0.000
EXTER       0.198       0.043       4.652       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         ATTB       -0.126       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136         SCREDIBLE       0.039       0.043       0.908       0.364	SINTENT WIT	н				
INTER       0.176       0.049       0.002       0.000         INTER       0.273       0.049       5.605       0.000         SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         ATTB       -0.126       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136         SCREDIBLE       0.039       0.043       0.908       0.364	EXTER	0 198	0.043	4 652	2 0.000	0
SCREDIBLE       0.406       0.040       10.060       0.000         MCREDIBLE       0.421       0.038       11.024       0.000         ATTB       -0.126       0.037       -3.445       0.001         INVOLVE WITH       EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136         SCREDIBLE       0.039       0.043       0.908       0.364	INTER	0.273	0.049	5 605		
MCREDIBLE       0.421       0.038       11.024       0.000         ATTB       -0.126       0.037       -3.445       0.001         INVOLVE WITH         EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136         SCREDIBLE       0.039       0.043       0.908       0.364	SCREDIBLE	0.275	)6 00	40 10	060 0	000
ATTB       -0.126       0.037       -3.445       0.001         INVOLVE WITH         EXTER       0.118       0.043       2.740       0.006         INTER       0.074       0.049       1.491       0.136         SCREDIBLE       0.039       0.043       0.908       0.364	MCREDIBLE	04	21 0	038 1	1 024	0 000
INVOLVE WITH EXTER 0.118 0.043 2.740 0.006 INTER 0.074 0.049 1.491 0.136 SCREDIBLE 0.039 0.043 0.908 0.364	ATTB	-0.126	0.037	-3.445	0.001	
EXTER 0.118 0.043 2.740 0.006 INTER 0.074 0.049 1.491 0.136 SCREDIBLE 0.039 0.043 0.908 0.364	NIVOLVE WI	гц				
INTER 0.074 0.049 1.491 0.136 SCREDIBLE 0.039 0.043 0.908 0.364	EXTED	0 119	0.042	2 7/1		6
SCREDIBLE 0.039 0.043 0.908 0.364	INTEP	0.110	0.043	2.740 1.701	0.000	J
	SCREDIBLE	0.07	39 0.049	43  0	908 0	364

MCREDIBLE0.0950.0412.3260.020ATTB0.0330.0350.9350.350SINTENT0.1660.0443.7850.000

APPENDIX E. M-plus Output for CFA (Model 3)

Mplus VERSION 8.1 (Mac) MUTHEN & MUTHEN 11/04/2018 1:12 AM

INPUT INSTRUCTIONS

TITLE: FULL MODEL V3 10-31-2018;

DATA: FILE IS "Diss\_data\_valence\_mc.csv";

VARIABLE:

NAMES = Progress Duration Id Enraged Angry Irritated A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 SC1 SC2 SC3 SC4 SC5 SC6 SC7 SC8 SC9 SC10 SC11 SC12 SC13 SC14 SC15 MC1 MC2 MC3 MC4 MC4R MC5 MC6 I1 I1R I2 I3 I3R I4 I4R I5 I6 I6R I7 I7R I8 I9 I9R I10 AB1 AB2 AB3 AB4 AB1R AB2R AB3R AB4R V1 V2 V3 V1R V2R V3R Mword Memoticon Mswear Mvalence Mrealbf Mrealacq MCCHECK3 MCCHECK2 MCCHECK1 Mtie1 Mtie2 Mtie3 Macqtie1 Macqtie2 Macqtie3 Mstrtie1 Mstrtie2 Mstrtie3 Mbftie4 Macqtie4 Mstrtie4 gender ethinc income education SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R birthyear TieStrength VALENCE MvalR Mawordf Mallf MCTie MCallval MCposneg;

MISSING ARE ALL (-99);

USEV = A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A15 A16 SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R MC1 MC2 MC3 MC4R MC5 MC6 AB1R AB2R AB3R AB4R V1R V2R V3R I2 I3R I4R I5 I6R I7R I8 I9R I10 TIE\_S VAL\_P VAL\_N VAL\_M TSVP TSVN TSVM;

CATEGORICAL ARE A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A15 A16 SC1R SC2R SC3R SC4R SC5R SC6R SC7R SC8R SC9R SC10R SC11R SC12R SC13R SC14R SC15R MC1 MC2 MC3 MC4R MC5 MC6 AB1R AB2R AB3R AB4R V1R V2R V3R I2 I3R I4R I5 I6R I7R I8 I9R I10;

USEOBS Mallf EQ 0;

DEFINE:

