Knowledge, Persuasion, and Decision: Examining Predictors of Microblogging's Diffusion in China

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KNOWLEDGE, PERSUASION, AND DECISION: EXAMINING THE PREDICTORS OF MICROBLOGGING’S DIFFUSION IN CHINA

By

Yu Liu

A DISSERTATION

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KNOWLEDGE, PERSUASION, AND DECISION: EXAMINING THE PREDICTORS
OF MICROBLOGGING’S DIFFUSION IN CHINA

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The last decade has witnessed a global plethora of social media. One unique social media innovation, microblogging, which combines the features of blogging, texting, and social networking sites, enables its users to post personal thoughts and opinions as well as connect to online and offline networks. Particularly, microblogging has experienced a remarkable growth in China because it not only offers a popular platform for social interactions, but also plays an essential role as an alternative news medium.

Within the framework of Diffusion of Innovations theory, this study aimed to examine the five stages of microblogging’s innovation-decision process and identify the predictors of the first three stage--knowledge, persuasion, and decision--in order to build up a model for social media innovation-decision process.

In November 2011, a survey questionnaire was completed by 2,801 Chinese college students in Beijing, China. Results from mixture modeling analyses validated the theoretical framework of five stages of the innovation-decision process. Respondents went through knowledge, persuasion, decision, implementation, and confirmation about microblogging. Also, as suggested by Diffusion of Innovations theory, socioeconomic status, technology ownership, communication behavior including social participation,
online media use, cosmopoliteness, and opinion leadership, perceived innovation attributes including relative advantage, compatibility, complexity, and observability, and personality traits including dogmatism and attitude toward change all exerted direct influences on the innovation-decision process to some extent. Concerns for privacy, one variable that is highly relevant to social media use behavior, also predicted the decision stage of microblogging.

Findings of the current study provided both theoretical and practical implications. By following the innovation-decision process and integrating psychological factors, such as personality traits and concerns for privacy, this study proposed a research model for the social media innovation-decision process. Furthermore, this study also suggested that future research needs to incorporate more psychological factors and that marketing strategists for social media should take social participation, online media use, and concerns for privacy into consideration to attract and target potential users.
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CHAPTER I. INTRODUCTION

Background

The Internet population reached 2.09 billion people worldwide in 2011 (Internet World Stats, 2011). It has connected people from different geographic areas and empowered them to share the same information and communicate with each other. The last decade has not only witnessed a huge growth of the Internet population all over the world (480.4%), but also a global plethora of social media ranging from personal blogs to podcasts and social networking websites. Web users nowadays utilize social media to communicate with friends, write personal blogs, comment on restaurants nearby, watch entertainment videos, share creative works with others, and check in various places virtually.

As an “umbrella term,” social media are based on network technologies that include sets of tools, services, and applications employed by people to interact with others online, such as social networking sites, blogging, microblogging, virtual worlds, forums, networking, and gaming (Boyd, 2008, p. 92). At the heart of the term of social media lie two related concepts: Web 2.0 and User Generated Content. The former provides the ideological and technological platform for the social media, while the latter refers to how people utilize social media (Kaplan & Haenlein, 2010). Different from conventional Internet applications, social media encourage and create more Internet users’ contributions and interactions based on the web technological development. Therefore, as suggested by Kaplan and Haenlein (2010), social media refer to “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).
Moreover, to better understand social media, its application and influence, Kaplan and Haenlein further categorized social media into six types including blogging and microblogging (e.g., Blogger and Twitter), social networking sites (e.g., Facebook), content communities (e.g., YouTube), collaborative projects (e.g., Wikipedia), virtual social worlds (e.g., Second Life), and virtual game worlds (e.g., World of Warcraft).

Among the many types of social media, a unique technology – microblogging – is gaining popularity globally (Johnson, 2009; Kaplan & Haenlein, 2011), at both the individual and organizational levels (Ferguson & Greer, 2011; Marwick & Boyd, 2011). As one of the main and most popular microblogging services based in the United States, Twitter has attracted 200 million registered users all over the world (Shiels, 2011). More Internet giants, such as Google and Yahoo, have stepped into the market with similar microblogging services or features (e.g., Google Plus and Yahoo Impulse). This social media phenomenon is expected to increase exponentially.

As a vehicle that combines the features of blogging, texting, and social networking sites, generic microblogging enables its users to deliver a message of less than 200 characters (usually within 140 characters) to anyone who voluntarily opts to follow them and receive posts including texts and hyperlinks (Arceneaux & Weiss, 2010; Hermida, 2010). As a self-explanatory term, the “micro” indicates the limited number of characters in a typical microblogging post, while the “blogging” highlights its similar characteristics to blogging technology, such as posting personal thoughts, expressing individual opinions, and embedding outside links. Compared to traditional blogging, microblogging is more interactive by directly and instantly connecting a user to the online and offline social networks. In addition, due to the restricted number of characters
within one post, microblogging enforces message brevity and does not require complex thinking and thorough message elaboration. These characteristics of microblogging have sped up the diffusion of this new type of communication technology.

Moreover, because of its mobile web-friendly posting system, the medium through which the microblogging service could be accessed has expanded from traditional webpages to third-party applications on mobile devices, such as tablets and smart phones. Mobile devices have developed rapidly and gained increasing popularity in recent years (Malone & Hayes, 2011). According to the Pew Research Center’s Internet and American Life Project, 40% of the U.S. population got online via mobile phones in 2010 (Smith, 2010). As reported by comScore (2010), social media use has become one of the most popular and primary online behaviors, especially among mobile web users. Twitter experienced a 347% growth through mobile web access in 2010. The Gartner Research (2010) also predicts that the number of smart phones and browser-equipped enhanced phones will reach 1.82 billion in 2013, surpassing the installed base for PCs (Gartner, 2010). It is assumed that with the increasing development of mobile devices and huge growth of mobile web users, social media, such as microblogging, will attract an increasing number of users. Furthermore, newer features and services connecting to microblogging have attracted more users. For example, a leading location-based service, foursquare, claims more than 10 million users worldwide and 35,000 new users each day (foursquare, 2011). It is therefore expected that the integration of the multiple platforms and various new features will facilitate a higher rate of adoption for microblogging in the near future.
With its increasing popularity of microblogging, its potential of being the focus of communication research has also been growing. Empirical studies have been conducted by communication and information technology scholars to explore microblogging in two domains: media studies and computer-mediated communication. Media studies on microblogging have focused mainly on its word-of-mouth effect. For example, Jansen, Zhang, Sobel, and Chowdury (2009) found that microblogging could be considered an online tool for word-of-mouth communication and used as part of an organization’s branding strategy to sustain customer relationship. Moreover, research also investigated how microblogging was portrayed in the mass media at the beginning stage of its diffusion. Arceneaux and Weiss (2010) analyzed press coverage concerning Twitter and found that this microblogging service was promoted and characterized in positive terms by newspapers, magazines, and blogs. At the same time, microblogging research in computer-mediated communication has concentrated mainly on evaluating microblogging as a form of communication. Schultz, Utz, and Göritz (2011) found that crisis communication using microblogging led to more positive public reactions to crises compared to reactions emanating from blogs and traditional media, such as newspapers. The authors concluded that microblogging should deserve more attention and that microblogging users should be more strategically targeted. Overall, microblogging has become an important medium with user-generated messages and has played an influential role in computer-mediated communication, such as marketing and crisis communication. Thus, more research on microblogging users is warranted to better understand microblogging and its application in the context of communication and media studies.
Rationale

