ADOPTION OF TWITTER AND ITS EFFECTIVENESS IN e-WOM

By

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To my beloved grandmother Young-Sook Hwang, my family, friends, and Young Eun

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LIST OF ABBREVIATIONS

eWOM	Electronic Word of Mouth
UTAUT	United Theory of Acceptance and Use of Technology
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
WOM	Word of Mouth

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As a one of the fastest growing areas for online marketing, social media, specifically Twitter, a social networking site, could provide prominent opportunities for marketers. However, little scholarship has empirically investigated why consumers use Twitter and how to utilize Twitter as a brand information exchanging tool. This study mainly contributes to three different areas. First, the study investigates the motivation associated with Twitter by comparing it to other product-information sources such as advertising, thus providing a relative eWOM effectiveness perspective. Second, factors that influence eWOM intentions from sender and receiver perspectives are analyzed thus offering both marketer and consumer contexts. Third, the study tries to identify appropriate types of products about which people share information, often by making comparisons with other product categories. Ultimately, this study attempts to answer questions about what and how people decide to adopt or exchange product-related information. This study employed 4 independent variables—perceived usefulness, perceived ease of use, conformity to subjective norm, and demographical factors (age, education level and gender)—for Twitter adoption. In addition, 5 independent variables—perceived similarity, perceived credibility, product category (utilitarian and

hedonic), perceived fit (utilitarian and hedonic), and demographic factors (age, education level and gender)—which might affect consumer attitude toward marketing messages in Twitter, were examined in this study.

A pretest was conducted before the main test. For the main test, this study employed an online survey by utilizing an online consumer panel for U.S. consumers based on the results of the pretest. Statistical analyses found that perceived usefulness affected individuals' attitudes toward Twitter and their Twitter usage. Also, the perceived ease of use influenced individuals' attitudes toward Twitter directly and Twitter usage indirectly. However, individual conformity to subjective norms and demographical factors did not affect individuals' attitude toward Twitter or their Twitter usage.

In terms of eWOM-related independent variables, perceived similarity, perceived credibility, product category of hedonic dimension, and perceived fit of hedonic product dimensions affected consumers' evaluation of brand attitudes. In addition, perceived credibility, perceived fit of utilitarian dimension, and perceived fit of hedonic dimension affected consumers' eWOM-spreading intention.

CHAPTER 1
INTRODUCTION

Due to the rapid development in new communication technology (i.e., Web 2.0, social media), traditional marketing strategies, using seller-created product information (Park, Lee, & Han, 2007) such as advertising are no longer as effective in influencing consumer decision making as they were several decades ago. This trend may be explained by two reasons. First two-way communication platforms such as the Internet and even more progressive forms of social media have been developed (Sohn, 2009b; Trusov, Bucklin, & Pauwels, 2009). Today consumers do not wait for product information from television advertisements, but actively seek information through the Internet (Pew Research Center, 2011; Prendergast, Ko, & Yeun, 2010). Second, skepticism among consumers is widespread when compared with the past decade. For example, according to Trusov et al. (2009), 40% fewer people agree that advertisements are an appropriate way to obtain new product information (Nail, 2005).

WOM and eWOM

As one of the most effective marketing strategies to overcome consumer skepticism and aid customers' information-seeking efforts, word-of-mouth (WOM) marketing has drawn enormous attention from both practitioners (e.g., Jaffe, 2007; Kelly, 2007; Misner, 1999; Rosen, 2000, 2009; Sernovitz, 2009) and researchers (e.g., Trusov et al., 2009).

Two major findings from empirical research help explain why people react more positively or actively toward WOM than traditional marketing strategies such as advertisements: vividness of information (Anderson, 1998; Feldman & Lynch, 1988; Herr, Kardes, & Kim, 1991; Kisielius & Sternthal, 1984; Lau & Ng, 2001; McGill & Anand,

1989) and perceived credibility of information source (Allsop, Bassett, & Hoskins, 2007). Anderson (1998) indicated that WOM could convey vivid, novel, and pleasant experiences when people share positive feelings or negative complaints. Also, consumers may consider a WOM source to be an “unbiased filter” from a person who is “just like me” (p. 398). Considering the challenges and changes in the marketing environment, it is necessary to test empirically alternative strategies designed or adapted for the era of the Internet and to overcome consumer skepticism toward advertising. Acknowledging the importance of WOM in today’s networked society, many companies have applied the concept of WOM to include the online environment. Both companies and customers now use online conversations as a tool to spread product, brand, and service information. This newly emerged concept is called electronic word-of-mouth (eWOM) which often take forms in online forums (e.g., Prendergast et al., 2010), online reviews (e.g., Zhu & Zhang, 2010), e-mail (e.g., Phelps, Lewis, Mobilio, Perry, & Raman, 2004), and SMS messages (Okazaki, 2008, 2009); eWOM has also become a tool useful in spreading product, brand, and service information in the world of Web 2.0.

Social Media as a new eWOM Marketing Tool

One growing area of new media studies in new media in the context of the Web 2.0 environment focused on the emergence of social media, particularity among U.S. consumers (Radwanick, 2011). Nine of every 10 U.S. Internet users use social media, and 25.3% of mobile subscribers use social media via their mobile phone (Flosi, 2011). In particular, in 2010, social networking sites (SNSs) ranked as the second most engaging Internet activity, consuming 14.4% of users’ online time, followed by portals

(20.2%); SNSs captured even more time than e-mail usage (11.0%) and experienced a 15% increase in unique visitors compared with 2009 (Dennen, 2011).

Specifically, one of the most prominent SNSs, Facebook, reached 153.9 million unique visitors per month, with the highest share of time spent on a site (12.3%)—even higher than Google—and became the fourth most visited Web property (Radwanick, 2011). Twitter, a microblogging service, has also grown rapidly and drawn more than 20 million unique visitors per month in 2010, a 26% increase from 2009 (Radwanick, 2011).

Considering the burgeoning of online communication tools, WOM marketing is particularly useful in the online environment because the Internet provides abundant opportunities for consumers to share their opinions, preferences for, or previous experiences related to specific products or brands (Trusov et al., 2009). For example, 59% of customers said that they frequently forward information found on the Internet to colleagues, peers, family, or friends (Allsop et al., 2007). Market research data also support this assumption; for example, the Hotmail service provided by Microsoft expanded its user base to 1 million subscribers in the first 6 months, 2 million only 2 months after its launch, and eventually 11 million within 18 months by spreading its brand name at the bottom of all the outgoing e-mail messages sent through the Hotmail service (Dobele, Toleman, & Beverland, 2005).

More recently, several researchers have argued that social media, one of the fastest growing areas for online marketing, could provide prominent opportunities for marketers (e.g., Chu & Kim, 2011; Hennig-Thurau et al., 2010; Interactive Advertising Bureau, 2009; Kaplan & Haenlein, 2010; Lenhart, Purcell, Smith, & Zickuhr, 2010; Libai et al., 2010; Mangold & Faulds, 2009; Nielsen, 2011; Vollmer & Precourt, 2008; Wuyts,

Dekimpe, Gijsbrechts, & Pieters, 2010). From the practitioner's perspective, Vollmer and Precourt (2008) indicated that SNSs are ideal tools for eWOM and spreading brand information, because consumers willingly create and deliver it to their friends, classmates, and other acquaintances. Mangold and Faulds (2009) also argued that the use of SNSs helps companies to communicate with consumers. Furthermore, scholars have begun to test empirically the effectiveness of social media eWOM in influencing an individual's online opinion forwarding (Chu & Kim, 2011).

Due to their nature as emerging media platforms, SNSs do not have a universal definition across various disciplines. One popular source has referred to social media as "best understood as a group of new kinds of online media, which shared participation, openness, conversation, community, connectedness characteristics" (Mayflied, 2008, p. 5). Mayfield (2008) also classified social media into seven basic forms: social networks (e.g., Cyworld, MySpace, Facebook), blogs, wikis (e.g., Wikipedia), podcasts (e.g., Apple iTunes), forums, content communities (e.g., Flickr.del.icio.us), and microblogging (Twitter), whereas Nielsen (2011) categorized social media as social networks (e.g., Facebook, Linkedin), reviews (e.g., yelp, Angie's list), blogs, discussion forums, social gaming, media sharing (e.g., YouTube, Flickr), and microblogs (e.g.,Twitter). Also, Kaplan and Haenlein (2010) referred to social media as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" (p. 61), and differentiated social media types based on the degree of self-presentation/self-disclosure and social presence/media richness (Table 1-1). More specifically, Kaplan and Haenlein (2010) indicated that social media are classified into a total of six different

types: blogs, collaborative projects (e.g., Wikipedia), social networking sites (e.g., Facebook, Twitter), content communities (e.g., YouTube), virtual social worlds (e.g., Second Life), and virtual game worlds (e.g., World of Warcraft)

Among various types of social media, this study focused on microblogging. Microblogging refers to “social networking combined with bit-sized blogging, where small amounts of content ‘updates’ are distributed online and through the mobile phone network” (Mayfield, 2008, p. 6), or services that broadcast and receive real-time updates (Nielsen, 2011).

As the definitions illustrate, the most prominent features of microblogging involve connecting with others. Users of microblogging gather together after initiation by “a small group of founders who send out invitations to join the site to the members of their own personal network” (Trusov et al., 2009, p. 90), and likewise new members send invitations to their personal network and newer members continue to repeat this process. Therefore, considering the similarity between invitations in social media and eWOM referrals, it can be assumed that eWOM marketing would be effective in microblogging.

In particular, although much of the literature tend to examine SNSs and microblogging in the same context (Radwanick, 2011; Dennen, 2011; Flosi, 2011), this study focused on Twitter (microblogging) rather than Facebook (SNS) services because of two reasons: Twitter’s rapid growth rate and the efficacy of eWOM in the context of microblogging.

Twitter has attracted a great deal of attention as a new communication tool. The growing use of Twitter is extraordinary; with more than 40 million users and a 1,400% increase in use between April 2008 and April 2009 (Milstein, Chowdhury, Hockmuth,

Lorica, & Magoulas, 2008; Xifra & Grau, 2010). More recently, Twitter traffic now reaches 200 million tweets (messages) a day and 20.6 million U.S adults accessing Twitter at least once a month in 2011,(Seiple, 2011; Twitter, 2011), More importantly, Twitter is an especially effective tool for marketers for three reasons: users frequently mentioned brands on Twitter and topics frequently discussed on Twitter are of consumption nature; it is easy to make connections with consumers; there is a well-defined mechanism for WOM marketing (Jansen, Zhang, Sobel, & Chowdury, 2009; Kwak, Lee, Park, & Moon, 2010; Seiple, 2011; Mulcahy, 2011). Specifically, a total of 26% of online discussions contains certain brand names (Nielsen, 2011). Also, unlike SNSs such as Facebook and MySpace, Twitter does not rely on reciprocation to create relationships. A user can follow (create a relationship) any other user, but the user being followed does not necessarily have to follow back. Therefore, it is easy for marketers to track consumers and consumers can track the company's account without the burden of following or being followed. Being a 'follower' on Twitter means that the user agrees to receive all the messages (called 'tweets') from those the individual follows (Kwak et al., 2010). Consequently once a company creates a relationship with a consumer, it is easy to spread its message to that consumer. Finally, the most prominent feature of Twitter, 'Retweet,' is a mechanism for forwarding an individual's received message to his or her followers with one click of the mouse or by using the well-defined symbol 'RT'*;* this helps marketers spread information beyond the reach of the original message's followers (Kwak et al., 2010). Indeed, according to industry report, 53% of Twitter users use Twitter for 'Retweet' information from others (Seiple, 2011). Despite this phenomenal growth and Twitter's importance as a new marketing tool in the Web 2.0, empirical

research into the business use of Twitter has rarely been conducted. Accordingly, this study is designed to investigate the factors that might play a role in the eWOM process. The results of the study can contribute to our understanding of the marketing utilizing of an emerging media and its implication.

Purpose of the Study

Limited Academic Research

This study attempts to fill the theoretical gap in two areas: consumer motivation for using microblogging, Twitter, and factors affecting eWOM intention in the context of microblogging. First, due to the nature of SNSs as emerging media platforms, the motivations for using them as one category of social media have not been thoroughly scrutinized empirically. Although previous researchers have examined the driving forces of new media adoption among consumers, such as the Internet (e.g., Cha, 2009b; J. Lee, 2003; S. Lee, 2007; Papacharissi & Rubin, 2000), terrestrial digital television (Chan-Olmsted & Chang, 2006), and even broadband service adoption (Chan-Olmsted, Li, & Jung, 2005), limited studies have examined the motivation for using microblogging from the eWOM or other marketing perspective even if some scholars have suggested the possibility of using social media as effective eWOM tools (Kozinets, De Valck, Woinicki, & Wilner, 2010; Trusov et al., 2009). In addition, while previous studies have addressed various online consumer behaviors, such as digital auctions (Dholakia, Basuroy, & Soltysinski, 2002), software downloading (Hanson & Putler, 1996), and even music piracy on the Internet (Ki, Chang, & Khang, 2006), online recommendation, eWOM, has not been investigated thoroughly.

From the perspective of WOM, eWOM is one of the most revolutionary developments in its history. However, it has been suggested that consumer's eWOM

behaviors differ from traditional WOM processes when the context is expanded to the online environment (Cheema & Kaikati, 2010). For example, Cheema and Kaikati (2010) argued that eWOM is less powerful for a product category that has uniqueness as a characteristic, whereas initial WOM researchers consistently reconfirm that people rely more on WOM when they consider purchasing unique or innovative products (Rogers, 1995; Ryan & Gross, 1943; Whyte, 1954). Also, although previous researchers investigated the effectiveness and motivations of eWOM in various online environments, including online forums (e.g., Prendergast et al., 2010), online product reviews (Lee & Youn, 2009; Zhu & Zhang, 2010), and mobile SMS messages (Okazaki, 2008, 2009), SNSs have not been examined as an eWOM tool from both theoretical and empirical perspectives.

Research Directions

This study is expected to yield three main contributions. First, the study investigates the motivation associated with Twitter by comparing it to other product-information sources such as advertising thus providing a relative eWOM effectiveness perspective. Second, factors influencing eWOM intention from both sender and receiver perspectives is analyzed, thus offering both marketer and consumer contexts. Third, the study tries to identify appropriate types of products about which people share information, often by making comparisons with other product categories. Given an in-depth understanding of Twitter as an eWOM tool, ultimately, this study attempts to answer questions about what and how people decide to adopt or exchange product-related information (Frenzen & Nakamoto, 1993; Sohn, 2009a, 2009b). Therefore, theoretically, this study investigates adoption studies and eWOM literature to provide a better understanding of the significant factors associated with online consumer behavior

and, practically, this study helps companies construct appropriate marketing strategy for using SNSs.

		Social presence/ Media richness		
		Low	Medium	High
Self-presentation/ Self-disclosure	High	Blogs	Social networking sites (e.g., Facebook)	Virtual social world (e.g., Second Life)
	Low	Collaborative projects (e.g., Wikipedia)	Content communities (e.g., YouTube)	Virtual game world (e.g., World of Warcraft

Figure 1-1. Classification of social media by social presence/media richness and self-presentation/self-disclosure (Source: Kaplan & Haenlein, 2010).

CHAPTER 2
THEORETICAL FRAMEWORK

This study is composed of two main frameworks. The first framework is used to investigate the adoption factors of Twitter. The second framework is used to examine Twitter as an eWOM tool and the effectiveness of eWOM as a marketing tool. Specifically the first purpose of this study is to examine how consumer attitudes toward the new media platform, Twitter, are formed and linked to adoption intention accordingly. In this section, the integration of Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and Technology Acceptance Model (TAM) are introduced and explained in detail in the context of social networking site (Twitter). In addition, in terms of eWOM perspective, perceived similarity, perceived credibility, product category, perceived fit are introduced for the antecedents of consumer eWOM behavior in Twitter.

Social Networking Site Adoption Studies

Current Research Trend

Reflecting the importance and growth of social media in today's society, the current research trend in this area focuses mainly on three dimensions: the characteristics of SNSs (e.g., Ellison, Steinfield, & Lampe, 2007), the roles of SNSs in various contexts (e.g., Ellison et al., 2007; Tong, Van Der Heide, Langwell, & Walther, 2008) and the motivations for using social media (e.g., Raacke & Bonds-Raacke, 2008). According to Ellison et al. (2007) social network sites (SNSs) can be differentiated based on their initial purposes at the early stage of diffusion of SNSs: work-related context (e.g., LinkedIn.com), romantic relationship initiation (Friendster.com), sharing interest (Myspace.com, Cyworld.com), or communication among college students (Facebook.com).

Several researchers also examined the roles of SNSs in terms of communication perspective such as social capital (Ellison et al., 2007) and interpersonal impression formation (Tong et al., 2008). Ellison et al. (2007) found a strong positive relationship between Facebook usage and social capital. Tong et al. (2008) focused more on the personal level and the role of Facebook in terms of interpersonal impression formation.

Another important research trend of SNSs is on how the specific user demographics of social media affect individual motivation for adoption. While traditional media spread messages across all ages (Cha, 2007, 2009a), social network users were highly concentrated among teenagers and people in their 20s to 30s. For example, 40.3% of Facebook users and 46.6% of Twitter users were in the age group of 18 to 34 (Radwanick, 2011). Those age groups are particularly important for marketers since they are attractive consumer groups (Cha, 2007, 2009a), and they exhibit higher intention to purchase products and services online than older generations (Akhter, 2003). However, due to the nature of emerging media, the driving force of SNSs (e.g., Twitter) adoption was not fully tested empirically.

Media Use and adoption Research

It now is widely believed that technology and new media adoption is not a single function of technology factors. Rather, it is a media adoption function that includes social context, media accessibility, availability of communication partners, previous experience with media usage, individual life style, consumer innovativeness, characteristics of media, or even the fit between task and technology (Daft & Lengel, 1984; Dishaw & Strong, 1999; Fulk, Schmitz, & Steinfield, 1990; Lee, 2003; Markus, 1987; Salancik & Pfeffer, 1978). Before examining the framework of the Theory of Planned Behavior (TPB) and Technology Acceptance Model (TAM), it is worth

reviewing the assumptions of traditional media adoption and usage theories to compare and illustrate the different aspects of traditional media adoption studies. Note that this research mainly subscribes to the foundations presented in TRA, TPB, and TAM.

According to Lee (2003), one of the most prominent traditional media usage studies is Rational Choice Models of media (Daft & Lengel, 1984, 1986; Lengel & Daft, 1989). This model assumes that individuals' uses and adoption of media could be explained by rational choices that best suit their needs. Therefore, two main factors affect individuals' media usage: information richness and social presence. Social presence is the level of perceived presence that people view as sociable, warm, sensitive, personal, or intimate during the media usage process and interact with others by using specific media. Therefore, by using media that represent their need for appropriate levels of social presence, media usage patterns can be explained (Short, Willimans, & Christie, 1976). Media richness theory also indicated the different characteristics of media that influence individuals' adoption and usage of media. According to Daft and Lengel (1984) people rationally select media to fulfill their need for different information. Therefore, regarding the speed of feedback, types of channel employed, and personal-ness of source, people select the most desirable media for their communication purpose among face-to-face communication, telephone, and print media (Daft & Lengel, 1984, 1986; Lengel & Deft, 1989). However, the basic assumption of the rational choice model that individuals make rational and objective evaluation of their own needs and tasks for media use has been questioned. For example, Fulk et al. (1990) insisted that decision making-related media usage was neither always rational nor always efficiency-motivated.

Uses and Gratification (U&G) theory also suggests that multiple motivations, including sociability, contribute to new media adoption such as the mobile phone usage (Wei, 2008). Similar to rational choice models but including somewhat different motivations such as social influence, U&G examines the various motivations for adopting media based on the assumption that individuals use the same mass medium for different purposes (Severin & Tankanrd, 2001),. Many scholars pointed out that U&G is also one of the most ideal theoretical reasoning methods to reveal the role of psychological and behavioral tendencies in media usage (Ko, Cho, & Roberts, 2005; Korgaonkar & Wolin, 1999; Lin & Cho, 2010).

Drawing on the uses and gratification theoretical framework, Ko et al. (2005) indicated that U&G has been considered as axiomatic theory that can apply to many adoption behaviors from both traditional media such as radio (Mendelsohn, 1964), newspapers and magazines (Elliott & Rosenberg, 1987; Licheterstein & Rosenfeld, 1984), and television (Babrow, 1987; Conway & Rubin, 1991; Rubin, 1981, 1983, 1984) and nontraditional media (the so-called “new media”) such as cable television (Heeter & Greenberg, 1985; LaRose & Atkin, 1988), VCR (Cohen, Levy, and Golden, 1988; Levy, 1987), telephones (Dimmick, Sikand, & Patternson, 1994; O’Keefe & Sulanowski, 1995), pagers (Leung & Wei, 1999), e-mail (Dimmick, Kline, & Stafford, 2000), the Internet (Ko et al., 2005; Lin, 1999; Papacharissi & Rubin, 2000), satellite radio (Lin, 2010), and online radio (Lin, 2009). U & G theory has identified a variety of motivational factors through decades of research (e.g., surveillance, sociability, diversion, escape, arousal, instrumentality, reassurance, and companionship) (Wei, 2008).

Consumer Characteristics in Media Adoption

Another media adoption research trend has focused on the importance of consumer demographic characteristics (Atkin & LaRose, 1994; Atkin, Neuendorf, Jeffres, & Skalski, 2003; Dutton, Rogers, & Jun, 1987; Krugman, 1985; LaRose & Atkin, 1992; Lin, 1998; Steinfield, Dutton, & Kovaric, 1989) and psychological traits such as innovativeness (e.g., Chan-Olmsted & Chang, 2006; Chan-Olmsted, Li, & Jung, 2005; Chang, Lee, & Kim, 2006). For example, in terms of personal computer adoption, those with higher socioeconomic status are more likely to use a personal computer at home (Atkin & LaRose, 1994; Dutton et al., 1987; Steinfield et al., 1989; Chan-Olmsted & Chang, 2006). Males are more likely to use online games (Chang et al., 2006) and the Internet (Ernst & Young, 1999), whereas no gender difference was found in SNS usage and shopping behavior on SNSs (Cha, 2009a, 2010).

Social Influence

The term social influence in media adoption studies (Fulk et al., 1990) has varying meanings and there is hard to measure in an academic setting. The concept of social influence initially was explained in two different dimensions: informative (informational) and normative (Cialdini & Trost, 1999). Informative social influence is referred to "influence to accept information is conformation from another as evidence about reality" (Deutsch & Gerard, 1955, p. 629), whereas normative social influence is considered as the tendency of be liked or accepted by others and conforms to what individuals believe to be the norms of the group members or "a willingness to say yes without thinking first" (Cialdini, 1984, p. 13). Drawing from these basic concepts of social influence (not necessarily in terms of technology and media usage), several researchers have

suggested that it has different effects in various contexts such as deindividuation effect (Festinger, Pepitone & Newcomb, 1952), social identity (Elias, Appiah, & Gong, 2008; Tajfel & Turner, 1986; Turner, 1982; Mastro, 2003), social categorization (Brewer & Gaertner, 2004; Hogg, 2004; Hogg & Reid, 2006; Hogg & Terry, 1995), and social comparison (Buunk & Gibbons, 2007; Buunk & Oldersma, 2001; Festinger, 1954; Gulas & McKeage, 2000). For example, Festinger et al. (1952) examined social influence by proposing the concept of deindividuation – that individuals tend to lose their personal identity and merge into a group or crowd. They reported that despite the various moderators and predictors of social influence, social influence on media usage and technology acceptance has not been tested fully.

More recently, Cialdini and Goldstein (2004) differentiated three motivations that make individuals highly sensitive to social influence, such as accuracy seeking, affiliation, and maintenance of a positive self-concept. Although these concepts often occur simultaneously in real-world situations, they have different operational definitions. Accuracy seeking is an individual tendency to pursue and react toward uncertain social situations. Maintaining a positive self-concept refers to people's efforts to increase their self-esteem by following other's prominent views and behaviors. The affiliation factor is highly related to a motivation for engaging in norms and behaviors in order to obtain desirable social relationships. Among them, current research is particularly related to the affiliation factor of social influence, which is also highly related to Fishbein and Ajzen's (1975) subjective norm that discussed later.

Social influence in new media adoption

To provide an alternative theoretical reasoning from the findings of rational choice models, social influence constructs were adopted to explain individuals' new media

adoption – that individual perceptions toward certain media can be formulated not only for objective features of media but also decided by the attitude, statements, and behaviors of other people by using the term social influence (Fulk et al., 1990). Fulk et al. (1990) proposed the social influence model of technology use (SIMoTU) by suggesting that the individual behavior of media and technology adoption is not always based on the rational evaluation or objective need for media usage, but also the social influence from coworkers, group behavior norms and other social roles in the society.

As previous mentioned, social influence on individuals' behavior, focusing in particular on normative social influence, has been examined using two theoretical frameworks: The Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB). Although these theories were not designed for technology and media adoption, both provided useful explanations for the role of normative social influence in various consumer behaviors.

The Theory of Reasoned Action (TRA), initially proposed by Fishbein and Ajzen (1975), indicated that most individuals' behavior and attitudes toward the behavior is determined by two factors: attitudes and subjective norms. Attitude toward a behavior is defined as cognitively learned response toward an object or a behavior, "be it favorable or unfavorable" (Lee, 2003, p. 21). Subjective norms refer to "the person's perception that most people who are important to him think one should or should not perform the behavior in question" (Fishbein & Ajzen, 1975, p. 302), which reflects normative social influence. Therefore, the behavioral intention decided by the conjoint influence of attitude and subjective norm affect actual behavior (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). (Figure 2-1 for a conceptual model of TRA). Adopting the TRA constructs

and theoretical premise, one of the co-developers of TRA, Ajzen (1991) developed the Theory of Planned Behavior (TPB), adding a third construct of behavioral intention, perceived behavioral control, which demonstrated the assumption that a variety of human behaviors are controlled by volition (Ajzen, 2002). As illustrated earlier, while the TRA and TPB were not originally designed to reveal an individual's process of technology or media adoption; each theory was applied in various technology and media usage motivation studies (e.g., Davis, 1989; Kwon & Chon, 2009; Lin, Chuan, & Rivera, 2009; Venkatesh & Davis, 2000; Venkatesh & Morris, 2000). Figure 2–2 illustrated the basic conceptual model of TPB.

In particular, focusing on the social influence of new media and technology adoption, several studies have indicated the importance of the social influence dimension (e.g., Carr, 2008; Homburg, Wieseke, & Kuehnl, 2010; Kwon & Chon, 2009; Lin et al., 2009; Park, Kwan & Cheong, 2007). For example, Homburg et al. (2010) revealed that pressure from sales managers strongly affects a salesperson's intention to adopt a new sales technology packet. Park et al. (2007) also found that the effects of compliance with school policies include a positive relationship between Internet-based course management systems. Carr (2008) and Lin et al. (2009) also found that both peer influence and social influence are significantly related to an individual's instant messaging usage pattern.

Technology Acceptance Model

While TRA and TPB revealed the mechanism of various individual behaviors within a variety of disciplines, neither focused solely on technology or media adoption but general behavior or behavioral intention. Also, individual behavior and behavioral intention are not entirely affected by social influence, as well as formed by their own

beliefs of technology. Therefore, the concept of the Technology Acceptance Model (TAM) emerged based on TRA and TPB and focused exclusively on technology related studies (Davis, 1989). After an in-depth examination of TRA and TPB, Davis (1989) proposed a model to predict audience usage of information technologies. Davis, Bagozzi, & Warshaw (1989) demonstrated the concepts of perceived usefulness and perceived ease of use. (Figure 2–3). Perceived usefulness is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance,” (Davis, 1989, p. 320), whereas perceived ease of use refers to “the degree to which a person believes that using a particular system would be free of effort” (p. 320). In sum, when individuals consider the technology useful, they will start to think of the positive use-performance relationship; thus, it is linked to the adoption intention (Lee, 2003) and the higher perceptions of perceived usefulness and perceived ease of use lead to a more favorable attitude toward the technology and intention to adopt (Davis, 1989; Davis et al., 1989).

According to Park (2010), a number of studies have investigated the role of perceived ease of use and perceived usefulness within the information and communication technology contexts, such as word processing programs, spreadsheet software, and operating systems (e.g., Chau, 1996; Davis, 1993; Davis et al., 1989; Doll, Hendrickson, & Deng, 1998; Mathieson, 1991). In adopting the basic concepts of TAM, several researchers indicated the effectiveness of TAM to predict consumer adoption of the Internet and Internet-based technologies, such as distance learning programs (Lee, 2003; Lee et al., 2003), e-commerce (Jiang, Hsu, & Klein, 2000), telemedicine (Chau & Hu, 2002; Karahanna, Straub, & Chervany, 1999), e-learning tools (Park et al., 2007),

and digital library systems (Hong, Thong, Wong, & Tam, 2002; Thong, Hong, & Tam, 2002). More specifically, in terms of SNSs, shopping behavior in SNSs (Cha, 2009a) and adoption behavior of SNSs (Cha, 2010) have also been scrutinized using the TAM constructs.

Revision of TAM

Although TAM has already been applied in various contexts of adoption study (e.g., Hong et al., 2003; Jiang et al., 2000; Lee, 2003; Lee et al., 2003), there have been revisions in recent years (Park, 2010). First, Venkatesh, Morris, Davis, and Davis (2003) developed the unified theory of acceptance and use of technology (UTAUT), which integrates eight preexisting technology acceptance models, including TAM, TRA, TPB, and diffusion theory (Rogers, 1995). Specifically, Venkatesh et al. (2003) included the constructs of perceived usefulness, perceived ease of use (both from the TAM), and relative advantage (from diffusion theory) and inserted slightly different dimensions of performance expectancy. More importantly, subjective norm (from the TRA and the TPB) and other social and situational factors (e.g., age, gender, experience, and voluntariness of use) were considered. Adopting this revised framework, many studies revealed the adoption factors, including traditional TAM factors (e.g., perceived usefulness, ease of use), social influence, and consumer demographics, within various media contexts (Homburg et al., 2010; Lin et al., 2009; Putzke, Schoder, & Fishbach, 2010; Park, 2010; Park et al., 2007). For example, Putzke et al. (2010) found that both perceived usefulness and willingness to invest effort for a mass-customized newspaper were conjointly related to consumer intention to adopt a mass-customized newspaper and also indicated the moderating role of gender. Kwon and Chon (2009) indicated that social influence, in particular, maintaining a positive self-image dimension was a

significant predictor of an individual's terrestrial and satellite mobile TV usage, with consideration given to uses and gratification variables.

Integration of Social Influence and TAM

Drawing on UTAUT's perspective on social influence and other social influence literature (e.g., Carr, 2008; Homburg et al., 2010; Kwon & Chon, 2009; Lin et al., 2009; Park et al., 2007), this study also emphasized the constructs from TAM (perceived ease of use and perceived usefulness) and social influence (conformity to subjective norm) from TPB and TRA. Although both social influence theory (TRA, TPB) and TAM have been tested and retested in various contexts of new media adoption and successfully validated by several different disciplines, each theory offers limited scope to fully understand new media adoption. TAM could not fully explain why people feel specific technology (e.g., Internet) is useful or easy, but simply asked whether respondents considered a technology or service to be useful or easy (Baaren, Wijngaert & Huizer, 2011). In other words, situational factors (e.g., social influence) and personality traits (e.g., user demographics) have not been discussed in TAM (Baaren et al., 2011).

Indeed, Mathieson (1991) revealed that each model has unique strengths and weaknesses depending upon the situation. TAM had a slight advantage for empirical testing and covered general information on the participants' opinions toward the technology, whereas TPB provided more specific information about the users' behaviors. Taylor and Todd (1995) also compared TAM's and TPB's fitness for understanding information technology adoption. For example, TAM might be more useful for predicting usage alone, whereas TPB could provide the theoretical explanation that considers situational factors (e.g., social influence). Adopting the important role of conformity toward the norm, Lucas and Spitler (1999) found that social norms were a significant

factor affecting ease of use and usefulness of technology that finally influenced consumer intention to use technology. Figure 2-4 and Figure 2-5 illustrate the decomposed model of TPB and TAM.

Therefore, to overcome the weakness of the preexisting conceptual framework, this study proposed an integration of TAM and TPB (but was simpler than Taylor and Todd's [1995] model) to explore consumers' new media adoption within the Twitter context. (Figure 2-6). Variables were taken from TAM (perceived usefulness, perceived ease of use), TPB (conformity to social norm), and consumer factors (gender, age, educational level).

Table 2-1 displays important media adoption literatures including TAM, TPB and social influence dimensions.

WOM and eWOM

Word-of-Mouth

WOM communication has been examined in various studies (Herr et al., 1991), it is defined by the following words (Haywood, 1989): informal, noncommercial, post-purchase behavior and exchange, flow of information, communication, and conversation, among others (Goyette, Richard, Bergeron, & Marticotte, 2010), Granovetter's (1973) theory of the strength of weak ties (SWT) provides the theoretical reasoning of the effectiveness of WOM. Granovetter (1973) differentiated the strength of interpersonal connections as "strong" and "weak," based on "individual's combination time, the emotional intensity, the intimacy and the reciprocal services" (p. 1366). In particular, innovation among consumers was spread most effectively through weak ties rather than strong ties. Drawing upon the basic concept of ties, several researchers emphasized the effectiveness of weak ties as a WOM cue (Duhan, Johnson, Wilcox, & Harrell, 1997).

Communication scholars have recognized the importance of WOM particularly in terms of diffusion in innovation studies (Rogers, 1995; Ryan & Gross, 1943). Westbrook (1987) referred to WOM as “all informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services or their sellers” (p. 261), Harrison-Walker (2001) defined WOM as “informal, person-to-person communication between a perceived noncommercial communicator and receiver regarding a brand, a product, an organization, or a service” (p. 63). Whyte (1954) indicated that the term WOM means a communication between individuals about a certain topic. Arndt (1967) also defined it as a situation in which personally connected people communicate about a product, brand, or service.

It is worth noting the original idea of the WOM concept (Whyte, 1954; Katz & Lazarsfeld, 1955). Whyte (1954) revealed that WOM played an important role in consumer purchasing behavior for a newly invented product in the 1950s: the air conditioner. The purchasing of air conditioners was not random, and purchases revealed an interesting pattern. Also, Katz and Lazarsfeld (1955) indicated that the influence of WOM was two times more powerful than that of radio advertising, four times more powerful than direct marketing, and seven times more powerful than newspaper or magazine advertisements. Using this basic definition, many studies have revealed the powerful influence of WOM in the evaluation of alterative product choices and consumer behavior, especially compared to commercial information or neutral third-party information such as Consumer Reports.

In particular, a great deal of marketing research has focused on the various effects of WOM communication strategies, such as consumer attitudes (Brucks, 1985),

consumer risk taking (Woodside & Delozier, 1976), short-term and long-term product evaluation (Bone, 1995), and consumer choice of product (Lau & Ng, 2001). In the communication field, Hong and Yang (2009) revealed that in terms of the public relations perspective, corporate reputation and relational satisfaction are critical predictors of stakeholders' intention for positive WOM. Note that although many researchers have investigated the effect of WOM, its antecedents and moderators have been less tested (De Matos & Rossi, 2008).

Electronic Word-of-Mouth

Drawing on the importance and effectiveness of WOM in the consumer decision-making process, the Internet has been widely used as an important sales channel (Cheema & Papatla, 2010). According to a recent survey from the U.S. Census Bureau, total U.S. online retail commerce exceeded $41.525 million in 2010, a 13.6% increase over the previous year (Winters, Detlefsen, & Davie, 2010) and online purchasing behavior is highly affected by online formation-seeking activities such as electronic word-of-mouth (eWOM) information. Not only online consumers, but also general consumers rely on online information. Recognizing the importance of online information concerning consumer behavior, previous researchers have examined a new dimension of WOM that uses online platforms such as online product reviews and forums (Bickart & Schindler, 2001; Dellarocas, 2004), which corresponds to the increasing interest in the Internet as an information source (Pew Research Center, 2005; Prendergast et al., 2010). Moreover, a recent survey conducted by the Pew Research Center (2011) revealed that the Internet is the second most widely used news source, following television news, and among 18 to 29 year olds, the Internet has surpassed television as

the main news source. Therefore, it is reasonable to assume that people will try to obtain product-related information through the Internet.

Thus, word-of-mouth marketing is a particularly important feature of the Internet (Trusov et al., 2009). According to Sohn (2009a), previous literature demonstrated that eWOM is an outcome of psychological motives such as innovativeness (e.g., Henning-Thurau, Gwinner, Walsh, & Gremler, 2004; Phelps et al., 2004; Sun, Youn, Wu, & Kuntaraporn, 2006) and the social tie among individuals on the Internet (e.g., Steyer, Garcia-Bardidia, & Quester, 2006; Vilpponen, Winter, & Sundquist, 2006). The effectiveness of WOM in the online setting has received attention in different contexts, such as movie reviews (Basuroy, Chatterjee, & Ravid, 2003; Dellarocas, Zhang, & Awad, 2007). The accessibility-diagnosticity model (Feldman & Lynch, 1988; Herr et al., 1991; Lau & Ng, 2001) provided a theoretical explanation of the effectiveness of WOM compared to mass communication messages. With face-to-face (vivid) presentation, information remains longer in consumers' memory and heavily influences their judgment and decision-making process (Feldman & Lynch, 1988; Herr et al., 1991; Kisielius & Sternthal, 1984; Lau & Ng, 2001; McGill & Anand, 1989).

Electronic word-of-mouth 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 et al., 2004, p. 39).

In the online environment, the concept of e-WOM has emerged with the possibilities of unlimited networking through the Internet (Smith, Coyle, Lightfoot, &

Scott, 2007) and enabling real-time activity, conversation, or correspondence about a product (Kliatchko, 2008).

Several studies have confirmed that eWOM can overcome the drawbacks of WOM communication based on two factors: measurability and transparency (Godes & Mayzlin, 2004; Park & Kim, 2008; Rezabakhsh, Bornemann, Hansen, & Schrader, 2006). For example, Godes and Mayzlin (2004) indicated that online WOM behavior could be traced easily and effectively by examining consumers' online activities, such as leaving a product review or comment in online forums, whereas it is difficult to measure the underlying dynamics of WOM since offline WOM information is usually exchanged in personal communication channels (Park & Kim, 2008). Also, using online channels, consumers obtain more power to overcome information asymmetries and achieve market transparency (Rezabakhsh et al., 2006). Although about 90% of WOM communication has accrued in the offline context (Keller & Berry, 2006), eWOM in the Internet context could change the way WOM influence consumer behavior. Many studies have reconfirmed the effectiveness of WOM in consumer behavior, unlike in mass media, information transfer through interpersonal channels such as informal conversation or discussion is invisible (Rosen, 2000). However, due to pervasive use of the Internet, researchers can now measure eWOM through a blog or social networking site such as Facebook or Twitter that allows individuals to write a comment or express their opinion to various stakeholders (Sohn, 2009b).

The eWOM examples include blogs, online reviews (Dellarocas, 2003; Dellarocas et al., 2007; Duan, Gu, & Whinston, 2008), online discussion forums (Bickart &

Schindler, 2001; Chevalier & Mayzlin, 2006; Chiou & Cheng, 2003; Dellarocas, 2004), and news groups.

Okazaki (2008) indicated that WOM marketing has expanded in the computer-mediated environment, which includes e-mail, blogs, community sites, online review (Dellarocas, 2003; Dellarocas et al., 2007; Duan et al., 2008), discussion forums (Bickart & Schindler, 2001; Chevalier & Mayzlin, 2006; Chiou & Cheng, 2003; Dellarocas, 2004), news groups, and even mobile SMS message-based WOM marketing strategies (Okazaki, 2008, 2009). Table 2-2 summarizes important eWOM related literatures.