IF (TieStrength NE 2) THEN TIE\_S = 0; IF (TieStrength EQ 2) THEN TIE\_S = 1; IF (Valence EQ 1) THEN VAL\_P = 1; IF (Valence NE 1) THEN VAL\_P = 0; IF (Valence EQ 2) THEN VAL\_N = 1; IF (Valence NE 2) THEN VAL\_N = 0; IF (Valence EQ 3) THEN VAL\_M = 1; IF (Valence NE 3) THEN VAL\_M = 0; IF (Valence EQ 4) THEN VAL\_NU = 1; IF (Valence NE 4) THEN VAL\_NU = 1; IF (Valence NE 4) THEN VAL\_NU = 0; TSVP = TIE\_S \* VAL\_P; TSVN = TIE\_S \* VAL\_P; TSVM = TIE\_S \* VAL\_M;

ANALYSIS: BOOTSTRAP IS 2000;

MODEL:

FOOD BY A1 A2 A3; SERVICE BY A4 A5 A6 A7 A8; EXTER BY FOOD SERVICE; DISEX BY A9 A10 A11; **EMOTION BY A15** A16; INTER BY DISEX EMOTION; ATTRA BY SC1R SC2R SC3R SC4R SC5R; TRUST BY SC6R SC7R SC8R SC9R SC10R; EXPERTISE BY SC11R SC12R SC13R SC14R SC15R; SCREDIBLE BY ATTRA TRUST EXPERTISE; MCREDIBLE BY MC1 MC2 MC3 MC4R MC5 MC6; ATTB BY AB1R AB2R AB3R AB4R; SINTENT BY V1R V2R V3R; INVOLVE BY I2 I3R I4R I5 I6R I7R I8 I9R I10; TRUST@0.1; EXTER INTER ON TIE S VAL P VAL N VAL M TSVP TSVN TSVM; SCREDIBLE ON EXTER INTER; MCREDIBLE ON SCREDIBLE; ATTB SINTENT ON MCREDIBLE INVOLVE; SCREDIBLE@0.01;

MODEL INDIRECT: ATTB IND TIE\_S; SINTENT IND TIE\_S; ATTB IND INTER; ATTB IND EXTER; SINTENT IND EXTER; SINTENT IND EXTER; ATTB IND SCREDIBLE; SINTENT IND SCREDIBLE;

## OUTPUT: STANDARDIZED TECH4 CINTERVAL(BCBOOTSTRAP);

#### MODEL FIT INFORMATION

Number of Free Parameters 377

Chi-Square Test of Model Fit

Value	5460.832*	
Degrees of Freedom	1498	
P-Value	0.0000	

\* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used

for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.074	
90 Percent C.I.	0.072	0.076
Probability RMSEA <=	.05	0.000

### CFI/TLI

CFI	0.942
TLI	0.939

Chi-Square Test of Model Fit for the Baseline Model

Value	69557.975	
Degrees of Freedom	1575	
P-Value	0.0000	

SRMR (Standardized Root Mean Square Residual)

Value 0.078

Optimum Function Value for Weighted Least-Squares Estimator

Value 0.13539659D+02

# MODEL RESULTS

			Two-Tailed		
	Est	timate	S.E. Es	st./S.E. P	-Value
FOOD	BY				
A1		1.000	0.000	999.000	999.000
A2		0.960	0.047	20.360	0.000
A3		0.796	0.052	15.288	0.000
SERVICI	E BY				
A4		1.000	0.000	999.000	999.000
A5		1.014	0.056	18.196	0.000
A6		1.004	0.050	20.100	0.000
A7		1.018	0.046	22.351	0.000
A8		0.660	0.057	11.570	0.000
DISEX	BY				
A9		1 000	0 000	999 000	999 000
A10		1 027	0.093	11 068	0 000
A11		0.425	0.084	5 049	0.000
		01.120	0.001	0.013	0.000
EMOTIO	N B	Y			
A15		1.000	0.000	999.000	999.000
A16		0.885	0.222	3.983	0.000
ATTRA	BY				
SC1R		1.000	0.000	999.000	999.000
SC2R		0.873	0.041	21 495	0.000
SC3R		1 037	0.030	34 339	0.000
SC4R		0.889	0.047	18 932	0.000
SC5R		1 1 3 9	0.036	31 624	0.000
Secre		1.107	0.020	51.021	0.000
TRUST	BY				
SC6R		1.000	0.000	999.000	999.000
SC7R		1.022	0.029	34.655	0.000
SC8R		1.083	0.025	43.419	0.000
SC9R		1.027	0.032	31.633	0.000
SC10R		1.082	0.028	38.200	0.000
EXPERT	IS BY	ζ			
SC11R		1.000	0.000	999.000	999.000
SC12R		1.100	0.040	27.211	0.000
SC13R		1.200	0.042	28.620	0.000