There are at least three motivations for conducting this study. First, the examination of microblogging adoption will help to understand the social media as a dynamic process. Despite the large number of microblogging users, the growing popularity of microblogging and increasing number of recent studies, there is very little research on microblogging adoption. The fact that microblogging is still an innovation at its beginning stage of diffusion provides a valuable opportunity to further understand the characteristics of this early adoption process (Kaplan & Haenlein, 2011). According to the theory of Diffusion of Innovations (Rogers, 2003), the early stage of an innovation’s diffusion is the best time to examine the predictors of an innovation’s adoption and identify early adopters from late adopters. In addition to adoption, this research will also investigate the predictors of microblogging knowledge and attitude. Existing studies have investigated the adoption of social media including social networking sites, such as Facebook and Myspace (e.g., Cha, 2010; Folorunso, Vincent, Adekoya, & Ogunde, 2010; Lin, Chiu, & Lim, 2011), content community, such as YouTube (e.g., Ryu, Kim, & Lee, 2009), and online gaming (e.g., Chang, Lee, & Kim, 2006), but these studies have merely concentrated on the predictors of social media adoption. As a dynamic process, diffusion of an innovation includes an innovation-decision process where adopters usually go through several stages, such as knowledge, persuasion, and decision, to adopt an innovation (Rogers, 2003). Therefore, this study will investigate microblogging’s dynamic diffusion by examining the predictors of the knowledge, persuasion, and decision stages in the innovation-decision model.
Second, the incorporation of predictors that are seldom studied will help to gain a
deep understanding of microblogging’s diffusion from a new perspective. Given the
importance of microblogging, some important questions arise: Who are the
microblogging users? What are the predictors of their knowledge about, attitude toward,
and adoption of microblogging? The research concerning social media adoption in
general has used very limited variables, such as socioeconomic status and perceived
innovation’s attributes. Other adoption variables, such as communication behavior,
psychological variables, and other social media related factors, have never been taken
into account. As suggested by Kim, Sohn, and Choi (2011), research on social media
should incorporate psychological factors, such as personality, to determine whether these
traits can influence the adoption of microblogging. Also, as a type of social media,
microblogging has its media richness and nature of social interaction. Therefore, the
communication behavior, such as social participation and information seeking, might be
related to the diffusion of microblogging. In addition, as privacy becomes one of the
crucial issues in the development of social media, the investigation of privacy concerns
may help to gain a better understanding of microblogging users. To address these issues,
this research will include more relevant variables and build a more elaborated model of
social media diffusion, which has not been performed in previous research. Of course, it
is not possible to include all diffusion-related personality and communication behavior
variables in a workable model. This study will select several of them that are highly
related to the diffusion of microblogging and relevant to the Chinese culture context.

Third, the selection of China will help to investigate the microblogging’s
diffusion in a collective culture. According to the latest 2009 statistics (Internet World
the total number of Chinese Web users (around 400 million) surpassed that of Americans (around 240 million). China has now the largest number of Internet users in the world. Of the 400 million Web users in China, 140 million are users of Sina Weibo, one of Twitter’s equivalents in China as well as China’s largest microblogging service provider (Du, 2011; Kiss, 2011). According to Chinese media, 2010 marked “the first year of microblogging in China” (Sina, 2010, p. 1). Microblogging is exploding in China since 2011, because it not only provides a popular platform for social interactions, but also plays an essential role in the coverage of breaking news as the third largest source of information among Chinese Web users (e.g., Wang, 2011; Wines & LaFraniere, 2011). For instance, the unreported Chinese couple’s seven-month pregnant forced abortion case first started being known on Sina Weibo, then attracted traditional media coverage, and eventually promoted local authorities’ investigation (Chin, 2012). Another example is the train accident in Wenzhou on July 23, 2011. The number of microblogging posts on this accident exceeded 26 million (Wines & LaFraniere, 2011). International news organizations (e.g., The New York Times and The Wall Street Journal) also launched their Sina Weibo accounts due to the Chinese growing market and microblogging’s increasing popularity. One report issued by Data Center of China Internet predicted that the number of microblogging users in China would reach 253 million by the end of 2013 (Data center of China Internet, 2010). Therefore, the examination of one of the world’s largest microblogging populations would not only contribute to the knowledge of communication technologies’ diffusion, but also have cultural and geographic implications. Most of the social media innovations originated from the western world, then spread through other countries and cultures, and even have equivalents in the other
parts of the world. While social media became a global trend, most of the social media adoption research has been conducted in developed countries, such as the United States (e.g. Cha, 2010) and South Korea (e.g., Chang et al., 2006). Developing countries, such as China with a large number of microblogging users, have received little attention. Therefore, an additional incentive to conduct this study in China is to examine the microblogger characteristics in that Asian developing country. Furthermore, the study of microblogging’s diffusion in China may also have implications for the social media diffusion studies in the intercultural context. China is different from the West in its collective culture where individuals are less likely to challenge authority and question basic assumptions. Also, heavily influenced by Confucius’ thoughts in China, any change or variation from societal norms is discouraged because it may break the balance of an individual’s life and make the individual different from the other members in his/her social group (Ji, Lee, & Guo, 2010). Therefore, by examining the diffusion of microblogging in the Chinese social system where some personality traits, such as dogmatism and attitude toward change, could have differential effects from those in other social systems, this study will also offer a cultural perspective and provide a practical contribution to social media diffusion studies in a cross-cultural context.

**Purpose of the Study**

The primary purpose of this study is to determine the significant predictors of diffusion’s knowledge, persuasion, and decision stages for microblogging in China based on socioeconomic status, technology clusters, communication behavior, innovation attributes, and personality traits. As stated above and further discussed in the next chapter, much of the diffusion-based new media literature has focused on adoption
(decision) predictors. The characteristics of the other two stages in the innovation-decision process have rarely been examined empirically in communication technology studies. With these three stages, this study will then develop a model of social media innovation-decision process within the theoretical framework of Diffusion of Innovations by using mixture modeling analysis. In addition, it will identify the relationships between all the five stages of the innovation-decision process (knowledge, persuasion, decision, implementation, and confirmation) for microblogging in China, a topic that has never been tested in previous diffusion-based new media studies.

Outline

The research will be divided into five chapters. Chapter I introduced the topic by providing background information about microblogging and a rationale for the study. Chapter II will present the diffusion-based theoretical framework, review the relevant empirical literature about new media technology studies, and state the hypotheses based on the literature review. Chapter III will describe the methodology of the study, including data collection and questionnaire design. Chapter IV will provide the descriptive demographics of the sample as well as present the research findings related to the hypotheses. Finally, Chapter V will conclude with a discussion of the study’s results, addressing the theoretical and empirical implications, providing suggestions for future research, and noting the limitations of the research.
CHAPTER II. REVIEW OF LITERATURE

This chapter describes the diffusion-based theoretical framework for this study and reviews relevant empirical studies about the diffusion of social and other new media to justify the 12 sets of hypotheses stated below.