Table 2-1. Technology acceptance model, social influence related literatures in adoption study

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
Mass-Customized Newspaper adoption (TAM)	Putzke et al.(2010)	Survey	Willingness to invest effort, gender, perceived usefulness	Willingness to invest effort for mass-customized products, perceived usefulness were significant predictor. For women, base category satisfaction was significantly affects to PU.
Instant messaging (UTAUT)	Lin et al. (2009)	Survey	Effort expectancy, social influence, and peer influence	Effort expectancy, social influence and peer influence were significantly affected to individual's instant messaging usage
Internet-based course management system (TAM)	Park et al. (2007)	Survey	Perceived ease of use, perceived usefulness, compliance with school policy	Perceived ease of use, perceived usefulness and compliance with school policy played a significant role to instructors' electronic courseware adoption
VoIP adoption (TAM + U&G)	Park (2010)	Survey	Perceived ease of use, perceived usefulness, motivation for communication, instrumental use	Perceived ease of use affects perceived usefulness and perceived usefulness has positive association with actual VoIP use. Also, instrumental and communication motivation has positive relationship with perceived ease of use, perceived usefulness and usage of VoIP
Mobile Internet service	Jiang (2009)	Survey	Beliefs about mobile Internet, quality perception	Belief about mobile internet and quality perception has linear relationship with adoption intention

Table 2-1. Continued

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
Instant Messaging	Carr (2008)	Interview		Organization members were introduced to instant messaging primarily by peers and utilized for peer interaction
Sales technology adoption	Homburg et al. (2010)	Survey	Perceived Usefulness, perceived ease of use, perceived adoption pressure	Perceived usefulness, perceived ease of use and perceived adoption pressure of manager paly an important role to new sales technology adoption

Table 2-2. eWOM related literature

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
Importance of eWOM	Rezabakhsh et al. (2006)	Survey	Willingness to invest effort, gender, perceived usefulness	e-WOM empowered consumers to solve (1) asymmetries information about the product (2) boost market transparency.
Online review of Electronic product (PMP)	Park & Kim (2008)	Experiment	Consumer expertise, cognitive fit (types of reviews), number of reviews	The volume of reviews are positively related to select consumers' TV show preference
Online review of movie	Dellarocas et al. (2007)	Secondary analysis	Volume of reviews	The volume of reviews are positively related to movie sales
Online newsgroup and TV shows	Godes & Mayzlin (2004)	Secondary analysis	Volume of reviews	The volume of reviews are positively related to select consumers' TV show preference
Factors influencing e-WOM in Online forum	Prendergast et al. (2010)	Survey	Source similarity, persuasiveness, attitude toward the forum	Similarity of user's interests and forum's topic, initial attitude toward the forum are strong predictors
Information sources in product evaluation	Cheema & Papatla (2008)	Survey	Product type (hedonic vs. utilitarian), Internet experience	Consumers consider online information source is relatively important than offline sources in utilitarian product evaluation than hedonic product evaluation For the consumers with high level of experience, offline information is more important

Table 2-2. Continued

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
Effectiveness of e-WOM strategy comparing with traditional marketing strategy	Trusov et al. (2009)	Secondary Analysis	eWOM	WOM referrals have more effects than traditional marketing.
Factors of mobile WOM	Okazaki (2008)	Survey Mobile campaign	Brand commitment, relationship with mobile device, group-person connectivity, perceived value of campaign	Commitment to the promoted brand, relationship with mobile device, group-person connectivity are all important antecedent of referral. Entertainment value is more strong predictor than purposive value
Actual usage of mobile base WOM	Okazaki (2009)	Survey Mobile campaign	Interpersonal connectivity, self-identification with the mobile device, Affective brand commitment	For brand commitment, WOM is more affective than mobile WOM, however in terms o willingness to make referrals, mobile WOM lead more persuasive power
Online consumer behavior in book sales	Huang & Chen (2006)	Experiment	Sales volume, customer reviews, evaluations of others, (expert review vs. consumer review)	The recommendations of peer influence more than expert.
eWOM in China	Xue & Zhou (2011)	Experiment	Positive/negative WOM, involvement	Positive/negative WOM, involvement, prior experience are significant moderator

Table 2-2. Continued

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
eWOM in brand attitude	Lee et al. (2009)	Experiment	Positive/negative (extremely positive, moderate, extremely negative)	Extremely positive reviews increased brand attitude. Extremely negative reviews had strong influence than positive WOM.
eWOM in apartment review	Lee & Youn (2009)	Experiment	eWOM platform (independent product review website, brand's website, personal blog), eWOM valence (positive vs.negative	Participants exposed to the review on personal blog were less likely to recommend the product to friends than those exposed to the review on other platform (contrary to previous assumption) In the negative eWOM, there was no significant difference
eWOM in brand choice facilitation	Hung & Li (2007)	Secondary analysis	eWOM in virtual community	In the virtual community setting, eWOM highly affect toward consumer brand selection
Online consumer behavior in book sales	Huang & Chen (2006)	Experiment	Sales volume, customer reviews, evaluations of others, (expert review vs. consumer review)	The recommendations of peer influence more than expert.
eWOM in brand trust of mobile phone	Xingyuan et al. (2010)	Survey	WOM	WOM increase brand trust

Table 2-2. Continued

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
eWOM motivation to leave a online review	Hennig-thrau et al. (2004)	Survey	Platform assistance, venting negative feelings, concern for other consumers, extraversion/positive self enhancement, social benefits, helping the company, advice seeking	Platform assistance, venting negative feelings, concern for other consumers, extraversion/positive self enhancement, social benefits, helping the company, advice seeking are significant moderators
eWOM motivations to read consumer review	Hennig-Thurau & Walsh (2003)	Survey	Obtaining buying related information, social orientation through information, community membership, remunerate, to learn to consume a product	Obtaining buying related information, social orientation through information, community membership, remunerate, to learn to consume a product are all the significant predictor of eWOM reading motivation
eWOM motivations to write review	Hennig-Thurau et al. (2004)	Survey	Platform assistance, venting negative feelings, concern for other consumers, extraversion/positive self-enhancement, social benefits, economic incentives, helping the company, advice seeking	Platform assistance, venting negative feelings, concern for other consumers, extraversion/positive self-enhancement, social benefits, economic incentives, helping the company, advice seeking are all the important predictor of motivation for writing review

Table 2-2. Continued

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
Predictors of online information searching in automobile purchase	Ratchford et al. (2003)	Survey Secondary data analysis	Age, education level	Young and more educated people are more frequently use the Internet as a information source
Motivation for online opinion seeking	Goldsmith & Horowitz (2006)	Survey	Perceived risk, influence of others, price consciousness, ease of use, accidentally, it's cool, to get information, saw on TV	Perceived risk, influence of others, price consciousness, ease of use, accidentally, it's cool, to get information, saw on TV are all significant predictor of motivation for online opinion seeking
Product involvement as a moderator of eWOM	Xue & Zhou (2011)	Experiment	Product involvement, previous WOM experience, negative/positive WOM	For higher product involvement participants, negative comments are more powerful than positive comment
Online forum discussion	Bickart & Schindler (2001)	Experiment	Online forum	Online forum influenced more than corporate webpage.
Online forum discussion	Chiou & Cheng (2003)	Experiment	Brand image	For low-image brands, negative WOM hurt more than high-image brand their brand image
Online review of movie	Basuroy et al. (2003)	Secondary analysis	eWOM, star, budget	Negative reviews hurt performance more than positive reviews help performance
Online review	Duan et al. (2008)	Secondary analysis	The number of ratings, rating quality (high vs. low)	Unlike previous literature, higher ratings do not lead to higher sales whereas the number of ratings highly related the movie sales

Table 2-2. Continued

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
Online feedback	Dellarocas (2003)	Conceptual	Age, education level	Online feedback is a good opportunity for operations research, management science research
eWOM Online book reviews	Chevalier & Matzlin (2006)	Secondary analysis	Volumes of review, review quality (high/ low)	The volume of reviews are highly related to firms profit, negative review affects more than positive
Online consumer review	Chen & Xie (2008)	Secondary analysis	eWOM	eWOM, in particular online consumer review is influential to consumer reaction
Online review in movie market	Liu (2006)	Secondary analysis	The review valence (positive/ negative) The number of review	Volume of review affects movie sales whereas their valence affect limitedly
eWOM in online communities (blog)	Kozinets et al. (2010)	Qualitative	Evaluation, explanation, embracing, endorsement	There are four different strategies for the communal reference expression
Online professor evaluation	Edwards et al. (2009)	Experiment	Expectancy	Expectancy effects play on mediate role
Online review	Park et al. (2007)	Experiment	Involvement, quantity of review, quality of review	For low-involvement consumers, quantity of review affects more than quality
eWOM	Sohn (2009a)	Experiment	Social network density, information valence	In the dense social network, positive and negative information valence did not differ whereas in the non-dense network situation, positive product information is more valuable than negative product information

Table 2-2. Continued

Context	Author (year)	Method	Significant moderators, Predictors	Main Findings
eWOM in online forum	Sohn (2009b)	Survey	Social norm, perceived value of information	Social norm affects eWOM intention
eWOM in SNSs	Chu & Kim (2011)	Survey	Trust, normative influence, informational influence	Trust, normative influence, informational influence are positively associated with SNS user's eWOM behavior

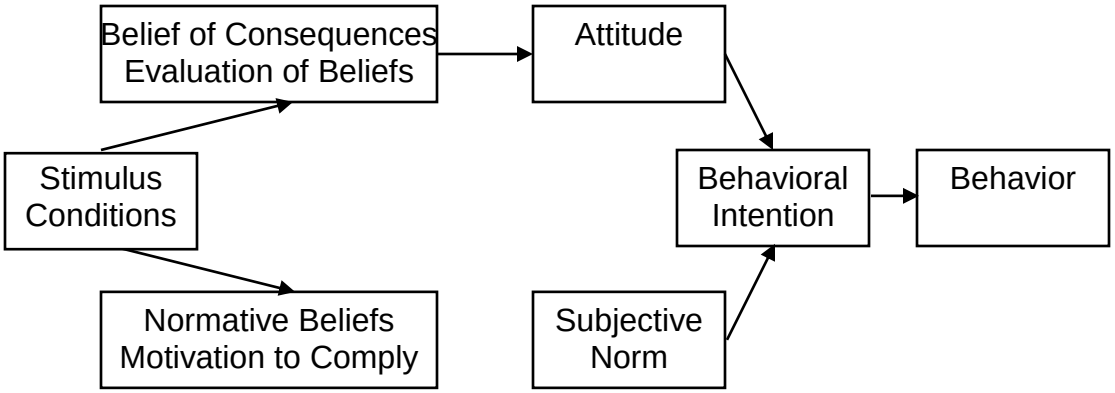


Figure 2-1. The theory of reasoned action.

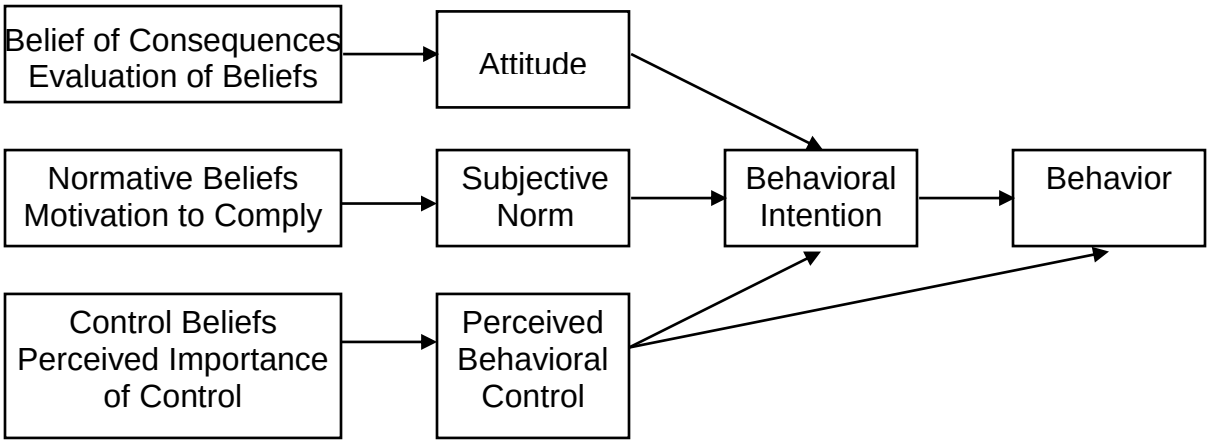


Figure 2-2. The theory of planned behavior.

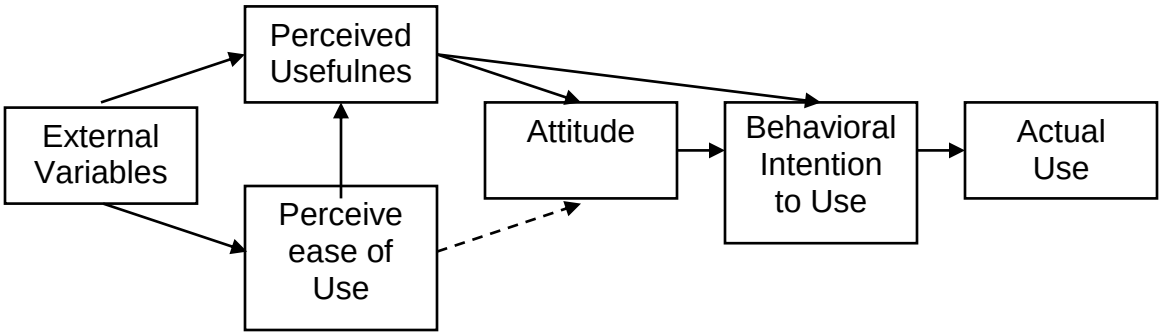


Figure 2-3. Technology acceptance model.

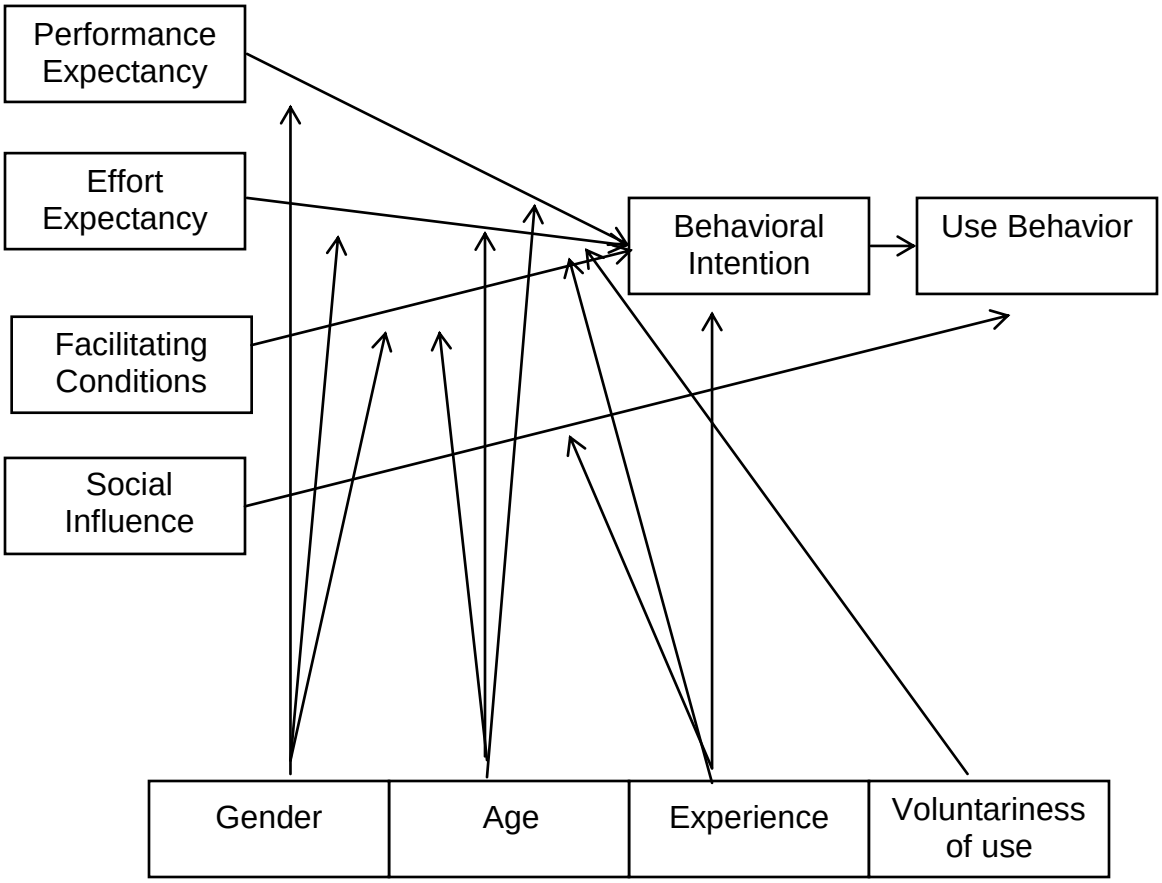


Figure 2-4. United theory of acceptance and use of technology (UTAUT).

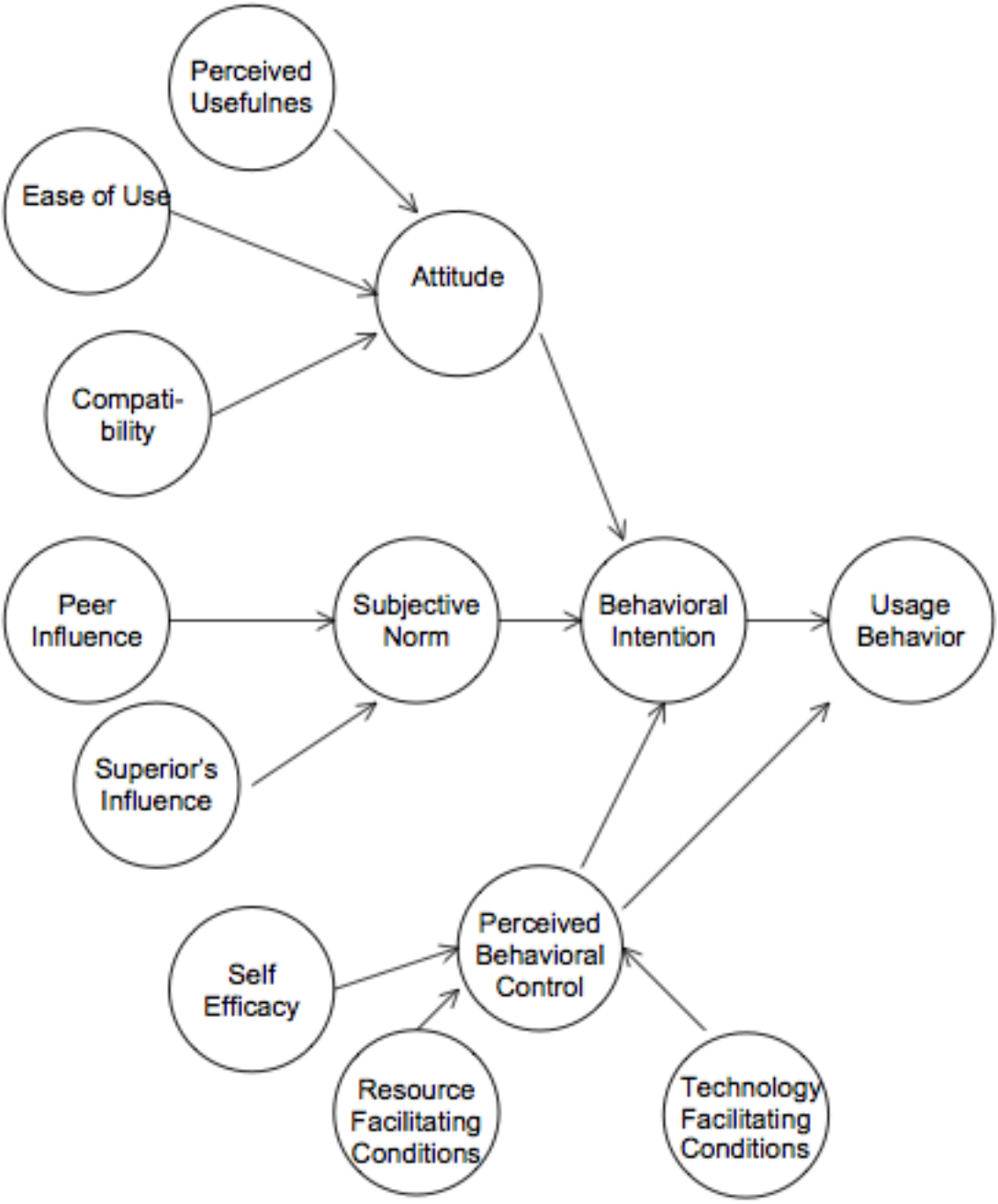


Figure 2-5. Decomposed theory of planned behavior.

CHAPTER 3
LITERATURE REVIEW AND RESEARCH QUESTIONS

This chapter provides the proposed measurements and the specific theoretical framework, with a focus on the adoption of Twitter and consumers' motivation to receive and send electronic word-of-mouth (eWOM) messages through Twitter.

Twitter Usage Motivation

Testing Social Influence in Twitter Adoption

Although the initial premise of TAM highly relies on the social influence dimensions predicting an individual's new media adoption behavior (Davis, 1989), the social influence dimensions were rarely tested in relevant empirical studies. This research uses an integrated approach of TRA, TPB, and TAM, and the original assumption of perceived subjective norm (i.e., normative social influence) that influenced intention to adopt new media (Fishbein & Ajzen, 1975). Indeed, the original theoretical framework of social influence revealed that normative (subjective) social influence affects a situation that is new and ambiguous (Asch, 1951). This trend of prominent effects of social influence on unfamiliarly situation, also particularly reconfirmed in the context of early stages of experience of technology (Lin et al., 2009; Venkatesh et al., 2003).

Likewise, TRA illustrated that the individual's behavioral intention to act in a certain manner is affected by the individual's degree of conformity toward the social norm. In detail, Fishbein and Ajzen (1975) indicated that attitude and subjective norm both influence behavior intention. Also, conformity to the social norm influences new media adoption in various contexts, such as new distance learning technology adoption (Lee, 2003; Lee et al., 2003). Therefore, it can be assumed that individuals' primary intention

in using technology such as Twitter could be influenced by the level of their conformity tendency.

Applying the logic of TRA and TPB (Fishbein & Ajzen, 1975) from the early stage of adoption study (e.g., Mathieson, 1991; Taylor & Todd, 1995) to Internet-technology-based media (e.g., Carr, 2008; Chu & Kim, 2011; Lee et al., 2003; Lin et al., 2009; Park et al., 2007), many studies reconfirmed the role of the conformity tendency toward an individual's adoption intention and usage. For example, Lin and colleagues (2009) demonstrated the effects of positive social influence on college students' instant messaging choice: when the majority of others use an instant messaging program which differs from their current program, they might change their choice of instant messaging program (Chung & Nam, 2007). Carr (2008) also indicated that organization members' instant messaging adoption is influenced by peers and that the purpose of instant messaging usage is for peer interaction. Park et al. (2007) also indicated that compliance with school policy played a significant role in instructors' electronic courseware adoption. Based upon these research findings, it is plausible that if participants have higher tendency of compliance toward the subjective norm, then they might adopt Twitter more easily. In addition, considering the fact that SNSs, especially Twitter, can still be considered emerging media with a short history that are highly influenced by social norm (Asch, 1951; Venkatesh et al., 2003), thus it is expected that the attitude toward the SNSs and intention to adopt the SNSs can vary by the degree of conformity toward social norms (Lee, 2003). Thus, the following hypothesis is postulated:

H1. Conformity to subjective norm will be positively associated with one's (a) attitude toward Twitter and (b) Twitter usage.

Testing Technology Acceptance Model in Twitter adoption

One prominent factor influencing consumers' adoption and purchasing behavior is perceived utility (Davis, 1989; Schiffman & Kunuk, 1978). According to the Technology Acceptance Model (TAM), two main dimensions affect consumers' attitudes or intentions to adopt products with newly developed technology: perceived usefulness and perceived ease of use (Davis, 1989; Davis et al., 1989). Perceived usefulness refers to "the degree to which an individual believes that using a particular system would enhance his/her job performance" (Davis, 1989, p. 320).

Perceived usefulness

This refers to the degree of personal belief that the usage of technology can enhance an individual's performance (Davis, 1989). Gefen, Karahanna, & Straub (2003) also indicated that perceived usefulness is "the degree to which an individual believes that using a particular system would enhance his/her job performance" and this conceptual definition is similar to Rogers' (1995) concept of relative advantages. Considering perceived usefulness, the significant prediction role of perceived usefulness is reconfirmed in shopping on social networking web sites (Cha, 2009a) and online video platforms (Cha, 2009b) and. Also, in the recent context of mobile phone adoption, the dimensions of perceived usefulness are measured by three different aspects of perceived utility: perceived utility of new technology, perceived utility of a new service, and perceived utility of a handset (Teng, Lu, & Yu, 2009). Putzke et al. (2010) tested perceived usefulness in consumer adoption of a mass-customized newspaper and found that it played a significant prediction role. In addition, as

supported by previous literature, the positive relationship between perceived usefulness and technology adoption intention was reconfirmed in the context of Internet-technology-based media, such as course management systems (Park et al., 2007) and voice-over Internet protocol (VoIP) (Park, 2010). Therefore, it can be assumed that it can be assumed that individuals who initially perceive Twitter to be greatly useful exhibit a favorable attitude toward Twitter and use it more frequently. Thus the following hypothesis is developed for testing the perceived usefulness:

H2: Perceived usefulness of Twitter will be positively associated with one's (a) attitude toward Twitter and (b) Twitter usage.

Perceived ease of use

Perceived ease of use is defined as "the degree to which an individual believes that using a particular system would be free of real and mental effort" (Davis, 1989, p. 323). Davis (1989) indicated the similarity of perceived ease of use and self-efficacy, cost, effort, and complexity (Lee, 2003; Lee et al., 2003). Adopting this conceptual definition, much previous literature revealed a positive relationship between perceived ease of use and media adoption intention, such as shopping in social networking (Cha, 2009a) and e-commerce service (Gefen & Straub, 2000; Lee, Park, & Ahn, 2001). Indeed, according to Lee (2003), recent studies in new media and technology adoption indicate the importance of a simple interface design (Raskin, 1997), represented by the slogan as KISS (Keep It Simple, Stupid) (Preece, Rogers, & Sharp, 2002). In particular, in the Web browsing context, simple and easy-to-use have been the primary factors in determining which Web browser to use (Gambon, 1998).

As Twitter is primarily Web-based and requires an Internet connection, it is expected that the factor of perceived ease of use play an important role in Twitter

adoption, affecting both attitudes toward Twitter and actual usage. Also, recent research in Internet-based technology such as voice over Internet protocol (VoIP) (Park, 2010), Internet-based course management system (Park et al., 2007), also revealed a positive association of perceived ease of use and adoption intention of new media platform.

Thus, the following hypothesis was proposed:

H3. Perceived ease of use will be positively associated with one's (a) attitude toward Twitter and (b) Twitter usage.

Consumer Related Characteristics

Age

Consumer demographic factors in the online environment also have been investigated. Traditionally, in terms of communication technology adoption, age was negatively associated to consumer adoption behavior (e.g., Chan-Olmsted et al., 2005; Lin, 1998). Drawing upon this role of age in an online environment, Ratchford, Lee, and Talukdar (2003) found that age and education level are highly related to consumers' intention to employ information-search behavior on the Internet. They concluded that, younger and more educated people tend to use Internet searching in automobile purchasing decisions. This result is consistent with other social networking research which generally found that age has a negative relationship with online shopping on social networking sites (Cha, 2009a) and e-commerce (Akhter, 2003). Also consistent with other findings on online technology adoption using the Internet (Madden & Savage, 2000), online chat rooms and webcasts use have a negative relationship with the users' age group (Lin, 2004; Peter, Valkenburg, & Schouten, 2005). Previous research has also indicated that older people are reluctant to adopt new technology and exhibit negative perceptions toward new technology (Cha, 2009b; Gilly & Zeithaml, 1985;

Pommer, Berkowitz, & Walton, 1980). Drawing on the basic concept of adoption in this inverse relationship of age and technology usage, He and Mykytyn (2007) expanded its context to adoption of online payment methods and shopping on social networking sites (Cha, 2009a). Accordingly, the following hypothesis is postulated:

H4. Age is negatively associated with one's (a) attitude toward Twitter and (b) Twitter usage

Education level

Ratchford et al. (2003) also revealed the linear relationship between education level and online information searching. Therefore, it is expected that education level and attitude toward Twitter adoption have positive relationships with education levels.

H5. Education level is positively associated with one's (a) attitude toward Twitter and (b) Twitter usage.

Gender

Gender differences in new media adoption have been studied for over a decade. In the early era of new media diffusion, males consistently used new media more frequently than females (Dutton et al., 1987; Jeffres & Atkin, 1996; LaRose & Atkin, 1988). Consistent with the results of previous studies, Internet usage was also prominent among males (Ernst & Young, 1999). However, in terms of current usage status of the Internet, there was no significant difference between males and females (Dennen, 2011; Radwanick, 2011). Furthermore, regarding Internet-based, advanced technology usage, such as instant messaging, females use instant messaging more frequently for obtaining socialization gratification (Leung, 2001). Considering social media usage patterns, recent industry reports revealed that the usage gap between genders did not differ significantly, and females even spend more time on SNSs than

males (Dennen, 2011; Radwanick, 2011). Corresponding with industry reports (Dennen, 2011; Radwanick, 2011), Cha (2009a) revealed that, in terms of frequency, males and females are not statistically different. It seem that, there was conflicting results regarding the traditional new media adoption study and SNSs specific usage studies. Therefore, the following research question is proposed:

RQ1: How does gender that influence one's (a) attitude toward Twitter and (b) Twitter usage?

Attitude Toward Twitter and Actual Usage of Twitter

Although established relationships between attitude toward and purchase intention or have been discussed in previous literatures particularly from marketing, advertising (e.g., Brown & Stayman, 1992; McKenzie & Lutz, 1989) and new media adoption study research context (e.g., Vishwanath & Goldhaber, 2003). Ajzen and Fishbein (2005) argued that there are possible differences between the attitude and actual behavior of individuals.

Though most empirical studies have shown a positive relationship between attitude and behavior (Ajzen & Fishbein, 2005), it is also expected that consumer evaluation of Twitter and their actual usage of Twitter can vary (Ajzen & Fishbein, 1977; Fishbein & Ajzen, 1975; Perloff, 2010). This study measured multiple dimensions of participants' attitude and intention. Specifically, attitude toward the Twitter and actual Twitter usage (daily usage, hourly usage, and frequency of obtaining brand information) were evaluated.

Thus, it can be postulated that favorable Twitter attitude can be transferred to Twitter usage. In other words, attitude toward Twitter and Twitter usage would be positively associated, the following hypotheses are proposed:

H6. Attitude toward Twitter is positively associated with one's Twitter usage.

WOM and eWOM Related Factors

Communicator Characteristics

Perceived similarity

One of the most important factors affecting WOM is perceived communicator characteristics such as similarity (Brown & Reingen, 1987; Gilly, Craham, Wolfnbarger, & Yale, 1998; Price, Feick, & Higie, 1989; Wangenheim & Bayon, 2004). According to Wangenheim and Bayon (2004), several studies have provided theoretical explanations for why people prefer messages from those who share similar characteristics. First, social comparison theory (Festinger, 1954) indicated that peoples' tendency to compare themselves with others increases when they encounter people they consider to have similar characteristics. This is because consumers assume that similar people will share similar needs and preferences. Second, the source-attractiveness model (Kelman, 1961) explained that receivers more closely identify themselves with similar sources. Third, Kamins's (1990) match-up hypothesis suggested that the effect of information could differ from the congruity of the image of the communicator and perceived image of the receiver. Empirical studies in the WOM context reconfirmed that the perceived source similarity induces more influential power toward the consumer product and brand selection (Brown & Reingen, 1987; Gilly et al., 1998; Price et al., 1989; Wangenheim & Bayon, 2004). Similarity influences behavior intention, and this logic is applicable, too, in the context of the online environment. Particularly, in the eWOM environment of online forums, Prendergast and colleagues (2010) found that perceived similarity of the communicators were positively correlated with the attitude toward the eWOM platform and purchasing intention.

Likewise, in the Twitter environment, the similarity among users (both the following and followers), particularly in terms of sharing similar interests, might affect the persuasion power of the product information, as previous literatures from both traditional WOM and eWOM indicated that higher perceived source similarity of group members was positively associated with the individual attitude and behavior intention (Prendergast et al., 2010; Wangenheim & Bayon, 2004, 2007). Therefore, the following hypothesis was postulated:

H7. The perceived similarity between a Twitter user and one's Twitter friends who tweet about a branded product will be positively related to one's (a) attitude toward the brand and (b) eWOM spreading intention

Source credibility

Communicator's credibility as an expert in a certain topic can also affect the evaluation of WOM (Wangenheim & Bayon, 2004). Various scholars in particular communication area have found that higher credibility of a spokesperson leads to more persuasive power (e.g., Hovland, Janis, & Kelley, 1953; Jones, Sinclair, & Courneya, 2003; Kiousis, 2001). Based on the research trends in source credibility and expertise, this study proposes the concept of source credibility based on the model of Petty and Cacioppo's (1986) elaboration likelihood model (ELM). The ELM has two basic notions. First, when people are exposed to a certain kind of persuasive message, they might start to think about the message's logic and reasoning (central cue). Or the audience may be influenced by a peripheral cue, such as mood or feeling (Petty & Cacioppo, 1984). Adopting this logic, many factors have been scrutinized, including personal involvement, argument repetition, and characteristics of source (Jones, et al., 2003). Hovland and colleagues conducted a systemic study (Hovland et al., 1953) which

determined that source credibility represents the effects of the different characteristics of the communicator on the processing of a message (Kiousis, 2001). Desirable source credibility has been investigated in various contexts such as political communication (Iyengar & Valentino, 2000) and effective advertisement (Gotlieb, & Sarel, 1991; Yoon, Kim, & Kim, 1998). For example, Iyengar and Valentino (2000) revealed that it is important to use high source credibility by matching the candidate's claim with his or her political party in making an effective political advertisement. Gotlieb and Sarel (1991) considered the source credibility concept in terms of advertisement design and also confirmed that overall source credibility leads to more favorable attitudes toward the advertisement. In addition, this relatively high impact of source credibility on the persuasion message is even confirmed by cross-cultural comparison between samples from the United States and those from Korea. Source credibility consisted primarily of two key features: source expertise and attractiveness. The concept of message source credibility mainly from the source expertise was reconfirmed in the WOM context (Bansal & Voyer, 2000; Wangenheim & Bayon, 2004). For example, Bansal and Voyer (2000) revealed that the WOM sender's expertise positively affected service purchasing decisions. Wangenheim and Bayon (2004) also confirmed the effects of higher credible sources on service switching. Likewise, it is expected that perceived source credibility affects individuals' perception toward Twitter's product information, as people consider highly credible sources on Twitter to be opinion leaders (Jacoby & Hoyer, 1981), and they perceive superior source credibility as an indication of product quality (Gilly et al., 1998). As a result, we expected that:

H8. The perceived source credibility of Twitter friends who tweet about a brand product will be positively related to one's (a) attitude toward the brand and (b) eWOM spreading intention.

Product Related Characteristics

Hedonic and utilitarian product category

Traditional WOM researchers mainly focused on tangible (Arndt, 1967; Sheth, 1971) and relatively new products (Whyte, 1954).

Overtime, researchers have expanded their scope of investigating a WOM to intangible products such as services. WOM is particularly important in the service industry since intangibility leads to difficulty in prepurchase trials (Berry, 1980; Zeithaml, 1981; Zeithaml, Berry, & Parasuraman, 1993; Zeithaml, Parasuraman, & Berry, 1985). Also, due to high levels of complexity and perceived risk (Berry, 1980; Zeithaml et al., 1981; Zeithaml et al., 1985), WOM information is considered credible among consumers since it is independent from organizations (Silverman, 2001; Sweeney, Soutar, & Mazzarol, 2008).

A recent survey from Nielsen (2011) indicated that electronics and computer equipment are the products most highly influenced by eWOM (29%), followed by beauty care and clothes (27%), financial products services (27%), telecommunication services (25%), and travel and entertainment (22%). Also, WOM is particularly powerful in experience goods (Godes & Mayzlin, 2004; Granovetter, 1973) such as telecommunication services.

Empirical research has shown that the WOM effect is prominent in the service context because of its intangible and experiential nature (De Matos & Rossi, 2008;

Murray, 1991; Zeithaml et al., 1993). In summary, product categories can vary in their level of influence in WOM and eWOM, including intangible services like movies (Basuroy et al., 2003) and tangible products like computers (e.g., Herr et al., 1991; Laczniak, DeCarlo, & Ramaswami, 2001; Lee, Rogers, & Kim, 2009), automobiles (Mizerski, 1982; Ratchford, Lee, & Talukdar, 2003), and mobile phones (Xingyuan, Li, & Wei, 2010).

Research has suggested that consumer-purchasing motivations have mainly focused on two different motivations: utilitarian and hedonic (Babin & Darden, 1995; Babin, Darden, & Griffin, 1994; Cha, 2009a). The definitions of utilitarian and hedonic motives differ between researchers. For example, Batra and Ahtola (1990) defined utilitarian aspect as non-emotional outcome, task-oriented, and cognitive, whereas the hedonic has aspects sensory attribute, fantasy, and emotive feeling. Empirically, utilitarian motivations are typically measured by asking, “How useful or beneficial the object is,” whereas hedonic motivations are assessed by “how pleasant and agreeable those associated feelings are” (Barta & Ahtola, 1990, p. 161). Psychologically, these two consumer motivations (utilitarian and hedonic) are neither mutually exclusive nor equally salient. Some brands or product categories generally consider utilitarian motivation to be more salient than hedonic motivation (e.g., selecting toothpaste to prevent going to the dentist versus choosing a luxury fashion brand for its appearance). In addition, utilitarian and hedonic considerations affect simultaneously when consumers are purchasing products. For example, when consumers consider purchasing an automobile, they might think about the both gas mileage (utilitarian) and sporty design (hedonic) concurrently (Dhar & Wertenbroch, 2000). This differentiation

between utilitarian and hedonic motivation is frequently mentioned in several examples of marketing literature focusing on different motivations for purchasing behavior, i.e., the two different dimensions of utilitarian (product-oriented) and hedonic (experience-oriented) aspects (Babin et al., 1994; Hirschman & Holbrook, 1982; Holbrook & Hirschman, 1982).

Drawing upon the concepts of utilitarian and hedonic motivations, different effects of fostering attitudes toward products have been investigated by various disciplines such as marketing, sociology, psychology, economics (Barta, & Ahtola, 1990; Chitturi, Raghunathan, & Mahajan, 2007; Dhar & Wertenbroch, 2000; Okada, 2005), and communication research (Cha, 2009a).