SC14R	1.195	0.040	30.041	0.000		
SC15R	1.137	0.045	25.025	0.000		
MCREDIRI I	ΡV					
MC1	1 000	0.000	000 000	000 000		
MC2	1.000	0.000	10 330	0.000		
MC2	1.022	0.021 0.017	49.550	0.000		
MC4P	0.590	0.017	11 005	0.000		
MC4K	0.389	0.034	20.169	0.000		
MC5	0.83/	0.029	29.108	0.000		
MCO	1.000	0.017	39.890	0.000		
ATTB BY						
AB1R	1.000	0.000	999.000	999.000		
AB2R	1 002	0.013	79 129	0 000		
AB3R	1 015	0.016	61 506	0.000		
AB4R	0.963	0.018	53 837	0.000		
	0.905	0.010	00.007	0.000		
SINTENT BY	Y					
V1R	1.000	0.000	999.000	999.000		
V2R	0.990	0.017	58.242	0.000		
V3R	0.902	0.026	34.370	0.000		
INVOLVE B	Y					
I2	1.000 (	0.000 9	99.000 9	99.000		
I3R	1.028	0.050	20.733	0.000		
I4R	1.079	0.046	23.668	0.000		
I5	1.015 (	0.047 2	21.760	0.000		
I6R	1.102	0.046	24.189	0.000		
I7R	1.061	0.044	24.003	0.000		
18	1 1 1 1 (	0.044 2	25 274 (	000		
I9R	1 087	0.046	23 581	0.000		
110	1.027	0.048	21 432	0.000		
	1.027	01010		0.000		
EXTER BY						
FOOD	1 000	0 000	999 000	999 000		
SERVICE	1.03	7 0.07	4 13.96	0.000		
~						
INTER BY						
DISEX	1.000	0.000	999.000	999.000		
EMOTION	0.60	02 0.1	25 4.81	4 0.000		
SCREDIBL B	Y					
ATTRA	1.000	0.000	) 999.000	999.000		
TRUST	1.163	0.054	21.476	0.000		
EXPERTIS	E 09	96 00	)53 18.6	29 0.000		
	>					
SCREDIBL ON						
----------------	------------------	----------------	---------------	-----------	--	--
EXTER	0.546	0.040	13.814	0.000		
INTER	-0.795	0.150	-5.289	0.000		
	-					
MCREDIBL ON		<				
SCREDIBLE	1.01	6 0.07	13.6	05 0.000		
ATTB ON						
MCREDIBLE	-07	25 0.0	46 -15	677 0 000		
INVOLVE	0 001	0 072	2 0.016	5 0 987		
IIII OL IL	0.001	0.072	0.010			
SINTENT ON						
MCREDIBLE	0.4	25 0.0	64 6.6	96 0.000		
INVOLVE	0.228	0.071	3.193	8 0.001		
EVTED ON						
TIE S	0.052	0.141	0 267	0.714		
TIL_S VAL D	0.032	0.141	0.307	0.714		
VAL_F VAL_N	0.141	0.120	1.125	0.202		
VAL_N VAL_M	-0.905	0.121 0.121	- / .401	0.000		
VAL_M TSVD	-0.387	0.134	-2.091	0.004		
TSVP	0.084	0.205	0.414	0.079		
	0.030	0.210	4.079	0.000		
	0.387	0.214	2.741	0.000		
INTER ON						
TIE_S	-0.747	0.157	-4.772	0.000		
VAL_P	-0.322	0.114	-2.820	0.005		
VAL_N	0.257	0.111	2.319	0.020		
VAL_M	-0.021	0.105	-0.199	0.842		
TSVP	0.256	0.192	1.331	0.183		
TSVN	-0.054	0.201	-0.271	0.787		
TSVM	-0.037	0.201	-0.185	0.853		
SINITENIT WITH						
ATTD	0 212	0.051	1 166	0.000		
AIID	0.213 10 MODI	U.UJI	4.100 1 TS	0.000		
STANDAKDIZE		LL RESU				

STDYX Standardization

	Estimate		Two-Tailed S.E. Est./S.E. P-Value		
FOOD A1 A2	BY 0.9 0.3	914 883	0.017 0.030	52.628 29.177	$0.000 \\ 0.000$