Theoretical Framework

Research on communication technologies uses a variety of theories or models (e.g., Technology Acceptance Model, Theory of Uses and Gratifications, Theory of Planned Behavior, Diffusion of Innovations theory), depending on the purpose of each study. Among these theoretical frameworks, the Uses and Gratifications approach centers on the types of motivations and the degree of media use, while the Technology Acceptance Model and the Theory of Planned Behavior might be too parsimonious to explain the adoption behavior and understand the antecedents of social media adoption. Diffusion of Innovations theory, on the other hand, has become the most significant framework to study the various aspects of new media diffusion, primarily their adoption in a social system. This study will rely on Diffusion of Innovations theory because not only does it provide a comprehensive explanation of the adoption process as specified in the innovation-decision model, but it also allows to test generalized statements about the influence of demographic, communication, and psychological variables in such a model (Rogers, 2003). As noted by Chang et al. (2006), Diffusion of Innovations, in particular, has proven its relative superiority in helping understand social media adoption behavior because it “focuses directly on adoption of new media” (p. 315).
Elements of Diffusion of Innovations

This section will briefly describe the key components of Diffusion of Innovations theory. Diffusion refers to “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5). This definition of diffusion contains four main elements: innovation, communication channel, time, and social system.

First, Rogers defines innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p. 12). He also identified five perceived characteristics of an innovation that can affect the rate of adoption: relative advantage, compatibility, complexity, trialability, and observability. Relative advantage is defined as “the degree to which an innovation is perceived as being better than the idea it supersedes” (p. 229). Compatibility is a perceived innovation attribute that evaluates “the degree to which an innovation is perceived as consistent with the exiting values, past experiences, and needs of potential adopters” (p. 240). Complexity refers to “the degree to which an innovation is perceived as relatively difficult to understand and use” (p. 257). Trialability determines “the degree to which an innovation may be experimented with on a limited basis” (p. 258). Observability indicates “the degree to which the results of an innovation are visible to others” (p. 259). Rogers predicted that relative advantage, compatibility, trialability, and observability of an innovation would be positively related to the rate of adoption, while complexity of an innovation would be negatively associated with its diffusion.

Second, “a communication channel is the means by which messages get from one individual to another” (p. 18), usually through mass media channels and interpersonal
channels. The former refers to newspapers, radio, television, and other mediated outlets, while the latter often designates information exchange between two or more individuals.

Time can be assessed on three dimensions in diffusion studies: the categories of adopters based on innovativeness, the rate of adoption in a social system, and the innovation-decision process. According to Rogers (2003), different people will adopt an innovation at a different rate depending on their innovativeness. Innovativeness is “the degree to which an individual (or other unit of adoption) is relatively earlier in adopting new ideas than other members of a system” (Rogers, 2003, p. 267). Rogers created categories to differentiate individuals according to their level of innovativeness and ascribed different characteristics to each category based on socioeconomic status, communication behavior, and personality values. He referred to the first group of individuals to adopt an innovation as innovators, the second group as early adopters, the third group as early majority, the fourth group as late majority, and the fifth group as laggards. These groups represent 2.5 %, 13.5 %, 34 %, 34 %, and 16 % of all adopters in a social system, respectively.

An innovation’s rate of adoption is defined as “the relative speed with which an innovation is adopted by members of a social system” (Rogers, 2003, p. 23). The rate of adoption is usually measured by the percentage of the members who adopt a certain innovation in a social system over a period of time. It is heavily determined by the perceived innovation attributes, such as relative advantage, compatibility, complexity, trialability, and observability, as discussed above. Because the innovation-decision process is the conceptual core of this study, it will be discussed separately in the next section.
Fourth, as “a set of interrelated units that are engaged in joint problem solving to accomplish a common goal” (Rogers, 2003, p. 23), a social system is critical to the diffusion studies because the system norms could facilitate the innovation to be widely adopted in a certain system or produce resistance to a certain innovation. A social system can be a population or an organization.

The Innovation-Decision Model

Among all the theoretical components of Diffusion of Innovations, the model for the innovation-decision process is a particularly useful to explain the diffusion of microblogging and its predictors at different stages.

Figure 2.1. A Model of Five Stages in the Innovation-Decision Process (Rogers, 2003, p. 170)

According to Figure 2.1, an individual or a decision-making unit usually goes through different stages in the innovation-decision process that range from learning about
an innovation to eventually keep using an adopted innovation. As a process involving attitude-shaping, decision-making, and action-taking, the innovation-decision process includes five stages: knowledge, persuasion, decision, implementation, and confirmation. In addition, various predictors exert different effects at different stages.

According to Rogers (2003), the knowledge stage “occurs when an individual is exposed to an innovation’s existence and gains an understanding of how it functions” (p. 169). Rogers’ generalizations indicate that, at this stage, the characteristics of the decision-making unit or individual, such as the individual’s socioeconomic status (e.g., education level and social status) and communication behavior (e.g., cosmopolitanism and opinion leadership), have a direct effect on an individual’s knowledge of an innovation. Although the graph of the innovation-decision model also includes personality traits as potential predictors that directly affect knowledge, there is no specific generalization on how these variables would influence an individual’s knowledge about an innovation.

The persuasion stage “occurs when an individual forms a favorable or unfavorable attitude towards the innovation” (p. 169). At this stage, an individual starts engaging with the innovation, and his or her evaluation of the innovation’s attributes heavily influences his or her resulting attitude toward the innovation. These innovation attributes include relative advantage, compatibility, complexity, trialability, and observability, which have been defined above.

The decision stage “takes place when an individual engages in activities that lead to a choice to adopt or reject the innovation” (p. 169). At this stage, the predictors of the first two stages might directly or indirectly determine the individual’s decision to adopt, even though they are not shown on the graph. For instance, Rogers (2003) hypothesized
that earlier adopters would have “more years of formal education,” be “more literate,” have a “higher social status,” a “greater degree of upward social mobility,” and “larger-sized units (farms, schools, companies, and so on)” than later adopters (p. 288). In addition, in terms of communication behavior, Rogers predicted that earlier adopters would be more cosmopolite, seek information more actively, enjoy a higher degree of opinion leadership, and have more social participation as well as greater exposure to mass media than later adopters. Rogers also reported several personality traits, such as dogmatism and attitude toward change, that significantly help differentiate between earlier adopters and later adopters.

The implementation stage “occurs when an individual puts a new idea into use,” and the confirmation stage “takes place when an individual seeks reinforcement of an innovation-decision already made, but he or she may reverse this previous decision if exposed to conflicting messages about the innovation” (p. 169). Rogers (2003) stated that the implementation stage could be influenced by the individual’s trial experience and uncertainty after the trial. At this stage, the availability of an innovation, an individual’s information seeking behavior, and his/her contact with change agent could all influence this individual’s use of the innovation. On the other hand, the confirmation stage might be affected by an individual’s psychological level of dissonance caused by the trial and use of the innovation at the decision and implementation stages. At this stage, confirmation usually ends up with continuance based on the satisfaction or discontinuance caused by internal dissonance. However, Rogers did not translate these statements into formal and testable generalizations that would allow researchers to identify predictors exerting direct and indirect effects on an individual’s implementation
and confirmation of a certain innovation. Even for the graph of the innovation-decision model (Figure 2.1), Rogers did not specify any variables affecting the stages of implementation and confirmation.