It is obvious that matching products' attributes and their dimensions of utilitarian and hedonic motivation is utilized when marketers design the marketing strategy. For example, Cha (2009a) revealed that shopping for real goods on social networking networks is more dependent on the utilitarian value, whereas shopping for virtual items is more relevant for hedonic motivations. Similarity, in terms of brand evaluation and the spread of eWOM on Twitter, product category might also play a role. Generally, online consumers tend to seek utilitarian values rather than hedonic values, as the online shopping environment lacks multisensory attributes for hedonic dimensions (Reibstein, 2002). However, online information-seeking behavior or the spread of eWOM would be different from the actual purchasing behavior of consumers, as the recent survey by Nielson (2011) indicates that consumer eWOM activities are associated with both utilitarian (e.g., electronics and computer equipment) and hedonic (e.g., entertainment, travel service) dimensions. Considering the mixed results from online purchasing

literatures and eWOM research, this study investigates the differences and similarities among factors that affect the evaluation of brands and eWOM spreading intention in the Twitter context. Previous literature from both the industry and academic perspectives have dealt with different product categories. For example, Cha (2009a) used the product categories of books, tickets, DVDs, clothing and accessories, computers and accessories, and video games. Allsop et al. (2007) selected restaurants, computers, movies, vehicles, nutrition and healthy eating, health care providers, financial products/services, and vacations; Graham and Havlena (2007) studied the product categories of auto, retail, soft drinks, technology, and travel. From the industry viewpoint, Neilson (2011) revealed a ranking of the most frequently discussed product categories in the online environment: electronics and computer equipment (29%), beauty care and clothing (27%), finance products/services (27%), telecommunication services (25%), and travel and entertainment (22%). ComScore (2007) reported the percentage of review viewers who subsequently made a service purchase: restaurant (41%), hotels (40%), travel (27%), automotive (24%), home (19%), medical (14%), and legal (8%). The influence of an online review on the purchase decision also varied by product type: restaurant (79%), hotels, (87%), travel (84%), automotive (78%), home (73%), medical (76%), and legal (79%). Therefore, it is unclear which product category would be most frequently discussed on Twitter and the varying effects of product category may have on consumer brand obtaining behavior.

RQ2. How does the product category of a tweeted brand influence one's (a) attitude toward the brand and (b) eWOM spreading intention?

Perceived fit

In most marketing literature, consumer evaluation of brands is moderated by perceived fit or similarity between extension and parent brand (e.g., Aaker & Keller, 1990; Bhat & Reddy, 2001; Park, Jaworsk, & Macinnis; 1986). Previous literature consistently shows that the better the fit between the extended product and the parent brand, the more positive evaluations will be toward the brand extensions. The categorization and schema theory (Aaker & Keller, 1990; Bhat & Reddy, 2001; Boush & Loken, 1991) justifies this logic: When consumers sense a close relationship between the original brand and the extended brand, they might associate both with their preexisting perceptions, thoughts, and categories. Therefore, the greater the perceived fit between the original brand and extended brand, the more favorable the evaluation toward the brand extension will be. Similarly, when the company launched the new products or services, individual evaluation of perceived fit was similar to that of the parent brand (Boush et al., 1987; Papadimitriou, Apostolopoulou, & Loukas, 2004).

Drawing on this important role of perceived fit in the context of SNSs, Cha (2007, 2009a) indicated that developing shopping services in the SNSs could be considered a category extension. Therefore, Cha (2007, 2009a) revealed that the customers' perception of the fit between SNSs and individual items (virtual items vs. real items) on the shopping services of SNSs influenced their attitude toward the shopping services in the SNSs. Likewise, as Twitter is a microblogging service, when individuals are exposed to the product or service information on Twitter, if the fit between Twitter and the items are high, they might have a more favorable attitude toward the product or service. This process can be explained by the reasoning that introducing product information on Twitter can be considered a category extension as described in most marketing

literature (Cha, 2009a). Therefore, consumers' perception of the fit between Twitter and the individual items introduced would affect the attitude toward the brands and their eWOM spreading intention. Applying this logic, the following hypothesis is proposed for both the utilitarian and hedonic product category:

H9. Perceived fit between Twitter and utilitarian product category information is positively associated with one's (a) attitude toward the brand and (b) eWOM spreading intention on Twitter

H10. Perceived fit between Twitter and hedonic product category information is positively associated with one's (a) attitude toward the brand and (b) eWOM spreading intention on Twitter

Attitude Toward the Brand, eWOM Intention and Purchase Intention

Adopting the argument that there are possible differences between the attitude and actual behavior of individuals (Ajzen & Fishbein, 2005), this study measured multiple dimensions of participants' attitude and intention. Specifically, attitude toward the brand, eWOM intention and purchase intention were evaluated.

Although established relationships between attitudes toward advertising and attitudes toward the brand and purchase intention have been well documented in prior literature including marketing, advertising contexts (e.g., Brown & Stayman, 1992; MacKenzie & Lutz, 1989) and Internet advertising (e.g., Cho & Leckenby, 1999; Cho & Cheon, 2004; Ko et al., 2005).

Previous studies have consistently found positive relationships between attitudes and behavioral intention in particular for purchase intention. This study also expects that these relationships occur within attitude toward brand, eWOM intention and purchase intention.

Thus, the following hypotheses are proposed:

H11. Attitude toward the brand is positively associated with one's eWOM spreading intention

H12. Attitude toward the brand is positively associated with one's purchase intention

H13. eWOM intention is positively associated with one's purchase intention

Consumer Related Characteristics

The relationship between consumer characteristics and usage of Twitter as a tool for eWOM was also investigated. Specifically, three sets of research questions were proposed in terms of age, education level and gender:

RQ3. How does age influence one's (a) attitude toward the brand, (b) eWOM spreading intention and (c) purchase intention?

RQ4. How does educational level influence one's (a) attitude toward the brand, (b) eWOM spreading intention and (c) purchase intention?

RQ5. How does gender influence one's (a) attitude toward the brand, (b) eWOM spreading intention and (c) purchase intention?

Figure 3-1, Figure 3-2, Figure 3-3, and Figure 3-4 describe the proposed model to predict the intention to use Twitter and eWOM motivations and Table 3-1 summarized the hypotheses and research questions in this study.

Table 3-1. Summary of Twitter adoption related hypotheses and research questions

Dimension	Independent Variable	Hypothesis
Twitter Adoption	Subjective Norm	H1a. Conformity to subjective norm will be positively associated with one's attitude toward Twitter.
		H1b. Conformity to subjective norm will be positively associated with one's Twitter usage.
	Perceived Usefulness	H2a. Perceived usefulness of Twitter will be positively associated with one's attitude toward Twitter.
		H2b. Perceived usefulness of Twitter will be positively associated with one's Twitter usage.
	Perceived Ease of Use	H3a. Perceived ease of use will be positively associated with one's attitude toward Twitter.
		H3b. Perceived ease of use will be positively associated with one's Twitter usage.
	Age	H4a. Age is negatively associated with one's attitude toward Twitter
		H4b. Age is negatively associated with one's Twitter usage
	Education Level	H5a. Education level is positively associated with one's attitude toward Twitter
		H5b. Education level is positively associated with his/her Twitter usage
	Gender	RQ1a. How does gender influence one's attitude toward Twitter?
		RQ1b. How does gender influence one's Twitter usage?
	Attitude toward Twitter	H6. Attitude toward Twitter is positively associated with one's Twitter usage

Table 3-2. Summary of eWOM perspective related hypotheses and research questions

Dimension	Independent Variable	Hypothesis
Twitter as a marketing Tool	Perceived Similarity	H7a. The perceived similarity between a Twitter user and one's Twitter friends who tweet about a branded product will be positively related to one's attitude toward the brand.
		H7b. The perceived similarity between a Twitter user and one's Twitter friends who tweet about a branded product will be positively related to one's eWOM spreading intention.
	Source Expertise	H8a. The perceived source credibility of Twitter friends who tweet about a branded product will be positively related to one's attitude toward the brand.
		H8b. The perceived source credibility of Twitter friends who tweet about a branded product will positively related to one's eWOM spreading intention.
	Product Category	RQ2a**.** How does the product category of a tweeted brand influence one's attitude toward the brand?
		RQ2b**.** How does the product category of a tweeted brand influence one's eWOM spreading intention?
	Perceived fit	H9a. Perceived fit between Twitter and hedonic product category information is positively associated with one's attitude toward the brand.
		H9b. Perceived fit between Twitter and hedonic product category information is positively associated with one's eWOM spreading intention.
		H10a: Perceived fit between Twitter and utilitarian product category information is positively associated with one's attitude toward the brand
		H10b: Perceived fit between Twitter and hedonic product category information is positively associated with one's eWOM spreading intention

Table 3-2. Continued

Dimension	Independent Variable	Hypothesis
	Attitude toward the brand	H11. Attitude toward the brand is positively associated with one's eWOM spreading intention.
		H12. Attitude toward the brand is positively associated with one's purchase intention.
	eWOM intention	H13. eWOM intention is positively associated with one's purchase intention
	Age	RQ3a. How does age influence one's attitude toward the brand?
		RQ3b. How does age influence one's eWOM spreading intention?
		RQ3c. How does age influence one's purchasing intention?
	Educational level	RQ4a. How does educational level influence one's attitude toward the brand?
		RQ4b. How does educational level influences one's eWOM spreading intention?
		RQ4c. How does educational level influence one's purchasing intention?
	Gender	RQ5a. How does gender influence one's attitude toward the brand?
		RQ5b. How does gender influence one's eWOM spreading intention?
		RQ5c. How does gender influence one's purchasing intention?

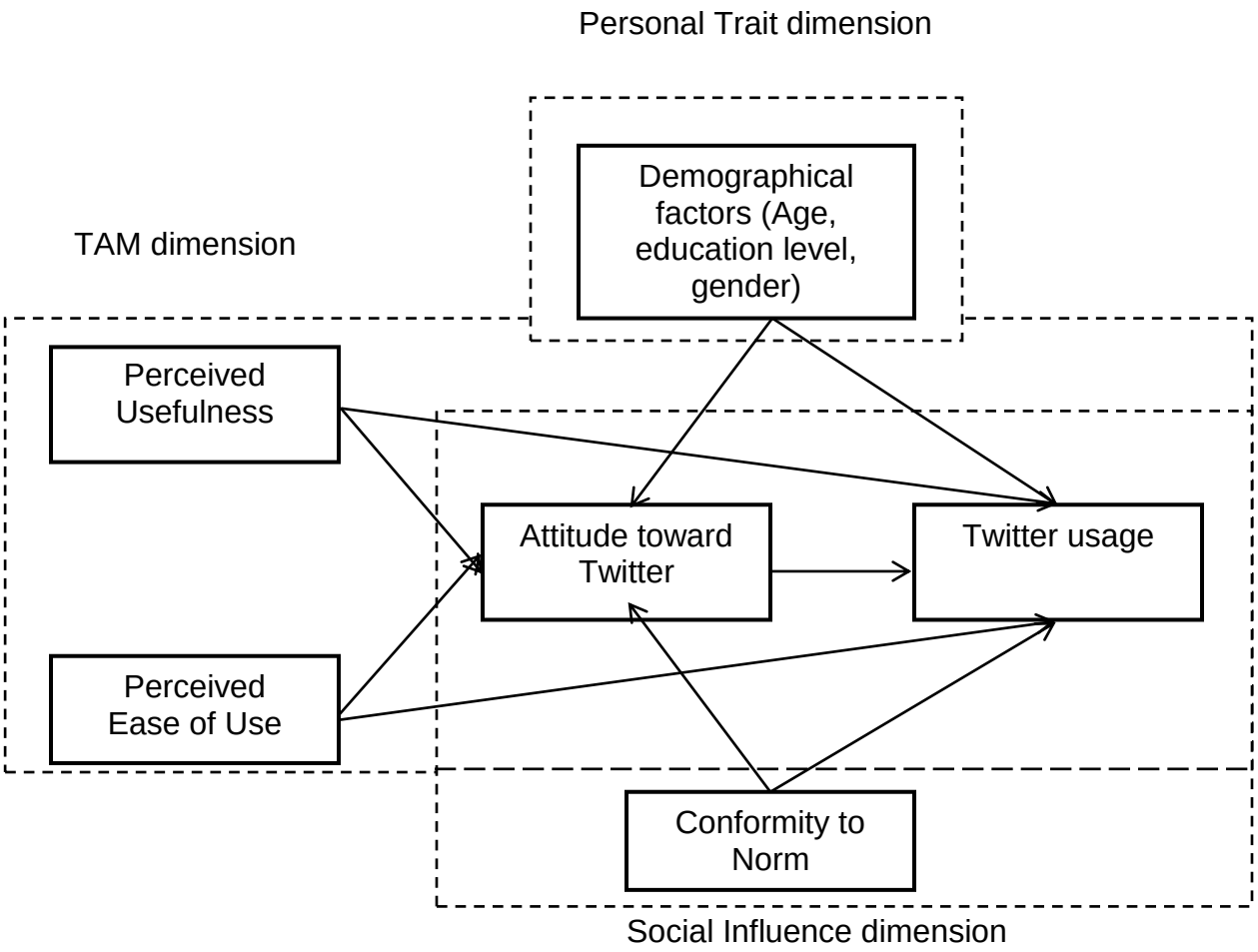


Figure 3-1. Proposed conceptual research model for Twitter adoption in this study.

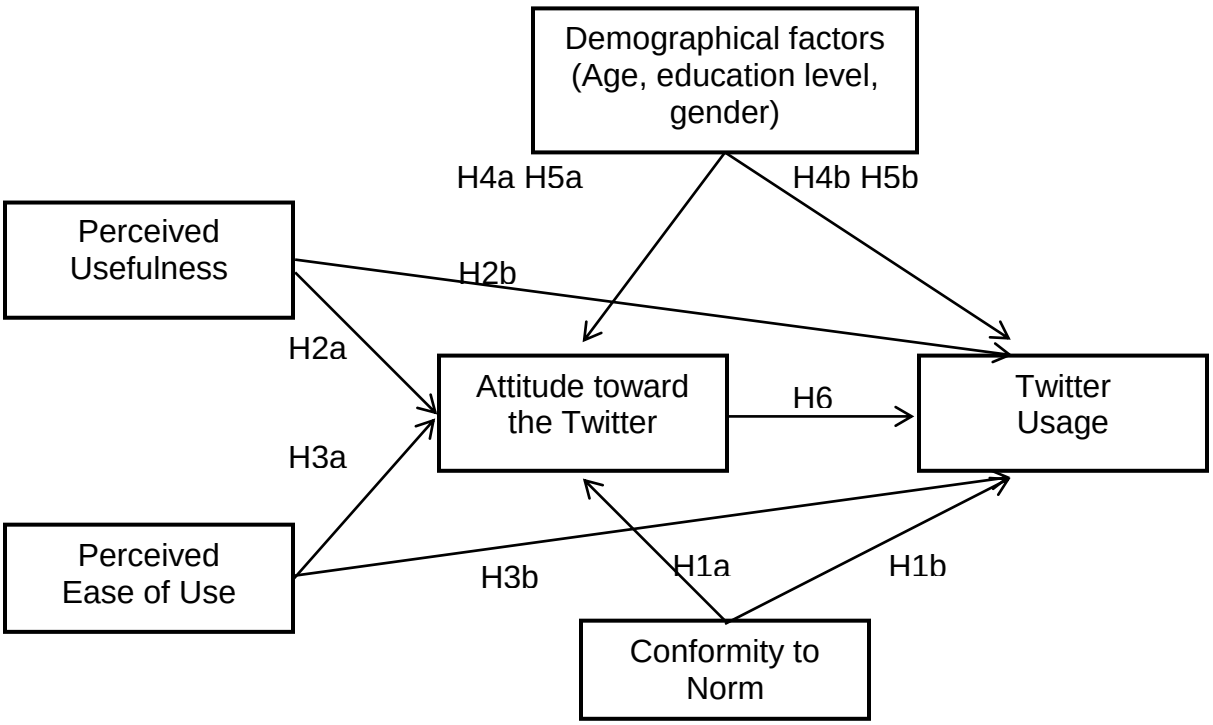


Figure 3-2. Proposed model for Twitter adoption.

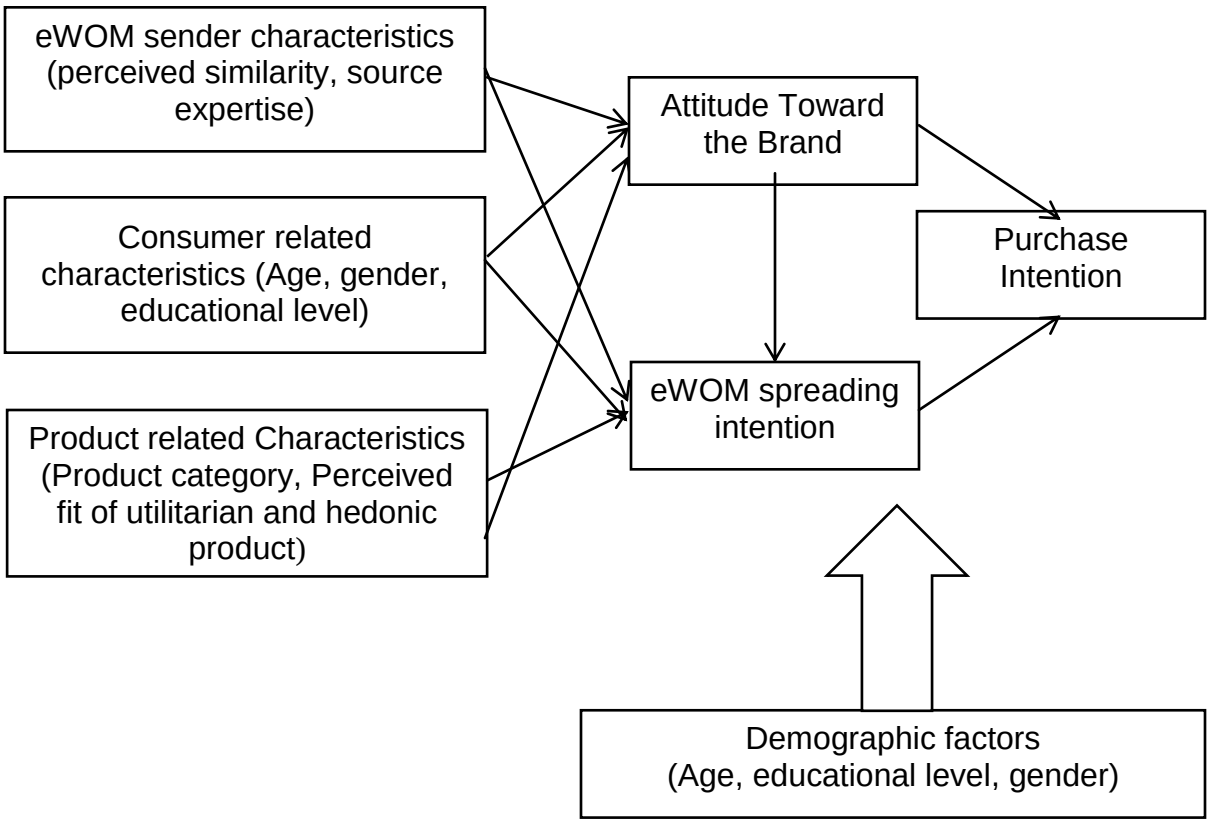


Figure 3-3. Proposed conceptual model for the Twitter in eWOM perspective.

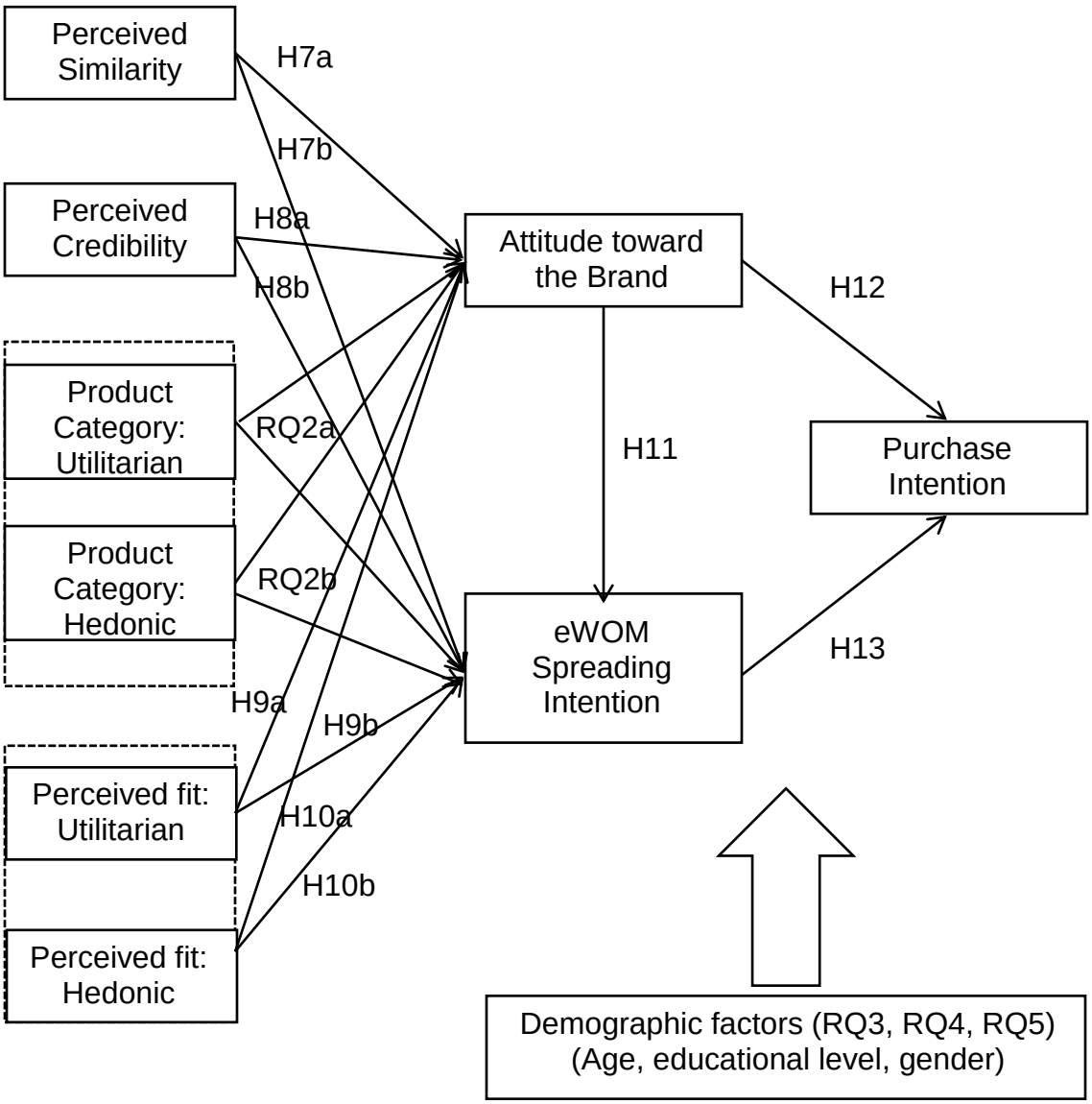


Figure 3-4. Proposed model for the Twitter in eWOM perspective.

CHAPTER 4
METHOD

Measurement

This study adopted several types of variables from traditional media adoption studies based on the social influence perspective and eWOM literatures: For the first model, the attitude toward Twitter and actual Twitter usage (dependent variable), conformity to norm, perceived usefulness, and perceived ease of use were measured. For the second eWOM research model, the attitude toward the brand and eWOM spreading intention (dependent variable), perceived similarity, perceived source expertise, product category, and perceived fit were measured. Also, consumer-related variables such as age, gender, income, and educational level are included in the study.

Pretest

A pretest of 30 undergraduate students was carried out before the main test. The purpose of the pretest was to confirm the validity and reliability of the measurements. Another purpose of the pretest was to ensure the wording and flow of the survey questionnaire to prevent potential confusion and misunderstanding before the main test. The questionnaire was created based primarily on three well-developed theoretical frameworks: TRA, TPB, and TAM.

Participants and Procedure

A total of 30 undergraduate students from a large southeastern university participated in the in-class survey for extra course credit. The ages of the participants for the pretest were 19 to 36 years. The mean age was 21.42 (*SD* = 2.99). The majority of participants were females (79.3%, n =24), and 20.7% of subjects were males

(n = 6); in addition, 79.3% of participants were Caucasian (n = 23), 10.3% were Hispanic (n = 3), and 10.3% were Asian (n = 3).

All of the constructs in the questionnaire except demographic questions were assessed using multiple items with a 7-point Likert scale. The constructs included multiple indicators, such as (1) conformity to norm, (2) perceived usefulness, (3) perceived ease of use, (4) attitude toward Twitter, (5) perceived similarity, (6) perceived credibility, (7) product category, (8) perceived fit, and (9) Retweet intention. Table 4-1 provides a descriptive summary of questionnaire items.

Reliability Tests

To ensure the reliability of coefficients of measurement, Cronbach's alpha was used to estimate reliability in particular, for internal consistency that represents inter-correlations among items. This study adopted the following criteria that are most commonly used: Cronbach's alpha around .90 was considered "excellent"; around .80 was considered "very good"; and values near .70 were considered "adequate" (Cha, 2009b; Chang 2005; Hair, Anderson, Tatham, & Black, 1998; Kline, 2005). The criterion for exploratory research in the acceptance value of Cronbach's alpha's reliability test was .60 (Cha, 2009b; Hair et al., 1998). The results of the pretest indicated that all measurements used in the pretest among undergraduate students were above the acceptable Cronbach's alpha value, that is, between .75 and .99 (Hair et al., 1998; Kline, 2005). Table 4-2 displays the results of the reliability check for the pretest.

Regression Analysis for Twitter Adoption

Based on the above reliability test results, this study averaged the items for each of constructs, such as (1) conformity to norm, (2) perceived usefulness, (3) perceived ease of use, (4) attitude toward Twitter, (5) perceived similarity, (6) perceived credibility,

(7) product category, and (8) perceived fit. Before conducting a regression analysis, a Pearson correlation matrix was examined. Table 4-3 shows the correlation matrix among variables.

A regression analysis was then employed for the pretesting of 30 participants. More specifically, there was a high correlation between perceived usefulness and perceived ease of use ($r = .75$, $p < .01$) and attitude toward Twitter ($r = .78$, $p < .01$). In addition, perceived ease of use was found to correlate with perceived usefulness ($r = .78$, $p < .01$) and attitude toward Twitter ($r = .88$, $p < .01$). In addition, considering other variables, there were no extremely high correlations among variables that would have made it possible to conduct a regression analysis (Chang, 2005).

Another important role for the regression analysis of the pretest was to determine the variable for Twitter usage. Individuals' Twitter usage was measured in two different ways: days per week and hours per day. Although the two items were correlated ($r = .75$, $p < .01$) and measured the related theoretical concept of Twitter usage, this study used both days per week and hours per day for measuring participants' actual Twitter usage for mainly two reasons. First, most industrial reports used both constructs (Nielson, 2011; Webster, 2010, 2011). Second, the mean scores and standard deviations for daily measurement ($M = 3.90$, $SD = 2.94$) and hours per day ($M = 2.59$, $SD = 1.48$) were different.

Therefore, three regression analyses were conducted, which considered attitude toward Twitter and each Twitter usage variable (daily, hourly) using the dependent variables. First, the regression model for Twitter attitude was significant, with $F(3, 25) = 42.93$, $p < .01$, and explained 84% of the variance ($R^2 = .84$). All three predictor

variables, conformity to subjective norm (β = .20, $p < .05$), perceived usefulness (β = .30, $p < .05$), and perceived ease of use (β = 59, $p < .001$)--were significant predictors of attitude toward Twitter. By using weekly usage as a dependent variable, the regression model was also significant, with F (3, 25) = 10.90, $p < .01$, and explained 57% of the variance (R^2 = .57). Only perceived ease of use was a significant predictor (β = .55, $p < .05$).

However, in terms of hourly-based Twitter usage, none of the predictors were significant. Table 4-4 shows the results of two regression analyses, with attitude toward Twitter and Twitter usage (both day-based and hour-based) as dependent variables.

Therefore, all of the measurements that were used in the pretest were also used in the main test since all measurements were reliable.

Descriptive Statistics of the eWOM Product Category and Perceived Fit

Another important purpose of the pretest was to differentiate dimensions of the product category. In order to describe the discrete theoretical dimensions of the product category and perceived fit, it is necessary to report descriptive statistics regarding the product categories most frequently discussed on Twitter in terms of brand information and their perceived fit between Twitter and brand information obtaining activity. In terms of product category, participants obtained movie information most frequently (M = 4.56, SD = 1.80), followed by clothing information (M = 4.45, SD = 1.97), travel information (M = 4.41, SD = 1.72), and restaurant information (M = 4.41, SD = 1.80). However, the respondents to the pretest rarely obtained health care service information (M = 2.48, SD = 1.24) or computer information (M = 2.76, SD = 1.62). Considering respondents' perceived fit between Twitter and information obtaining tools, they felt Twitter was most appropriate for obtaining movie information (M = 4.79, SD = 1.52), followed by

restaurant information (*M* = 4.41, *SD* = 1.66). For obtaining computer equipment information (*M* = 3.07; *SD* = 1.39) and health care provider information, Twitter was seen as less useful (*M* = 3.00, *SD* = 1.24). Detailed descriptive statistics can be found in Table 4-5 and Table 4-6.

Principal Component Analysis of Product Category and Perceived Fit

Traditionally, the product category could be separated into several criteria within marketing and communication research, such as tangible vs. intangible product differentiation (e.g., Arndt, 1967; Sheth, 1971; Zeithaml et al., 1993) and utilitarian vs. hedonic product (e.g., Babin & Darden, 1995; Babin et al., 1994; Cha, 2009a). Drawing upon this theoretical differentiation, a principal component analysis with Direct Oblimin rotation was conducted to verify whether individuals' eWOM behavior would differ by product category. Principal component analysis was employed, since this method is appropriate for capturing as much information as possible using only a few components (Park, Dailey, & Lemus, 2002). Direct Oblimin rotation was selected, as there was significant correlation among many of the items for each product category and perceived fit constructs (Fabrigar, Wenger, MacCallum, & Strahan, 1999) (Table 4-7 and Table 4-8).

However, the results of the principal component analysis did not correspond with previous product category differentiation. As Table 4-9 and Table 4-10 summarizes, the principal component analysis yielded two factors in terms of product category (factor 1: travel service, movie, electronics, telecommunication service, restaurant, and clothing; factor 2: computer, automobile, financial service/product, and health care providers). Regarding perceived fit, two factors were obtained; however, the constructs were different (factor 1: financial service/product, health care providers, automobile,

restaurant, clothing, and computer; factor 2: movie, electronics, travel, and telecommunication service). This means that, in terms of item composition, questionnaire respondents did not differentiate between tangible vs. intangible or utilitarian vs. hedonic product dimensions. In particular, factor loading of health care providers in terms of product category (.49 vs. .52) was not severe. The financial service/product and health care provider items were loaded together with automobile and computer in both product category and perceived fit dimensions. These results might have been caused by the wording of "financial service/product," which may have mislead the participants' perception, even if previous literature used that term in industrial reports (Nielson, 2011; Webster, 2010, 2011). Therefore, for the main test, the word *product* was eliminated. Following the same logic, the wording of "health care providers" was also changed to "health care service" and used in the main test, which employed real consumers as participants.

Main Test

The objectives of this research are to identify consumer motivation for the adoption of Twitter and to investigate the possible direction for Twitter as an effective marketing tool. To achieve these goals, a survey method was adopted for data collection, as surveys were appropriate for investigating research questions in the context of realistic settings and allows for generalizability of the research findings (Wimmer & Dominick, 2006). Traditionally, survey research was conducted via mail, telephone, and the Internet.

Among these three survey methods, the telephone survey was excluded, as this study employs many questions. The telephone survey is considered appropriate only for short questionnaires (Babbie, 2001; Wimmer & Dominick, 2006). The mail survey was

excluded as a data-collecting method, as it generally has a low response rate (Wimmer & Dominick, 2006). Therefore, this research will be conducted via the Internet for two reasons: (1) efficiency in data-collecting procedures and (2) online connection requirement for Twitter usage. The online survey is more effective than mail or telephone surveys because it requires less time to develop, implement, and process (Wimmer & Dominick, 2006); therefore, the cost of conducting this research is relatively inexpensive. Also, the recruiting process is simple and convenient, because participants receive questionnaires through email or a Web site (Spizziri, 2000; Wimmer & Dominick, 2006). In addition, it is logical to use an online survey to investigate Twitter-related issues, as an Internet connection is necessary for both online surveys and Twitter usage. Therefore, this study was conducted by online survey using an email invitation that includes the link to a Web-based survey screen.

Note that the order of sets of questions were randomly mixed into the set of question through the Qualtrics survey program to minimize potential bias.

Instrument Development

Measures

Table 4-11 and Table 4-12 summarize the constructs included and their operational definitions. All the measurements used in this study were conceptualized based on established theoretical frameworks both from new media adoption and eWOM literature. Particularly, this study used multiple items for each of the constructs except qualifying question to minimize measurement error. Also, the wording of this question was tested through the pretest.

Prior Experience of Obtaining Information from Twitter

To recruit actual and active users that have obtained brand information via Twitter, one qualifying question was used to assess whether the respondents have obtained brand information in Twitter using “yes” or “no” categorical answer. The statement was: “Have you ever get brand information from your Twitter friends? (Both from individual and company account).”

Frequency of Obtaining Brand Information from Twitter

To measure the frequency of brand information obtaining behavior via Twitter the respondents were asked how often they get brand information using a seven-point Likert scale anchored by 1 = “very rarely,” to 7 = “all the time.” The scale was used previously in social media related studies (Cha, 2009a, 2010).

Actual Twitter Usage

Twitter usage status was measured by three different constructs. Once the qualifying question isolated the participants who have experience obtaining brand information in Twitter, they were asked to answer how frequently they use Twitter each weak (1 = one day to 7 = seven days).

Additional questions were also used for measuring participants’ consumption of Twitter in hours per day. Previous literature measured new media usage such as the Internet (LaRose et al., 2006), Facebook (Ellison et al., 2007; Tong et al., 2008), and SNSs (Cha, 2010) have used two different methods in message usage measuring. One is asking directly how many hours consumer usually used the media with open-ended question (LaRose, Lai, Lang, & Wu, 2005; Tong et al., 2008). Another method is using a seven-point Likert scale (Cha, 2010; Ellison et al., 2007). This study used the measure of “less than 10 minutes,” “10 to 30 minutes,” “30 minutes to 1 hour,” “1 to 2 hours,” “2-3

hours," 3 to 4 hours," and "more than 4 hours a day" rather than open ended questions since it is particularly designed to measure an individual's perception of the extend to which SNSs was integrated into his/her daily activities (Ellison et al., 2007). Also this type of measure has been adopted by several social media usage literatures both from industry reports (Webster, 2010; 2011; Radwanick, 2011; Nielson, 2011) and academic papers (Ellison et al, 2007; Cha, 2010).

Finally, to assess the usage pattern in the context of brand information a statement, "How often do you get information about a brand from your Twitter friends?" was created using a seven-point Likert scale.

Conformity to Subjective Norm

Conformity to subjective norm is defined as the level of overall tendency to the person's perception that most people who are important to him think one should or should not perform the behavior in question. (Lee, 2003; Lee et al., 2003; Mathieson, 1991). The variable of "conformity to subjective norm" was measured here with three seven-point Likert scales (1 = strongly disagree, 7 = strongly agree) adopted from Lee (2003) and Lee et al. (2003) with modification for the Twitter context. The wordings of questionnaire were: (1) "Generally speaking, I would do what my group members think I should do," (2) "Generally speaking, I would do what my Twitter friends think I should do in the Twitter environment," and (3) "Generally speaking, I would do what others think I should do in the online environment." (Cronbach's α = .95).

TAM Related Measures

TAM related measures were consisted of two dimensions: perceived usefulness and perceived ease of use. This construct has been tested in various contexts from to traditional TAM studies (e.g., Davis, 1989; Davis et al., 1989) and internet-based

technology adoption such as internet-based course management system (Park et al., 2007), distance learning program (Lee, 2003; Lee et al., 2003), instant messaging (Lin et al., 2009) to VoIP adoptions (Park, 2010). The scales' validating and reliability have been reconfirmed in a variety of different languages such as German (Baaren et al., 2011) or geographic region including South Korea (Kwon & Chon, 2009).

This study adopted the original version of TAM (Davis, 1989) rather than Venkatesh et al' (2003) expanded version of Unified Theory of Acceptance and Use of Technology (UTAUT) for two reasons: higher reliability of scales and more precise operational definition of constructs followed the suggestion of Putzke, Schoder, & Fishbach (2010).

Perceived usefulness

Respondents' perception of Twitter usefulness is one of the most important dimensions in the adoption study. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance." (Davis, 1989, p. 320). Six-items were adopted from previous studies to measure perceived usefulness of Twitter (Davis, 1989; Cha, 2009a, 2009b). Participants were asked to express their feeling of agreement for each statement in seven-point Likert scales (1 = strongly disagree to 7 = strongly agree) with revision to Twitter environment. The statements were: (1) "I find Twitter useful in my life," (2) "Use of Twitter improves my performance," (3) "Use of Twitter makes it easier to obtain product information," (4) "Use of Twitter to obtain product information increases my productivity," (5) "Use of Twitter enables me to accomplish tasks more quickly," (6) "Use of Twitter enhances the effectiveness in product information search," Together, these six items formed a highly reliable scale, Cronbach's $\alpha = .94$.

Perceived ease of use

Perceived ease of use had been defined as “the degree to which a person believes that using a particular system would be free of effort (Davis, 1989, p. 320).” Subjects’ perceptions toward Twitter in terms of ease of use were assessed via a six, seven-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree) with changing some wording. The wording of questions were: (1) “Tweet, Mention and Retweet on Twitter is easy,” (2) “Learning to use Twitter is easy for me,” (3) “It is easy to get information on Twitter,” (4) “I find Twitter to be flexible to interact with,” (5) “It is easy for me to become skillful at using Twitter,” and (6) “I find Twitter easy to use,” (Cronbach’s α = .94).

Attitude Toward Twitter

Respondents’ attitude toward Twitter were measured by Chen and Wells (1999), Prendergast and colleague’s (2010) five-items, seven-point Likert sclae (1 = strongly agree, 7 = strongly disagree). The statements were: (1) “Twitter makes it easy for me to build a relationship with the online community,” (2) “I would like to communicate with my Twitter friends again in the future,” (3) “I’m satisfied with the services provided by Twitter,” (4) “I feel comfortable in using Twitter,” and (5) “I feel surfing on Twitter is a good way for me to spend my time.” The attitude measures of Twitter were highly reliable (Cronbach’s α = .90).

Perceived Source Similarity

Perceived source similarity refers to the degree of similarity with others that each individual has in terms of specific shared characteristics (Rogers, 1995), or homophily of certain attributes (Brown & Reingen, 1987). To measure the general perception of Twitter user’s attitude toward their Twitter friends in terms of similarity, six-item, seven-

point Likert scales ranging from 1 = strongly disagree, to 7 = strongly agree borrowed from previous literature (Gilly et al., 1998; Prendergast et al., 2010; Wangenheim & Byon, 2004, 2007) was used with slight modifications. The statements were: (1) “In terms of outlook on life, my Twitter friends are similar to me,” (2) “In terms of likes and dislikes, my Twitter friends are similar to me,” (3) “In terms of values and experiences, my Twitter friends are similar to me,” (4) “In terms of tastes for products, my Twitter friends are similar to me,” (5) “In terms of preferences and value, my Twitter friends are similar to me,” and (6) “Overall, my Twitter friends are similar to me.” (Cronbach’s α = .93).