A3	0.747	0.042	17.667	0.000
SERVICE BY	7			
A4	0.878	0.026	33.363	0.000
A5	0.889	0.031	28.760	0.000
A6	0.881	0.028	31.704	0.000
A7	0.891	0.019	47.348	0.000
A8	0.605	0.045	13.439	0.000
DISEX BY				
A9	0.879	0.038	23.321	0.000
A10	0.899	0.040	22.681	0.000
A11	0.394	0.074	5.308	0.000
EMOTION B	Y			
A15	0.619	0.086	7.173	0.000
A16	0.551	0.081	6.813	0.000
ATTRA BY				
SC1R	0.872	0.019	46.698	0.000
SC2R	0.780	0.032	24.292	0.000
SC3R	0.897	0.018	50.421	0.000
SC4R	0.792	0.030	26.816	0.000
SC5R	0.965	0.012	81.868	0.000
TRUST BY				
SC6R	0.878	0.018	49.762	0.000
SC7R	0.893	0.014	62.910	0.000
SC8R	0.932	0.011	88.322	0.000
SC9R	0.896	0.016	54.839	0.000
SC10R	0.931	0.012	76.051	0.000
EXPERTIS BY	Y			
SC11R	0.825	0.023	35.568	0.000
SC12R	0.890	0.018	48.843	0.000
SC13R	0.951	0.010	92.084	0.000
SC14R	0.948	0.011	86.468	0.000
SC15R	0.913	0.018	49.522	0.000
MCREDIBL E	BY			
MC1	0.924	0.011	81.641	0.000
MC2	0.941	0.014	69.425	0.000
MC3	0.944	0.011	87.392	0.000
MC4R	0.584	0.049	12.008	0.000
MC5	0.798	0.023	34.081	0.000
MC6	0.929	0.010	96.604	0.000

ATTB BY					
AB1R	0.959	0.010	96.31	8 0.0	000
AB2R	0.960	0.009	9 106.8	21 0.	000
AB3R	0.971	0.009	9 111.04	45 0.	000
AB4R	0.927	0.013	3 70.59	0.0	000
SINTENT BY	V				
V1R	0 975	0.010	100 24	9 00	00
V2R	0.965	0.010	86 916	5 0.0	00
V3R	0.882	0.023	38.110	) 0.00	00
INVOLVE B	v				
	0 780	0.030	26 120	0.000	
12 12D	0.780	0.030	20.129	0.000	0
13K 14D	0.802	0.027	29.233	0.00	0
14N 15	0.042	0.022	20.44/ 20/20	0.00	0
15 1(D	0.792	0.028	28.429	0.000	0
10K	0.860	0.01/	50.8/3	0.00	0
I/K	0.828	0.020	42.128	0.00	0
18	0.86/	0.017	50.8/3	0.000	0
19K	0.848	0.019	44.265	0.00	0
110	0.801	0.024	33.097	0.000	)
EXTER BY	0.016	0.02	3 30.80	04	000
SERVICE	0.910	84 0.0	26 37.	362 (	000
INTER BY					
DISEX	0.766	0.07	3 10.49	96 0.0	000
EMOTION	0.6	<b>682</b> 0.	087 7	.815	0.000
SCREDIBL B	Y				
ATTRA	0.85	1 0.02	22 386	521 0	000
TRUST	0.950	0.00	4 266	713 0	000
EXPERTIS	E 0.3	896 0	.015 5	8.303	0.000
COPEDIDI					
SCREDIBL C	)N				
EXTER	0.594	4 0.04	0 14.6	084 O	.000
INTER	-0.691	0.03	6 -19.3	43 0.	000
MCREDIBL (	ON				
SCREDIBL	E 0.	813 0	0.033 2	4.726	0.000
ATTB ON					
MCREDIBI	LE -(	).735	0.040 -	18,161	0.000
INVOLVE	0.0	01 0.0	055 0.	016	0.987

SINTENT ON				
MCREDIBLE	0.4	41 0.0	61 7.2	23 0.000
INVOLVE	0.179	0.055	5 3.240	0.001
EXTER ON				
TIE_S	0.027	0.073	0.374	0.709
VAL_P	0.068	0.059	1.145	0.252
VAL_N	-0.437	0.053	-8.298	0.000
VAL_M	-0.185	0.063	-2.954	0.003
TSVP	0.026	0.062	0.419	0.675
TSVN	0.269	0.065	4.115	0.000
TSVM	0.182	0.066	2.747	0.006
INTER ON				
TIE_S	-0.492	0.083	-5.895	0.000
VAL_P	-0.194	0.062	-3.151	0.002
VAL_N	0.156	0.066	2.379	0.017
VAL_M	-0.012	0.062	-0.201	0.841
TSVP	0.099	0.072	1.383	0.167
TSVN	-0.021	0.077	-0.276	0.783
TSVM	-0.014	0.076	-0.189	0.850
SINTENT WIT	Ή			
ATTB	0.351	0.082	4.284	0.000

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## BIBLIOGRAPHY

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