Therefore, given the absence of generalizations that would specifically predict the likelihood that an innovation would reach the implementation and confirmation stages, this study will not examine the determinants of these two stages for microblogging. This topic first would need extensive exploratory analysis that is beyond the scope of this thesis. Instead, as a modest starting point, this study will investigate the linear relationships among the five stages (Figure 2.2). The next section will formulate 12 sets of hypotheses derived from diffusion generalizations and empirical works about new media, including social media.

**Empirical Findings and Hypotheses**

Previous communication technology diffusion research that completely or partially employed the theoretical framework of Diffusion of Innovations has focused on such new media technologies as mobile phones (e.g., Liu, Huang, & Chen, 2008; Vishwanath & Goldhaber, 2003; Wei, 2006); personal computers (Lin, 1998); digital television and high-definition television (HDTV) (e.g., Atkin, Neuendorf, Jeffres, & Skalski, 2003; Chan-Olmsted & Chang, 2006; Dupagne & Driscoll, 2010); interactive cable television services (Li, 2004a); cable television (Lin & Jeffres, 1998); Internet and wireless Internet services (e.g., Hammond, Tuner, & Bain, 2000; Kwak, Skoric, Williams & Poor, 2004; Rhee & Kim, 2004; Wei, 2006; Zhou, 2008; Zhu & He, 2002); mobile Internet (Jiang, 2009) and its services including multimedia message services (Hsu, Lu, & Hsu, 2007); mobile advertising services (Yang, 2007); and other online media services
and applications (Lin, 2004), such as online news (Chan & Leung, 2005); online radio (Lin, 2009); webcasting (Lin, 2006), online shopping (Li, 2004b), on both individual level and organization level. For each predictor below, this section will state the proper generalization from Rogers (2003), if any, then report relevant research findings for the studies above, and finally formalized the hypothesis that will be tested.

**Five Stages of the Innovation-Decision Process**

According to Rogers (2003), the stages of knowledge, persuasion, and decision in the innovation-decision process are usually assumed to follow a linear process. In other words, the knowledge of, the attitude toward, and the adoption behavior of an innovation occur in a sequence paralleling to the hierarchy of effects model, which asserts that cognitions lead to attitudes, which in turn lead to behaviors. Some empirical studies have examined the effects of the same predictors on diffusion-related dependent variables, such as the knowledge, interest, and purchase intent of digital television (e.g., Atkin et al., 2003; Chan-Olmsted & Chang, 2006; Dupagne, 1999). However, without following Rogers’ innovation-decision model, no concrete answer on how knowledge influenced adoption was provided in these studies. Other empirical research studied the relationship between the stages of persuasion and decision. In the case of social media, Folorunso et al. (2010) found that an individual who had a favorable attitude toward using social networking sites was more likely to use social networking sites. In the case of new media technology, the positive effect of attitude on adoption behavior was also found among the adopters of cell phone and online radio (e.g., Lin, 2009; Vishwanath & Goldhaber, 2003). These three studies indicated that there is a positive relationship between the persuasion and the decision stages in the innovation-decision process. Moreover, Zhang and Wei’s
(2009) further examined the relationship between the stages of knowledge, persuasion, and decision of Internet adoption in rural China. Consistent with the innovation-decision model, the authors found that knowledge exerted a positive effect on attitude, which in turn had a positive effect on Internet adoption. Since an individual will shape an attitude toward an innovation at the persuasion stage and then accept or reject the innovation at the decision stage, the study’s finding indicated that the knowledge stage had a positive effect on the persuasion stage, which in turn had a positive effect on the decision stage. Although Zhang and Wei’s (2009) study also reported the positive effect of knowledge on adoption, the current study will only focus on the linear relationships between the stages of knowledge, persuasion, and decision within the framework of innovation-decision process. Therefore, the first hypothesis stated the following:

\[ H_1: \text{The knowledge stage will have a positive effect on the persuasion stage, which in turn will have a positive effect on the decision stage of microblogging’s innovation-decision process.} \]

It should also be noted that little research on new media adoption has been devoted to integrating the stages of implementation and confirmation of the innovation-decision model and examining the relationship between these five stages as a whole. As pointed out by Rogers (2003), an individual usually goes through a sequence of five stages to pass from gaining knowledge of an innovation to recognizing the use of this innovation. Although the stages of decision, implementation, and confirmation could all terminate the innovation-decision process, the decision of adopting an innovation usually leads to the implementation of the innovation on a regular basis, which might lead to the recognition and routinization of using the innovation. Therefore, it is assumed that, there
is a positive effect from knowledge to persuasion, which in turns influences adoption, which in turns affects implementation, which in turn impacts confirmation in a positive way. Therefore, the first research model of five stages of microblogging’s innovation-decision process was proposed as shown in Figure 2.2 and the second hypothesis stated that:

\[ H_2: \text{The knowledge stage will have a positive effect on the persuasion stage, which in turn will have a positive effect on the decision stage, which in turn will have a positive effect on the implementation stage, which in turn will have a positive effect on the confirmation stage of microblogging’s innovation-decision process.} \]

Figure 2.2 Proposed Linear Model of the Five Stages of Microblogging’s Innovation-Decision Process

**Socioeconomic Status**

Rogers (2003) concluded that socioeconomic characteristics played an essential role in the process of diffusion. Defined as “the position of individuals, families, households, or other aggregates on one or more dimensions of stratification,” socioeconomic status is a composite measure that incorporates dimensions of “income, education, prestige, wealth, or other aspects of standing that members of society deem salient” (Bollen, Glanville, & Stecklov, 2001, p. 157). Rogers generalized that compared to the later knowers and adopters, earlier knowers and adopters have more years of
education and higher social status as indicated by income level and occupational prestige. For the college student sample in the current study, educational levels might be similar. In other words, educational level may not be associated with knowledge and adoption of microblogging among Chinese college students. Therefore, socioeconomic status will only be measured by income level.

In the case of new media knowledge, income level was found to be positively associated with HDTV awareness and familiarity (Dupagne & Driscoll, 2009) as well as with digital television content knowledge (Chan-Olmsted & Chang, 2006). However, none of the existing studies examined the relationship between socioeconomic status and knowledge of social media.