Perceived Source Credibility

Source credibility was consisted of two dimensions: trustworthiness and expertise (Kiousis, 2001). They are defined as trustworthiness of source (Petty & Cacioppo, 1986) and “ability to perform product-related tasks successfully (Feick & Higie, 1992, p.12).” To measure perceived source credibility, six-item, seven-point Likert scales anchored by “1 = strongly disagree” to “7 = strongly agree” from previous relevant studies (Prendergast et al., 2000; Wangenheim & Bayon, 2004) were used. Specifically, the following questions were included in the questionnaire (1) “I feel the tweeted product information given by my Twitter friends is strong,” (2) “I feel the tweeted brand information given by my Twitter friends is convincing,” (3) “I feel the tweeted brand information given by my Twitter friends is persuasive,” (4) “I feel the tweeted brand information given by my Twitter friends is powerful.” In addition, four items were created to measure the knowledge and expertise specifically for each product categories (hedonic: restaurant service, utilitarian: computer equipment). The statements of items were: (5) “My Twitter friends have knowledge about computer equipment in general,” (6)

“My Twitter friend is an expert in the area of computer equipment,” (7) “My Twitter friends have knowledge about restaurants in general,” and (8) “My Twitter friend is an expert in the area of restaurants.” Combining four items adopted by previous literature and four created measurements, these eight items formed a highly reliable scale, Cronbach’s α = .93.

Product Category

To verify the appropriate product categories for spreading brand information from the marketer perspective, a total of 10 product categories were tested (computer equipment, clothes, finance services, restaurants, telecommunication services, movies, healthcare services, electronics) based on relevant industry reports from industry (Nielson, 2011; Webster, 2010, 2011). Specifically, we assessed respondents’ self-reported frequency for obtaining brand related information in each product category. The statement used was: “I often try to obtain product information about product category,” using a seven-point Likert scale with 1 being “strongly disagree” and 7 being “strongly agree.” The measurements’ wordings and validity were also tested through the pretest. (Cronbach’s α = .93).

Perceived Fit

Perceived fit was measured through various scales used within marketing literature, particularly in brand extension evaluation (e.g., Aaker & Keller, 1990; Martinez & Pina, 2010; Voss, Spangengerg, & Grohmann, 2003). Most of traditional perceived fit measurements were bipolar scales (e.g., Voss et al., 2003). For example, Voss and colleagues (2003) measured consumers’ evaluation of brand extension via seven-point bipolar items with being 1 being “not at all logical” to 7 being logical”. The original work from Aaker and Keller (1990) also employed bipolar scale anchored by “very

inappropriate" to "very appropriate." Recent studies in examining SNSs for marketing purposes, on the other hand used a seven-point Likert scale that directly assessed participants perception of fit between SNSs and shopping behavior of virtual vs. real item (Cha, 2009a). Using this approach, the current study also directly assessed consumers' perception of perceived fit between Twitter and the usefulness of Twitter for obtaining brand information. Specifically the participants were asked to indicate their agreement of the perceived fit between Twitter and the individual items that they obtained brand information for. The statements were: "Twitter is a good medium to learn about _____." Participants evaluated their attitude through seven-point Likert scale anchored by "strongly disagree" (1) to "strongly agree" (7). (Cronbach's α = .93).

Attitude Toward the Brand

General attitude toward the obtained brand information in Twitter were accessed by four-item, seven-point bipolar adjective scale anchored by "Unfavorable/favorable," "Bad/good," "Dislike/Like," and "Negative/positive" particularly designed for measuring attitude toward the brand (Kim & Chan-Olmsted, 2005) and brand attitude in the online environment (Lee, Kim, & Chan-Olmsted, 2010). The four-item brand attitude measurement was highly reliable (Cronbach's α = .94).

eWOM Spreading Intention

This study used eWOM spreading intention (forwarding brand related information) as a one of the most important dependent variables. Three items constituted the measure, eWOM spreading intention: (1) "If I find interesting product information on Twitter, I want to Retweet it to my friends after reading the tweeted brand information from Twitter friends," (2) "If somebody asks me for advice about an interesting product information, I will encourage him or her to Tweet after reading the tweeted brand

information from Twitter friends," (3) "I would recommend my friends and family to Tweet or Retweet the interesting product related information after reading the tweeted brand information from Twitter friends." Three items were adopted by previous literatures (Okazaki, 2008, 2009). Participants indicated their level of agreement with three statements in seven-point Likert scale anchored by "1 = strongly disagree" to "7 = strongly agree." (Cronbach's α = .92).

Purchase Intention

In addition to Twitter adoption and the eWOM related variables, intention to purchase for the product that the respondents obtained brand information for assessed using four items: (1) "After considering the product information on my Twitter, it is very likely that I will buy the product," (2) "After considering the product information on my Twitter, I will purchase the product next time I need a product," (3) "After considering the product information on my Twitter, I will definitely try the product," and (4) "If my friend called me last night to get the advice in his/her search for a product, I would recommend him/her to buy the product." The measure was based on Prendergast and colleague's (2010) item with a seven-point Likert scale from 1 = "strongly disagree" to 7 = "strongly agree." (Cronbach's α = .91).

Consumer Characteristic Factors

This study suggests three consumer-related variables such as age, educational level and gender (Chan-Olmsted & Chang, 2006; Chan-Olmsted & Jung, 2005; Chang & Chan-Olmsted, 2010). In the current study, age is assumed to be negatively associated with Twitter usage (e.g., Chan-Olmsted & Juang, 2005) since older people are reluctant to adopt new technology and more likely to exhibit negative perceptions

toward new technology (Gilly & Zeithaml, 1985; Pommer, et al, 1980; Cha, 2009b). For other demographic background, participants' ethnicity, occupations were also measured.

Data Collection, and Procedure

To investigate the consumer motivation for using Twitter and its effectiveness as a marketing tool, this study adopted an online survey utilizing a national consumer panel. Consumer panel was selected because the current study focuses on the perception of Twitter adoption and its implication for marketing strategy of real consumer rather than perceptions among students (Washburn, Till, & Priluck, 2004). Recognizing that the advantages (such as ease in recruiting participants and efficiency) and the disadvantages (such as the sampling issue) of conducting research online might be overcome via the popularity of using the Internet, many studies on both marketing context (e.g., Bachmann, Elfrink, & Vazzana, 1996; Ilieva, Baron, & Healey, 2002; Taylor, 2000) and communication research (Andrews, Nonnecke, & Preece, 2003; Yun & Trumbo, 2000) have employed the method of online survey. Also, as access to the Internet is a prerequisite for using microblogging, it is appropriate to conduct online survey through the email.

A total of 458 consumers randomly selected from a national consumer panel maintained a leading research firm in the United States received the invitation e-mail for the survey. The e-mail contained the survey link so subjects could participate in the survey by clicking on the link during the period from June 6 to June 10, 2011. When participants clicked on the survey link, an informed consent form was displayed to obtain their agreement to participate in the research. To ensure that this study employed only the consumers that have experienced obtaining brand information form Twitter, a qualifying question that assessed whether the contacted panelists have used

Twitter for obtaining brand information was used. Specifically, subjects were asked to answer the question of “Have you ever get brand information from your Twitter friends? (Both from individual and company account),” using “yes” or “no” categories. Those who answered “no” were excluded from the study. Among the 453 panel members, 136 subjects have not use Twitter for brand information and were excluded from this study. Nine surveys were also excluded since participants did not completed survey. As a result, a total of 308 questionnaires were used for statistical analysis (69.5%).

Participants

As stated previously, a total of 308 responses were used for statistical analysis. Before testing the hypotheses and research questions, the user profile of the participants in this study was briefly discussed and compared with recent industry surveys in terms of SNSs and Twitter usage pattern (Cha, 2009b).

The majority of the samples were females (75.6%, n = 233) whereas 24.0% of participants were males (n = 74); 28.9% of the participants were in ages between 18 to 24, 45.1% were 25 to 34, 10.1% were 35 to 44, 8.9% were 45 to 55, and 4.2% were 55 or above. Seventy-seven participants answered they were Caucasians (n = 239), 8.8% were Asian (n = 27), 6.8% were Hispanic (n = 21), 4.9% were African American and 1.6% (n = 5) were others. Out of 308 respondents, 16.5% (n = 51) were high school graduate or less, 36.1% (n = 111) and 35.1(n = 108) hold 1-3 year’s college diploma and 4 years college diploma respectively, and 12.0% (n = 37) had completed graduate or professional degree. In terms of annual household income, 17.2% (n = 53) of subjects answered that they earn less than $25,000, 33.2% were between $25,000 to $50,000 (n = 102), 23.7% were ranged from $50,000 to $75,000 (n = 73), 13.3% (n = 41) were $75,000 to $100,000 and 11.4% (n = 35) said they earn more than $100,000.

As for Twitter usage, the respondents stated that they use Twitter on average 5.3 days per week (*SD* = 1.90). When it comes to usage in hours / minute, 9.4% respondents used Twitter for less than 10 minutes per day (n = 29), 27.3% used between ten 10 from 30 minutes (n = 84), 32.1% used 30 minutes to 1 hour (n = 99), 15.9% used 1 hour to 2 hours (n = 49), 7.1% used 2 hours to 3 hours (n = 22), 3.2% used 3 hours to 4 hours (n = 10) and 4.9% used more than 4 hours per day (n = 15).

This study also compared the demographic characteristics of the respondents with the user profile from recent industry reports. Table 4-13 illustrates the user profile of this study against the information gathered from industry reports published by leading marketing firms (Webster, 2010; 2011). The biggest difference between the current study's sample and the industry report sample is the percentage of obtaining brand information. The sample for this study seemed to obtain more brand information comparing with the results from the industry reports that measured the percentage of users obtaining brand information in Twitter and among general social media user (69.5% vs. 51% vs. 16%). Next, the sample of current study has a higher percentage of female participants than industry report (75.6% vs. 54%). Also, participants who were between the ages of 25-34 accounted for 45.1% of the sample in this study whereas the age group represented only 28% of the subjects of the industry report. In terms of ethnicity, this study employed more Caucasian (77%) than market research data (55%). Using the criteria for U.S. Census occupation categories, the largest percentage occupation of participants were management (16.4%) and followed by education, training or library (12.7%). All other demographic characteristics were fairly similar between this study and the industry report.

Statistical Analysis

Overview

This study employed several statistical analyses, including exploratory factor analysis, confirmatory factor analysis for validity test, and Cronbach's alpha for reliability test. In addition, to test the proposed hypotheses and research questions, a correlations analysis, structural equation modeling (SEM), analysis of variance (ANOVA), and regression analysis were conducted for testing consumer-related variables (gender, age, and educational level).

Figure 4-1 shows the specific flow of statistical analyses for our study. Three separate statistical analyses were conducted. First, all measurements of this study were put in together, and a reliability test and correlations analysis were conducted to verify the relationship between variables. Variables related to Twitter adoption and eWOM spreading intention variables were then analyzed separately. For the Twitter adoption variables, perceived usefulness, perceived ease of use, and conformity to subjective norm were analyzed with three main dependent variables: attitude toward Twitter, Twitter usage, and frequency of obtaining brand information. Next, to confirm the extent to which measurements reflect the appropriate meaning for each theoretical concept, exploratory and confirmatory factor analyses were conducted. For the main hypotheses and research questions testing, SEM was adopted, and, finally, analysis of variance was conducted to test the categorical variable (gender). In terms of eWOM-related research questions and hypotheses, the main process was similar to those for Twitter adoption research; however, one factor analysis (both exploratory and confirmatory) process was added to verify the product category and perceived fit measures.

Following SEM, ANOVA and regression analysis were employed for testing consumer demographic variables (gender, age, educational level).

Validity and Reliability Test

To verify the extent to which the measurements reflect the real meaning of the abstract concepts of definition and to confirm that the same object generates the same result each time, validity and reliability tests were conducted prior to the main statistical analysis for test hypotheses and research questions. For validity testing, an exploratory factor analysis and confirmatory factor analysis were employed. To test reliability, Cronbach's alpha test was conducted using SPSS 19 and AMOS 19 statistical programs.

Validity test

Validity refers to the extent to which the measurement represents the exact meaning of the concept. Among several validity tests, including predictive validity, content validity, and convergence validity, this study particularly focused on the convergence validity that refers to "whether a group of items under the same concept is associated with one another without significant associations with other items measuring a different concept" (Chang, 2005, p. 83). Although each construct for both for Twitter adoption and eWOM-related variables had a solid theoretical background (e.g., Arndt, 1967; Davis, 1993; Lee, 2003; Lee et al., 2003; Dellarocas, 2003), measurements were based on the different contexts of adoption studies and eWOM studies; therefore, principal component analysis, exploratory factor analysis, and confirmatory factor analysis were performed to check the validity of measurements.

Principal component analysis. The purpose of principal component analysis is variable reduction, for data reduction and fewer numbers (Snook & Gorsuch, 1989). In

detail, all questionnaire items for, in particular, product-category-related variables were put into the factor analysis using principal component analysis with Direct Oblimin rotation. This was done because the dimensions were not based on solid theoretical measurements, but, rather, on the industrial report (Webster, 2010, 2011). Direct Oblimin rotation was selected, as it is recommended that Oblimin rotation be used when the factors correlate to each other (Fabrigar et al., 1999; Park et al., 2002).

Exploratory factor analysis. We employed exploratory factor analysis (EFA), using maximum likelihood estimation with Oblique rotation. Oblique rotation was selected because variables were correlated to each other (Hong, Milik, & Lee, 2003). Although the majority of measures used in this study has been verified and were based on solid theoretical background, EFA was conducted to determine the appropriate scale dimensions. The model fit was tested via the statistic program SPSS 19. The sample size is important when conducting exploratory factor analysis: less than 50 is very poor; 100 is poor; 200 is fair; and more than 300 is good (Comery & Lee, 1992; J. Kim, M. Kim, and Hong, 2009; Tabachnick & Fidell, 1996;). In the current study, a total of 308 participants were used, which is considered a sufficient sample size. To determine the appropriate factor numbers, three criteria were used: (1) less than .08 of the root mean square error of approximation (RMSEA), (2) the changes in RMSEA values were less than .01, and (3) it was recommended to use a fewer-factor model if the changes in RMSEA were marginal.

In interpreting the rotated factors, following the logic of Jun, Cho, and Kwon (2008), this study excluded item loads higher than ±0.4 with other factors and concentrated on the items that loaded at least ±0.5 on only one factor.

Confirmatory factor analysis. After conducting EFA to confirm the validity of measurements, a confirmatory factor analysis (CFA) using maximum likelihood was conducted. The interpretation of the confirmatory factor analysis was the same as for the exploratory factor analysis.

Reliability test

Reliability refers to the item-to-item consistency of respondents' answers for the questionnaire. Among several reliability test methods, Cronbach's alpha (which represents the extent of correlations among scales) was used, The general criteria for interpretation of reliability are as follows: a reliability coefficient around .90 is excellent; around .80 is very good; and values around .70 are adequate (Hair et al., 1998; Kline, 1998).

Following the general standard for determining a measurement's reliability, reliability coefficients of at least .70 were used in the statistical analysis (Cha, 2009a, 2009b; Chang, 2005; Hair et al., 1998; Kline, 2005). The constructs for the reliability test were conformity to subjective norm, perceived usefulness, perceived ease of use, attitude toward Twitter, actual Twitter usage, perceived similarity, perceived credibility, product category (utilitarian vs. hedonic), perceived fit (utilitarian vs. hedonic), attitude toward the brand, eWOM intention, and purchase intention.

Structural Equation Modeling

Advantages of structural equation modeling (SEM)

To test the hypotheses and research questions, this study adopted structural equation modeling (SEM) for data analysis for three primary reasons. First, even if multiple regression could directly answer the causal relationship between the independent variables and dependent variables, SEM can consider the dependence

relationship among independent variables (Chang, 2005). Second, SEM can control the measurement errors of multiple items. Three, SEM contains not only observed variables but also unobserved (latent) variables, allowing the researcher to conduct a more accurate and sophisticated statistical analysis. Therefore, to test the proposed hypotheses, a structural equation modeling (SEM) method was used. It has been suggested that SEM can control measurement error with greater sophistication, resulting in more accurate results (Browne & Cudeck, 1993; Bentler, 1990; Tucker & Lewis, 1973; West, Finch, & Curran, 1995).

Testing model fit

Two representative methods to evaluate model fit: χ^2 using fit indices, were used to test the hypotheses in this study, since various model fit indices, such as the root mean square error of approximation (RMSEA), Tucker-Lewis index (TLI), and Comparative Fit Index (CFI), can overcome the weakness of χ^2 that makes it sensitive to the sample size and χ^2 rejects the null hypothesis conservatively. Therefore, this study used RMESA, TLI, and CFI, as well as χ^2 indices, to evaluate the model fit followed by Kim et al.,'s (2009) recommendation. These methods are highly reliable in terms of model fit indices criteria, and the model is relatively simple (Browne & Cudeck, 1993). Previous studies have reported that RMESA indices of less than .05 indicate a strong fit, whereas those ranging from .05 to .10 represent a moderately model fit, and TLC and CFI of more than .90 represent a good model fit (Bentler, 1990; Browne & Cudeck, 1993; Tucker & Lewis, 1973; West et al., 1995). Table 4-14 shows the representative methods for model fit testing.

Additional Analysis

In addition to SEM, analysis of variance (ANOVA) and regression analysis were applied in terms of gender difference, since gender was measured via categorical variable (Chan-Olmsted & Chang, 2006; Chan-Olmsted et al., 2005; Chang & Chan-Olmsted, 2010; Chang et al., 2006). A one-way ANOVA was conducted for gender difference, and multiple regression for age and educational level was employed.

Table 4-1. Descriptive summary of pretest questionnaire

Variable	No. of Item	No. of case	Minimum	Maximum	Mean	SD
Conformity to Norm	3	29	1.00	6	3.45	1.33
Perceived Usefulness	6	29	1.00	7	3.55	1.51
Perceived Ease of Use	6	29	1.00	7	4.31	1.63
Attitude Toward Twitter	5	29	1.00	6.40	4.17	1.55
Perceived Similarity	6	29	1.00	5.67	3.69	1.40
Perceived Credibility	8	29	1.00	6.25	3.85	1.12
Product Category	10	29	1.00	5.60	3.61	1.17
Perceived Fit	10	29	1.00	6.50	3.77	1.18

Table 4-2. Reliability test of pretest questionnaire

Variable	No. of item	Cronhach's alpha
Conformity to Norm	3	.79
Perceived Usefulness	6	.94
Perceived Ease of Use	6	.96
Attitude Toward Twitter	5	.91
Perceived Similarity	6	.99
Perceived Credibility	8	.92
Product Category	10	.89
Perceived Fit	10	.93
Retweet Intention	3	.75

Table 4-3. Correlation matrix of pretest items

	Mean	SD	1	2	3	4	5	6	7	8
1	3.45	1.33	-	.18	.31	.44*	.21	.40*	.28	.24
2	3.55	1.51	.18	-	.75**	.78**	.71**	.72**	.65**	.55**
3	4.32	1.63	.30	.75**	-	.88**	.68**	.71**	.74**	.53**
4	4.17	1.55	.44*	.78**	.88**	-	.72**	.79**	.81**	.69**
5	3.69	1.40	.21	.71**	.68**	.72**	-	.74**	.52**	.56**
6	3.85	1.12	.40*	.72**	.71**	.79**	.74**	-	.48**	.44*
7	3.90	2.94	.28	.65*	.74**	.81**	.52**	.48**	-	.75**
8	2.59	1.48	.24	.55**	.53**	.69**	.56**	.44*	.76**	-

*$p < .05$; **$p < .01$

1 = Conformity to subjective norm, 2 = perceived usefulness, 3 = perceived ease of use, 4 = Attitude toward Twitter, 5 = perceived similarity, 6 = perceived source expertise, 7 = Twitter usage (days per weak), 8 = Twitter usage (hours per day)

Table 4-4. Regression analysis of pretest

Dependent Variable	Independent Variable	β	SE	t	p-value
Twitter Attitude	Conformity to Norm	.20	.09	2.39	.025
	Perceived Usefulness	.30	.13	2.45	.022
	Perceived Ease of Use	.59	.12	4.61	.000
F (3, 25)	42.93***				
R^2	.84				
Adjusted R^2	.82				
Twitter Usage (days per week)	Conformity to Norm	.07	.31	.52	.606
	Perceived Usefulness	.22	.39	1.11	.279
	Perceived Ease of Use	.55	.38	2.63	.014
F (3, 25)	10.90***	.07	.31	.52	.606
R^2	.57				
Adjusted R^2	.52				
Twitter usage (hours per day)	Conformity to Norm	.11	.19	.63	.531
	Perceived usefulness	.35	.24	1.43	.165
	Perceived ease of use	.23	.23	.91	.371
F (3, 25)	4.38***				
R^2	.35				
Adjusted R^2	.27				

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

Table 4-5. Descriptive statistics of product category

Product Category	Minimum	Maximum	Mean	SD
Movie	1	7	4.56	1.80
Clothes	1	7	4.45	1.97
Restaurant	1	7	4.41	1.80
Travel information	1	7	4.41	1.72
Electronics	1	6	3.72	1.53
Telecommunication Service	1	7	3.28	1.39
Financial product/ service	1	6	3.07	1.44
Automobile	1	7	3.00	1.75
Computer equipment	1	7	2.76	1.62
Healthcare providers	1	5	2.48	1.24

Table 4-6. Descriptive statistics of perceived fit

Product Category	Minimum	Maximum	Mean	SD
Movie	1	7	4.79	1.52
Clothes	1	7	4.41	1.66
Restaurant	1	7	4.24	1.60
Travel information	1	7	4.17	1.39
Electronics	1	7	3.83	1.51
Telecommunication Service	1	7	3.55	1.43
Financial product/ service	1	7	3.48	1.60
Automobile	1	7	3.17	1.47
Computer equipment	1	6	3.07	1.39
Healthcare providers	1	7	3.00	1.24

Table 4-7. Correlation matrix (Product category) for pretest

`	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	2.76	1.62	-	.24	.70*	.29	.42*	.16	.69**	.10	.34	.36
2	4.45	1.97	.24	-	.34	.54**	.72**	.49*	.13	.55**	.42*	.44*
3	3.07	1.44	.70**	.34	-	.39*	.51**	.30	.57**	.14	.28	.50**
4	4.41	1.72	.29	.54**	.39*	-	.76**	.67**	.52**	.76**	.40*	.74**
5	4.41	1.80	.42*	.72**	.51**	.76**	-	.51**	.57**	.49**	.51**	.66**
6	3.28	1.39	.16	.40*	.30	.67**	.51**	-	.13	.69**	.29	.81**
7	3.00	1.75	.69**	.13	.57**	.52**	.57**	.13	-	.24	.48**	.50**
8	4.55	1.80	.10	.55**	.14	.76**	.49**	.69**	.24	-	.36	.70**
9	2.48	1.24	.34	.42*	.28	.40*	.51**	.29	.48**	.36	-	.35
10	3.72	1.53	.36	.44*	.50**	.74**	.66**	.81**	.51**	.70**	.35	-

*$p < .05$; **$p < .01$

1 = Computer equipment, 2 = clothes, 3 = finance product/services, 4 = travel information, 5 = restaurants, 6 = telecommunication service, 7 = automobiles, 8 = movies, 9 = health care providers, 10 = electronics

Table 4-8. Correlation matrix (Perceived fit) for pretest

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	3.07	1.39	-	.55**	.43*	.29	.48*	.54**	.44*	.28	.34	.33
2	3.83	1.51	.55**	-	.63**	.56**	.73**	.60*	.54**	.53**	.54*	.49**
3	3.17	1.47	.43*	.63**	-	.58**	.63**	.68**	.77**	.42*	.90**	.42*
4	4.17	1.39	.29	.56**	.58*	-	.68**	.78**	.57**	.83**	.52*	.85**
5	4.41	1.66	.48**	.73**	.63**	.68**	-	.59**	.75**	.66**	.54**	.61**
6	3.55	1.43	.54**	.60**	.69**	.78**	.59**	-	.63**	.63**	.66**	.75**
7	3.48	1.60	.44*	.54**	.77**	.57**	.75**	.63**	-	.43	.81**	.58**
8	4.79	1.52	.28	.53**	.42*	.83**	.66**	.63**	.43*	-	.29	.83**
9	3.00	1.44	.34	.54**	.90**	.52*	.54**	.66**	.81**	.29	-	.39*
10	4.24	1.60	.33	.49**	.42*	.85**	.60**	.76**	.59**	.83**	.39**	-

*$p < .05$; **$p < .01$

1 = Computer equipment, 2 = clothes, 3 = finance product/services, 4 = travel information, 5 = restaurants, 6 = telecommunication service, 7 = automobiles, 8 = movies, 9 = health care providers, 10 = electronics

Table 4-9. Principal component analysis with product category

Variable	Factor1	Factor2
Travel service	**.89**	.47
Movie	**.88**	.15
Electronics	**.86**	.50
Telecommunication Service	**.84**	.19
Restaurant	**.78**	.64
Clothes	**.71**	.33
Computer equipment	.23	**.89**
Automobile	.37	**.88**
Finance service / product	.37	**.82**
Healthcare providers	.49	**.52**

Table 4-10. Principal component analysis with perceived fit

Variable	Factor1	Factor2
Financial service/product	**.93**	-.47
Healthcare providers	**.91**	-.38
Automobile	**.88**	-.54
Restaurant	**.76**	-.73
Clothes	**.75**	-.60
Computer equipment	**.62**	-.36
Movie	.44	**-.94**
Electronics	.52	**-.94**
Travel service	.61	**-.93**
Telecommunication service	.77	**-.77**

Table 4-11. Operational definition of main constructs and measurement

Variable	Conceptual Definition	Measurement
Conformity to Subjective Norm	The level of overall tendency to the person's perception that most people who are important to him think one should or should not perform the behavior in question.	3 items seven-point Likert scale (Lee, 2003; Lee et al., 2003; Mathieson, 1991).
Perceived Usefulness	The level of a person believes that using a particular system would enhance his or her job performance.	6 items seven-point Likert scale (Davis, 1989; Lee, 2003; Cha, 2009b)
Perceived Ease of Use	The level of an individual believes that using a particular system would be free of real and mental effort.	6 items seven-point Likert scale (Davis, 1989; Lee, 2003; Cha, 2009b)
Attitude toward Twitter	The level of individuals' favorable attitude toward Twitter.	5 items seven point Likert scale (Chen & Wells, 1999; Prendergast et al., 2010).
Actual usage time of Twitter	The level of individual usage pattern of the Twitter.	2 items seven point Likert scale
Perceived Source Similarity	The degree to which individuals are similar in terms of certain shared characteristics specifically for eWOM sender (Twitter friends).	6 items seven-point Likert scale (Wolfinbarger & Gilly, 1993; Prendergast et al., 2010; Wangenheim & Byon, 2004; 2007).
Perceived Source Credibility	The level of perceived source trustworthiness and expertise of eWOM sender (Twitter friends).	6 items seven-point Likert scale (Kiousis, 2001; Gurhan-Canli & Maheswaren, 2000; Prendergast et al., 2010; Wangenheim & Bayon, 2004).
Product Category	The product category of consumer mainly obtained information from Twitter.	10 items, seven-point Likert scale (Created for this study).
Perceived Fit	Consumers' perception of fit between Twitter and the individual items that they obtained brand information.	10 items, seven-point Likert scale (Created for this study).
Attitude Toward the Brand	The level of individual perception of favorable attitude toward the brand.	4 items seven-point bipolar scale (Kim & Chan-Olmsted, 2005; Lee et al., 2010).

Table 4-11. Continued

Variable	Conceptual Definition	Measurement
eWOM Spreading Intention	The level of individual intention for eWOM spreading.	3 items seven-point Likert scale (Okazaki, 2008, 2009).
Purchase Intention	Individual intention for purchase of product that obtained brand information.	4 items seven-point Likert scale (Prendergast et al., 2010).
Age	Age of a respondent.	1 item
Educational Level	Education level of respondent.	1 item
Gender	Gender of participants.	1 item
Income	Participants' annual household income.	1 item

Table 4-12. Summarizes the original constructs included and their operational definition

Construct	Item
Qualifying Question	Have you ever get brand information from your Twitter friends? (Both from individual and company account)
Frequency of obtaining brand information	How often do you get information about a brand from your Twitter friends?
Twitter Usage	How many days during a typical week do you use Twitter?
	How many hours during a typical day do you use Twitter?
Conformity to subjective Norm	Generally speaking, I would do what my group members think I should do.
	Generally speaking, I would do what my Twitter friends think I should do in the Twitter environment.
	Generally speaking, I would do what others think I should do in the online environment.
Perceived Usefulness	I find Twitter useful in my life.
	Use of Twitter improves my performance.
	Use of Twitter makes it easier to obtain product information.
	Use of Twitter to obtain product information increases my productivity
	Use of Twitter enables me to accomplish tasks more quickly.
	Use of Twitter enhances the effectiveness in product information search.
Perceived Ease of Use	Tweet, Mention and Retweet on Twitter is easy.
	Learning to use Twitter is easy for me.
	It is easy to get information on Twitter.
	I find Twitter to be flexible to interact with.
	It is easy for me to become skillful at using Twitter.
	I find Twitter easy to use.
Attitude Toward Twitter	Twitter makes it easy for me to build a relationship with the online community.
	I would like to communicate with my Twitter friends again in the future.
	I'm satisfied with the services provided by Twitter.
	I feel comfortable in using Twitter.
	I feel surfing on Twitter is a good way for me to spend my time.
Perceived Source Similarity	In terms of outlook on life, my Twitter friends are similar to me.
	In terms of likes and dislikes, my Twitter friends are similar to me.
	In terms of values and experiences, my Twitter friends are similar to me.
	In terms of tastes for products, my Twitter friends are similar to me.
	In terms of preferences and value, my Twitter friends are similar to me.
	Overall, my Twitter friends are similar to me

Table 4-12. Continued

Construct	Item
Perceived Source Credibility	I feel the tweeted product information given by my Twitter friends is strong.
	I feel the tweeted brand information given by my Twitter friends is convincing.
	I feel the tweet brand information given by my Twitter friends is persuasive.
	I feel the tweet brand information given by my Twitter friends is powerful.
	My Twitter friends have knowledge about computer equipment in general.
	My Twitter friend is an expert in the area of computer equipment.
	My Twitter friends have knowledge about restaurants in general.
	My Twitter friend is an expert in the area of restaurants.
Product Category	I often try to obtain product information about computer equipment.
	I often try to obtain product information about clothes.
	I often try to obtain product information about finance services.
	I often try to obtain product information about travel information.
	I often try to obtain product information about restaurants.
	I often try to obtain product information about telecommunication services.
	I often try to obtain product information about automobiles.
	I often try to obtain product information about movies.
	I often try to obtain product information about healthcare services.
	I often try to obtain product information about electronics.
Perceived Fit	Twitter is a good medium to learn about computer equipment.
	Twitter is a good medium to learn about clothes.
	Twitter is a good medium to learn about finance services.
	Twitter is a good medium to learn about travel information.
	Twitter is a good medium to learn about restaurants.
	Twitter is a good medium to learn about telecommunication services.
	Twitter is a good medium to learn about automobiles.
	Twitter is a good medium to learn about movies.
	Twitter is a good medium to learn about healthcare services.
	Twitter is a good medium to learn about electronics.
Attitude Toward the Brand	Unfavorable/favorable
	Bad/good
	Dislike/like
	Negative/positive

Table 4-12. Continued

Construct	Item
eWOM spreading intention: After reading the tweet brand information from Twitter friends…	If I find interesting product information on the Twitter, I want to Retweet it to my friends after reading the tweeted brand information from Twitter friends.
	If somebody asks me for advice about interesting product information, I will encourage him or her to Tweet after reading the tweeted brand information from Twitter friends.
	I would recommend my friends and family to Tweet or Retweet in interesting product related information after reading the tweeted brand information from Twitter friends.
Purchase Intention	After considering the product information on my Twitter, it is very likely that I will buy the product.
	After considering the product information on my Twitter, I will purchase the product next time I need a product.
	After considering the product information on my Twitter, I will definitely try the product.
	If my friend called me last night to get the advice in his/her search for a product. I would recommend him/her to buy the product.

Table 4-13. The comparison of the sample profile with industrial report

Variable	Category	Current Study Year of 2011	Industry Report (2011 Twitter Users) [a]	Industry Report (General Social Media Users) [b]
Obtaining brand information in Twitter	Yes	69.5% (n = 317)	51%[1)]	16%[1)]
	No	30.5% (n = 136)	49%[1]	84%[1)]
African American				
Gender	Male	24.1% (n = 74)	46%[1)]	-
	Female	75.6% (n = 233)	54%[1)]	-
Age	12 to 17	-	13%[1)]	15%[2)]
	18 to 24	28.9% (n = 89)	21%[1)]	9%[2)]
	25 to 34	45.1% (n = 139)	28%[1)]	18%[2)]
	35 to 44	10.1% (n = 31)	20%[1)]	25%[2)]
	45 to 55	8.9% (n = 27)	11%[1)]	19%[2)]
	55 and over	4.2% (n = 13)	7%[1)]	13%[2)]
Ethnicity	Caucasian	77% (n = 239)	55%[1)]	-
	African American	4.9% (n = 15)	22%[1)]	-
	Hispanic	6.8% (n = 21)	15%[1)]	-
	Asian	8.8% (n = 27)	3%[1)]	-
	Others	1.6% (n = 5)	5%[1)]	-
Education	High School/less	16.5% (n = 51)	12%[1)]	-
	1-3 years college	36.1% (n = 111)	23%[1)]	-
	4 year college	35.1% (n = 108)	30%[1)]	-
	Some Graduate	12.0% (n = 37)	17%[1)]	-
Annual Income	Under $25K	17.2% (n = 53)	17%	-
	$25K to $50K	33.2% (n = 102)	14%	-
	$50K to $75K	23.7% (n = 73)	23%	-
	$75K to $100K	13.3% (n = 41)	11%	-
	Over $100K	11.4% (n = 35)	13%	-
Twitter Usage: Days per week	-	5.34 (SD = 1.90)	3.17	1.47
Twitter Usage: Hours per day	Less than 10 minutes	9.4% (n = 29)	-	-
	10-30 min	27.3% (n = 84)	-	-
	30 min – 1 hour	32.1% (n = 99)	-	-
	1-2 hours	15.9% (n = 49)	-	-
	2-3 hours	7.1% (n = 22)	-	-
	3-4 hours	3.2% (n = 10)	-	-

Table 4-13. Continued

Variable	Category	Current Study Year of 2011	Industry Report (2011 Twitter Users) [a]	Industry Report (General Social Media Users) [b]
	More than 4 hours	4.9% (n = 15)	-	-

Source: The Edison Research / Arbitron Internet and Multimedia Study, (Webster, 2010, 2011)
Note: a: Twitter users are defined as people who use Twitter at least once per month (Webster, 2011)
b: Daily unique visitors from 19 different social network sites (Facebook, LinkedIn, Myspace, Twitter and etc.) were gathered and calculated
1) Source: Twitter usage in America: 2010 (Webster, 2010).
2) Source: Study: Ages of Social Network Users (Pingdom, 2010).

Table 4-14. Comparing model fit index

Model Fit Indices	Sensitive for the Number of Sample	Considering Simplicity of Model	Criteria for Interpretation
GFI	O	X	above .90
AGFI	O	O	X
PGFI	O	O	X
NFI	O	X	above .90
RFI	O	X	above .90
IFI	O	X	above .90
NNFI(TLI)	X	O	above .90
CFI	X	X	above .90
PNFI	O	O	X
PCFI	X	O	X
RMSEA	X	O	less than .08 = fair less than .05 = good

Source: Kim, Kim, &Hong (2009).

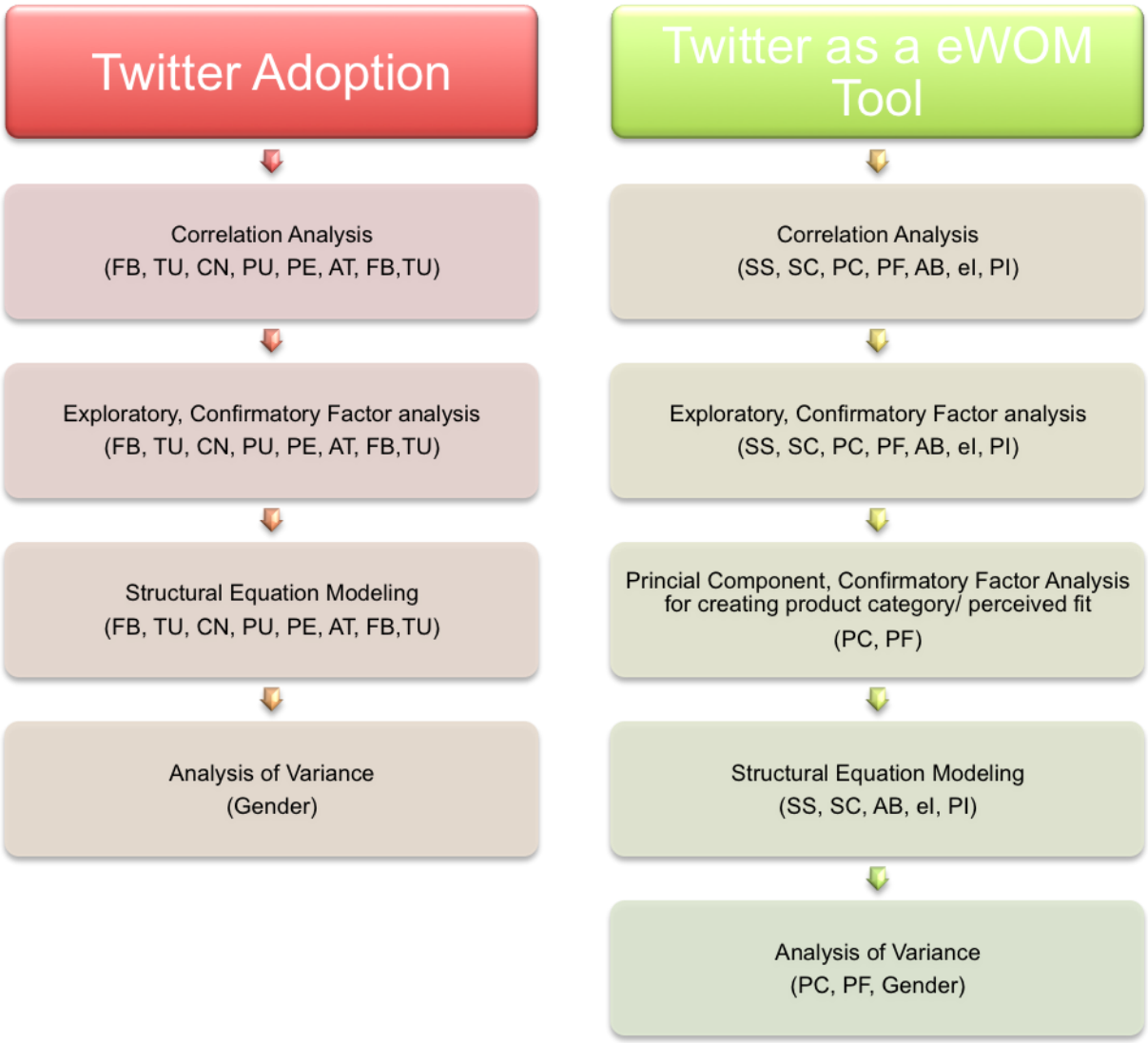


Figure 4-1. Flow of statistical analysis. (FB: frequency of obtaining brand information, TU: Twitter usage, CN: conformity to subjective norm, PU: perceived usefulness, PE: perceived ease of use, AT: attitude toward Twitter, SS: perceived source similarity, SC: perceived source credibility, PC: product category, PF: perceived fit, AB: attitude toward the brand, eI: eWOM speeding intention, PI: purchase intention).

CHAPTER 5
RESULTS

This chapter presents the results of the hypothesis testing and research question. It consists of mainly two main parts. First, hypotheses and research questions addressing the adoption of Twitter are discussed. Second, the results of the hypotheses testing and research questions on eWOM related variables are provided. Each part contains factor analysis and structural equation modeling for the main variables. Additional analyses were also conducted such as ANOVA and regression for consumer characteristic variables such as age, gender and educational level.

Twitter Adoption Results

Descriptive Statistics

Before conducting the main statistical analysis, two types of descriptive statistics of mean and the standard deviation (SD) were performed. The results are displayed in Table 5-1.

Among variables, the mean value of perceived ease of use was relatively higher (M = 5.80, *SD* = 1.17) than perceived usefulness (M = 4.94, *SD* = 1.24). Also participants' conformity tendency to social norm was relatively high (M = 3.99, *SD* = 1.47) whereas their frequency of obtaining brand related information was slightly low (M = 3.13, *SD* = 1.47). However, their daily Twitter usage per week (M = 3.88, *SD* = 1.37) and hourly usage per day (M = 5.34, *SD* = 1.91) was high.

Correlations Analysis

Before the main statistical testing for the Twitter adoption variables, a correlation matrix was constructed to check the relationship between variables. (Table 5-2). As expected, all measurements were significantly correlated each other. In particular, main

dependent variables attitude toward Twitter was significantly correlated with conformity to norm (r = .31, $p < .01$), perceived usefulness (r = .65, $p < .01$), and perceived ease of use (r = .73, $p < .01$). Also, participants daily Twitter usage per week was associated with conformity to norm (r = .14, $p < .05$), perceived usefulness (r = .36, $p < .01$), and perceived ease of use (r = .43, $p < .01$). Also, hourly Twitter usage per day was related to conformity to norm (r = .24, $p < .01$), perceived usefulness (r = .40, $p < .01$), perceived ease of use (r = .28, $p < .01$). Therefore all measurements were included into structural equation modeling both for factor analysis and hypotheses and research questions testing.

Factor Analysis

Exploratory factor analysis

Exploratory and confirmatory factor analyses were conducted to verify the measurement dimensions. In terms of the factor number decision, the results of exploratory factor analysis reconfirmed the five dimensions: conformity to subjective norm, perceived usefulness, perceived ease of use, attitude toward Twitter and actual Twitter usage. To determine the factor number a few statistics were reviewed. First, the scree plot revealed that four factors or five factors are appropriate for the model since the graph for eigenvalue seemed to sharp descent. (Figure 5-1). Also, between four factors model and five factors model, four factors model's RMSEA was .068 that satisfied the following criteria: (1) The value is less than .08 RMSEA, (2) the changes in RMSEA values were less than .01; and (3) it was recommended to use a fewer-factor model if the changes in RMSEA were marginal (Hu & Bentler, 1999). Therefore it was concluded that the five factors model was most appropriate for the Twitter adoption study. In interpreting the rotated factors, following the logic of Jun et al., (2008), this

study excluded the items load higher than ± 0.4 with and other factors and concentrated on the items that loaded at least ± 0.5 on only one factor. Based on the results of the EFA, each factor was labeled in conformity to subjective norm, perceived usefulness, perceived ease of use, attitude toward Twitter and Twitter usage. (Table 5-3).

Confirmatory factor analysis

To confirm the four different dimensions of Twitter adoption related variables, a confirmatory factor analysis (CFA) using maximum likelihood method was conducted. This study assumed that individuals' Twitter adoption is a multi dimensional and hierarchical behavior rather than a one-dimension activity that was mainly influenced by conformity to subjective norm, perceived usefulness and perceived ease of use. Therefore, the model for participants' Twitter usage pattern based on the pretest was tested.

The results indicated a good model fit with five dimensions (conformity to subjective norm, perceived usefulness, perceived ease of use, attitude toward Twitter and Twitter usage). The five factors model's (χ^2= 731,383, df = 199, p < .001) Comparative Fit Index (CFI) was .91, Tucker-Lewis index (TLI) was .89 and RMSEA was .093 whereas one factor model was not appropriate for the data (χ^2 = 2804.106, df = 209, p < .001, CFI = .556, TLI = .509, RMSEA = .201). The initial factor loadings for Twitter adoption variables ranged from .69 to .94.

However, even if the results for both exploratory factor analysis and confirmatory factor analysis produced the five dimensions of measurements, the model fit was relatively marginal (CFI = .91, TLI = .90, RMSEA = .093). Thus, followed Cha's (2009b) method for model revision, both standardized residuals and modification indices were analyzed for model revision based on the standardized residuals and theoretical

background in previous studies. The results for standardized residuals and modification indices suggested that six items have high correlated errors with other variables. A total of six items were removed one by one to observe the model fit change. The deleted items were. (1) “Use of Twitter improves my performance,” (2) “Use of Twitter enhances the effectiveness in product information search,” (3) “It is easy to get information on Twitter,” (4) “I find Twitter to be flexible to interact with,” (5) “Twitter makes it easy for me to build a relationship with the online community,” and (6) “I feel surfing on Twitter is a good way for me to spend my time.” The final model obtained good model fit (χ^2 = 192.015, df = 71, CFI = .968, TLI = .960. RMSEA = .071) and satisfied that criteria for good model fit evaluation (CFI, TLI > .90, RMSEA < .80).

Therefore, the results of the CFA presented a model with five constructs in seven different dimensions that were the same as for EFA: conformity to subjective norm, perceived usefulness, perceived ease of use, attitude toward Twitter and Twitter usage.

Table 5-4 shows the results of model fit of confirmatory factor analysis and Table 5-5 shows the final factor loading. The results of confirmatory factor analysis indicated that all the items statistically evaluated the each constructs as intended and factor loading of each item is high (.59 to .94).

Validity and reliability

To confirm the measurements’ discriminant validity, correlations of the latent variables were assessed. Table 5-6 shows the correlations between the measurement items and latent variables that are highly correlated with each others, switching the recommended criteria proposed by Gefen and Straub (2005).

The reliability of all measurements was also assessed via two representative methods: cronbach's alpha test and factor loadings. The cronbach's alpha values ranged from .88 to .93, satisfying the criteria for good reliability (above .70) recommended by previous research (Nunnaly, 1978). Also, all the measurements' reliability was tested by checking the factor loadings (> 0.5). (Cha, 2009b; Rivard, 1988). The confirmatory factor analysis yielded factor loadings ranged from .59 to .95. Both Cronbach's alpha and factor loadings confirm that the measurements in Twitter adoption study were reliable.

Structural Equation Modeling

After confirming that the five different factors have the adequate fit in measurement model, a structural equation modeling was conducted for testing the hypotheses and research questions using the five variables: conformity to subjective norm, perceived usefulness, perceived ease of use, attitude toward Twitter and actual Twitter usage.

A critical assumption for conducting SEM is multivariate normality, which means that the scale items and their combined measurements should be statistically normally distributed (Joreskog, 1973). Therefore, Twitter adoption related variables' skewness and kurtosis were first assessed. It was found that the skewness have ranged from -1.68 to .906, and kurtosis from -.93 to 3.81; this satisfied the criteria for normality for the Twitter adoption model (skewness < 2, kurtosis < 4). (Hong et al., 2003). (Table 5-1).

After confirming multivariate normality of the structural model, correlations analysis with exogenous variables was performed. Traditionally the correlation value above .90 may the problem of multicollinearity (Hair et al., 1998). The current model's correlation

values are ranged from .24 to .72 ($p < .01$). Therefore there is no multicollinearity problem in the structural model. (Table 5-6).

After the correlation matrix was displayed, a structural equation model was performed to test hypotheses and research questions. The overall model fit indices suggested that the model adequately fit the data (χ^2= 276.322, d.f. = 105, p < .001; CFI = .958, TLI = .946, RMSEA = .073), having above .90 of CFI and TLI (Bentler, 1990) and lower than .08 of RMSEA (Browne & Cudeck, 1993).

The results of the structural model are presented in Table 5-7, Table 5-8 and Table 5-9, with the standardized path coefficients. H1a and H1b predicted that the conformity toward the subjective norm is positively related to the attitude toward Twitter and individual's actual usage of Twitter. However, Hypothesis 1a and Hypothesis 1b were not supported according to the modeling results. (Table 5-8).

In terms of perceived usefulness and attitude toward Twitter as well as Twitter usage, the results of the structural equation model indicated that the perceived usefulness is a significant predictor of the attitude toward Twitter ($\beta = .30$, $p < .05$). Also, perceived usefulness is positively associated with the respondents' Twitter usage (hours per day) ($\beta = .22$, $p < .001$) and frequency of obtaining brand information ($\beta = .38$, $p < .001$). However, this relationship was not exhibited in daily-based Twitter usage. Thus, Hypothesis 2a was supported whereas Hypothesis 2b was partially supported.

In terms of hypotheses 3a and 3b, which predicted a positive relationship between perceived ease of use and attitude toward Twitter (H3a) and the subjects' Twitter usage (H3b), only Hypothesis 3a was confirmed. Perceived ease of use was a significant predictor of the individuals' attitude toward Twitter ($\beta = .69$, $p < .001$).

The fourth set of hypotheses suggested a significant effect of the attitude toward Twitter and Twitter usage. The finding indicated that one's attitude toward Twitter was positively associated with his/her daily Twitter usage ($\beta = .61$, $p < .001$), hourly Twitter usage per day ($\beta = .33$, $p < .01$), and their behavioral frequency to obtain brand related information in Twitter ($\beta = .24$, $p < .05$). Therefore, Hypothesis 4 was supported.

As illustrated in Table 5-9, perceived ease of use had a direct effect on attitude toward Twitter, but not on Twitter usage. However, attitude toward Twitter was found to affect Twitter Usage. Therefore, the mediation effect of attitude toward Twitter was evaluated in this context. Specifically, the model indicated that through perceived ease of use did not directly predict the individuals' Twitter usage pattern, the construct did influence the participants' Twitter usage through the respondents' attitude toward Twitter as a mediator. The path coefficient of perceived ease of use on respondents' daily usage per week, with attitude toward Twitter as a mediator was .42(.69*.61), hourly usage per day was .22(.69*.33), and frequency of obtaining brand information was .16(.69*.24). (Table 5-10).

This study revealed the role of conformity to subjective norm, perceived usefulness and perceived ease of use for predicting individuals' Twitter adoption. Conformity to subjective norm did not affect directly or indirectly one's attitude toward Twitter and Twitter usage (Hypothesis 1a and Hypothesis 1b were rejected). In terms of perceived usefulness, it affects the participants' attitude toward Twitter and Twitter usage (Hypothesis 2a and Hypothesis 2b were supported). In terms of perceived ease of use, it was positively related to one's attitude toward Twitter, but not his / her Twitter usage pattern. However, perceived ease of use was positively associated with Twitter

usage while Twitter attitude is acting as a mediating variable (Hypothesis 3a was supported, Hypothesis 3b was partially supported). Also, individuals' attitude toward Twitter is a significant predictor of their actual Twitter usage (Hypothesis 4 was supported).

In sum, when people consider Twitter to be useful, they tend to exhibit more favorable attitude toward Twitter and use Twitter more frequently. Also, individuals who felt it is easy to use Twitter tend to have more positive feeling of Twitter, but this feeling did not directly translate to Twitter usage. Nevertheless, the participants' perceived ease of use regarding Twitter does indirectly influence their Twitter usage when favorable attitude toward Twitter is present. Figure 5-2 shows the final structural model, including the significant pathways' observed values.

Additional Analysis

This study employed two additional statistics to analyze consumer-related variables such as age, education level and gender.

A multiple regression for predicting respondents' attitude toward Twitter and their Twitter usage (daily usage, hourly usage, and frequency of obtaining brand information) was performed using consumer demographics as independent variables (age, education level). However, age and education level were not found to be statistically significant in terms of attitude toward Twitter (adjusted R-squared value of .01, $p = .07$), daily usage of Twitter (adjusted R-squared value of .005, $p = .17$), hourly usage of Twitter (adjusted R-squared value of -.003, $p = .59$) and brand-related behavior in obtaining information (adjusted R-squared value of .005, $p = .17$).

Also, a one-way analysis of variance (ANOVA) was performed by using gender as an independent variable and attitude toward Twitter, Twitter usage (frequency of

obtaining brand information, daily usage, and hourly usage) for dependent variables. Although mean difference existed in attitude toward Twitter (M_{male}: 5.57, *SD* = 1.13 vs. M_{female}: 5.53, *SD* = 1.07), days per week usage (M_{male}: 5.61, *SD* = 1.85 vs. M_{female}*: 5.26,* *SD* = 1.92), hours per day usage (M_{male}: 3.28, *SD* = 1.56 vs. M_{female}: 3.09, *SD* = 1.44) and frequency of brand information obtaining behavior (M_{male}: 4.08, *SD* = 1.38 vs. M_{female}: 3.81, *SD* = 1.37), the results for gender difference showed that there were no significant differences in terms of attitude toward Twitter (F = .06, p = .80), daily usage (F = 1.86, p = .17), hourly usage (F = 1.02, p = .31), and frequency of behavior in obtaining brand information (F = 2.25, p = .13). (Hypothesis 4, Hypothesis 5 and Research Question 1 were not supported).

eWOM Related Results

Descriptive Statistics

Before conducting the main statistical analysis, two types of descriptive statistics of mean and standard deviation (SD) were performed and displayed in Table 5-11.

Among all variables, the mean values for perceived similarity (M = 5.19, *SD* = 1.10) and perceived credibility were relatively high (M = 5.00, *SD* = 1.09). Also participants were more frequency obtaining brand information of hedonic product (M = 5.15, *SD* = 1.22) than utilitarian product (M = 4.37, *SD* = 1.44). The dominant role of the hedonic product is also exhibited in consumer's perception of perceived fit between Twitter and each product category the mean value for perceived fit of hedonic product is 5.25 (*SD* = 1.16) and utilitarian product is 4.55 (*SD* = 1.31).

Finally, the mean refers for the three main dependent variables, attitude toward the brand (M = 5.39, *SD* = 1.19), eWOM intention (M = 5.13, *SD* = 1.37) and purchasing intention (M = 4.93, *SD* = 1.12) are relatively high as well.

Correlations Analysis

Similar to the Twitter adoption analysis, a correlation matrix was created to verify the relationship among variables. (Table 5-12). As expected, the results of correlations analysis yield statistically significant results for each variable. Specifically, the main dependent variables for eWOM related research, attitude toward the brand, eWOM intention and purchase intention were significantly correlated with independent variables (perceived similarity, perceived credibility, product category and perceived fit). The correlations analysis yielded that attitude toward the brand was significantly correlated with perceived similarity ($r = .53$, $p < .01$), perceived credibility ($r = .58$, $p < .01$), product category ($r = .49$, $p < .01$), and perceived fit ($r = .59$, $p < .01$). eWOM intention was also highly correlated with perceived similarity ($r = .57$, $p < .01$), perceived credibility ($r = .72$, $p < .01$), product category ($r = .60$, $p < .01$) and perceived fit ($r = .72$, $p < .01$). Finally, correlations analysis confirmed the statistically significant correlation between purchase intention and perceived similarity ($r = .50$, $p < .01$), perceived expertise ($r = .68$, $p < .01$), product category ($r = .62$, $p < .01$), and perceived fit ($r = .69$, $p < .01$). Therefore all measurements were included into structural equation model for both factor analysis and hypotheses and research question testing. (Table 5-12).

Factor Analysis

The purpose of the factor analysis here is to confirm the measurement dimensions based on the theoretical ground. In order to differentiate variables' dimensions, first this study employed principal component analysis for product category and perceived fit to verify the virtual/real, utilitarian/hedonic product differentiation. Then the results of principal component analysis were considered to conduct exploratory factor analysis and confirmatory analysis for final factor loadings.

Principal component analysis

This study expected certain level of product category differentiation such as tangible vs. intangible product differentiation (e.g., Arndt, 1967; Sheth, 1971; Zeithaml et al., 1993) or utilitarian vs. hedonic product (e.g., Babin & Darden, 1995; Babin et al., 1994; Cha, 2009a).

To verify the theoretical differentiation of product category, this study employed a principal component analysis with Direct Oblimin rotation to confirm whether individuals' eWOM behavior would be different based on the factor of product category. Principle component analysis was employed since this method is appropriate for capturing as much information as possible by using a few components (Park et al., 2002) and Direct Oblimin rotation was selected since there was significant correlation among many of items for each product category and perceived fit constructs (Fabrigar et al.,1999). The results of principal component yield utilitarian vs. hedonic differentiation rather than tangible vs. intangible product category differentiation.

Table 5-13 and Table 5-14 show the results of principal component analysis for product category and perceived fit yield two factors successfully. The first factor (utilitarian dimension) refers to five items: healthcare services, financial services, automobiles, telecommunication services and computer equipment whereas the second factor (hedonic dimension) consists with other five items: movie, restaurant, clothes, electronics and travel information. This differentiation of utilitarian and hedonic dimensions was included for further exploratory and confirmatory factor analysis.

Exploratory factor analysis

Including utilitarian and hedonic dimension differentiation, an exploratory factor analysis with maximum likelihood extraction was conducted to determine factor

numbers. Same criteria used in Twitter adoption research for verifying factor differentiation was applied: less than .08 RMSEA, changes less than .01 in RMSEA values and using fewer-factor if the RMSEA changes were marginal (Hu & Bentler, 1999).

First, the number of factors was evaluated via scree plot graph in terms of its descent. (Figure 5-3). It yielded nine-factor. Next, based on the RMSEA value, and its change rate, the nine-factor model was confirmed following Jun et al's (2008) logic that excluded the item load higher than ± 0.4 with other factors and concentrated on the items that loaded at least ± 0.5 on only one factor. The following nine factors were confirmed in this study: perceived similarity, perceived credibility, product category (utilitarian), product category (hedonic), perceived fit (utilitarian), perceived fit (hedonic), attitude toward the brand, eWOM intention and purchase intention. (Table 5-15).

Confirmatory factor analysis

To confirm the nine different perceptions of eWOM related variables, a confirmatory factor analysis (CFA) using maximum likelihood method was applied. This study assumed that respondents' eWOM behavior in Twitter is a multi-dimensional and hierarchical behavior rather than one-dimension activity that could be predicted by perceived similarity and perceived credibility to brand information sender, individual's perceptions of appropriation in spreading brand information in Twitter according to product category (utilitarian vs. hedonic). Therefore, the model for participants' eWOM related behavioral pattern based on the results of the pretest and exploratory factor analysis was performed.

The results indicated a good model fit with utilitarian vs. hedonic differentiation for product category and perceived fit. The specific factors are perceived similarity,

perceived credibility, product category (utilitarian) product category (hedonic), perceived fit (utilitarian), perceived fit (hedonic), attitude toward the brand, eWOM spreading intention and actual purchase intention (χ^2 = 2538.326, d.f = 909, CFI = .87, TLI = .86, RMSEA = .076).

Table 5-16 shows the results of model fit of the confirmatory factor analysis and Table 5-17 shows the final factor loading. The results of the confirmatory factor analysis indicated that all the items statistically evaluated the each constructs as intended and the factor loading of each item is high (.61 to .92).

Validity and reliability

After confirming the factors for eWOM related variables, measurements' the discriminant validity through the correlations analysis of the latent variables was presented. The result of correlations analysis was displayed in Table 5-18. It indicated that all the latent variables were highly correlated. Reliability of final measurements was evaluated via Cronbach's alpha test and factor loadings. The measurements' Cronbach's alpha values were between .87 to .94 satisfying the baseline for good reliability (above .70) suggested by previous literature (Nunnaly, 1978). In addition, all variables' factor loadings were above 0.5 (from .67 to .91), satisfying the criteria for reliability test (Rivard, 1988). Therefore, it was concluded that the variables for eWOM satisfied both Cronbach's alpha test and factor analysis. (Table 5-17 and Table 5-18).

Structural Equation Modeling

After confirming the nine different factors with the adequate fit of measurement model, a structural equation modeling was conducted for testing hypotheses and research questions using the nine variables: perceived similarity, perceived credibility, product category (utilitarian), product category (hedonic), perceived fit (utilitarian),

perceived fit (hedonic), attitude toward the brand, eWOM intention and actual purchase intention.

A critical assumption for conducting SEM is multivariate normality which states that scale items and their combined measurements should be statistically normally distributed (Joreskog, 1973). Therefore, the variables' skewness and kurtosis were first assessed. It was found that the data here ranged from -1.41 to -.15, in skewness and -.93 to 2.56 in kurtosis, satisfying the criteria for normality for the structural equation model (skewness < 2, kurtosis < 4). (Hong et al., 2003). (Table 5-11).

After verifying the multivariate normality of structural model, correlations analysis with exogenous variables was performed. Previous studies have argued that the correlation value above .90 may cause a problem of multicollinearity (Hair et al., 1998). For this model of eWOM related variables, all correlation values ranged between .39 and .73 ($p < .01$). It was concluded that there is no multicollinearity problem in the structural model. (Table 5-18).

Once the correlation matrix was displayed, a structural equation model was performed to reveal the relationship between variables and to test the hypotheses and research questions. The overall model fit indices suggested that the model strongly fit the data for explaining the relationship of variables (χ^2= 169.055, d.f. = 89, p < .001; CFI = .983, TLI = .971, RMSEA = .054), with above .90 CFI and TLI (Bentler et al., 1990) and below .08 RMSEA (Browne & Cudeck, 1993).

The results of the structural model are presented in Table 5-19 and Table 5-20, with the standardized path coefficients. Figure 5-4 shows the final structural model, including the significant pathways' observed values. H7a and H7b predicted that the

perceived similarity between respondents and their Twitter friends who Tweet brand related information would be positively associated with their attitude toward the brand and eWOM intention. The results of SEM indicated that perceived similarity is a significant predictor of consumers' evaluation of brand, but it did not influence the individual intention for spreading eWOM message ($\beta = .21$, $p < .001$; $\beta = .047$ $p = .31$, respectively). Therefore, Hypothesis 7a was supported and Hypothesis 7b was not supported. (See Table 5-21 for the hypothesis testing summary).

In terms of perceived credibility and its effects on attitude toward the brand and eWOM intention, perceived credibility was highly associated with both attitude toward the brand ($\beta = .19$, $p < .05$) and eWOM spreading intention ($\beta = .28$, $p < .001$). Thus, Hypothesis 8a and Hypothesis 8b were both supported.

RQ2 investigated whether there is a difference between utilitarian and hedonic products in terms of one's attitude toward a tweeted brand and eWOM intention. The results of SEM suggested that there was a difference in the attitude toward the brand, but dependent on the product category. Specifically, obtaining brand information for a hedonic product (e.g., movie and restaurant) played a role in the respondents' attitude toward the brand ($\beta = .16$, $p < .001$). But the utilitarian product did not affect individuals' perception toward the brand. Also, obtaining brand related information on Twitter for either utilitarian or hedonic product did not affect participants' eWOM spreading intention.

This study also expected that consumer perception of fit between product dimensions (utilitarian vs. hedonic) and the usage of Twitter for brand information would be positively associated with one's attitude toward the brand and his/her eWOM

spreading intention (Hypothesis 9a, Hypothesis 9b and Hypothesis 10a, Hypothesis 10b). In terms of perceived fit between utilitarian products and Twitter, the variable successfully predicted eWOM intention ($\beta = .16$, $p < .05$). However, perceived fit was not related to one's attitude toward the brand in the context of utilitarian products. In addition, the results of SEM indicated that perceived fit of hedonic products and Twitter positively influenced both individuals' attitude toward the brand ($\beta = .29$, $p < .001$) and eWOM intention ($\beta = .18$, $p < .01$). Hence, Hypothesis 9a was not supported while Hypothesis 9b, Hypothesis 10a and 10b were supported.

Next, the pathways from attitude toward the brand to eWOM intention and purchase intention were examined. Regarding the relationships predicted in Hypothesis 11, Hypothesis 12, and Hypothesis 13, the suggested that there were significant by positive relationships between attitude toward the brand and eWOM intention ($\beta = .33$, $p < .001$), attitude toward the brand and purchase intention ($\beta = .24$ $p < .001$) and eWOM intention and purchase intention ($\beta = .46$, $p < .001$).

In summary, this study found the role of perceived similarity, perceived credibility, utilitarian product category, hedonic product category, perceived fit (utilitarian), perceived fit (hedonic) to be significant in predicting consumers' attitude toward the brand, eWOM intention and purchasing intention. Perceived similarity only influence one's attitude toward the brand (Hypothesis 7a was supported whereas Hypothesis 7b was rejected). Regarding perceived credibility, both attitude toward the brand and eWOM intention were positively associated with perceived credibility (Hypothesis 8a and Hypothesis 8b were supported). In terms of product category, only the hedonic product dimension was related to one's attitude toward the brand. The study also

revealed that perceived fit was only positively related to one's eWOM intention in the context of utilitarian products, while perceived fit was significant in affected both attitude toward the brand and eWOM intention for hedonic products (Hypothesis 9b, Hypothesis 10a, Hypothesis 10b were supported whereas Hypothesis 9a was not supported). Also, as predicted, attitude toward the brand did positively influence eWOM intention and purchase intention (Hypothesis 11, Hypothesis 12), and eWOM intention was a significant predictor of purchase intention (Hypothesis 13).

Additional Analysis

This study employed two additional statistics to investigate consumer- related variables such as age, education level, and gender.

A multiple regression was conducted for predicting respondents' attitude toward the brand, eWOM intention, and purchase intention by using age and education level for independent variables. Age and education were not found to be statistically significant in terms of attitude toward the brand (adjusted R-squared value of -.001, p = .45), eWOM intention (adjusted R-squared value of -.006, p = .91), and their purchase intention (adjusted R-squared value of -.001, p = .43). (Research Question 3 and Research Question 4 was not supported).

Also, a one-way analysis of variance (ANOVA) was performed by using gender as an independent variable to predict participants' attitude toward the brand, eWOM intention and purchase intention. While mean difference existed in terms of attitude toward the brand (M_{male}: 5.35, SD = 1.17 vs. M_{female}: 5.41, SD = 1.20), eWOM intention (M_{male}: 5.21, SD = 1.36 vs. M_{female}: 5.10, SD = 1.38) and purchase intention (M_{male}: 5,12 SD = 1.10 vs. M_{female}: 4.86, SD = 1.12), the results for gender difference showed no significant differences in terms of attitude toward the brand (F = .17 p = .68), eWOM

intention (F = .37 p = .55), and purchase intention (F = 3.09, p = .08). Thus, Research Question 5 was not supported.

Table 5-1. Twitter adoption related measurement, descriptive statistics, skewness and kurtosis

Variable	Items	Min	Max	Mean	SD	Skewness	Kurtosis
Conformity to Norm	NORM1	1	7	4.03	1.57	-.176	.277
	NORM2	1	7	3.88	1.59	-.036	-.876
	NORM3	1	7	4.07	1.57	-.109	-.762
Perceived Usefulness	PU1	1	7	4.64	1.50	-.425	-.394
	PU2	1	7	4.66	1.45	-.429	-.357
	PU3	1	7	4.86	1.33	-.473	.018
	PU4	1	7	5.03	1.38	-.752	.494
	PU5	1	7	5.23	1.32	-.891	.724
	PU6	1	7	5.33	1.37	-1.03	1.05
Perceived Ease of Use	PE1	1	7	5.72	1.28	-1.21	1.40
	PE2	1	7	5.86	1.24	-1.47	2.26
	PE3	1	7	5.69	1.24	-1.04	.946
	PE4	1	7	5.71	1.19	-1.22	2.05
	PE5	1	7	5.75	1.25	-1.27	1.73
Attitude toward Twitter	AT1	1	7	5.57	1.28	-1.23	1.52
	AT2	1	7	5.83	1.21	-1.68	3.82
	AT3	1	7	5.59	1.23	-1.16	1.59
	AT4	1	7	5.84	1.20	-1.40	2.30
	AT5	1	7	4.88	1.55	-.630	-.234
Twitter usage for days per week	TU1	1	7	5.34	1.91	-.884	-.431
Twitter usage for hours per day	TU2	1	7	3.13	1.47	.906	.592
Frequency of obtaining brand information	FB	1	7	3.88	1.37	.491	-.223

Table 5-2. Initial correlation matrix among Twitter adoption variables

	Mean	SD	1	2	3	4	5	6	7
1	3.88	1.37	-	.24**	.47**	.29**	.41**	.32**	.33**
2	3.99	1.47	.24**	-	.36**	.17**	.31**	.14*	.24**
3	4.96	1.21	.47**	.36**	-	.46**	.65**	.36*	.40**
4	5.76	1.10	.29**	.17**	.46**	-	.73**	.43**	.28**
5	5.54	1.08	.41**	.31**	.65**	.73**	-	.49**	.40**
6	5.34	1.91	.32**	.14*	.36**	.43**	.49**	-	.43**
7	3.13	1.47	.33**	.24**	.40**	.28**	.40**	.43**	-

1: Frequency of obtaining brand information, 2: Conformity to social norm. 3: Perceived usefulness, 4: Perceived ease of use, 5: Attitude toward Twitter, 6: Twitter usage (days per week), 7: Twitter usage (hours per day).
* $p < .05$, ** $p < .01$

Table 5-3. Model fit of exploratory factor analysis of Twitter adoption related variables

Model	X^2	d.f	p	RMSEA
Model 1 (1 factor model)	2649.209	170	.000	.217
Model 2 (2 factors model)	1260.445	151	.000	.154
Model 3 (3 factors model)	588.146	133	.000	.106
Model 4 (4 factors model)	283.597	116	.000	.068
Model 5 (5 factors model)	219.302	100	.000	.062

Table 5-4. Model fit of confirmatory factor analysis of Twitter adoption variable

Model	X^2	d.f	CFI	TLI	RMSEA
Model 1 (1 factor model)	2804.106	209	.556	.509	.201
Model 2 (5 factors model)	731.383	199	.909	.894	.093
Model 3 (5 revised factors model)	275.575	109	.960	.949	.071

Table 5-5. Results of final factor loading and reliability test (Twitter adoption)

Variable	Item	Standardized Factor Loading	Cronbach's α
Conformity to subjective Norm	Generally speaking, I would do what my group members think I should do.	.89***	.93
	Generally speaking, I would do what my Twitter friends think I should do in the Twitter environment.	.86***	
	Generally speaking, I would do what others think I should do in the online environment.	.94***	
Perceived Usefulness	I find Twitter useful in my life.	.82***	.92
	Use of Twitter makes it easier to obtain product information	.89***	
	Use of Twitter to obtain product information increases my productivity	.90***	
	Use of Twitter enables me to accomplish tasks more quickly	.85***	
Perceived Ease of Use	Tweet, Mention and Retweet on Twitter is easy.	.84***	.95
	Learning to use Twitter is easy for me.	.95***	
	It is easy for me to become skillful at using Twitter.	.89***	
	I find Twitter easy to use.	.94***	
Attitude Toward Twitter	I would like to communicate with my Twitter friends again in the future.	.81***	.88
	I'm satisfied with the services provided by Twitter.	.82***	
	I feel comfortable in using Twitter.	.89***	
Actual Twitter Usage	How many days during a typical week do you use Twitter?	.63***	
	How many hours during a typical day do you use Twitter?	.60***	
	How often do you get information about a brand from your Twitter friends?	.59***	

Note: *** $p < .001$

Table 5-6. Correlation matrix for final validity of constructs (Twitter adoption).

Variable	Items	CN	PU	PE	AT	FB	TUD	TUH
Conformity to Norm (CN)	1	.93**	.32**	.16**	.22**	.21**	.15**	.21**
	2	.92**	.30**	.13*	.18**	.21**	.08	.21**
	3	.95**	.33**	.13*	.22**	.22**	.16**	.24**
Perceived Usefulness (PU)	1	.30**	.88**	.25**	.43**	.40**	.29**	.38**
	2	.33**	.91**	.33**	.47**	.46**	.27**	.35**
	3	.33**	.92**	.32**	.48**	.43**	.30**	.36**
	4	.24**	.89**	.37**	.51**	.42**	.33**	.28**
Perceived Ease of Use (PE)	1	.13**	.32**	.89**	.67**	.28**	.41**	.26**
	2	.16**	.33**	.95**	.66*	.23**	.35**	.22**
	3	.15**	.30**	.92**	.67**	.19**	.34**	.17**
	4	.10	.34**	.95**	.68**	.19**	.39**	.24**
Attitude toward Twitter (AT)	1	.22**	.52**	.57**	.91**	.34**	.45**	.31**
	2	.19**	.43**	.77**	.89**	.29**	.45**	.31**
	3	.20**	.46**	.62**	.89**	.30**	.45**	.29**
Frequency of obtaining brand information (FB)	1	.24**	.47**	.29**	.41**	-	.32**	.33**
Twitter Usage: Days per week (TUD)	1	.14*	.36**	.43**	.49**	.32**	-	.43**
Twitter Usage: Hours per day (TUH)	1	.24**	.40**	.28**	.40**	.33**	.43**	-

Note: *$p < .05$, ** $p < .01$

Table 5-7. Significant parameter estimates of model

Parameter	Parameter Estimates
Perceived usefulness → Attitude toward Twitter	.296 (.297)***
Perceived ease of use → Attitude toward Twitter	.657 (.687)***
Attitude toward Twitter → Frequency of obtaining brand Information	.303 (.236)*
Attitude toward Twitter → Twitter usage (Days per week)	1.09 (.607)***
Attitude toward Twitter → Twitter usage (Hours per day)	.460 (.333)**
Perceived usefulness → Frequency of obtaining brand information	.471 (.383)***
Perceived usefulness → Twitter usage (Hours per day)	.291 (.222)**

Note: Number represents non-standardized parameter estimates, Standardized parameter estimates displayed in parenthesis.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 5-8. Summary of hypothesis testing for the Twitter adoption study

	Independent Variable	Dependent Variable	Path coefficient (Standardized)	SE	P	Dependent Variable
H1a	Conformity to subjective norm	Attitude toward Twitter	.037	.032	.39	Not supported
H1b	Conformity to subjective norm	Twitter usage (days per week)	.007	.076	.904	Not supported
		Twitter usage (hours per day)	.101	.061	.081	Not supported
		Frequency of obtaining brand information	.061	.055	.276	Not supported
H2a	Perceived usefulness	Attitude toward Twitter	.297	.045	.001***	Supported
H2b	Perceived usefulness	Twitter usage (days per week)	.038	.121	.590	Not supported
		Twitter usage (hours per day)	.222	.097	.003**	Supported
		Frequency of obtaining brand information	.383	.088	.001***	Supported
H3a	Perceived ease of use	Attitude toward Twitter	.687	.047	.001***	Supported
H3b	Perceived ease of use	Twitter usage (days per week)	-.104	.175	.306	Not supported
		Twitter usage (hours per day)	-.124	.138	.235	Not supported
		Frequency of obtaining brand information	-.110	.124	.271	Not supported

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

Table 5-8. Continued

	Independent Variable	Dependent Variable	Path coefficient (Standardized)	SE	P	Result
H4	Age	Twitter usage (days per week)	N.A	N.A	N.A	Not supported
		Twitter usage (hours per day)	N.A	N.A	N.A	Not supported
		Frequency of obtaining brand information	N.A	N.A	N.A	Not supported
H5	Education Level	Twitter usage (days per week)	N.A	N.A	N.A	Not supported
		Twitter usage (hours per day)	N.A	N.A	N.A	Not supported
		Frequency of obtaining brand information	N.A	N.A	N.A	Not supported
RQ1	Gender	Twitter usage (days per week)	N.A	N.A	N.A	No
		Twitter usage (hours per day)	N.A	N.A	N.A	No
		Frequency of obtaining brand information	N.A	N.A	N.A	No
H6	Attitude toward Twitter	Twitter usage (days per week)	.607	.222	.001***	Supported
		Twitter usage (hours per day)	.333	.172	.007**	Supported
		Frequency of obtaining brand information	.236	.154	.048*	Supported

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

Table 5-9. Direct, indirect and total effects of major variables

Independent Variable	Dependent Variable	Direct Effect	Indirect Effect	Total Effect
Perceived Usefulness	Attitude toward Twitter	.297	.000	.297
	Twitter usage (days per week)	.038	.180	.218
	Twitter usage (hours per day)	.222	.099	.320
	Frequency of obtaining brand information	.383	.070	.453
Perceived Ease of Use	Attitude toward Twitter	.687	.000	.687
	Twitter usage (days per week)	-.104	.417	.312
	Twitter usage (hours per day)	-.124	.228	.105
	Frequency of obtaining brand information	-.110	.162	.052
Conformity to Subjective Norm	Attitude toward Twitter	.037	.000	.037
	Twitter usage (days per week)	.007	.022	.029
	Twitter usage (hours per day)	.101	.012	.113
	Frequency of obtaining brand information	.061	.009	.069
Attitude Toward Twitter	Twitter usage (days per week)	.607	.000	.607
	Twitter usage (hours per day)	.333	.000	.333
	Frequency of obtaining brand information	.236	.000	.236

Table 5-10. Mediation effect of attitude toward Twitter

Independent Variable	Mediation Variable	Dependent Variable	Standardized Path Coefficient
Perceived ease of use	Attitude toward Twitter	Twitter usage (days per week)	.417
		Twitter usage (hours per day)	.228
		Frequency of obtaining brand information	.162

Table 5-11. eWOM related measurement, descriptive statistics, skewness and kurtosis,

Variable	Items	Min	Max	Mean	SD	Skewness	Kurtosis
Perceived Similarity	SIM1	1	7	5.12	1.32	-.97	.94
	SIM2	1	7	5.22	1.26	-1.00	1.31
	SIM3	1	7	5.07	1.33	-.99	.87
	SIM4	1	7	5.28	1.19	-1.09	1.66
	SIM5	1	7	5.18	1.22	-.95	1.35
	SIM6	1	7	5.24	1.31	-.95	.90
Perceived Credibility	CR1	1	7	5.07	1.22	-.78	1.15
	CR2	1	7	5.12	1.26	-1.02	1.65
	CR3	1	7	5.05	1.32	-.97	1.05
	CR4	1	7	4.94	1.31	-.85	1.13
	CR5	1	7	4.96	1.35	-.83	.78
	CR6	1	7	4.63	1.48	-.46	-.12
	CR7	1	7	5.18	1.36	-.87	.82
	CR8	1	7	4.69	1.49	-.59	.05
Product Category	PC1	1	7	4.69	1.63	-.51	-.53
	PC2	1	7	5.08	1.53	-.86	.23
	PC3	1	7	4.24	1.73	-.21	-.93
	PC4	1	7	4.93	1.59	-.69	-.18
	PC5	1	7	5.21	1.49	-.95	.55
	PC6	1	7	4.43	1.63	-.39	-.62
	PC7	1	7	4.32	1.71	-.28	-.86
	PC8	1	7	5.51	1.35	-1.14	1.33
	PC9	1	7	4.15	1.73	-.15	-.97
	PC10	1	7	5.02	1.58	-.86	-.02
Perceived Fit	PF1	1	7	4.90	1.45	-.66	.11
	PF2	1	7	5.12	1.41	-.94	.99
	PF3	1	7	4.24	1.64	-.24	-.65
	PF4	1	7	4.98	1.48	-.78	.40
	PF5	1	7	5.38	1.33	-1.13	1.64
	PF6	1	7	4.83	1.34	-.66	.55
	PF7	1	7	4.61	1.45	-.42	-.15
	PF8	1	7	5.65	1.32	-1.41	2.56
	PF9	1	7	4.17	1.67	-.19	-.70
	PF10	1	7	5.13	1.36	-.86	.86
Attitude toward the Brand	AB1	1	7	5.33	1.35	-.87	.81
	AB2	1	7	5.42	1.28	-.85	.80
	AB3	1	7	5.42	1.30	-.90	.97
	AB4	1	7	5.41	1.28	-.85	.81

Table 5-11. Continued

Variable	Items	Min	Max	Mean	SD	Skewness	Kurtosis
eWOM	eI1	1	7	5.30	1.38	-1.10	1.02
spreading	eI2	1	7	4.93	1.58	-.76	-.01
intention	eI3	1	7	5.16	1.47	-.91	.35
Purchase	PI1	1	7	4.82	1.30	-.38	-.10
Intention	PI2	1	7	4.92	1.25	-.63	.48
	PI3	1	7	4.85	1.28	-.40	.28
	PI4	1	7	5.11	1.18	-.48	.35