In the case of new media technology adoption, although some researchers found that income level did not play a significant role in users’ adoption and use behavior (Chang et al., 2006; Jeffres & Atkin, 1996; Lin, 2009; Liu et al., 2008; Ryu et al., 2009). For example, Chang et al. (2006) and Ryu et al. (2009) found no relationship between income level and adoption of online gaming among Korean college students or use of video content community among Korean elderly users, respectively. But many other empirical studies have confirmed the association between new media technology adoption and personal/family income level. For instance, adopters’ higher income level exerted a positive influence on the adoption of new media technology, such as Internet service, digital television, HDTV, cable services (digital/multimedia/interactive), computers, online shopping, cable TV shopping, and cell phone (e.g., Atkin, Jeffres, & Neuendorf, 1998; Chan-Olmsted & Chang, 2006; Collins, Regan, & Abel, 1983; Dickerson & Gentry, 1983; Ducey, Krugman, & Eckrich, 1983; Dupagne, 1999; Dupagne
& Driscoll, 2010; Dupagne & Salwen, 2005; Kwak et al., 2004; Leung, 1998; Li, 2004a, 2004b; Lin, 1998, 2006; Lin & Jeffres, 1998; Wei, 2001). In addition, studies on late adopters of cell phones in both United States and Hong Kong reported that income level negatively influenced the laggards’ adoption intention and use of cell phones (Leung & Wei, 1999; Vishwanath & Goldhaber, 2003). On the other hand, Li (2004b) found that Internet shopping users had a lower family income in Taiwan. Among the 21 studies reviewed, 18 studies reported a positive relationship between income level and knowledge or adoption of new media technologies. Therefore, there is overwhelming evidence that the higher the income level, the more possibilities an individual will know and adopt a certain communication technology. For this current study, using family income as a measurement of socioeconomic status, the third set of hypotheses stated the following:

\[ H_{3a}: \text{Socioeconomic status (family income) will have a positive effect on an individual’s knowledge of microblogging.} \]

\[ H_{3b}: \text{Socioeconomic status (family income) will have a positive effect on an individual’s adoption of microblogging.} \]

**Technology Cluster**

Rogers (2003) defined a technology cluster as “one or more distinguishable elements of technology that are perceived as being closely interrelated” (p. 14). He believed that diffusion of a certain innovation was not simply independent from others, and that an individual’s decision-making of innovation adoption might be influenced and triggered by ownership of products with similar functions and features. Therefore, it is assumed that an individual’s past experience with an innovation could be positively or
negatively associated with his or her knowledge and adoption of the next innovation.

Rogers never formulated a formal statement about the effect of technology cluster on any stage of the innovation-decision model. However, one can consider that ownership of various technologies is a form of social status because some of the innovations are “costly to adopt and require large initial outlays of capital” (Rogers, 2003, p. 288).

Sometimes, in a social system, only the individuals who have more financial advantages would be able to know and adopt innovations. Rogers stipulated that earlier knowers and adopters have higher social status than do later knowers and adopters. Therefore, it is assumed that earlier knowers and adopters could also own more communication technologies than do later knowers and adopters.

For the knowledge stage, empirical studies on knowledge of new media demonstrated that ownership of communication technologies was generally positively associated with at least one certain type of knowledge. For example, Chan-Olmsted and Chang (2006) found that ownership of home theater was positively related to awareness of digital television, and ownership of DVD, Internet, personal computer, and home theater was positively associated with digital television knowledge of the content, environment, and equipment dimensions. Another study also reported a positive relationship between ownership of communication technologies and awareness, familiarity, and knowledge of HDTV (Dupagne & Driscoll, 2009).

For the decision stage, although Chang et al. (2006) found no significant relationship between new media ownership and online gaming adoption, empirical research on other social and new media technologies collaborated the existence of such relationship, particularly when a new technology has similar or complementary functions
to existing technologies. For example, in the case of HDTV, ownership of home entertainment products, such as video game systems, compact disc players, and broadcast satellite services, was found to influence an individual’s decision-making of HDTV adoption (Atkin et al., 2003; Dupagne, 1999; Dupagne & Driscoll, 2010).

With the development of new media technology and upgrade of applications and services, the functionally complementary products of one new media technology sometimes change. For instance, ownership of voicemail, fax machine, answering machine, and pagers was a significant predictor of cell phone’s adoption (Leung & Wei, 1999; Vishwanath & Goldhaber, 2003). When it came to 3G mobile phones, the components of the technology cluster became PDA, personal computer, digital camera, and MP3 player (Liu et al., 2008). However, it does not change the fact that an individual’s awareness and adoption of a new media technology could be directly or indirectly influenced by the ownership of an existing similar or complementary technology, as confirmed previously by empirical studies (Chan-Olmsted & Chang, 2006; Dupagne, 2006; Hammond et al., 2000; Lin, 1998, 2001; Lin et al., 2011; Reagan, 1987; Vishwanath & Goldhaber, 2003). From the late adopters’ perspective, Leung and Wei’s (1999) study of laggards’ mobile phone adoption showed how these individuals’ negative past experiences with a technology cluster predicted the non-adoption of mobile phones by laggards. Due to a lack of educational and financial resources, ownership of technology products that have similar or complementary functions to mobile phones was highly associated with the non-adoption of mobile phones.

Moreover, researchers classified new media technologies into various types based on different criteria. For instance, Dupagne and Salwen (2007) categorized
communication technologies into three types based on the environment: entertainment, telecommunication, and computer technology. Based on utility, Atkin (1995) classified communication technologies into entertainment-oriented, information-based, and interpersonal technology. Researchers confirmed the relationship between adoption of a type of new media technology and ownership of new media technologies with similar functions. For example, entertainment-oriented technology is more closely related to entertainment-oriented technology ownership (Atkin, 1995), and Internet service adopters owned more technologies that could provide information and communication benefits (Hammond et al., 2000). In addition, Li (2004a) found that the adoption of interactive cable service in Taiwan was more closely related to ownership of information-based and interpersonal technology other than owning an entertainment-oriented technology cluster. However, today’s tendency of platform aggregation of consumer-based new media technology often homogenizes the components of a technology cluster across new media technology products and services. For example, ownership of a personal computer (desktop and laptop), digital camera, cell phone, DVD player, and Internet service significantly predicted the adoption of a 3G mobile phone and wireless Internet service (Liu et al., 2008; Wei, 2006). Based on numerous empirical studies, the fourth set of hypotheses made the following predictions:

\( H_{4a} \): Ownership of related communication technologies will have a positive effect on an individual’s knowledge of microblogging.

\( H_{4b} \): Ownership of related communication technologies will have a positive effect on an individual’s adoption of microblogging.
Communication Behavior

Rogers (2003) emphasized the importance of communication behavior variables, such as social participation, mass media use, and cosmopolitanism, at the knowledge and decision stages of the innovation-decision process. Based on his generalizations, this study will consider the effects of four communication behavior variables at these two stages for microblogging.

Social participation. Rogers (2003) hypothesized that earlier knowers and adopters have more social participation than later knowers and adopters. Social participation refers to the extent “how actively the person takes part in the activities of formal and informal groups in society” (Lindström, Hanson, & Östergren, 2001, p. 443). By emphasizing an individual’s social interaction with his or her surrounding social system, such as union meeting, church, and private party, social participation might allow an individual to meet more individuals who knew or have adopted an innovation, enjoy more opportunities to become aware of an innovation, and then result in a better knowledge or a final decision-making of adoption.

Only a few studies have examined the effect of social participation on knowledge about communication knowledge. Contradictory to the Diffusion of Innovations theory, the findings of these studies reported a negative relationship between social participation and knowledge of digital television (Chan-Olmsted & Chang, 2006) as well as awareness of HTDV (Dupagne & Driscoll, 2009).