Table 5-12. Initial Correlation matrix among eWOM variables

	Mean	SD	1	2	3	4	5	6	7
1	5.19	1.10	-	.64**	.48**	.53**	.53**	.57**	.50**
2	4.96	1.09	.64**	-	.69**	.72**	.58**	.72**	.68**
3	4.76	1.24	.48**	.69**	-	.70**	.49**	.60**	.62**
4	4.90	1.15	.53**	.72**	.70**	-	.59**	.72**	.69**
5	5.39	1.19	.53**	.58**	.49**	.59**	-	.68**	.67**
6	5.13	1.37	.57**	.72**	.60**	.72**	.68**	-	.75**
7	4.93	1.12	.50**	.68**	.62**	.69**	.67**	.75**	-

1: Perceived similarity, 2: Perceived credibility. 3: Product category, 4: Perceived fit, 5: Attitude toward the brand, 6: eWOM intention, 7: purchase intention.
* $p < .05$, ** $p < .01$

Table 5-13. The results of principal component analysis of product category

Variable	Factor1	Factor2
Healthcare services	**.92**	-.10
Financial services	**.85**	-.03
Automobiles	**.85**	.03
Computer equipment	**.69**	.06
Telecommunication services	**.61**	.20
Movie	-.15	**.98**
Restaurant	-.02	**.82**
Clothes	.15	**.69**
Electronics	.32	**.58**
Travel information	.40	**.47**

Table 5-14. The results of principal component analysis of perceived fit

Variable	Factor1	Factor2
Healthcare services	**.97**	-.12
Financial services	**.96**	-.09
Automobiles	**.80**	.12
Computer equipment	**.62**	-.32
Telecommunication services	**.61**	.32
Movie	-.16	**.99**
Restaurant	-.02	**.90**
Clothes	.21	**.66**
Electronics	.32	**.64**
Travel information	.42	**.52**

Table 5-15. Model fit of exploratory factor analysis of eWOM related variables

Model	X^2	d.f	p	RMSEA
Model 1 (1 factor model)	5601.808	945	.000	.127
Model 2 (2 factors model)	4574.207	901	.000	.115
Model 3 (3 factors model)	3720.697	858	.000	.104
Model 4 (4 factors model)	3173.512	816	.000	.097
Model 5 (5 factors model)	2685.281	775	.000	.090
Model 6 (6 factors model)	2197.248	735	.000	.081
Model 7 (7 factors model)	1839.763	696	.000	.073
Model 8 (8 factors model)	1497.378	658	.000	.065
Model 9 (9 factors model)	1278.589	621	.000	.058

Table 5-16. Model fit of confirmatory factor analysis of eWOM related variables

Model	X^2	d.f	CFI	TLI	RMSEA
Model 1 (1 factor model)	6060.427	945	.599	.561	.133
Model 2 (7 factors model)	3017.230	924	.836	.816	.086
Model 3 (9 factors model with utilitarian, hedonic differentiation)	2538.326	909	.872	.855	.076

Table 5-17. Results of final factor loading and reliability test (eWOM)

Variable	Item	Standardized Factor Loading	Cronbach's α
Perceived Source Similarity	In terms of outlook on life, my Twitter friends are similar to me.	.87**	.93
	In terms of likes and dislikes, my Twitter friends are similar to me.	.82**	
	In terms of values and experiences, my Twitter friends are similar to me.	.81**	
	In terms of tastes for products, my Twitter friends are similar to me.	.79**	
	In terms of preferences and value, my Twitter friends are similar to me.	.86**	
	Overall, my Twitter friends are similar to me.	.88**	
Perceived Source Credibility	I feel the tweeted product information given by my Twitter friends is strong.	.85**	.92
	I feel the tweeted brand information given by my Twitter friends is convincing.	.87**	
	I feel the tweet brand information given by my Twitter friends is persuasive.	.84**	
	I feel the tweet brand information given by my Twitter friends is powerful.	.84**	
	My Twitter friends have knowledge about computer equipment in general	.61**	
	My Twitter friend is an expert in the area of computer equipment	.67**	
	My Twitter friends have knowledge about restaurants in general	.76**	
	My Twitter friend is an expert in the area of restaurants	.77**	
Product Category (Utilitarian)	I often try to obtain product information about healthcare services	.79**	.91
	I often try to obtain product information about finance services	.78***	

Table 5-17. Continued

Variable	Item	Standardized Factor Loading	Cronbach's α
	I often try to obtain product information about automobiles.	.83**	
	I often try to obtain product information about telecommunication services.	.86**	
	I often try to obtain product information about computer equipment.	.80**	
Product Category (Hedonic)	I often try to obtain product information about movies.	.78**	.87
	I often try to obtain product information about restaurants.	.76**	
	I often try to obtain product information about clothes.	.71**	
	I often try to obtain product information about electronics.	.77**	
	I often try to obtain product information about travel information.	.75**	
Perceived fit (Utilitarian)	Twitter is a good medium to learn about healthcare services.	.82**	.91
	Twitter is a good medium to learn about finance services.	.81**	
	Twitter is a good medium to learn about automobiles.	.85**	
	Twitter is a good medium to learn about computer equipment.	.83**	
	Twitter is a good medium to learn about telecommunication services.	.81**	
Perceived fit (Hedonic)	Twitter is a good medium to learn about movies.	.80**	.90
	Twitter is a good medium to learn about restaurants.	.83**	
	Twitter is a good medium to learn about clothes.	.76**	
	Twitter is a good medium to learn about electronics	.81**	

Table 5-17. Continued

Variable	Item	Standardized Factor Loading	Cronbach's α
	Twitter is a good medium to learn about travel information.	.80**	
Attitude toward the brand	Unfavorable/favorable	.90**	.94
	Bad/good	.91**	
	Dislike/like	.91**	
	Negative/positive	.86**	
eWOM spreading intention	If I find interesting product information on the Twitter, I want to Retweet it to my friends after reading the tweeted brand information from Twitter friends.	.92**	.92
	If somebody asks me for advice about interesting product information, I will encourage him or her to Tweet after reading the tweeted brand information from Twitter friends.	.86**	
	I would recommend my friends and family to Tweet or Retweet in interesting product related information after reading the tweeted brand information from Twitter friends	.90	
Purchase Intention	After considering the product information on my Twitter, it is very likely that I will buy the product.	.90**	.91
	After considering the product information on my Twitter, I will purchase the product next time I need a product.	.84**	
	After considering the product information on my Twitter, I will definitely try the product.	.84**	
	If my friend called me last night to get the advice in his/her search for a product. I would recommend him/her to buy the product	.84**	

Note: ** $p < .01$

Table 5-18. Correlation matrix for final validity of constructs (eWOM)

Variable	1	2	3	4	5	6	7	8	9
Perceived Similarity	-	.64**	.39**	.51**	.45**	.54**	.53**	.57**	.50**
Perceived Credibility	.64**	-	.62**	.68**	.66**	.67**	.58**	.72**	.68**
Product Category (UT)	.39**	.62**	-	.73**	.70**	.50**	.39**	.51**	.57**
Product Category (HD)	.51**	.68**	.73**	-	.60**	.69**	.54**	.61**	.59**
Perceived Fit (UT)	.45**	.66**	.70**	.56**	-	.73**	.49**	.64**	.63**
Perceived Fit (HD)	.54**	.67**	.50**	.69**	.73**	-	.62**	.70**	.65**
Attitude Toward Brand	.53**	.58**	.39**	.54**	.49**	.62**	-	.68**	.67**
eWOM Intention	.57**	.72**	.51**	.61**	.64**	.70**	.67**	-	.73**
Purchase Intention	.50**	.68**	.57**	.59**	.63**	.65**	.67**	.75**	-

1: Perceived Similarity, 2: Perceived Credibility, 3: Product Category (UT), 4: Product Category (HD), 5: Perceived Fit (UT), 6: Perceived Fit (HD), 7: Attitude Toward Brand, 8: eWOM Intention, 9: Purchase Intention.

**$p < .01$

Table 5-19. Significant parameter estimates of model for eWOM

Parameter	Parameter Estimates
Perceived Similarity → Attitude toward the Brand	.225 (.205)***
Perceived Credibility → Attitude toward the Brand	.211 (.190)*
Product Category (Hedonic) → Attitude Toward the Brand	.163 (.163)*
Perceived Fit (Hedonic) → Attitude Toward the Brand	.303 (.287)***
Perceived Credibility → eWOM intention	.318 (.275)***
Perceived fit (Utilitarian) → eWOM intention	.157 (.162)*
Perceived fit (Hedonic) → eWOM intention	.192 (.177)**
Attitude toward the brand → eWOM intention	.347 (.334)***
Attitude toward the brand → Purchase intention	.228 (.238)***
eWOM intention → Purchase intention	.421 (.456)***

Note: Number represents non-standardized parameter estimates, Standardized parameter estimates displayed in parenthesis.
*< *p*. 05; ***p* < .01; ****p* < .001

Table 5-20. Direct, indirect and total effects of major variables

Independent Variable	Dependent Variable	Direct Effect	Indirect Effect	Total Effect
Perceived Similarity	Attitude toward the brand	.205	.000	.205
	eWOM intention	.047	.068	.116
	Purchase intention	-.033	.101	.068
Perceived Credibility	Attitude toward the brand	.190	.000	.190
	eWOM intention	.275	.063	.338
	Purchase intention	.112	.199	.311
Product Category (Utilitarian)	Attitude toward the brand	-.082	.000	-.082
	eWOM intention	-.066	-.027	-.093
	Purchase intention	.237	-.062	.175
Product Category (Hedonic)	Attitude toward the brand	.163	.000	.163
	eWOM intention	.077	.054	.131
	Purchase intention	-.106	.099	-.007
Perceived Fit (Utilitarian)	Attitude toward the brand	.042	.000	.042
	eWOM intention	.162	.014	.176
	Purchase intention	-.001	.090	.089
Perceived Fit (Hedonic)	Attitude toward the brand	.289	.000	.289
	eWOM intention	.177	.096	.273
	Purchase intention	.095	.193	.288
Attitude toward the brand	eWOM intention	.334	.000	.334
	Purchase intention	.238	.152	.390
eWOM intention	Purchase intention	.456	.000	.456

Table 5-21. Summary of hypothesis testing for the eWOM in Twitter study

	Independent Variable	Dependent Variable	Path coefficient (Standardized)	SE	P	Result
H7a	Perceived Similarity	Attitude toward the brand	.205	.064	.001***	Supported
H7b	Perceived Similarity	eWOM intention	.047	.054	.312	Not supported
H8a	Perceived Credibility	Attitude toward the brand	.190	.082	.001***	Supported
H8b	Perceived Credibility	eWOM intention	.275	.069	.011**	Supported
RQ2a	Product Category (Hedonic)	Attitude toward the brand	.163	.085	.05*	Yes (hedonic)
RQ2b	Product Category	eWOM intention	N.A	N.A	N.A	No
H9a	Perceived fit (Utilitarian)	Attitude toward the brand	.042	.078	.620	Not supported
H9b	Perceived fit (Utilitarian)	eWOM intention	.162	.064	.015*	Supported
H10a	Perceived fit (Hedonic)	Attitude toward the brand	.289	.087	.001***	Supported
H10b	Perceived fit (Hedonic)	eWOM intention	.177	.073	.008**	Supported
H11	Attitude toward the brand	eWOM intention	.334	.054	.001***	Supported
H12	Attitude toward the brand	Purchase intention	.238	.057	.001***	Supported
H13	eWOM intention	Purchase intention	.456	.072	.001***	Supported
RQ3a	Age	Attitude toward the brand	N.A	N.A	N.A	No
RQ3b	Age	eWOM intention	N.A	N.A	N.A	No
RQ3c	Age	Purchase intention	N.A	N.A	N.A	No
RQ4a	Education level	Attitude toward the brand	N.A	N.A	N.A	No
RQ4b	Education level	eWOM intention	N.A	N.A	N.A	No
RQ4c	Education level	Purchase intention	N.A	N.A	N.A	No
RQ5a	Gender	Attitude toward the brand	N.A	N.A	N.A	No

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

Table 5-21. Continued

	Independent Variable	Dependent Variable	Path coefficient (Standardized)	SE	P	Result
RQ5b	Gender	eWOM intention	N.A	N.A	N.A	No
RQ5c	Gender	Purchase intention	N.A	N.A	N.A	No

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

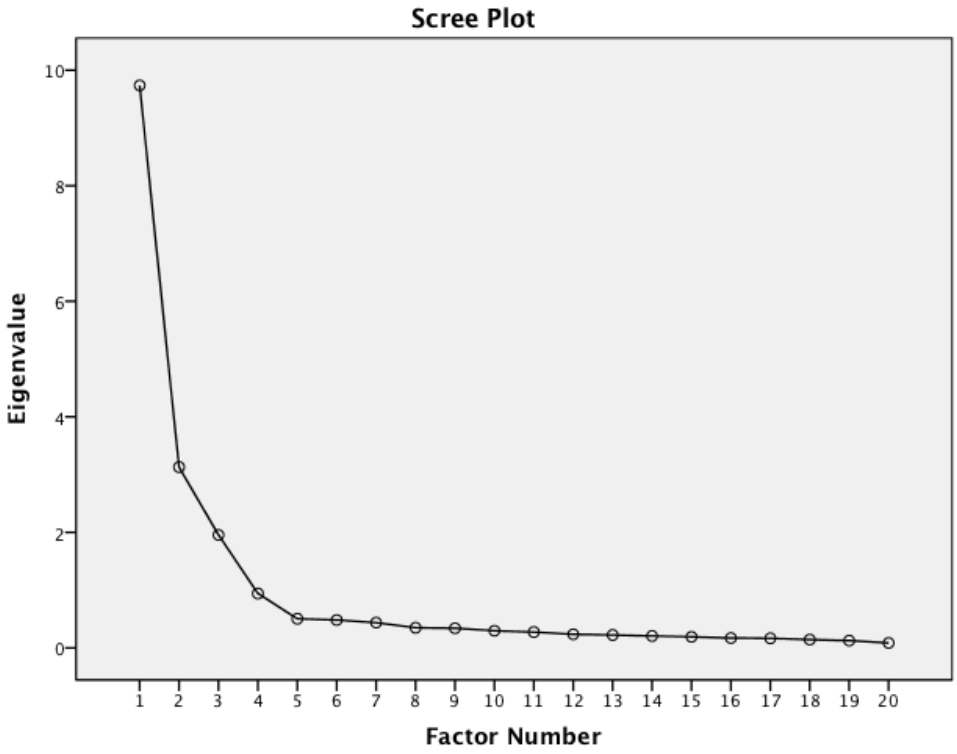
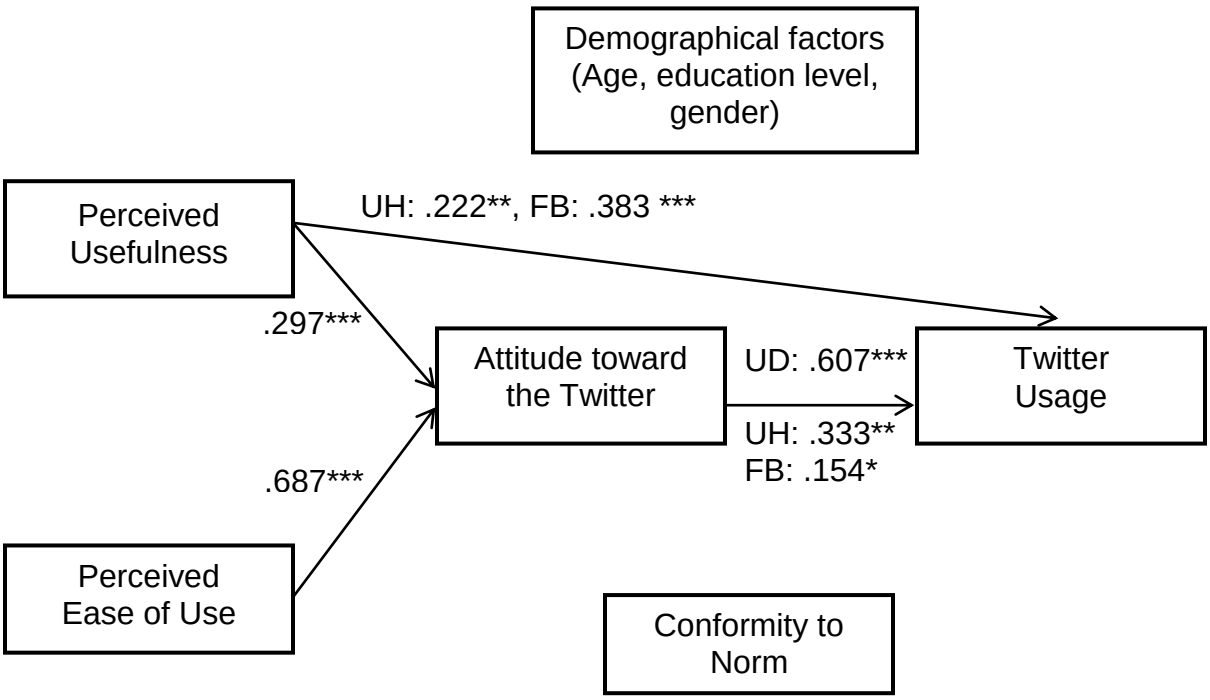


Figure 5-1. Scree plot of Twitter adoption variables.



χ^2= 276.322, d.f. = 105, p < .001; CFI = .958, TLI = .946, RMSEA = .073

Figure 5-2. Structural model including observed pathway. UD: Twitter usage (days per week), UH: Twitter usage (hours per day), FB: Twitter usage (frequency of brand information obtaining behavior).

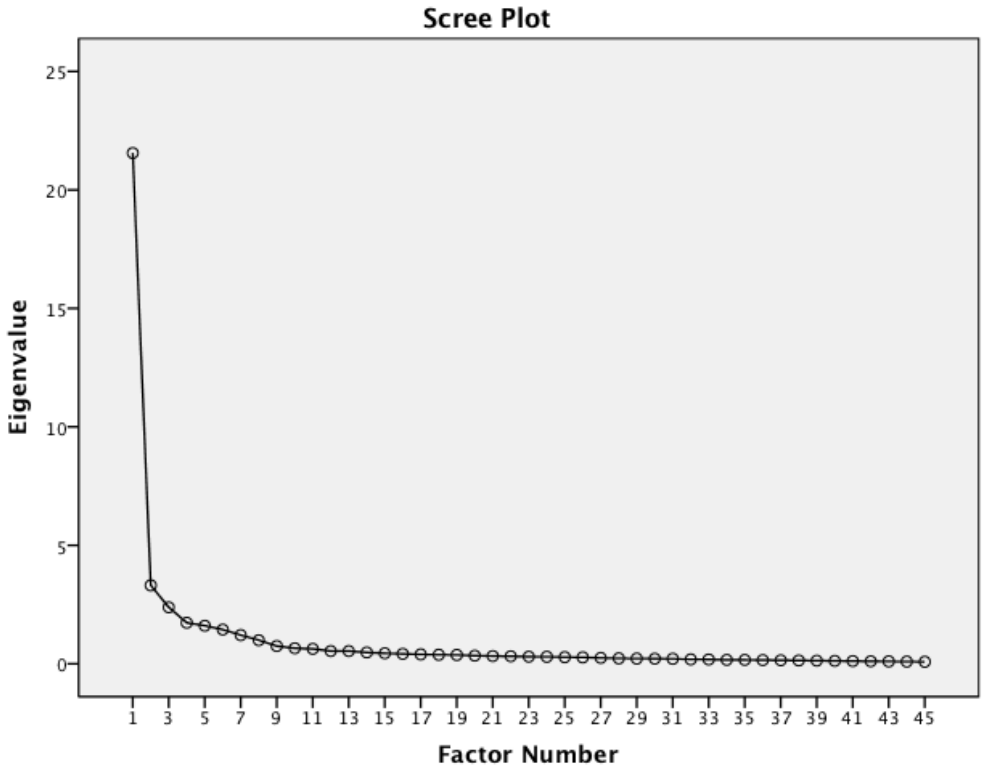


Figure 5-3. Scree plot of eWOM related variables.

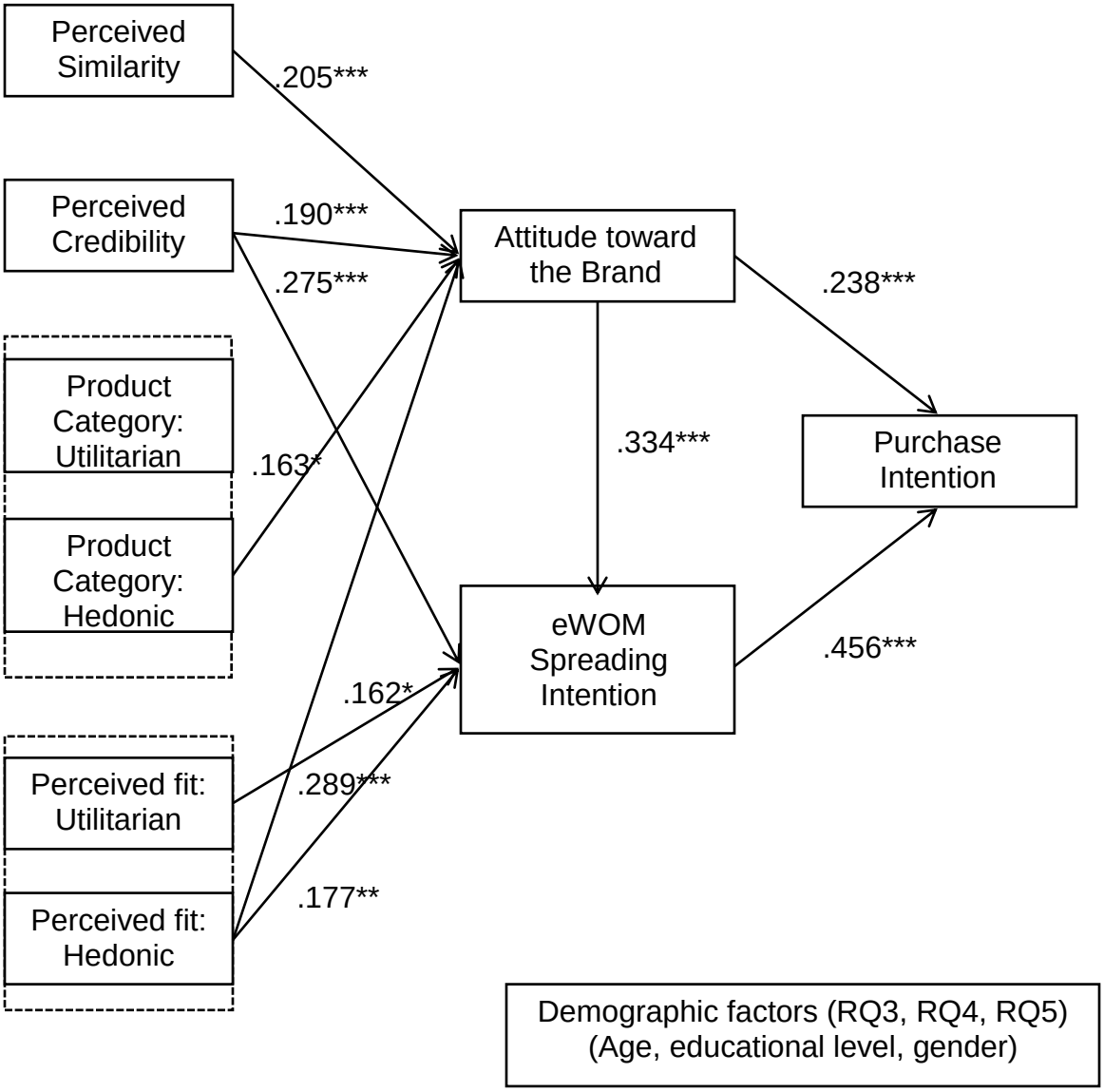


Figure 5-4. Proposed model for the Twitter in eWOM perspective.

CHAPTER 6
DISCUSSION

This chapter has two purposes. First, the results of the hypotheses and research questions are summarized. Second, individual contributions of each independent variable are discussed and possible explanations are suggested if the independent variables were not statically significant.

Although Twitter usage and its business implications have gained increasing attention in the marketplace, little empirical research has been conducted specifically to address the adoption and marketing utility of Twitter. This study conducted multiple sets of empirical tests to explore the determinants of consumers' attitude toward Twitter, their actual usage of Twitter, and its effectiveness for marketing purposes. Table 6-1 and Table 6-2 show the summary of findings for both the Twitter adoption investigation and eWOM study.

To test the hypotheses and research questions, this study adopted SEM, regression, and ANOVA as statistical methods for Twitter adoption and eWOM-related variables.

Summary of Findings for Twitter Adoption

Hypotheses 1 to 6 and Research Question 1 addressed the factors that affect consumers' attitude toward Twitter and their Twitter usage. Conformity to subjective norms, perceived usefulness, perceived ease of use, and consumer characteristics (age, education level, and gender) were used as independent variables; daily Twitter usage per week, hourly Twitter usage per day, and the frequency of obtaining brand-related information were used as dependent variables. Also, one-path relationship between attitude toward Twitter and usage was assessed. To test the relationship between

independent and dependent variables, this study employed SEM (conformity to subjective norm, perceived usefulness, perceived ease of use, attitude toward Twitter), multiple regression (age and education level), and one-way ANOVA (gender).

In terms of SEM, Hypothesis 2a (perceived usefulness and attitude toward Twitter), Hypothesis 3a (perceived ease of use and attitude toward Twitter), and Hypothesis 6 (attitude toward Twitter and Twitter usage) were strongly supported. Hypothesis 2b (perceived usefulness and Twitter usage) was partially supported since perceived usefulness was positively associated with hourly usage and the frequency of behavior in obtaining brand information was not associated with daily Twitter usage. However, Hypothesis 1a and Hypothesis1b (conformity to subjective norm) were not supported.

In the regression analysis of demographic variables (age, education level), neither variable significantly predict individuals' attitude toward Twitter (Hypothesis 4a, Hypothesis 5a) and their Twitter usage (Hypothesis 4b, Hypothesis 5b).

In addition, RQ1 investigated gender differences among attitude toward Twitter (Research Question 1a) and actual Twitter usage (Research Question 1b). The result of ANOVA found that there was no difference between male and female subjects both in terms of attitude toward Twitter and Twitter usage. Table 6-1 and Table 6-2 summarize the empirical tests of variables related to Twitter adoption.

Effects of Conformity to Subjective Norm on Attitude toward Twitter and Usage

The current study proposed two hypotheses in terms of conformity to subjective norm. First, individuals' level of conformity to subjective norm was expected to positively associate with one's attitude toward Twitter. Second, the relationship between participants' degree of conformity and various dimensions of Twitter usage, including daily, hourly usage and the frequency of behavior regarding obtaining brand information

is assumed to have a positive relationship. While conformity to subjective norm construct was correlated with participants' Twitter attitude (r = .31, $p < .01$), daily usage of Twitter (r = .14, $p < .05$), hourly usage (r = .24, $p < .01$) and frequency of behavior regarding obtaining brand information (r = .24, $p < .01$), the results of SEM rejected both hypotheses in the current study.

Specifically, regarding the results of SEM, Hypothesis 1 (conformity to subjective norm) was not supported, meaning that conformity to subjective norm did not influence consumers' attitude toward Twitter and their usage of Twitter. While previous studies have suggested the importance of social influence to determine individuals' adoption behavior (e.g., Baaren et al., 2011; Lin et al., 2009; Lu, Yao, & Yu, 2005), this study did not find significant conformity to the subjective norm in predicting Twitter adoption and usage.

It is plausible that the different methods of measuring the individuals' levels of conformity to the subjective norm might contribute to the finding. For example, the majority of previous literatures from social science, including communication and marketing areas, dealt with the concept of social influence via two representative methods: directly asking individual perception through a survey questionnaire (e.g., Davis, 1989; Davis et al., 1989) or manipulating by experimental condition (e.g., Vishwanath, 2009). Alternative methods such as network analysis (Katona, Zubcsek, & Sarvary, 2011; Lee et al., 2003) might be more appropriate for evaluating social influence in this context. Indeed, Katona et al. (2011) recently revealed that the diffusion of SNSs was highly related to personal influence by utilizing a network analysis approach.

Another possible explanation for this result might be that there are different dimensions of social influence. In this study, social influence was referred to as the level of a person's overall perception that most people who are important to him or her think that one should or should not perform the behavior. Social influence in this study was measured using an original scale that dealt with conformity to subjective norm from TRA and TPB (Fishbein & Ajzen, 1975; Lee, 2003; Lee et al., 2003; Venkatesh & Davis, 2000). This is similar to the concept of social norm (Cialdini, 1984, 1994) and many of social influence constructs in new media adoption studies such as Personal Digital Assistant (PDA) adoption (Nasco, Kulviwat, Kumar and Bruner, 2008), text messaging services (Pedersen & Nysveen, 2003) and mobile commerce (Pedersen, 2005) focused on the social influence for conformity to perceived dominant norm. The results of subjective norm and attitude toward the media / intention to use a media platform varied (e.g., Nasco et al., 2009, Venkatesh & Davis, 2000; Hsu, Yen, Chiu, & Chang, 2006). For example, Nasco et al. (2009) and Venkatesh and Davis (2000) found positive relationships between conformity to subjective norm and attitude toward media platform, whereas Hsu et al. (2006) did not find effects of conformity to subjective norm.

In addition, social influence might vary within specific contexts such as perceived popularity in society (Zhou, 2008) or peer influence versus social influence (Lin et al., 2009). Indeed, Kwon and Chon (2009) differentiated social influence into three different dimensions: affiliation, positive self-image, and perceived popularity. Therefore, it is plausible that Twitter, with its unique media characteristics, might be more relevant only to certain dimensions of social norm.

The research context of this study also should be addressed. While various new media platforms and information technology have been examined for over a decade, it was found that for non-Internet-based products (i.e., PDA), conformity to subjective norm construct influenced consumer attitude and usage pattern (Nasco et al., 2008), whereas attitude and behavioral intention of Internet-based service (i.e., blog) was not associated with social influence (Hsu & Lin, 2008).

Another possible explanation for the results is that the current adoption stage of Twitter might affect individuals' attitude toward the new media and their usage (Fisher & Price, 1992). For example, Fisher and Price (1992) found that superordinate group influence significantly affected the intention for consumers' early adoption behavior through both personal and normative outcomes from early adoption. However, although this study considered Twitter as an emerging media, only actual users of Twitter were recruited as participants.

Finally, regarding the adoption stage, the sample of this study might be different from previous literatures. In detail, a variety of new media adoption studies (e.g., Eckhardt, Laumer, & Weitzel, 2009; Katona et al., 2011) differentiated the adopter and non-adopter in terms of participants. Eckhardt et al. (2009) found that peer influence significantly affect non-adopters' information technology adoption, but this is not the case for adopters. Therefore, considering the sample of this study included only actual users of Twitter, this might explain why the level of conformity did not predict participants' attitude toward Twitter (Hypothesis 1a) and their usage (Hypothesis 1b).

Effects of Perceived Usefulness on Attitude toward Twitter and Usage

This study investigated one of the most important variables – "perceived usefulness" – that the expectation of a system would enhance his or her job

performance. First, in order to increase validity, this study adopted the original version of TAM measurements for perceived usefulness (Davis, 1989) rather than Venkatesh et al.'s (2003) expanded version of Unified Theory of Acceptance and Use of Technology (UTAUT) recommended by Putzke, Schoder, & Fishbach (2010) to successfully predict participants' favorable attitude toward Twitter and their usage of Twitter.

Second, although perceived usefulness in previous literatures focused on the original definition of perceived usefulness to increase their job performance (e.g., Davis et al., 1989; Lee, 2003; Venkatesh et al., 2003), this study modified the items specifically for behavior to obtain brand information as well as the general perception of Twitter usefulness. In detail, two items ("I find Twitter useful in my life" and "Use of Twitter enables me to accomplish tasks more quickly") were used via traditional TAM items to measure job performance aspects, and two items ("Use of Twitter makes it easier to obtain product information" and "Use of Twitter to obtain product information increases my productivity") were used to evaluate participants' brand information-related perceptions. As expected, our study confirmed that high reliability and validity through Cronbach's alpha test ($\alpha = .93$), exploratory factor analysis, and confirmatory factor analysis (standardized factor loading ranged .82 to .90), and participants of this study exhibited relatively high levels of perceived usefulness ($M = 4.94$, $SD = 1.24$). That is, the measurement of perceived usefulness for a brand-specific concept was successfully evaluated by our measurement and respondents' actually perceived Twitter was useful to obtain product/brand-related information.

In terms of hypothesis testing, as expected, all four items of perceived usefulness were important predictors for both attitude toward Twitter ($\beta = .30$, $p < .001$) and actual

usage (hours per day: β = .22, $p < .01$; frequency of obtaining brand information: β = .383, $p < .001$), corresponding with previous literature form TAM (Davis et al., 1989) and UTAUT (Venkatesh et al., 2003). Indeed, perceived usefulness is one of the most important factors affecting individuals' attitude toward the new media platforms or technologies and their intention or usage in various Internet technology-based new media platforms such as distance learning adoption (Lee et al., 2003), PDA (Nasco et al., 2008), blog (Hsu et al., 2008), online shopping service (Vijayasarathy, 2004), and mobile commerce (Wu & Wang, 2005). Thus, Hypothesis 2a (attitude toward Twitter) and Hypothesis 2b (Twitter usage) were supported.

Effects of Perceived Ease of Use on Attitude toward Twitter and Usage

This study also tested the perceived ease of use in predicting individuals' attitude toward Twitter and their Twitter usage. For an average user or consumer of new communication technology, new information technology generally is considered to be costly or unaffordable (Kang, 2003). Therefore, if the medium is easy to use, users might exhibit higher intention to use or higher actual consumption of new media. Adopting this logic, a variety of studies reconfirmed that the effects of perceived ease of use to predict individuals' new media adoption, in particular among Internet technology-based services such as blog (Hsu & Lin, 2008).

This study reconfirmed that perceived ease of use influenced attitude toward Twitter (β = .69, $p < .001$). In fact, regarding participants' Twitter attitude, perceived ease of use had greater prediction power than perceived usefulness (β = .69, $p < .001$ vs. β = .30, $p < .001$). The descriptive statistics also showed that individuals were more likely to foster favorable attitude toward Twitter for ease of use than usefulness (M_{ease} = 5.80, SD = 1.17 vs. $M_{usefulness}$ = 4.93, SD = 1.24 vs.).

Note that perceived ease of use affects only respondents' Twitter attitude but not actual usage. It is not surprising that there were mixed results in terms of the relationship between perceived ease of use and attitude toward new media or Intention to use (Vijayasarathy, 2004). Particularly for the Internet-based media platforms or services such as on-line shopping usage (Vijayasarathy, 2004), mobile commerce (Wu & Wang, 2005), only attitude toward online shopping was significantly influenced by perceived ease of use where usage intention was not directly influenced by perceived ease of use.

Note that, even though perceived ease of use did not relate directly to Twitter usage, two alternative statistical methods, correlations analysis and a mediation analysis provided possible clues on its indirect role in affecting Twitter usage. Specifically, individuals' perception of easiness to use Twitter had significant correlations with daily usage of Twitter ($r = .40$, $p < .01$), hourly usage of Twitter ($r = .24$, $p < .01$), and frequency of obtaining brand information ($r = .24$, $p < .01$), in addition to attitude toward Twitter ($r = .72$, $p < .01$). Based on these findings, it might be argued that perceived ease of use did not directly affect subjects' Twitter usage, but indirectly influenced Twitter usage through the attitude toward Twitter. More accurately, this mediation effect of attitude toward Twitter was evaluated by SEM. The path coefficient of perceived ease of use on respondents' daily usage per week, with attitude toward Twitter as a mediator, was .42 (.69*.61), hourly usage per day was .22 (.69*.33), and frequency of obtaining brand information was .16 (.69*.24). (Hypothesis 3a was supported, Hypothesis 3b was not supported).

This result might be explained by the adoptions stage of Twitter (e.g., Eckhardt, Laumer, & Weitzel, 2009; Katona et al., 2011). As previously mentioned, this study initially recruited those users of Twitter who specifically obtained brand-related information and might already be familiar with Twitter usage. Thus, the perceived ease of use could be less important for the respondents' Twitter usage.

Effects of Consumer Demographic Variables on Attitude toward Twitter and Usage

In terms of consumer characteristics, this study adopted three variables: age, education level, and gender. Age and education levels were analyzed with regression and participants' gender differences were evaluated through ANOVA.

Contrary to previous studies such as cable modem broadband adoption (Chan-Olmsted et al., 2005), terrestrial digital television (Chan-Olmsted & Chang, 2006), and e-book adoption (Jung, Chan-Olmsted, Park, & Kim, 2011), age and education levels did not predict respondents' attitude toward Twitter and their Twitter usage. Further examination of correlations analysis also found that there was no significant correlation between age, education level and Twitter attitude, and Twitter usage, respectively, except weak correlation between education level and the frequency of behavior in obtaining brand information ($r = .11$, $p < .05$). (Hypothesis 4a, Hypothesis 4b, Hypothesis 5a, and Hypothesis 5b were not supported).

Gender difference based on the ANOVA result indicated that there was no difference regarding attitude toward Twitter and Twitter usage, contrary to previous TAM-related studies in the context of mass-customized newspaper adoption (Putzke et al., 2010) or recent mobile TV adoption (Kwon and Chon, 2009). Contrary to previous literature, gender was found not to related to respondents' attitude toward Twitter (M_{male}:

5.73, *SD* = 1.18 vs. M_{female}: 5.76, *SD* = 1.07) as well as their daily Twitter usage (M_{male}: 5.61, *SD* = 1.85 vs. M_{female}: 5.26, *SD* = 1.92), hourly usage (M_{male}: 3.28, *SD* = 1.56 vs. M_{female}: 3.09, *SD* = 1.44), and frequency of behavior in obtaining brand information (M_{male}: 4.08, *SD* = 1.38 vs. M_{female}: 3.81, *SD* = 1.36). Thus, regarding Research Question 1, there was no difference between males and females in terms of attitude toward Twitter or Twitter usage.

One possible explanation why gender-based differences did not predict participants' attitude toward Twitter and Twitter usage might due to the dominance of sample in the study. Specifically, males were 24% of participants (n = 74) whereas females were 75.6% (n = 233). Therefore, a different proportion of participants' gender might affect the result.

In addition, in the context of Twitter usage, it might also be plausible that there was no 'tech anxiety' among females usage in certain types of computer-related technology (Jung et al., 2011). Indeed, Jung et al. (2011) found that there was no gender difference in e-book adoption.

Twitter usage among the general population has drastically increased in recent years, reaching 200 million accounts in 2010 (Twitter, 2011). Simultaneously, Facebook, another representative of SNSs usage, reached 160 million visitors each month – about three out of every four Internet users (Lipsman, Mudd, Rich, & Bruich, 2011). Also, this study employed only current user of Twitter, it is possible that demographic characteristics such as age and education level no longer play important roles to predict individuals' Twitter adoption since participants already are familiar with Twitter. Indeed, Yang, Morris, Teevan, Adamic, and Ackerman (2011) recently revealed that the cultural

differences among participants (China, India, United States, and United Kingdom) explained more variance in individuals' SNSs usage, in particular for Q&A behavior, than demographic variables, including age and gender. (Hypothesis 4a, Hypothesis 4b, Hypothesis 5a, Hypothesis 5b were not supported).

Effects of Attitude toward Twitter on Usage

Although many studies regarding new media adoption measured attitude toward media and intention for adoption, the current study measured actual usage for three different dimensions (days per week, hours per day, frequency of obtaining brand information). This study particularly measured actual usage of Twitter rather than intention, employing only current users of Twitter through the qualifying question. The results indicate that attitude toward Twitter was a significant factor affecting daily Twitter usage ($\beta = .61$, $p < .001$), hourly Twitter usage ($\beta = .33$, $p < .001$), and frequency of obtaining brand information ($\beta = .24$, $p < .05$). Thus, Hypothesis 6 was supported.

Summary of Findings for eWOM-Related Variables

This study also investigated factors affecting consumers' eWOM behavior in Twitter. Hypotheses 7 to 13 and Research Questions 2 to 5 were empirically tested via SEM, multiple regression and ANOVA.

Perceived similarity, perceived credibility, product category, perceived fit, and consumer characteristics (age, education level, gender) were used as the independent variables, and attitude toward the brand, eWOM intention, and purchase intention were used as dependent variables.

In terms of SEM, results for perceived similarity, perceived credibility, product category and perceived fit were tested. This study found that H7a (perceived similarity and attitude toward the brand), H8a (perceived credibility and attitude toward the brand),

H8b (perceived credibility on eWOM intention), H9b (perceived fit of utilitarian product on eWOM intention), H10a (perceived fit of hedonic product on attitude toward the brand), H10b (perceived fit of hedonic product on eWOM intention), H11 (attitude toward the brand on eWOM intention), H12 (attitude toward the brand on purchase intention), and H13 (eWOM intention on purchase intention) were strongly supported. Considering the results of multiple regression and ANOVA, RQ2 (gender and product category), only the hedonic product category influenced one's attitude toward the brand. However, H7b (perceived similarity on eWOM intention), H9a (perceived fit of utilitarian product category on attitude toward the brand), RQ2b (product category and eWOM intention), RQ3 (age), RQ4 (education level), RQ5 (gender) were not supported. Table 6-1 and Table 6-2 summarize the empirical tests of hypotheses and research questions.

Effects of Perceived Similarity on Attitude toward the Brand and eWOM Intention

This study adopted perceived similarity, one of the most important variables in the context of WOM and eWOM study (e.g., Brown & Reingen, 1987; Gilly, Craham, Wolfnbarger, & Yale, 1998; Price, Feick, & Higie, 1989; Wangenheim & Bayon, 2004) regarding communicator characteristics.

In terms of perceived similarity (Hypothesis 7), only attitude toward the brand was influenced by perceived similarity ($\beta = .21$, $p < .001$); this yielded different results from previous eWOM studies in the context of blogs (e.g., Prendergast et al., 2010) or forums (e.g., Dellarocas, 2004). Most previous studies within the context of the online environment revealed a positive relationship between perceived similarity and consumer willingness to spread eWOM (Dellarocas, 2004; Prendergast et al., 2010; Wangenheim & Bayon, 2004). However, Chu and Kim (2011) recently revealed that homophily, a related concept of perceived similarity, actually had a relationship with individuals'

eWOM behavior. The discrepancy might be rationalized from the perspective of eWOM cost.

Although most WOM and eWOM literature has focused on the benefits and motivations of WOM and eWOM communication in consumer behavior, several studies have discussed the inevitable cost of WOM (Cheema & Kaikati, 2010; Frenzen & Nakamoto, 1993). In particular, Cheema and Kaikati (2010) suggested that the concept's "need for uniqueness," plays an important role in WOM processes. Need for uniqueness is a special psychological trait (Lynn & Harris, 1997; Snyder & Fromkin, 1977; Tian, Bearden, & Hunter, 2001) that creates a preference for distinct and unique product comparisons with common products (Bloch, 1995; Simonson & Nowlis, 2000). While eWOM via Twitter helps foster a favorable attitude toward the brand and to inspire greater purchase intention, it also may contribute to a sense of loss of uniqueness in consumers' possessions (Cheema & Kaikati, 2010); thus, consumers may be reluctant to spread eWOM to their acquaintances. In this case, consumers' reactions to eWOM messages could be mediated by individuals' psychological trait of "need for uniqueness." Considering the "cost" of eWOM, it is plausible that other psychological traits might mediate between one's attitude toward the brand and his/her effort to eWOM in Twitter.

Also, regarding the relationship between perceived source similarity and attitude toward the brand, eWOM intention, and purchase intention, correlations analysis provides some possible explanation. Although source similarity did not significantly predict individuals' eWOM intention in SEM, source similarity had significant correlations with eWOM intention ($r = .57$, $p < .01$) and purchase intention ($r = .50$, $p < .01$). Further,

regression analysis for predicting participants' eWOM intention, perceived similarity, and perceived credibility was put into the multiple regression. The model yielded an adjusted R-squared value of 61.3% and perceived similarity was significant predictor of eWOM intention ($\beta = .134$, $p < .05$). However, additional regression result indicated that perceived similarity did not predict participants' purchase intention.

Therefore, while perceived similarity did not significantly predict subjects' eWOM intention in SEM, it did influence multiple regression with marginal statistical power ($\beta = .134$, $p < .05$).

Effects of Perceived Credibility on Attitude toward the Brand and eWOM Intention

This study adopted source credibility as an important independent variable to predict consumers' attitude toward the brand, eWOM intention, and purchase intention in Twitter. Regarding measurement items, the current study modified the items specifically for Twitter context. In detail, four items from communicator credibility measurements in eWOM were adopted and modified for message senders in Twitter from both personal and company accounts. The wordings of four items were (1) "I feel the tweeted product information given by my Twitter friends is strong"; (2) "I feel the tweeted brand information given by my Twitter friends is convincing"; (3) "I feel the tweeted brand information given by my Twitter friends is persuasive"; and (4) "I feel the tweeted brand information given by my Twitter friends is powerful." Also, four items were created to evaluate the knowledge and expertise specifically to select from each product category (hedonic: restaurant, utilitarian: computer equipment). The statements of items were: (5) "My Twitter friends have knowledge about computer equipment in general"; (6) "My Twitter friend is an expert in the area of computer equipment"; (7) "My

Twitter friends have knowledge about restaurants in general"; and (8) "My Twitter friend is an expert in the area of restaurants."

Consistent with our prediction, the results of the reliability test, exploratory factor analysis, and confirmatory factor analysis found high Cronbach's alpha value ($\alpha = .92$), and satisfied value of standardized factor loadings (.61 to .87). That is, the measurement of source credibility for brand-specific concept in Twitter was successfully evaluated by our measurement.

Regarding perceived credibility, this study reconfirmed its important role in predicting individuals' eWOM behavior (Prendergast et al., 2010; Wangenheim & Bayon, 2004). To be specific, this study revealed a positive association between perceived credibility, attitude toward the brand ($\beta = .19$, $p < .001$), and intention to spread eWOM ($\beta = .28$, $p < .001$). In other words, brand attitude and individuals' willingness to spread eWOM were highly influenced by the credibility of the information sender (Hypothesis 8). This finding reaffirmed the importance of the message sender's credibility in the Twitter, new media environment.

Effects of Product Category on Attitude toward the Brand and eWOM Intention

Our study used the product differentiation of utilitarian and hedonic differentiation specifically based on products function (Hirschman & Holbrook, 1982; Holbrook & Hirschman, 1982; Verhagen, Boter, & Adelaar, 2010) rather than consumer perceived shopping value (Babin et al., 1994).

A majority of previous studies regarding eWOM in blog or customer reviews only focused on specific product with experiment design (e.g., Lee et al., 2009; Mizersk, 1982; Ratchford et al., 2003). For example, Lee and colleagues (2009) found the importance of negative eWOM in attitude toward the laptop computer and purchase

intention. Mizerski (1982) and Ratchford et al. (2003) empirically tested the importance of eWOM within automobile context. However, this study adopted multiple product categories obtained from industry report that most frequently discussed on online environment (healthcare services, finance services, automobiles, telecommunication services, computer equipment, movies, restaurants, clothes, electronics and travel information). Next, questionnaires were made to directly ask participants' level of brand information obtaining behavior on Twitter (e.g., "I often try to obtain product information about healthcare services,") To verify the different product differentiation, principal component analysis, exploratory factor analysis and confirmatory factor analysis were performed and confirmed that consumers perceived product nature based on the utilitarian vs. hedonic inherit. The results of reliability and validity tests indicated that measurement successfully evaluated product category differentiation (utilitarian product category: Cronbach's alpha value of .91, standardized factor loading ranged .78 to .86, hedonic product category: Cronbach's alpha vale of .87, standardized factor loading between .71 to .78).

In terms of the SEM of product category, an interesting finding should be addressed. In line with prior differentiation between utilitarian and hedonic products (Hirschman & Holbrook, 1982; Holbrook & Hirschman, 1982; Reibstein, 2002; Verhagen et al., 2010), this study found that Twitter is more important in mediation of brand information for hedonic products ($\beta = .16$, $p < .001$). (Research Question 2). Indeed, descriptive statistics indicated that consumers more often obtained hedonic product related brand information ($M = 5.15$, $SD = 1.22$) than brand information of utilitarian product ($M = 4.36$, $SD = 1.44$).

One possible explanation for only the significant influence of the hedonic product category on consumers' attitude toward the brand is the concept of "brand extendibility" (Hagtvedt & Patrick, 2009). Hagtvedt and Patrick (2009) found that hedonic association for brands was a key factor of brand extendibility; therefore, a hedonic brand leads to a more favorable attitude toward brand extension evaluation than a utilitarian brand. Likewise, this study is based on the concept of category extension: that with Twitter providing brand information, consumers might be more favorable to brand information of a hedonic product.

Also, Carroll and Ahuvia's (2006) logic of "brand love" might be one possible explanation that hedonic products easily lead to a higher likelihood of being brand lover. Following this notion, hedonic product category may foster a more favorable attitude toward the brand in Twitter environment comparing with the utilitarian product category.

While only the hedonic product category predicted attitude toward the brand, additional correlations analysis found that hedonic product category predicted eWOM intention ($\beta = .61$ $p < .001$), and purchase intention ($\beta = .59$, $p < .001$) and utilitarian product category was significantly correlated with brand attitude ($\beta = .39$, $p < .01$), eWOM intention ($\beta = .51$, $p < .01$) and purchase intention ($\beta = .57$, $p < .01$). Thus, Research Question 2a confirms the difference between utilitarian and hedonic product category differentiation.

Effects of Perceived Fit on Attitude toward the Brand and eWOM Intention

Considering the findings in hypotheses 9 and10, we also adopted perceived fit construct, one of the most frequently discussed in previous marketing and brand-related study (e.g., Aaker & Keller, 1990; Cha, 2009a; Chang & Chan-Olmsted, 2010; Bhat & Reddy, 2001; Park et al., 1986).

The current study, adopting Cha's (2007, 2009a) logic, investigated the perceived fit of Twitter and each product category (utilitarian vs. hedonic) with a focus on category extension rather than product extension. In detail, questionnaires were created to directly ask individuals' level of agreement in terms of perceived fit between Twitter and each category that obtained from principal component analysis (e.g., "Twitter is a good medium to learn about healthcare services"). Then perceived fit of utilitarian and hedonic dimensions was analyzed via Cronbach's alpha reliability test, exploratory factor analysis and confirmatory factor analysis. Reliability and validity tests performed in this study confirmed that these items actually measured the concept of perceived fit of product (both utilitarian and hedonic product) and Twitter. Specifically, perceived fit of utilitarian dimensions yields high value of Cronbach's alpha .91, standardized factor loading ranged from .81 to .85, and hedonic dimension also enjoyed high value of Cronbach's alpha, .90, with standardized factor loading between .76 to .83.

Regarding hypotheses 9 and 10, perceived fit between Twitter and the product category largely influenced consumers' attitude toward Twitter and their eWOM spreading intention. This is consistent with most previous studies in the area of perceived fit and brand extension. Specifically, perceived fit of utilitarian product was not positively related to attitude toward the brand, whereas the hedonic dimension of the perceived fit was positively associated with attitude toward the brand ($\beta = .29$, $p < .001$). However, in terms of eWOM intention, both utilitarian products ($\beta = .18$, $p < .05$) and hedonic products ($\beta = .18$, $p < .01$) predicted respondents' eWOM intention.

One possible theoretical reasoning that perceived fit of hedonic product significantly influenced consumers' attitude toward the brand and eWOM intention

whereas utilitarian fit was only positively associated with consumers' eWOM intention is brand extendibility (Hagtvedt & Patrick, 2009), similar to the result from Research Question 2 (product category). Hagtvedt and Patrick (2009) indicated that if the brand has more hedonic related associations, then it leads to more favorable attitude toward the brand extension evaluation. Although this study adopted the logic of category extension rather than product extension, consumers might feel more positive when they obtained hedonic product related brand information in Twitter than utilitarian product. Indeed, the descriptive statistics revealed that consumers generally considered Twitter a good medium for obtaining brand information on a hedonic product more than a utilitarian product ($M_{hedonic}$ = 5.25, *SD* = 1.16 vs. $M_{utilitarian}$ = 4.55, *SD* = 1.31).

In addition to SEM, correlations analysis provided that utilitarian perceived fit had significantly correlated with consumers' attitude toward the brand (r = .48, $p < .01$), eWOM intention (r = .64, $p < .01$) and purchase intention (r = .63, $p < .01$). Therefore, although consumers indicated their perception of perceived fit of hedonic product and Twitter was more important than utilitarian fit, perceived fit between utilitarian product and Twitter was somewhat important.

Effects of Consumer Demographic Variables on Attitude toward the Brand and eWOM Intention

This study additionally conducted two statistical analyses to investigate the consumer related variables such as age, education level and gender. However, none of these consumer characteristics predict consumers' attitude toward the brand, eWOM intention and purchase intention by multiple regression and ANOVA.

Additional correlations analysis did not find significant correlations between age and attitude toward brand, eWOM intention, and purchase intention, as well as between

education level and attitude toward the brand, eWOM intention, and purchase intention. Also chi-square test indicated that there was no significant difference among gender in terms of the three dependent variables. Based on these findings, it can be argued that consumer demographic characteristics such as age, education level and gender did not affect individuals' brand attitude, eWOM intention and purchase intention at lease eWOM context within Twitter with caution.

However, regarding inconsistent results of consumer characteristics in eWOM context (e.g., Cheung, & Law, 2009; Heung, 2003; Lp, Lee, & Law, 2011; Ratchford et al., 2003), it could be argued that demographics did not serve as a consistent predictor in terms of consumers' eWOM behavior. For example, some previous literature found that young and highly educated people used more Internet (Ratchford et al., 2003), specifically travel information sharing behavior (Lp et al., 2011) whereas some studies did not find significant difference among age and education level for travel web site usage (Cheung & Law, 2009; Heung, 2003). Gender differences were not found in SNSs usage (Cha, 2009b) and traveling information sharing web site (Lp et al., 2011), and that was reconfirmed in this study.

Similar to the demographic characteristic in the pattern of Twitter adoption study, one possible explanation of failing to predicting individual eWOM behavior in Twitter by demographic characteristic is a female dominant sample of this study. Specifically, males respondents only composed 24% of the participants (n = 74) Therefore, the different proportion of participants' gender might affect to the result. In addition, it might be plausible that there was no longer 'tech anxiety' among females in the adoption of computer related technology (Jung et al., 2011). It is plausible that eWOM behavior in

Internet technology based service, Twitter, also did not affect tech anxiety for female consumers.

Also, current adoption stage of SNSs and Twitter might affect the lack differences in age, education level and gender in consumer eWOM behavior in Twitter. As previously mentioned, Twitter usage among general population has drastically increased recent year, reached 200 million accounts in 2010 (Twitter, 2011) many consumers are familiar with Twitter and its role in obtaining brand-related information or as an eWOM spreading tool. Therefore, their attitude toward brand, eWOM behavior or purchase intention might be similar regardless of individuals' demographical characteristics.

Effects of Attitude toward the Brand on eWOM intention and Purchase Intention

Regarding the prediction role of consumer attitude and actual behavioral intention, this study investigated the relationship among attitude toward the brand, eWOM intention and purchase intention. Although many studies in eWOM context used specific fictitious brand to test the effect of eWOM in attitude toward brand and actual purchase intention in experiment setting (e.g., Lee & Youn, 2009; Lee et al., 2009), this study asked consumers about their brand attitude when consumers encountered brand information forwarded by their Twitter friends both form personal and company account. The descriptive statistics here indicated that the respondents exhibited relatively high score of bran attitude (M = 5.39, SD = 1.19), eWOM intention (M = 5.13, SD = 1.37), and purchase intention (M = 4.83, SD = 1.11). That is consumers exhibited favorable attitude toward the brand, eWOM intention, and purchase intention when they received brand-related information in Twitter.

The results of SEM also confirmed that consumers' attitude toward brand predicated individuals' eWOM spreading intention ($\beta = .33$, $p < .001$), and purchase intention ($\beta = .24$ $p < .001$). In addition, individuals' eWOM spreading intention was positively associated with their purchase intention ($\beta = .46$ $p < .001$). The results reconfirmed that linear relationship of individuals' attitude and behavior (Ajzen & Fishbein, 1977, 2005; Fishbein & Ajzen, 1975; Perloff, 2010). Thus Hypothesis 11, 12 and 13 were supported.

Table 6-1. Result summary for hypotheses

Hypothesis	Result
H1a. Conformity to subjective norm will be positively associated with one's attitude toward Twitter.	Not supported
H1b. Conformity to subjective norm will be positively associated with one's Twitter usage.	Not Supported
H2a. Perceived usefulness of Twitter will be positively associated with one's attitude toward Twitter.	Supported
H2b. Perceived usefulness of Twitter will be positively associated with one's Twitter usage.	Supported
H3a. Perceived ease of use will be positively associated with one's attitude toward Twitter.	Supported
H3b. Perceived ease of use will be positively associated with one's Twitter usage.	Not supported
H4a. Age is negatively associated with one's attitude toward Twitter.	Not supported
H4b. Age is negatively associated with one's Twitter usage.	Not supported
H5a. Education level is positively associated with one's attitude toward Twitter.	Not supported
H5b. Education level is positively associated with one's Twitter usage	Not supported
H6. Attitude toward Twitter is positively associated with one's Twitter usage.	Supported
H7a. The perceived similarity between a Twitter user and one's Twitter friends who tweet about a branded product will be positively related to one's attitude toward the brand	Supported
H7b. The perceived similarity between a Twitter user and one's Twitter friends who tweet about a branded product will be positively related to one's eWOM spreading intention.	Not supported
H8a. The perceived source credibility of Twitter friends who tweet about a branded product will be positively related to one's attitude toward the brand.	Supported
H8b. The perceived source credibility of Twitter friends who tweet about a branded product will positively related to one's eWOM spreading intention.	Supported
H9a. Perceived fit between Twitter and utilitarian product category information is positively associated with one's attitude toward the brand.	Not supported
H9b. Perceived fit between Twitter and utilitarian product category information is positively associated with one's eWOM spreading intention.	Supported
H10a. Perceived fit between Twitter and hedonic product category information is positively associated with one's attitude toward the brand.	Supported
H10b. Perceived fit between Twitter and hedonic product category information is positively associated with one's eWOM spreading intention.	Supported

Table 6-1. Continued

Hypothesis	Result
H11. Attitude toward the brand is positively associated with one's eWOM spreading intention.	Supported
H12. Attitude toward the brand is positively associated with one's purchase intention.	Supported
H13. eWOM intention is positively associated with one's purchase intention	Supported

Table 6-2. Result summary for research question

Research Question	Result
RQ1a. How does gender influence one's attitude toward Twitter?	No difference
RQ1b. How does gender influences one's Twitter usage?	No difference
RQ2a**.** How does the product category of a tweeted brand influence one's attitude toward the brand?	Hedonic played a role in affecting one's attitude toward the brand whereas utilitarian product did not.
RQ2b**.** How does the product category of a tweeted brand influence one's eWOM spreading intention?	No difference
RQ3a. How does age influence one's attitude toward the brand?	No difference
RQ3b. How does age influence one's eWOM spreading intention?	No difference
RQ3c. How does age influence one's purchasing intention?	No difference
RQ4a. How does educational level influences one's attitude toward the brand?	No difference
RQ4b. How does educational level influences one's eWOM spreading intention?	No difference
RQ4c. How does educational level influence one's purchasing intention?	No difference
RQ5a. How does gender influence one's attitude toward the brand?	No difference
RQ5b. How does gender influence one's eWOM spreading intention?	No difference
RQ5c. How does gender influence one's purchasing intention?	No difference

CHAPTER 7
CONCLUSION

This chapter discusses the thesis findings in the context of academic contributions and practical applications. It also addresses limitations and suggestions for future research.

Our study consisted of two main parts: factors affecting Twitter adoption and its utilization of eWOM as a marketing tool. This study was conducted in consideration of the recent burgeoning of SNSs, specifically, Twitter, an ideal tool for alternative marketing. Little empirical research has been conducted to investigate consumer motivations for using Twitter and their eWOM behavior.

For the initial stage of Twitter-related study, this study investigated several potential factors affecting consumers' adoption of Twitter as a brand information obtaining tool and its potential for marketing purposes. To obtain a more in-depth understanding of the reasons behind consumers' use of Twitter and utilization of Twitter as a product/brand information communication tool, current study integrated several different theories that explain consumer behavior specific to online environment: theory of reasoned action, theory of planned behavior, technology acceptance model, and eWOM.

Based on the multiple sets of empirical test, including SEM, multiple regression, ANOVA, and correlations analysis, our study found a list of variables affecting consumers' adoption of Twitter and their eWOM behavior in Twitter. This chapter discusses how the findings can be applied from the perspective of academic contribution and the practitioners' point of view. Also, limitations and suggestions for future research are provided.

Twitter Adoption Related Implication

Theoretical Implications

In terms of academic contribution of Twitter adoption, this study identified six different aspects. First, it empirically tested SNSs adoption based on integrating theoretical background of social influence, TRA, TPB, and TAM by measuring various dimensions of usage, including the frequency of behavior in obtaining brand information rather than adoption intention employing a general sample.

Second, somewhat different from previous studies, it found the concept, conformity to subjective norm was no longer an important predictor of new media adoption. Third, this study validated again the importance of perceived usefulness. Fourth, this study reconfirmed the impact of the perceived ease of use. Lastly, the study shows a different result from previous studies – that participants' demographic characteristics such as age, education level, and gender did not influence Twitter attitude and usage.

Integrating adoption theories in Twitter context with actual usage using general sample

Although several theories have confirmed and reconfirmed individuals' adopting behavior of a new media platform (e.g., Homburg et al., 2010; Lee, 2003; Lee et al., 2003; Park, 2010), using TPB, TRA, and TAM, the adoption of social media, particularly SNSs, has rarely been tested empirically. This study proposed integrating models of TPB, TRA, and TAM, and including a demographic characteristic construct to predict individuals' adoption behavior. Unlike most previous studies, this study adopted three different constructs of actual Twitter usage, including daily usage per week, hourly usage per day, and the most important item of the frequency of behavior in obtaining

brand information, rather than adoption intention by recruiting current Twitter users. Although previous studies revealed the consistent attitude of new media and usage intention (e.g., Davis et al., 1989) some studies indicated the possibility of a discrepancy between attitude and individuals' actual behavior (e.g., Ajzen & Fishbein, 1977; Fishbein & Ajzen, 1975; Perloff, 2010). Therefore, this study analyzed various factors influencing attitude toward the new media, Twitter, and their actual usage to provide more in-depth understanding of consumer behavior on Twitter, particularly behavior in obtaining brand-related information.

Also, this study employed general U.S. consumers by utilizing a national consumer panel. Previous studies in the context of media adoption mostly used student samples that might lack external validity due to sampling issues (e.g., Lin et al., 2009). While the student sample was used for the pre-test, the general population sample was used for the main test. The purpose of the pre-test was to test validity and reliability; the results of exploratory factor analysis and confirmatory factor analysis yielded almost identical questionnaire items. A brief comparison of the results between student sample for pre-test and general sample for main test were somewhat different. Therefore, it should be noted that although student sample was used frequently in new media, especially social media adoption studies, their interpretation and generalization need caution.

Conformity to subjective norm in attitude toward Twitter and usage

Contrary to our prediction, individuals' level of conformity to subjective norm did not significantly relate to their adoption intention or usage of Twitter. Our study contradicts previous findings that the degree of conformity to subjective norm was positively associated with new media adoption such as distance learning (Lee, 2003; Lee et al., 2003). As previously discussed, different methods for measuring participants'

degree of conformity to subjective norm such as experiment or network analysis would be useful to analyze the relationship between individuals' levels of conformity and their SNSs attitude and usage. Also different dimensions of social influence such as peer influence should be analyzed.

The importance of perceived usefulness in attitude toward Twitter and usage

As expected, perceived usefulness was found to be a significant factor affecting individuals' attitude toward Twitter and their usage of Twitter. In other words, this study reconfirmed the importance of individuals' perception of perceived usefulness in attitude toward Twitter and their usage of Twitter. Specifically, this study verified the perceived usefulness construct in the social media context. According to TAM (Davis, 1989; Davis et al., 1989), one of the most important constructs to influence individual perceived utility is perceived usefulness. Many studies have confirmed the important predicting role of perceived usefulness in media adoption, particularly among Internet-based new technology. However, the majority of previous studies measured perceived usefulness as a conceptual definition of improving individuals' job performance. This study expanded the conceptual dimension of perceived usefulness in brand-related variables such as "Use of Twitter makes it easier to obtain product information," "Use of Twitter to obtain product information increases my productivity." Thus, our study extended the original TAM constructs of perceived usefulness utilizing results from the exploratory factor analysis, confirmatory factor analysis and SEM. It validated the role of perceived usefulness regarding brand information obtaining behavior in one's attitude toward the Twitter and usage.

Thus, as one of the theoretically important perspectives of adoption study, perceived usefulness was the strongest predictor among Twitter adoption-related

variables, including perceived ease of use, age, education level, and gender. Specifically, the result of SEM reconfirmed that perceived usefulness induced the highest path coefficient in factors affecting individuals' attitude toward Twitter and their usage of Twitter.

The importance of perceived ease of use in attitude toward Twitter and usage

Consistent with previous adoption literatures, the effect of the perceived ease of use was strongly related to participants' attitude toward Twitter though it did not link to individuals' Twitter usage. Theoretically, two contributions might be addressed in this study: the indirect effects of perceived ease of use to individuals' actual usage of Twitter and adoption stage of Internet based new media platform. First, although the results of empirical test of perceived ease of use and attitude toward the new media and usage intention, the results of correlations analysis and mediation analysis of SEM provided that perceived ease of use indirectly influenced Twitter usage rather via attitude toward Twitter rather than directly impacted to actual usage. In other words, although individuals were not directly influenced by their perception of ease of use when they tried new media platforms, they might still be indirectly influenced.

Second, the adoption phase of an Internet-based media platform should be addressed. Specifically, regarding the more recent Internet-based media platforms or services, including on-line shopping usage (Vijayasarathy, 2004), mobile commerce (Wu & Wang, 2005), only attitude toward the online shopping was significantly influenced by perceived ease of use where using intention was not directly influenced by perceived ease of use, while in the initial stage of the Internet burgeoning, literatures in terms of Internet-based new media platforms such as distance learning program (Lee, 2003; Lee et al., 2003) were related to the audience's perception of ease of use for

each media platforms. Therefore, the prominent usage of the Internet, social media and SNSs, perceived ease of use no longer influenced individual intention for using Internet service-based media since audiences have experienced the Internet to a certain degree.

This study identifies perceived usefulness and perceived ease of use as the two primary factors affecting individuals' attitude toward Twitter and Twitter usage. Likewise, this study empirically tests the relationship among variables. The results of this study generally support the adoption studies, namely traditional media adoption and Internet-based media.

However, in relation to attitude and behavioral measures, the effects of perceived usefulness and ease of use are different. Perceived usefulness positively influences both consumer attitude toward Twitter and their actual usage whereas perceived ease of use only predicts individuals' attitude toward Twitter. This explains why consumers do not adopt certain types of high-tech, Internet-based new media platforms available in markets. System characteristics, including usefulness and ease of use, play a role in the consumer decision-making process for adoption. When consumers foster attitude toward certain new media services, they are primarily driven by ease of use, and secondarily by usefulness. However, during the phase of actual usage, consumers' perception of usefulness directly influences their usage. Considering the services that are useful but complex, or easy to use but less helpful to consumers, it is necessary to understand different expectations for ease of use and usefulness through the attitudinal stage and actual behavioral stage.

Furthermore, going beyond the TAM, researchers should consider the "fundamental functional similarity," "functional uniqueness" (Cha, 2009, p.173), and

“perceived hybrid functionality” (Jung et al., 2011, p. 15) in terms of consumers’ new media adoption. Traditionally, many media adoption studies focused on the similarities of new media that could replace or substitute old ones (e.g., Lee & Leung, 2008). However, a recent study reveals the positive relationship between consumers’ functional uniqueness and their likelihood of using the new video platform instead of television (Cha, 2009b). Likewise, in the Twitter context, at the attitudinal stage, consumers exhibit more favorable attitudes when consumers consider Twitter as similar to other easy-to-use Internet-based services. However, in the actual behavioral stage, fundamental functional similarity would not influence individuals’ usage pattern. Instead, functional uniqueness relating to perceived usefulness might affect consumers’ Twitter usage. Moreover, Jung et al. (2011) proposed that the concept of perceived hybrid functionality refers to the combining of relatively new reading platforms and old print media by explaining e-book reader adoption. Similarly, in the SNSs context, perceived usefulness and ease of use are not simple concepts regarding how to use Twitter. Twitter is a relatively new platform for communication and shares similarities with other web-based services. This implies that Twitter has “supplemental, but not substitution,” (Jung et al., 2011) functions compared with other new media platforms, particularly for sending brand-related information to consumers.

Consumer characteristics in attitude toward Twitter and usage

Our study investigated age, education level and gender as audience demographic-related independent variables in addition to traditional adoption variables form TPB and TAM. Age and education level were measured by Likert scale whereas gender was asked by categorical variable. Contrary to previous adoption study contexts such as cable modem broadband adoption (Chan-Olmsted et al., 2005), terrestrial digital

television (Chan-Olmsted & Chang, 2006) or e-book adoption (Jung, et al., 2011), individuals' demographical characteristics were not associated with either participants' attitude toward Twitter or usage. The results of regression and ANOVA including demographical variables may imply that: females no longer feel 'tech anxiety' to use Internet based services or new media platforms (Jung et al., 2011).

As previously mentioned, previous technology related adoption study revealed that females reluctant to adopt new media services or platform. However, in the Internet service based platforms, it has been pointed out that there were no gender differences. This might be because there was no longer 'tech anxiety' among females due to high penetration of Internet usage among people already familiar to the Internet and its applied services such as Twitter.

Specifically, Twitter usage among the general population has drastically increased in recent years, reaching 200 million accounts in 2010 (Twitter, 2011). Also, the sample of this study only recruited the current user of Twitter. Therefore, if we employed non-adopter simultaneously and compare two groups, demographical characteristics might play a role to predict individuals' Twitter usage.

Importance of perceived usefulness in new media adoption

In terms of perceived usefulness in Twitter adoption and usage, our study confirmed the role of perceived usefulness in predicting individuals' attitude toward Twitter and their usage. Two strategic implications could be concluded, especially for marketers. When media companies launched new media platform, they need to consider the importance of consumers' perception for usefulness not only to boost their job related performance but also to help their purchasing behavior including obtaining brand-related information. Also, perceived usefulness strongly influenced attitude

toward Twitter and further actual usage including frequency of brand information obtaining behavior. Regarding marketing practitioners' utilizing of Twitter as an alternative brand information spreading tool, marketers should recognize the importance of perceived usefulness construct to predict individual attitude toward Twitter, frequency of behavior in obtaining brand-related information.

Importance of perceived ease of use in new media adoption

Findings of this study also suggested the importance of perceived ease construct to individuals' attitude toward Twitter and their usage of Twitter, particularly for behavior in obtaining brand-related information. This study found that perceived ease of use influenced individuals' attitude and usage of Twitter directly and indirectly from practitioners' perspectives, two strategic implications can be concluded for media marketers. When media companies launched new media platform, they should consider the importance of 'easy to use' in design various context. For example, the interface of new media platform should be simple and intuitive for individuals. Also, regarding marketing practitioners' utilizing of Twitter as an alternative brand information spreading tool, marketers should recognize the importance of perceived ease of use construct to predict individual attitude toward Twitter and frequency of behavior in obtaining brand-related information and design marketing campaigns accordingly.

Industrial Implications

In this section, in terms of Twitter adoption results addressed the importance of perceived usefulness, perceived ease of use, to predict individuals' attitude toward Twitter and their usage. Specifically, the author illustrated how theoretical findings linked to practical understanding for understanding audiences' adoption and usage of Twitter.

For practical purpose, it is note that too methodology-oriented terms are not discussed here.

Importance of perceived usefulness in new media adoption

Considering perceived usefulness in Twitter adoption and usage, our study confirmed previous literatures that emphasizing perceived usefulness to predict individuals' attitude toward Twitter and their usage. Adopting our findings for practitioners' perspectives, two strategic implications obtained for media platform designer and marketer. When media companies launched new media platform, they need to consider the importance of consumers' perception for usefulness not only to boost their job related performance but also to help their purchasing behavior including obtaining brand-related information. Also, perceived usefulness strongly influenced attitude toward Twitter and further actual usage including frequency of brand information obtaining behavior. Regarding marketing practitioners' utilizing of Twitter as an alternative brand information spreading tool, marketers should recognize the importance of perceived usefulness construct to predict individual attitude toward Twitter, frequency of behavior in obtaining brand-related information as well.

Importance of perceived ease of use in new media adoption

Findings of this study also suggested that the importance of perceived ease construct to individuals' attitude toward Twitter and their usage of Twitter particularly for behavior in obtaining brand-related information. This study found that perceived ease of use influenced individuals' attitude and usage of Twitter directly and indirectly. Adopting our findings for practitioners' perspectives, two strategic implications obtained for media platform designer and marketer. When media companies launched new media platform, they should consider the importance of designing 'easy to use' in various context. For

example, the interface of new media platform should be simple and intuitive for individuals. Also, regarding marketing practitioners' utilizing of Twitter as an alternative brand information spreading tool, marketers should recognize the importance of perceived ease of use construct to predict individual attitude toward Twitter and frequency of behavior in obtaining brand-related information.

Also, the findings in this study will be of interest to Internet technology-based new media platform designers as well as managers. A better understanding of the relationship between new media platform interfaces and the consumer's response can help designers create attractive new media services. This will lead to favorable consumer attitudes, the success of these services, and, consequently, increased consumer usage.

eWOM Related Implication

Theoretical Implication

Regarding the academic contribution of eWOM from the perspective of Twitter, the results of this study addressed six theoretical implications. First, the study empirically for the first time test consumers' eWOM behavior based on the theoretical background of social influence to obtain brand-related information using general sample.

Second, the results show that perceived similarity was an important predictor of attitude toward a brand whereas this not linked to consumers' eWOM spreading intention. Third, this study validated the importance of perceived credibility both for attitude toward the brand and eWOM spreading intention. Fourth, this study investigated the product category of utilitarian and hedonic dimensions and consumers' eWOM behavior in Twitter for the first time. Fifth, our study employed perceived fit of utilitarian and hedonic dimensions to individuals' eWOM behavior in Twitter. Lastly, providing a

different result from previous studies, participants' demographic characteristics such as age, education level and gender did not influence consumers' attitude toward the brand or eWOM spreading intention.

More specifically, this study investigated the significant prediction role of perceived credibility, perceived similarity, product category (hedonic dimension), and perceived fit (hedonic dimension) for consumers' attitude toward the brand, eWOM intention, and purchase intention using a real consumer sample. This finding illustrates consumer eWOM behavior in the Twitter context, particularly regarding consumers' brand information obtaining and spreading behavior.

Traditionally, attribution theory indicates that consumers form preferences about a product after considering information about stimulus (e.g., brand, advertisement), person (a communicator's similarity and credibility in this case), circumstances (perceived fit in this case), or a combination of these three factors (Kelley, 1973; Laczniak et al., 2001).

This study examined how different influences of online brand information go beyond traditional eWOM perspectives and attribution theory that solely investigated each of stimulus, person and circumstance that affect online consumer behavior.

Our findings based on perspective of eWOM in the consumer behavior by exhibiting the different impact of perceived similarity, perceived credibility, product category and perceived fit. Specifically, previous researchers found that higher source similarity and source credibility independently influenced a consumer's attitude toward a brand and his or her purchase intention. This study empirically tested the simultaneous effects of perceived source similarity and perceived source credibility and added

perceived product and fit dimensions to obtain a model with more depth to explain consumer behavior in the context of social media (i.e., Twitter in this case). Interestingly, perceived similarity and perceived credibility had different influences in terms of a consumer's attitude toward brand and eWOM spreading intention. Specifically, perceived similarity only influenced a favorable attitude toward the brand whereas perceived credibility had a positive impact on both the brand attitude and eWOM spreading intention. This provides a clue to help us understand when and why a consumer responds differently to a marketing message provided via Twitter. Consumers prefer a communicator who is similar to them and this improves their attitude toward a brand whereas they exhibit a greater intention to spread product information when they receive information from an expert. For example, when a company launches a new brand or product and wants to foster a favorable attitude toward this brand, it is more effective to use a similar source in the stage when it is building brand awareness. On the contrary, if a marketer wants to spread brand information, it is better to use an expert representative or a medium such as an official page for its brand or use a third-party endorsement.

Testing consumer eWOM behavior in Twitter context with actual usage using general sample

Although several studies have investigated the factors affecting consumers' eWOM behavior and reconfirmed the importance of perceived similarity (Prendergast et al., 2010; Wangenheim & Bayon, 2004, 2007), perceived credibility (Bansal & Voyer, 2000; Wangenheim & Bayon, 2004) to predict customers' eWOM behavior within a social media context has rarely been tested empirically. In addition, this study adopted the constructs of utilitarian vs. hedonic product differentiation, perceived fit of utilitarian /

hedonic dimensions, and consumer demographic characteristics in the testing of brand-related behavior in the context of Twitter.

Differentiation from previous studies, this study measured three constructs of dependent variables such as attitude toward the brand, eWOM intention and purchase intention. Although previous study revealed a consistent effect of attitude toward the brand, eWOM intention and purchase intention, some studies have indicated the possibility of discrepancy between attitude and individuals' actual behavior (e.g., Ajzen & Fishbein, 1977; Fishbein & Ajzen, 1975; Perloff, 2010). Therefore, this study analyzed various factors affecting attitude toward the new media, Twitter and their actual usage to provide more in depth understanding of consumer behavior on Twitter, particularly in one's behavior in obtaining brand-related information.

To enhance external the validity of this study, the survey rather than experiment research method were employed using general consumer sample. Note that, most previous literatures in the eWOM context (e.g., Lee & Youn, 2008; Lee et al., 2009) adopted the experiment method. Experiment has advantage for testing causal relationship but has limitation in in external validity. Thus this study used the survey method to obtain in-depth and more realized understanding of consumers' online behavior within Twitter context. In detail, as a dependent variable, attitude toward the brand was evaluated by asking consumers' general attitude of brand that obtained information in Twitter rather than specific product or brand that commonly used in an experiment setting. Similarly, other major dependent variables such as eWOM intention and purchase intention also were measured by answering consumers' general perception when they encountered brand-related information in Twitter.

Also, this study recruited general consumers in the United States. Previous studies in the context of eWOM have used student samples that might lack external validity due to sampling issues in using student samples (e.g., Chu & Kim, 2011). This study used general population sample in the main test although student sample was employed in pre-test for testing validity and reliability. The results of principal component analysis, exploratory factor analysis and confirmatory factor analysis yielded almost identical questionnaire items. However there is a slight difference between pretest results that using student sample and main test that using general consumer. Thus, it is necessary to recognize the difference between student sample and general sample in the interpretation of results in eWOM and brand literature.