Empirical research also found inconsistent results of its association with new media technology adoption. Reagan (1987) found that among the four communication technologies, political participation had no association with ownership of personal
computer and cable TV service as well as a negative relationship with the use of videotext and the ownership of a VCR. On the other hand, Jennings and Zeitner’s (2003) study reported a positive relationship between access to the Internet and social participation as measured by organizational membership and volunteer activities. Meantime, Moy, Manosevitch, Stamm, and Dunsmore’s (2005) study furthered the understanding of the relationship between Internet use and civic engagement by examining Internet use from various dimensions. This study also found that Internet use for seeking information, interpersonal email, and participating in political and community-based activities was positively related to social participation as indicated by group membership, political activity, and community involvement. In addition, their study also reported a positive association between Internet use for chatting socially and such social participation activities as group membership and political activity.

Despite these ambiguous empirical results, we should remember that existing studies have yet to evaluate the role of social participation in the context of social media diffusion. Social media create a more interactive platform for Internet users and encourage their active involvement and social interaction (Kaplan & Haenlein, 2010). It is assumed that an individual who is more actively devoted into the social participation might know and adopt social media, which are primarily used for online social interaction and participation. Therefore, following Rogers’ (2003) generalization and the interactive feature of social media, the fifth set of hypotheses predicted the following positive effects:

\[ H_{5} \]: Social participation will have a positive effect on an individual’s knowledge of microblogging.
$H_{5b}$: Social participation will have a positive effect on an individual’s adoption of microblogging.

**Media use.** Rogers (2003) stated that earlier knowers and adopters have greater exposure to mass media communication channels than later knowers and adopters. Mass media channels refer to “means of transmitting messages that involve a mass medium such as radio, television, newspapers, and so on, that enables a source of one or a few individuals to reach an audience of many” (Rogers, 2003, p. 217). By emphasizing an individual’s level of mass media use, Rogers hypothesized that being exposed to mass media would influence an individual’s awareness, knowledge, and adoption of an innovation. The greater use of mass media channels, the higher likelihood mass media channels will create awareness of a certain innovation for an individual and eventually facilitate the decision-making of adoption. Based on the above-mentioned reasons, mass media use has received much attention from communication technology diffusion scholars (e.g., Lin, 2001; 2009).

But this empirical research has reported inconsistent results between media exposure and new media technology knowledge and adoption. Rarely are all measures of media use, such as television viewing, radio listening, newspaper reading, and moviegoing, significantly related to these two dependent variables. In addition, the direction of the relationship is not always positive.

In the case of knowledge about new media, Chan-Olmsted and Chang (2006) reported positive relationships between awareness of digital television and DVD rental, moviegoing, and Internet use. Also Internet use was related to all the dimensions of knowledge about digital television. As for HDTV, web news reading was positively
associated with HDTV awareness and familiarity. However, newspaper reading had a positive effect on HDTV awareness and a negative effect on HDTV familiarity (Dupagne & Driscoll, 2009).

In the case of social media adoption, Chang et al. (2006) found that the adopters of online gaming had a higher level use of video games and the Internet. This finding was also supported in the case of other new media technologies: personal computer, Internet service, HDTV, VCR, videotext, digital cable service, online service, electronic newspaper, online shopping, cable TV shopping, cell phone, online radio, fax machine, audio information service, and 3G mobile phone (Atkin et al., 1998; Dupagne & Agostino, 1991; Kang, 2002; Leung, 1998; Leung & Wei, 1999; Li, 2003, 2004b; Lin, 2001, 2009; Liu et al., 2008; Neuendorf, Atkin, & Jeffres, 1998; Reagan, 1989; Scherer, 1989; Schweitzer, 1991; Wei, 2001, 2006). On the other hand, negative relationships between the use of a certain mass media channel and communication technology adoption were also found in the cases of cable TV service, personal computer, VCR, and videotext (Collins et al., 1983; Danko & MacLachian, 1983; Lin, 1998; Reagan, 1987). In addition, some studies also reported that there was no relationship between communication technology adoption and any mass media use at all for cable TV, cable service, satellite TV, videotext, and 3G mobile phone (Ettema, 1984; Lin & Jeffres, 1998; Litman, Chan-Olmsted, & Thomas, 1991; Liu et al., 2008; Reagan, Ducey, & Bernstein, 1985). Overall, the majority of the studies reviewed indicated that evidence exists for a significant relationship between one or more media use variables and communication technology adoption.
We must also note that various social media applications and services have different levels of media richness (Kaplan & Haenlein, 2010). Although microblogging is lower in media richness than online gaming and video sharing communities, Chinese microblogging services have enhanced their media richness by adding such multimedia features as posting photos, audio clips, and video files. Also, as the Chinese web users’ third largest source of information (Wang, 2011), microblogging is becoming an important alternative news medium and starts playing an essential role in coverage of breaking news (Wines & LaFraniere, 2011; Chin, 2012). Elite media such as The New York Times and The Wall Street Journal also launch microblogging accounts on Sina Weibo to reach out their potential readers (see The New York Times, 2012 and The Wall Street Journal, 2012). Therefore, it is possible that individuals who are heavy mass media users will have a higher likelihood of adopting microblogging for news media use than their light counterparts. In addition, the news and comments on different public affairs posted via Chinese microblogging had been reported and cited by other social media outlets, such as blogging, and traditional media, such as newspapers all over the world (e.g., Du, 2011; Wang, 2011; Wines & LaFraniere, 2011; Xie & She, 2011; Yang & Meng, 2011). Although college students may not be heavy users of traditional mass media (e.g., newspapers, television, and radio), most of the news stories and television programs now are available online in China. It is assumed that individuals who are heavy users of online media tend to be aware of microblogging and adopt it. Therefore, the sixth set of hypotheses stated the following:

\( H_{6a} \): Media use will have a positive effect on an individual’s knowledge of microblogging.
$H_{0b}$: Media use will have a positive effect on an individual’s adoption of microblogging.

**Cosmopoliteness.** Rogers (2003) stated that earlier knowers and adopters are more cosmopolite than later knowers and adopters. He defined cosmopoliteness as “the degree to which an individual is oriented outside a social system” (p. 290). By emphasizing an individual’s orientation towards his or her environment and surrounding social system, Rogers believed that cosmopoliteness might allow an individual to own a wider social network, have more opportunities to become aware of an innovation, and then try out the new idea.