Importance of perceived similarity in attitude toward the brand and eWOM intention

Based on previous literature, our study provided the in-depth understanding of online consumer behavior, particularly brand-related information processing in Twitter. This study contributed to the traditional source similarity literature, one of the most important factors in various marketing, advertising and communication areas. Although previous studies consistently indicated that source similarity induced consumers' favorable attitude toward the brand and help consumers lead purchase intention, the degree or direction of the effects of source similarity could diverse depend on the context.

The results of this study indicated that the effect of source similarity could be significantly associated with consumers' attitude toward the brand. This study adopted perceived similarity, one of the most important variables in the context of WOM and eWOM study (e.g., Brown & Reingen, 1987; Gilly, Craham, Wolfnbarger, & Yale, 1998;

Price, Feick, & Higie, 1989; Wangenheim & Bayon, 2004) regarding communicator characteristics. The analyses of SEM indicated that perceived source similarity of eWOM sender was an important predictor of consumers' attitude toward the brand; however, this favorable attitude toward the brand was not associated with eWOM intention. Therefore, the result here challenges the notion of a relationship between perceived similarity of communicator and consumers' attitude toward Twitter and eWOM intention that has been frequently discussed both in WOM and eWOM literatures. This result might be explained by the concept of the need for uniqueness that was pointed out as a cost of WOM behavior, which creates a preference for distinct and unique product comparisons with common products (Bloch, 1995; Lynn & Harris, 1997; Simonson & Nowlis, 2000; Snyder & Fromkin, 1977; Tian et al., 2001). When consumers obtain brand-related information through Twitter, this might help foster a positive feeling toward the brand. However, it might also cause the dilution of uniqueness in consumers' possessions of certain product (Cheema & Kaikati, 2010). Therefore, although consumer exhibited favorable attitude toward Twitter, they might be reluctant to spread eWOM since it could dilute their possession of uniqueness.

Importance of perceived credibility in attitude toward the brand and eWOM intention

Consistent with previous marketing and communication literature, the positive effect of perceived credibility between attitude toward the brand and eWOM intention was strongly supported by this study. As one of the most important findings, perceived credibility was a strong predictor among the tested variables that produced high path coefficient and t-value through the SEM.

As described earlier, this study modified the traditional perceived credibility measurement to consumers' brand-related activity within the Twitter context to create appropriate measurement items and modify pre-existing items.

Our study contributed to the traditional concept of source credibility, which has been consistently pointed out as one of the most important factors influencing consumers' attitude toward the brand or purchasing behavior within various contexts such as advertising, marketing and communication. This study also found perceived source credibility to be highly associated with attitude toward the brand and their purchasing intention. That is, when consumers perceived the eWOM brand information sender are reliable, they exhibited more favorable attitude toward the brand and more positive intention to purchase.

Importance of product category in attitude toward the brand and eWOM intention

Our study suggested product category differentiation of utilitarian and hedonic product as an important independent variable to predict consumers' attitude toward the brand and purchase intention within the Twitter environment. As an exploratory investigation of product category differentiation from an eWOM perspective in the Twitter context, this study contributed to existing literature in two areas: reconfirming the traditional utilitarian vs. hedonic product differentiation and the effect of product category toward brand attitude and purchase intention.

First, previous literatures have reviewed the utilitarian vs. hedonic differentiation from two aspects: shopping motivation (Barta & Ahtola, 1990) and product differentiation (Babin & Darden, 1995; Babin et al., 1994; Cha, 2009a). This study adopted the product differentiation of utilitarian vs. hedonic perspective rather than the shopping motivation perspective. The results of principal component analysis

successfully differentiated the utilitarian product category (healthcare services, finance services, automobiles, computer equipment, and telecommunication services) from the hedonic product category (movies, restaurants, clothes, electronics and travel information). Further exploratory factor analysis and confirmatory factor analysis also reconfirmed that differentiation. Thus, our finding supports the notion of product differentiation from marketing literature in that consumers' perception of product was varied dependent on the product category.

Second, based on the product category of utilitarian vs. hedonic differentiation, the effects of each product category were tested through SEM. The results of SEM indicated that only hedonic product category was positively associated with consumers' eWOM spreading intention. That is, as an exploratory investigating of consumers' eWOM behavior within Twitter context, hedonic products carried more weight in affecting eWOM behavior specifically when the consumers received brand-related information.

Thus, our study contributes to the eWOM research within the Twitter context, specifically through the adoption of brand-related variables by demonstrating appropriate product category for spreading brand-related eWOM message in Twitter.

Importance of perceived fit in attitude toward the brand and eWOM intention

Consistent with previous marketing literature, the effects of perceived category fit between Twitter and each product category (utilitarian vs. hedonic) was strongly supported by this study. As mentioned earlier, this study adopted the logic of category fit (Cha, 2009a) rather than traditional parent brand – extended brand fit since the category fit perspective was more appropriate for analyzing Internet based service extension such as shopping behavior on SNSs (Cha, 2009a).

Theoretically, this study reconfirmed the importance of perceived fit in the category extension context for the utilitarian product category. Higher perceived fit leads to higher intention for eWOM spreading intention and hedonic dimensions of perceived fit fostered both favorable attitude toward the brand and eWOM intention. As described earlier, this different effect of utilitarian vs. hedonic dimension might be explained by the concept of brand extendibility (Hagtvedt & Patrick, 2009), which posited that the more hedonic associations of product lead to more favorable attitude toward brand extension. That is, when consumers are exposed to hedonic product information, they tend to exhibit more favorable attitude toward the brand and more willingness to purchase than utilitarian product information. Indeed, the results of SEM indicated that perceived fit of hedonic product category successfully predicted both attitude toward the brand and eWOM spreading intention whereas perceived fit of utilitarian product category was only associated with eWOM spreading intention.

Adopting the importance of perceived fit, this study also noted the concept of "exploratory link" (Bridges, Keller, & Sood, 2000, p.10). Specifically, when companies spread brand-related information in Twitter, there might be a need for a series of statements about the possible connections or links between Twitter and each product category. Indeed, Bridges et al., (2000) indicated that when participants were exposed to the exploratory link condition, they perceived a higher level of perceived fit comparing with no exploratory link conditions. Therefore, if a company inserts exploratory links to their brand-related information in Twitter, it would increase consumers' perceptions of perceived fit between Twitter and the product category. The correlation may ultimately foster favorable attitude toward the brand and increase purchase intention.

Consumer demographic in attitude toward the brand, eWOM intention and purchase intention

This study also conducted regression analysis and ANOVA to investigate the role of the demographic variables such as age, education level and gender. Although some previous studies identified the importance role of certain demographic variables in consumers' eWOM behavior, our regression analysis and ANOVA failed to show any significance in this study. That is, demographic characteristics no longer influenced both consumers' attitude toward the Twitter, eWOM intention and purchase intention. Unlike of the Twitter adoption variables consumers' demographic characteristics did not correlate with attitude toward the brand, eWOM intention, or purchase intention.

Industrial Implication

In this section, based on the empirical findings, the industrial application is elaborated five strategic implications are derived from the results. Specifically, the potential strategic usage of Twitter as a marketing tool, strategic use of perceived similarity, strategic use of perceived credibility, strategic use for product category, and strategic use of perceived fit were elaborated.

Strategic use of Twitter as an alternative marketing tool

Corresponding with industrial reports (Neilson, 2011; Webster, 2010, 2011), Twitter may be an effective tool for communicating brand information with consumers.

The number of Twitter accounts may reached 200 million in recent years (Bennett, 2011) more than 200 million tweets were sent per day, including brand/product information; this is an enormous increase from only 65 million tweets per day in 2010 (Twitter, 2011). Twitter is not only a medium for communicating with peers and acquaintances but also a tool for obtaining information. For instance, recent articles

from The New York Times and Business Insider indicated that people actively seek information via Twitter rather than a news web site (Hamburger, 2011), and the number of people who obtain information from Twitter rather than Google has increased (Miller, 2011).

More importantly, when compared with other social media such as Facebook or LinkedIn, Twitter has a relative advantage for marketing purposes. For example, it is noteworthy that 42% of Twitter users utilize Twitter to learn about products/services, 41% of Twitter users provide opinions about products/services, 31% of users ask for opinions about products/services, and 21% users even purchase certain products and services on Twitter (Bennett, 2011). Indeed, this study also found that 69.5 % (n = 317) of respondents obtained brand-related information on Twitter, whereas 30.5% (n = 136) did not use Twitter as a brand information tool. Therefore, when marketing practitioners formulate marketing strategy, Twitter should be seemed as an effective platform for conveying brand information.

Strategic use of perceived similarity

When marketer designed brand-related message in Twitter, they should consider the degree of similarity to consumers and company's representative who deliver the message. The results of this study revealed that perceived source similarity did influence the consumers' attitude toward the brand. However, no relationship between source similarity and consumers' eWOM intention was found. This result implies that marketers should consider either the effectiveness of eWOM and the cost of eWOM simultaneously. Consumers were generally more favorable to brand information from a communicator who is similar to them. However, in certain circumstance or certain product category, similarity between consumers and communicators might cause

dilution of “uniqueness.” This “need for uniqueness” should be considered by the marketers when they develop marketing strategy in the Twitter environment. For example, it might be reasonable to avoid spreading brand information of luxury product in Twitter since luxury or high image brands need a great amount of uniqueness that differentiates themselves in consumers’ mind. On the contrary, though it has somewhat hedonic dimensions, everyday product such as restaurant information or travel information would be appropriate in the Tweeting environment through a brand information spreading mechanism.

Strategic use of perceived credibility

Regarding the effect of perceived credibility on brand attitude, eWOM intention, this study confirmed previous literatures’ findings that perceived credibility was an important factor affecting consumers’ attitude toward the brand and eWOM intention.

Therefore, in terms of designing a brand information delivery strategy, marketers should consider devising credible messages rather than "like me" messages. For example, if a marketer wishes to spread brand information in a tweet, the representative of the message should be considered credible rather than similar to the consumer. Possible directions for boosting credibility for brand-related information include using third-party endorsements (Dean & Biswas, 2001) or another credible representative, such as an expert (Gotlieb & Sarel, 1991; Homer & Kahle, 1990; Yoon et al, 1998).

Strategic use of utilitarian vs. hedonic product category

From a marketing perspective, the finding here shows the utility of Twitter as a branding platform for products with dominant hedonic nature. Again, Twitter seems to provide the best environment of hedonic product marketing. Also, regarding product category, marketers should note that hedonic product information was more effective

than utilitarian product information when discussed in the Twitter environment. Therefore, when devising a marketing strategy or advertising media strategy for Twitter, practitioners should consider designing the appropriate messages considering the type of product category for which to spread brand-related information

Strategic use of perceived fit

Industry practitioners should also recognize the importance of perceived fit in leading to more favorable attitude toward the brand, eWOM intention and purchase intention particularly considering the different effects of perceived fit of utilitarian vs. hedonic product. Our study showed that perceived fit of utilitarian product category and hedonic product category were important predictor of consumers eWOM behavior in the Twitter context. Based on this finding, marketer should consider ways to improve consumers' perceived fit between Twitter and each product category, such as inserting exploratory links.

Limitations

Limitations for Twitter Adoption Study

Several limitations of this study should be acknowledged in terms of Twitter adoption-related study. This study employed the specific SNS context of Twitter. Although Twitter was selected based on certain criteria, including the effectiveness of using Twitter for marketing purposes, Twitter has a relatively small number of users compared with Facebook, the most prominent SNS. This study did not cover a broader scope of social media, such as Wikipedia or YouTube. Therefore, the results of our study are limited in terms of generalizability in the context of SNSs,

Also, in terms of sample of this study, several limitations should be addressed. First, although this study employed general sample rather than student sample, the

sample size was limited in comparing differences between groups through SEM. Bandalos (1997) suggested that a minimum sample to compare group differences is 150 whereas our study included a total of 307 sample. Thus, though ANOVA was conducted to compare gender difference, considering females were dominant (75.6%, n = 233), whereas 24.0% of participants were males (n = 74) in the analysis, SEM could not be executed. Second, this study employed consumer panel to recruit participants by online survey. Therefore, due to the nature of online survey and the use of online consumer panelists who were somewhat compensated for completing the survey, it is possible that the subjects might not be representative of the general users of Twitter usage. Third, this study employed only current user of Twitter through a qualifying question. Therefore, this study did not include non-adopter of Twitter that could measure adoption intention rather than actual usage.

In addition to the sampling issue, the adoption stage of Twitter should be addressed. Although Twitter has emerged as an accepted medium, the notion of adoption stages should be recognized. Previous literature indicated that individuals' adoption behavior highly influenced their adoption stage of new media. However, this study only recruited current user of Twitter that did not considered individuals' different adoption stage. Thus, consumer characteristics such as innovativeness did not included in this study.

Also, different dimensions of social influence were not considered in this study. Previous literatures indicated that there might be a different social influence including peer influence. However, this study solely focused on the social influence of conformity to subjective norms.

Lastly, individual differences including cultural difference, involvement and issue relevance were not considered in our study.

Limitations for eWOM Related Study

Among limitations in terms of the eWOM study, sampling issues were similar to that of the Twitter adoption study. Specifically, this study only employed one SNSs context of Twitter also this study recruited a limited sample to compare groups through SEM. Finally, our study used a consumer panel through an online survey.

For the eWOM specific study related limitations, this study inquired about general perceptions of brand and purchase intentions for products featuring brand information. This might result in potential bias that threatens the external validity. Also, this study mainly focused the eWOM senders' characteristics that might influence eWOM receivers' attitudinal and behavior change when senders spread brand-related information on Twitter. Therefore, this study can answer the question about how to increase the eWOM brand information's effectiveness, but not who is most influenced by eWOM message.

Suggestions for Future Research

Future Research Direction for New Media Adoption

As far as future research is concerned, to increase external validity, several replication studies should be conducted. For example, the total sample size of this study was somewhat limited when considering group differences using structural equation modeling. Although this study conducted a one-way ANOVA test for investigating gender differences in both Twitter adoption and eWOM-related research, Bandalos (1997) suggested that the minimum sample to compare group differences is 150 for

SEM. However, as previously mentioned, in this study, females were dominant (75.6%, n = 233) in the analysis.

Next, regarding the variable of social influence specifically related to Twitter adoption, future research could include another dimension of social influence, such as peer influence. Indeed, Lin et al. (2009) revealed the effectiveness of both social influence and peer influence in predicting individuals' use of instant messaging. Although this study did not find a predicting role of conformity to a subjective norm, future research should revisit a variety of social influences, including peer influence. Also considering the fact that this study only employed survey method to investigate the social influence, alternative method including network analysis for measuring accurate social influence should be revisited (e.g., Kantona et al., 2011).

Cultural differences also provide a promising future research direction (Straub et al., 1997; Yang et al., 2011). Indeed, in terms of application for TAM, Straub et al. (1997) indicated that TAM could be varied depend on geographical region (Japan, Switzerland and United States) in terms of predicting technology use. Also, focusing SNSs, Yang et al. (2011) revealed that there was a regional difference among individuals' Q&A behavior on SNSs. Specifically, individuals in Asian countries (India and China) were relatively more active than Western countries (United States and United Kingdom). Thus, cultural differences might influence individuals' Twitter usage.

In addition, different adoption stages that comparing adopter vs. non adopter should be also revisited (Jung et al., 2011).

Future Research Direction for eWOM Research

For the eWOM-related study, this study inquired about the general perceptions of brand and purchase intentions for products featuring brand information. This might

result in potential bias that threatens internal validity. Alternative methods, such as an experimental design with a specific product category or brand name, or field experiments in a natural setting, would be useful for future research and improving internal validity.

Another promising direction for future study is to investigate the role of individual differences--in particular, consumers' psychological traits--in determining the consumer profile of those considered most influential and important for eWOM marketing. For example, Price, Feick and Guskey (1995) revealed a relationship between marketplace involvement, altruistic values, and traditional WOM behavior. The results indicated that people who held more altruistic values and involvement exhibited more intention for WOM behavior. To apply these results to eWOM behavior in a social media context, it would be useful to investigate individual differences for understanding online consumer behavior in Twitter. Also, another marketing utilization for eWOM should be considered in future research. This study employed SNSs, specifically Twitter, as an eWOM marketing tool, however, there might be various media or a combination of them in eWOM to build effective marketing strategies. For example, Hong and Rim (2010) found that using corporate web sites positively influenced a consumer's WOM intention. Similarly, a variety context of consumers' eWOM behavior including newly launched SNSs Google+, or corporate blog should be investigated in near future.

APPENDIX A
PRETEST QUESTIONNAIRE

Thank you for agreeing to participate in this brief survey. I am Hyunsang Son, a graduate student in the College of Journalism and Communications at the University of Florida. Your input for this study about consumers' attitude toward Twitter is much appreciated.

All responses from this survey will be anonymous and used for academic research only.

Please respond to the following questions. (Please remember all of your answers are completely anonymous.)

1. Have you ever get **brand information** from your Twitter friends? (Both from person and company account)

☐ Yes ☐ No

	Very Rarely						All the Time
2. How often do you get information about a brand from your Twitter friends?	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. Generally speaking, I would do what my group members think I should do.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
2. Generally speaking, I would do what others think I Should do in the online environment.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
3. Generally speaking, I would do what my Twitter friends think I should do in the Twitter environment..	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. Use of Twitter enables me to accomplish tasks more quickly.	1	2	3	4	5	6	7
2. Use of Twitter improves my performance.	1	2	3	4	5	6	7
3. Use of Twitter to obtain product information increases my productivity.	1	2	3	4	5	6	7
4. Use of Twitter enhances the effectiveness in product information search.	1	2	3	4	5	6	7
5. Use of Twitter makes it easier to obtain product information	1	2	3	4	5	6	7
6. I find Twitter useful in my life	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. Tweet, Mention and Retweet on Twitter is easy	1	2	3	4	5	6	7
2. Learning to use Twitter is easy for me	1	2	3	4	5	6	7
3. It is easy to get information on Twitter	1	2	3	4	5	6	7
4. I find Twitter to be flexible to interact with	1	2	3	4	5	6	7
5. It is easy for me to become skillful at using Twitter	1	2	3	4	5	6	7
6. I find Twitter easy to use	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. Twitter makes it easy for me to build a relationship with the online community	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
2. I would like to communicate with my Twitter friends again in the future.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
3. I'm satisfied with the services provided by Twitter	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
4. I feel comfortable using Twitter	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
5. I feel surfing on Twitter is a good way for me to spend my time	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7

How many days during a typical week do you use Twitter?

☐Never ☐One day ☐Two days ☐Three days
☐Four days ☐Five days ☐Six days ☐Seven days

How many hours during a typical day do you use Twitter?

☐Never ☐Less than 10 minutes ☐10 – 30 minutes
☐30 minutes – 1 hour ☐1-2 hours ☐2-3 hours
☐3-4 hours ☐More than 4 hours a day

The following questions concern only your Twitter **friends** who tweet **"brand related information."**

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. In terms of outlook on life, my Twitter friends are similar to me	1	2	3	4	5	6	7
2. In terms of likes and dislikes, my Twitter friends are similar to me	1	2	3	4	5	6	7
3. In terms of values and experiences, my Twitter friends are similar to me	1	2	3	4	5	6	7
4. In terms of tastes for products, my Twitter friends are similar to me	1	2	3	4	5	6	7
5. In terms of preferences and value, my Twitter friends are similar to me	1	2	3	4	5	6	7
6. Overall, my Twitter friends are similar to me	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. I feel the tweeted product information given by my Twitter friends is strong	1	2	3	4	5	6	7
2. I feel the tweeted brand information given my Twitter friends is convincing	1	2	3	4	5	6	7
3. I feel the tweeted brand information given my Twitter friends is persuasive	1	2	3	4	5	6	7
4. I feel the tweeted brand information given by my Twitter friends is powerful.	1	2	3	4	5	6	7
5. My Twitter friends have knowledge about computer equipment in general.	1	2	3	4	5	6	7
6. My Twitter friends is an expert in the area of computer equipment.	1	2	3	4	5	6	7
7. My Twitter friends have knowledge about							

restaurants in general.	1	2	3	4	5	6	7
8. My Twitter friends is an expert in the area of restaurants	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. I often try to obtain product information about computer equipment	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
2. I often try to obtain product information about clothes	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
3. I often try to obtain product information about finance product / services	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
4. I often try to obtain product information about travel information.	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
5. I often try to obtain product information about restaurants.	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
6. I often try to obtain product information about telecommunication services.	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
7. I often try to obtain product information about automobiles	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
8. I often try to obtain product information about movies	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
9. I often try to obtain product information about health care providers	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
10. I often try to obtain product information about electronics.	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements

	Strongly Disagree						Strongly Agree
1. Twitter is a good medium to learn about computer equipment	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7
2. Twitter is a good medium to learn about clothes	_____:_____:_____:_____:_____:_____:_____ 1	2	3	4	5	6	7

3. Twitter is a good medium to learn about finance product / services	1	2	3	4	5	6	7
4. Twitter is a good medium to learn about travel information.	1	2	3	4	5	6	7
5. Twitter is a good medium to learn about restaurants.	1	2	3	4	5	6	7
6. Twitter is a good medium to learn about telecommunication services.	1	2	3	4	5	6	7
7. Twitter is a good medium to learn about automobiles	1	2	3	4	5	6	7
8. Twitter is a good medium to learn about movies	1	2	3	4	5	6	7
9. Twitter is a good medium to learn about health care providers	1	2	3	4	5	6	7
10. Twitter is a good medium to learn about electronics.	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. If I find interesting product information on the Twitter, I want to Retweet it to my friends after regarding the tweeted **brand information** from Twitter friends	1	2	3	4	5	6	7
2. If somebody asks me for advice about an interesting product information, I will encourage him or her to Tweet after reading the tweeted **brand information** from twitter friends	1	2	3	4	5	6	7
3. I would recommend my friends and family to Tweet or Retweet in interesting product related information after reading the tweeted **brand information** from twitter friends	1	2	3	4	5	6	7

In order to effectively evaluate the survey responses, please answer the following questions about yourself. Please answer the following questions by filling in the blank or checking one option.

Gender:

- ☐ Male
- ☐ Female

Age: _____

Year in School:

- ☐ Freshmen
- ☐ Junior
- ☐ Senior
- ☐ Graduate
- ☐ Other (Please specify _____)

Major:

- ☐ Advertising
- ☐ Journalism
- ☐ Public Relations
- ☐ Telecommunication
- ☐ Other (Please specify _____)

Ethnicity:

- ☐ Arabic
- ☐ Asian
- ☐ Black/African American
- ☐ Caucasian
- ☐ Hispanic/Latino
- ☐ Other

Thank you for your interest and participation in this important study. You will not be identified individually within the survey, and any information you provide will remain strictly anonymous. If your instructor offers extra credit for participating in this study, however, we ask that you provide the following information. We will forward it to your instructor for only extra credit.

First, Please indicate your **UFID**.

_____ _____ _____ _____ _____ _____ _____ _____

Please indicate your **UFL e-mail address** (@ufl.edu).

_____

Please enter prefix and number of your class (e.g., RTV 6508).

_____

Thank you for participation. Your opinions are extremely important to us, Again, we appreciate your valuable time.

APPENDIX B
MAINTEST QUESTIONAIRE

Thank you for agreeing to participate in this brief survey. I am Henry Son, a graduate student in the
College of Journalism and Communications at the University of Florida. Your input for this study
about consumers' attitude toward Twitter is much appreciated.

All responses from this survey will be anonymous and used for academic research only. No email or
IP addresses or other identifying information will be connected to your responses at any time.

1. Have you ever get **brand information** from your Twitter friends? (Both from person and company account)

☐ Yes ☐ No

	Very Rarely						All the Time
2. How often do you get information about a brand from your Twitter friends?	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. Generally speaking, I would do what my group members think I should do.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
2. Generally speaking, I would do what others think I Should do in the online environment.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
3. Generally speaking, I would do what my Twitter friends think I should do in the Twitter environment..	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. Use of Twitter enables me to accomplish tasks more quickly.	1	2	3	4	5	6	7
2. Use of Twitter improves my performance.	1	2	3	4	5	6	7
3. Use of Twitter to obtain product information increases my productivity.	1	2	3	4	5	6	7
4. Use of Twitter enhances the effectiveness in product information search.	1	2	3	4	5	6	7
5. Use of Twitter makes it easier to obtain product information	1	2	3	4	5	6	7
6. I find Twitter useful in my life	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. Tweet, Mention and Retweet on Twitter is easy	1	2	3	4	5	6	7
2. Learning to use Twitter is easy for me	1	2	3	4	5	6	7
3. It is easy to get information on Twitter	1	2	3	4	5	6	7
4. I find Twitter to be flexible to interact with	1	2	3	4	5	6	7
5. It is easy for me to become skillful at using Twitter	1	2	3	4	5	6	7
6. I find Twitter easy to use	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. Twitter makes it easy for me to build a relationship with the online community	1	2	3	4	5	6	7
2. I would like to communicate with my Twitter friends again in the future.	1	2	3	4	5	6	7
3. I'm satisfied with the services provided by Twitter	1	2	3	4	5	6	7
4. I feel comfortable using Twitter	1	2	3	4	5	6	7
5. I feel surfing on Twitter is a good way for me to spend my time	1	2	3	4	5	6	7

How many days during a typical week do you use Twitter?

☐Never ☐One day ☐Two days ☐Three days
☐Four days ☐Five days ☐Six days ☐Seven days

How many hours during a typical day do you use Twitter?

☐Never ☐Less than 10 minutes ☐10 – 30 minutes
☐30 minutes – 1 hour ☐1-2 hours ☐2-3 hours
☐3-4 hours ☐More than 4 hours a day

The following questions concern only your Twitter **friends** who tweet **"brand related information."**

Please indicate how much you agree or disagree with each of the following statements (remember the statements only apply to those Twitter friends who tweet brand related info).

	Strongly Disagree						Strongly Agree
1. In terms of outlook on life, my Twitter friends are similar to me	1	2	3	4	5	6	7
2. In terms of likes and dislikes, my Twitter friends are similar to me	1	2	3	4	5	6	7
3. In terms of values and experiences, my Twitter friends are similar to me	1	2	3	4	5	6	7
4. In terms of tastes for products, my Twitter friends are similar to me	1	2	3	4	5	6	7
5. In terms of preferences and value, my Twitter friends are similar to me	1	2	3	4	5	6	7
6. Overall, my Twitter friends are similar to me	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. I feel the tweeted product information given by my Twitter friends is strong	1	2	3	4	5	6	7
2. I feel the tweeted brand information given by my Twitter friends is convincing	1	2	3	4	5	6	7
3. I feel the tweeted brand information given by my Twitter friends is persuasive	1	2	3	4	5	6	7
4. I feel the tweeted brand information given by my Twitter friends is powerful.	1	2	3	4	5	6	7

5. My Twitter friends have knowledge about computer equipment in general.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
6. My Twitter friends is an expert in the area of computer equipment.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
7. My Twitter friends have knowledge about restaurants in general.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
8. My Twitter friends is an expert in the area of restaurants	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. I often try to obtain product information about computer equipment	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
2. I often try to obtain product information about clothes	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
3. I often try to obtain product information about finance services	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
4. I often try to obtain product information about travel information.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
5. I often try to obtain product information about restaurants.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
6. I often try to obtain product information about telecommunication services.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
7. I often try to obtain product information about automobiles	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
8. I often try to obtain product information about movies	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
9. I often try to obtain product information about health care services	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7
10. I often try to obtain product information about electronics.	_____	_____	_____	_____	_____	_____	_____
	1	2	3	4	5	6	7

Please indicate how much you agree or disagree with each of the following statements

	Strongly Disagree						Strongly Agree
1. Twitter is a good medium to learn about computer equipment	1	2	3	4	5	6	7
2. Twitter is a good medium to learn about clothes	1	2	3	4	5	6	7
3. Twitter is a good medium to learn about finance services	1	2	3	4	5	6	7
4. Twitter is a good medium to learn about travel information.	1	2	3	4	5	6	7
5. Twitter is a good medium to learn about restaurants.	1	2	3	4	5	6	7
6. Twitter is a good medium to learn about telecommunication services.	1	2	3	4	5	6	7
7. Twitter is a good medium to learn about automobiles	1	2	3	4	5	6	7
8. Twitter is a good medium to learn about movies	1	2	3	4	5	6	7
9. Twitter is a good medium to learn about health care services	1	2	3	4	5	6	7
10. Twitter is a good medium to learn about electronics.	1	2	3	4	5	6	7

Please indicate how you feel about brand information in general on my Twitter timeline

Unfavorable	1	2	3	4	5	6	7	Favorable
Bad	1	2	3	4	5	6	7	Good
Dislike	1	2	3	4	5	6	7	Like
Negative	1	2	3	4	5	6	7	Positive

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree						Strongly Agree
1. If I find interesting product information on the Twitter, I want to Retweet it to my friends after regarding the tweeted **brand information** from Twitter friends	_____ 1	_____ 2	_____ 3	_____ 4	_____ 5	_____ 6	_____ 7
2. If somebody asks me for advice about an interesting product information, I will encourage him or her to Tweet after reading the tweeted **brand information** from twitter friends	_____ 1	_____ 2	_____ 3	_____ 4	_____ 5	_____ 6	_____ 7
3. I would recommend my friends and family to Tweet or Retweet in interesting product related information after reading the tweeted **brand information** from twitter friends	_____ 1	_____ 2	_____ 3	_____ 4	_____ 5	_____ 6	_____ 7

After considering the product information on my Twitter…

	Strongly Disagree						Strongly Agree
1. It is very likely that I will buy the product	_____ 1	_____ 2	_____ 3	_____ 4	_____ 5	_____ 6	_____ 7
2. I will definitely try the product	_____ 1	_____ 2	_____ 3	_____ 4	_____ 5	_____ 6	_____ 7
3. I will purchase the product next time I need a product	_____ 1	_____ 2	_____ 3	_____ 4	_____ 5	_____ 6	_____ 7
4. Suppose that a friend called you last night to get you advice in his/her search for a product. Would you have recommended him/her to buy the product?	_____ 1	_____ 2	_____ 3	_____ 4	_____ 5	_____ 6	_____ 7

In order to effectively evaluate the survey responses, please answer the following questions about yourself. Please answer the following questions by filling in the blank or checking one option.

1. What is your gender?

- ☐ Male
- ☐ Female

2. What is your current age?

- ☐ 18 to 19
- ☐ 20 to 24
- ☐ 25 to 34
- ☐ 35 to 44
- ☐ 45 to 54
- ☐ 55 to 64
- ☐ 65 or over

3. What is the highest level of education you have completed?

- ☐ Less than High School
- ☐ High School / GED
- ☐ Some College
- ☐ 2-year College Degree
- ☐ 4-year College Degree
- ☐ Masters Degree
- ☐ Doctoral Degree
- ☐ Professional Degree (JD. MD)

4. Which occupational category best describes your employment?

- ☐ Management: professional or related occupations
- ☐ Management: business or financial operations occupations
- ☐ Management occupations, except farmers and farm managers
- ☐ Farmers and farm managers
- ☐ Business and financial operations
- ☐ Business operations specialists
- ☐ Financial specialists
- ☐ Computer or mathematical
- ☐ Architects, surveyors, cartographers, or engineers
- ☐ Drafters, engineering, or mapping technicians
- ☐ Community and social services
- ☐ Legal
- ☐ Education, training, or library
- ☐ Arts, design, entertainment, sports, or media
- ☐ Health diagnosing or treating practitioners & technical occupations
- ☐ Health technologists or technicians
- ☐ Health care support
- ☐ Fire fighting, prevention or law enforcement workers, (including supervisors)
- ☐ Other protective service workers (including supervisors)

5. What is your annual salary (including bonuses and commissions) in U.S. dollars?

- ☐ $0 - $25,000
- ☐ $25,001 - $50,000
- ☐ $50,000 - $75,000
- ☐ $75,001 - $100,000
- ☐ $100,001 - $125,000

- ☐ $125,001 - $150,000
- ☐ $150,001 - $175,000
- ☐ $175,001 - $200,000
- ☐ $200,001 +

6. What is your ethnicity?

- ☐ White / Caucasian
- ☐ African American
- ☐ Hispanic
- ☐ Asian
- ☐ Native American
- ☐ Pacific Islander
- ☐ Other

7. Gender:

- ☐ Male
- ☐ Female

8. Ethnicity:

- ☐ Arabic
- ☐ Asian
- ☐ Black/African American
- ☐ Caucasian
- ☐ Hispanic/Latino
- ☐ Other

Thank you for participation. Your opinions are extremely important to us, Again, we appreciate your valuable time.

APPENDIX C
UNIVERSITY OF FLORIDA INSTITUTIONAL REVIEW BOARD INFORMED CONSENT APPROVAL

Protocol Submission Form

UFIRB 02 – Social & Behavioral Research **Protocol Submission Form**			
This form must be typed. Send this form and the supporting documents to IRB02, PO Box 112250, Gainesville, FL 32611. Should you have questions about completing this form, call 352-392-0433.			
Title of Protocol:	Adoption of Twitter and Its Effectiveness in e-WOM		
Principal Investigator:	Hyunsang Son		**UFID #:** N/A
Degree / Title:	Master's student	**Mailing Address:** (If on campus include PO Box address): N/A	**Email:** hyunsangson@ufl.edu
Department:	College of Journalism and Communication		**Telephone #:** N/A
Co-Investigator(s):		**UFID#:**	**Email:**
Supervisor *(If PI is student)***:**	Dr. Sylvia M. Chan-Olmsted	**UFID#:**	
Degree / Title:	Ph.D., / Associate Dean for Research., / Professor	**Mailing Address:** N/A	**Email :** chanolmsted@jou.ufl.edu
Department:	Department of Telecommunication College of Journalism and Communications		**Telephone #:** N/A
Date of Proposed Research:	From May 9th, 2011 to June 9th, 2011.		
Source of Funding *(A copy of the grant proposal must be submitted with this protocol if funding is involved):*	Unfunded		

Scientific Purpose of the Study:

The study is designed to reveal the relationships among various factors affecting evaluation of microblogging (Twitter) adoption and factors affecting brand-related information forwarding in the Twitter among general consumers. This study analyzes whether customer's response differently depending on perceived utility, perceived ease of use and consumer demographics (age, gender, education level). Also, individuals' attitude toward the brand and message spreading intention will be investigated in terms of different level of perceived similarity, source credibility, product category and perceived fit between Twitter and each item.

Therefore, whether audiences' attitude toward the Twitter and evaluation of brand and message spreading intention are differently affected by different consumer characteristics (i.e., perceived utility, perceived ease of use, demographics, perceived similarity, source credibility, product category and perceived fit) will be examined in this research. Applying these findings in the context of Twitter adoption and implication for potential marketing tool, the proposed research seeks to examine the role of different consumer characteristics. This study lays the theoretical groundwork for the new media adoption studies and electronic word of mouth (eWOM) perspective.

Describe the Research Methodology in Non-Technical Language: ***(****Explain what will be done with or to the research participant.****)***

For this study a survey method will be conducted. Participants' attitude toward the Twitter adoption and their intention to spreading message in Twitter will be analyzed. The survey will be conducted through the national consumer panel with online access for its web-based questionnaires. The participants will receive a small amount of money ($4) in the exchange of their participation. A total of 300 consumers randomly selected from a national consumer panels operated by leading market research received an email with the link to reach stimuli and questionnaires. The sample consisted the United States based consumers who have not participated during past two weeks and they rewarded small premium ($4) through the panel company. Participants will be e-mailed a link to online consent form. When they agree to participate in the survey, they will be directed to an online survey. Upon consenting to take part in the study, participants will be asked to view the questionnaire and fill out their feeling, attitude toward Twitter. Subjects will be anonymous.

Describe Potential Benefits:

A small amount of premium ($4) will be given on behalf of the consumer panel for participating in this study.

Describe Potential Risks: (*If risk of physical, psychological or economic harm may be involved, describe the steps taken to protect participant.)*

The project should not create any physical, psychological or economic risks. Most of the scales used in the questionnaire are routinely used by marketing and communication scholars in their research. No risk associated with the questions has been reported.

Describe How Participant(s) Will Be Recruited:

The national consumer panel with online access for its web-based questionnaires. The participants will receive a small amount of money ($4) in the exchange of their participation through the consumer panel company.

Maximum Number of Participants (to be approached with consent)	**300**	**Age Range of Participants:**	**18-65 yrs**	**Amount of Compensation/ course credit:**	**$ 4**

Describe the Informed Consent Process. (Attach a Copy of the Informed Consent Document. See http://irb.ufl.edu/irb02/samples.html for examples of consent.)

The participants will read the posted consent statement. When they agree to participate in the survey, they are supposed to click the given link to the survey, indicating their willingness to participate. When they decide not to participate, they are supposed to click a link to the University of Florida official web site. Refer to the attached consent form. Subjects will be anonymous.

(SIGNATURE SECTION)		
Principal Investigator(s) Signature:		**Date:**
Co-Investigator(s) Signature(s):		**Date:**
Supervisor's Signature (if PI is a student):		**Date:**
Department Chair Signature:		**Date:**

Informed Consent

Protocol Title: Adoption of Twitter and Its Effectiveness in e-WOM

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study: The purpose of this study is to examine your responses to adoption of Twitter and attitude toward brand, message-spreading intention in Twitter.

What you will be asked to do in the study: You will be asked to indicate your thoughts and feelings about Twitter in a brief questionnaire.

Time required: Less than 30 minutes

Risks and Benefits: We do not anticipate there will be any risks or direct benefits to you as a consequence of your decision to complete the survey.

Compensation: Small monetary compensation will be given on behalf of the experimenter for participating in this study. Consumer Panel Company will reach you within 2 weeks after you have finished the study.

Confidentiality: Your answers from this study will be anonymous. No names will be used in any part of the study. Your identity will be kept confidential to the extent provided by law.

Voluntary participation: Your participation in this study is entirely voluntary. There is no penalty for not participating. You can choose not to answer any question you do not wish to answer.

Right to withdraw from the study: You have the right to withdraw from the study at anytime without consequence.

Whom to contact if you have questions about the study:

Principle Investigator:
Hyunsang Son, Master's Student
College of Journalism and Communications

hyunsangson@ufl.edu

Whom to contact about your rights as a research participant in the study: UFIRB Office

IRB02 Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; phone 392-0433

Agreement: I have read the document stating the procedures to be used and followed in this study. I have received a copy of informed consent and AGREE to participate in the study.

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BIOGRAPHICAL SKETCH

Hyunsang Son graduated summa cum laude, ranked 1st in his class, with a Bachelor of Arts in Mass Communication, with a minor in sociology, from Chung-Ang University, Seoul, Korea in 2008. During his master's program at the University of Florida, he finished five doctoral advance seminars—Brand Management, Persuasion Theory, Experimental Methods in Mass Communication, Social Influence on New Media Environment, and Health Communication Campaigns—in addition to core courses. He also actively participated in research and successfully accepted a total of 9 papers to the following national conferences with his coauthors: The 97th National Communication Association (NCA) Annual Convention, 2011, the 61th International Communication Association (ICA) Annual Conference 2011, Annual Conference of 2011 American Academy of Advertising (AAA), the 14th International Public Relations (IPR) research conference, the 95th and 96th Association for Education in Journalism and Mass Communication (AEJMC), Annual Conference 2010, 2011, and the AEJMC Mid-winter Conference 2009. In particular, his paper was selected as the top paper and he received the Steve Lacy Top Paper Award in Media Management and Economics Division at the 2011 AEJMC conference. His research interests include online consumer behavior, brand management, media management, and new communication technologies such as social media. In addition, he worked as a research assistant with Dr. Moon Lee on health communication campaigns. He graduated in the fall of 2011 and received an M.A. in mass communication from the University of Florida.