For the effect of individuals’ cosmopoliteness on new media knowledge, Dupagne and Driscoll (2009) reported positive relationships between cosmopoliteness and HDTV awareness and familiarity. Empirical research also found inconsistent results of its influence on new media technology adoption. Atkin et al. (1998) found that cosmopoliteness was not associated with the adoption of Internet. However, Dupagne and Driscoll (2010) reported a significant difference between HDTV adopters and non-adopters in terms of degree of cosmopoliteness. Jeffres, Atkin, Bracken, and Neuendorf’s (2004) study also indicated that, among the seven dimensions of cosmopoliteness, six were related to Internet access and email use in a positive way. In the Asian context, a study found that, in terms of lifestyle, the “yuppies” in China who were more westernized owned more wireless communication technology than those who were not (Wei, 2006). With the help of promotion from pop-starts and celebrities, Chinese microblogging service is becoming a major social medium for a large number of users to express themselves and communicate with their acquaintances (Barboza, 2011). It is assumed that
individuals who are oriented outside their social system are more likely to know and adopt microblogging than those who are localite. Therefore, the seventh set of hypotheses stated that:

\[ H_{7a}: \text{Cosmopoliteness will have a positive effect on an individual’s knowledge of microblogging.} \]

\[ H_{7b}: \text{Cosmopoliteness will have a positive effect on an individual’s adoption of microblogging.} \]

**Opinion leadership.** Rogers (2003) generalized that “earlier adopters have a higher degree of opinion-leadership than do later adopters” (p. 291). Opinion leadership refers to “the degree to which an individual is able to influence other individuals’ attitudes or overt behavior informally in a desired way with relative frequency” (p. 27). Rogers pointed out that opinion leadership requires an individual to have technical competence, enjoy social accessibility, and conform to the system’s norms. Individuals who have a higher level of technical competence and more social accessibility may be more likely to become aware of the new social media, have a more positive attitude toward these media, and finally adopt them. At the same time, their opinion leadership in the system would be maintained.

Opinion leadership has long been studied in the field of communication, marketing, and business. Diffusion of innovation researchers also examined the relationship between opinion leadership and adoption, since opinion leadership may play an important role in the process of diffusion according to the two-step flow (Robertson & Myers, 1969; Summers, 1971). In the case of technological innovations, only one empirical research reported a significant positive relationship between opinion leadership
and adoption of direct banking services (Lockett & Littler, 1997). However, the empirical research of marketing provided more evidence for our hypotheses below: compared to the other consumers, the opinion leaders were heavier consumers of wine and mass media (Goldsmith & d’Hauteville, 1998; Goldsmith, d’Hauteville, & Flynn, 1998; Summers, 1970). In addition, although Rogers (2003) did not formulate a generalization statement for the effect of opinion leadership on innovation knowledge, Shoham and Ruvio (2008) found a positive relationship between opinion leadership and knowledge about computer and software innovations.

Furthermore, one of the unique characteristics of microblogging, which is different from the other social media, is the instantaneous posting system, whereby the sender’s updates will be instantly and directly delivered to the followers (subscribers). A recent report noted that the more followers one individual had on Twitter, the more he or she tweeted (Alex, Evans, & Singh, 2009). This finding indicated that the higher degree of opinion leadership a microblogging user may enjoy in terms of the number of followers, the more frequently he or she will use a microblogging service. Therefore, based on Rogers’ (2003) generalization and the findings of empirical research, the eighth set of hypotheses stated the following:

\[ H_{8a} \]: Opinion leadership will have a positive effect on an individual’s knowledge of microblogging.

\[ H_{8b} \]: Opinion leadership will have a positive effect on an individual’s adoption of microblogging.
Innovation Attributes

This study will also examine the effects of perceived innovation attributes on the stages of persuasion and decision in the microblogging’s innovation-decision model. As noted above, Rogers (2003) claimed that five key innovation attributes—relative advantage, compatibility, complexity, trialability, and observability—significantly contributed to the understanding of an innovation’s diffusion. He also reported that these five attributes accounted for 49-87% of the variance in the rate of adoption of innovations.

Although Rogers stated that the perceptions of innovation attributes are generally developed at the persuasion stage and assumed to be especially critical for the formation of an individual’s attitude toward an innovation, only few studies tested the relationships at that stage. In the case of social media, Folorunso et al. (2010) found that the relative advantage, complexity, compatibility, trialability, and observability of social networking sites all influenced an individual’s attitude toward using social networking sites, which in turn affected intention to use social networking sites. In the case of new media technology, Vishwanath and Goldhaber (2003) found that the incompatibility and lack of observability of cell phone use directly influenced late adopters’ attitudes and indirectly affected their adoption behavior. Lin’s (2009) study on online radio also noted that individuals’ belief that adopting the online radio can improve their radio listening experience, which is equivalent/similar to perceived relative advantage, was a positive predictor of their attitude toward adoption, which in turn positively impacted online radio adoption.
Although Rogers (2003) believed that innovation attributes have direct and strong effects at the stage of persuasion, there is a lot more research examining the effects of innovation attributes at the decision stage. In the case of social media, Chang et al. (2006) reported that compared to non-adopters, adopters of online gaming had a higher perception of online gaming’s advantages. In addition, their analysis indicated that intention to adopt online gaming partly depended on the online gaming’s relative advantage and complexity. Cha’s (2010) study of American college students concluded that perceived ease of use of social networking sites significantly predicted their frequent use. Lin et al.’s (2011) study of Singapore’s working adults also showed that adopters perceived social networking sites to have more relative advantages and compatibility as well as less complexity than non-adopters.

In the case of new media technology, all five innovation attributes have been widely examined by communication scholars to explain the adoption of new media technology. There is evidence that these five attributes predicted the adoption of new media technology with varying levels of effectiveness: e.g., the perceived relative advantage’s effect on communication technology adoption by Whites and Blacks in the United States (Dupagne & Salwen, 2005); compatibility and trialability’s effect on consumers’ adoption of HDTV (Dupagne & Driscoll, 2010); the relative advantage’s effect on an individual’s intention to adopt interactive cable service (Li, 2004a); complexity as a negative predictor of adoption of online communication service (Lin, 2001); the effect of relative advantage and compatibility on intention to use wireless Internet (Wei, 2006); relative advantage as a positive predictor of personal computer adoption (Lin, 1998); relative advantage, compatibility, and observability as positively
influencing the adoption of digital TV (Chan-Olmsted & Chang, 2006); compatibility and trialability as increasing the use of Internet services (Agarwal & Prasad, 1997); relative advantage and complexity as affecting the Internet adoption in a working environment (Zhou, 2008); relative advantage, ease of use, and compatibility as increasing the likelihood of using mobile Internet services (Hsu et al., 2007); and relative advantage, complexity, compatibility, and observability as predictors of Internet adoption (Zhu & He, 2002). Relative advantage, compatibility, and complexity appear to be the most predictive among these five attributes. This inference is consistent with the conclusion in Tornatzky and Klein’s (1982) meta-analysis of 75 studies. They reported that of the 30 attributes identified by innovation researchers, only three—relative advantage, compatibility, and complexity—were the most consistent and important predictors of innovation adoption across studies.

It is apparent that these five innovation attributes may not all exert significant influence on the adoption decision at the same time. The demographic nature of the sample, the type of new media technology, and the region where the study was conducted could all play a role in emphasizing the significance of some attributes over others. Yet, perhaps the most powerful determinant of differences among innovation attributes might be the rate of adoption reflected in the adopter categorization. For instance, Vishwanath and Goldhaber’s (2003) study of late cell phone adopters in the United States also found that, since cell phone use was at its late majority stage of diffusion and in certain areas, entry-level cell phone was freely provided to consumers, trialability was not considered an important innovation attribute because the high penetration rate of cell phones and the maturity-based marketing strategies reduced the risk of adoption.
We should also note that new media researchers have examined other innovation attributes of new media technology adoption besides the five suggested Rogers: e.g., available resources and perceived benefits (e.g., Chan-Olmsted & Chang, 2006; Lin, 2001), perceived utilities (e.g., Lin, 2006), and perceived risk (e.g., Chang et al., 2006; Dupagne & Driscoll, 2010). However, consistent with Diffusion of Innovations theory, this study will only focus on the five attributes discussed in Rogers (2003). In addition, because microblogging, as one type of social media service, does not cost to access or adopt, trialability is assumed not to be one crucial factor in the innovation-decision process. Also, simply by observing other adopters’ use of microblogging, potential users would have a general idea of how microblogging operates or functions. Therefore, trialability will not be examined in the current study and the ninth set of hypotheses stated the following:

\( H_{9a} \): Perceived relative advantage, perceived compatibility, and perceived observability will have a positive effect on an individual’s attitude toward microblogging. However, perceived complexity will have a negative effect on an individual’s attitude toward microblogging.

\( H_{9b} \): Perceived relative advantage, perceived compatibility, and perceived observability will have a positive effect on an individual’s adoption of microblogging. However, perceived complexity will have a negative effect on an individual’s adoption of microblogging.

**Privacy Concerns**

With the explosive development of social media, concerns for privacy have become an increasingly salient issue for the research on social media today (Boyd &
An individual cannot avoid privacy concerns if he or she decides to accept and adopt social media, particularly when using social media like microblogging may reveal his or her personal information like location and other online activities (Kang, 2011). Unfortunately, there is no single accepted definition of privacy concerns. From the perspective of information privacy, Westin (1967) defined it as “the claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others” (p. 7). Information privacy concerns focus on how an individual views different aspects of information privacy, such as the inputs, use, and control of data (Campbell, 1997). With the Internet boom, Internet privacy concerns received increasing academic interests. As noted by Hoffman, Novak, and Peralta (1999), consumers pay more attention to privacy when online media are involved than with traditional media. Privacy concerns have been studied in various settings, such as consumers’ privacy concerns when a firm collects consumer data (Culnan & Armstrong, 1999; Stewart & Segars, 2002), employee’s privacy concerns when an employer collects employee data (Smith, Milberg, & Burke, 1996), and new technology adopters’ privacy concerns that arise from location-based service (Junglas, Johnson, & Spitzmüller, 2008). The current study defines privacy concerns as “concerns about possible loss of privacy as a result of a voluntary or surreptitious information disclosure” to social media (Dinev & Hart, 2005, p. 9).

Privacy concerns have received attention from social and new media scholars. Gross and Acquisti’s (2005) study of Facebook profiles found that the potential privacy threats included the disclosure of users’ identity information and reconstruction of users’ social security number with the help of personal information displayed on their profiles,
such as hometown and date of birth. Another study indicated that although some users were aware of the possible threats to their privacy, many users still underestimated the potential risks caused by using social networking sites (Jagatic, Johnson, Jakobsson, & Menczer, 2007). According to Fogel and Nehmad (2009), the individuals who were less comfortable with the possible risk caused by disclosure of personal information did not post information on their social media profiles (Fogel & Nehmad, 2009). Sheehan and Hoy’s (1999) study noted the negative relationship between the web users’ privacy concerns and their registration for web sites requesting information. Similarly, Chellappa and Sin (2005) also reported that as an individual’s privacy concerns increased, the likelihood of using personalization services decreased. Marketing research also indicated that the privacy concerns influenced the online purchasing intent (e.g., Ranganathan & Ganapathy, 2002) and e-commerce transactions decisions (e.g., Dinev & Hart, 2003). In the case of social media, Cha’s (2010) study of American college students found that college students who had fewer privacy concerns had a more frequent use of social networking sites. In sum, privacy concerns are generally negatively associated with the acceptance, adoption, and frequent use of information and communication technology.

Due to the public nature of the Internet, particularly the social features of social media, potential threats to privacy is a type of risk that is naturally developed with the social media use behavior. Thus, privacy concerns could also be treated as a proxy measure for perceived risk concerning the adoption and use of social media. Perceived risk is defined as “degree to which risks are perceived as associated with the innovation” (Ostlund, 1974, p. 24). Rogers (2003) predicted that “earlier adopters are better able to
cope with uncertainty and risk than are later adopters” (p. 290). The tenth set of hypotheses stated the following:

\[ H_{10a} \]: Concerns for privacy will have a negative effect on an individual’s attitude toward microblogging.

\[ H_{10b} \]: Concerns for privacy will have a negative effect on an individual’s adoption of microblogging.

**Personality Traits**

As noted by Rogers (2003), personality traits did not receive much attention from innovation diffusion scholars, partly because personality traits are not easy to measure and identify through a survey instrument, which is generally used in diffusion studies. Ostlund (1974) claimed that personality traits were not as powerful as perceived innovation attributes in understanding a general innovation’s diffusion. In the case of new media technology diffusion, communication scholars still sought to locate key personality variables and identified personal psychological characteristics that were considered to be more relevant to new media technology adoption, such as innovativeness (e.g., Kang, 2002; Li, 2004a; Lin, 1998, 2001, 2006; Lin & Jeffres, 1998), venturesomeness (e.g., Chan-Olmsted & Chang, 2006), and sense of humor (e.g., Atkin et al., 2003). These studies found that the personality traits are closely associated with the adoption behavior of digital TV, cable services, Internet shopping, cable TV shopping, and personal computers, respectively. However, none of these studies actually tested the personality traits referred to Rogers, such as dogmatism, attitude toward change, empathy, rationality, intelligence, fatalism, and ability to deal with abstraction. As the new media technology diffusion studies cited above suggest, personality characteristics may offer
new insights into new media technology adoption and contribute to the advancement of knowledge on new media diffusion. Given that the effect of personality variables on new media technology adoption is not much documented, some communication researchers (e.g., Atkin et al., 2003; Dupagne & Salwen, 2005; Kim et al., 2011) have called for greater attention to these psychological factors.

Based on Rogers’ (2003) generalizations, the current study will select two personality variables – dogmatism and attitude toward change – to discriminate between the adopters and non-adopters of microblogging, because these two traits appear particularly relevant to the microblogging’s diffusion in the Chinese social system. First, China is a collective society under the rule of one single authority – the Communist Party. Individuals usually have a certain position in a well-defined hierarchical social system and take responsibility of their roles (Leung, 2010). In this way, individuals are less likely to challenge authority and question basic assumptions. Dogmatism is a personality trait that indicates “a pervading adherence to the traditional voice of authority and a reluctance to challenge the status quo” (Ralston et al., 2006, p. 73). Therefore, to test the effect of dogmatism on the adoption behavior of microblogging could provide an appropriate angle for understanding the diffusion of social media in China.

Second, China has been heavily influenced by the major traditional thought – Confucianism. The core notion of Confucianism is the doctrine of the mean (zhong yong). In a nutshell, it means that “attitudes or behaviors must never go to excess. Instead, they should be kept moderate (zhong) and indistinguishable from those of others in a group (yong)” (Ji et al., 2010, p. 164). In other words, the change that may go further beyond the moderate standard or bring extreme variation into daily life is not usually
encouraged because it may make an individual different from the other in a social system. The adoption and use of microblogging can be considered a technological change that would have a significant impact on an individual’s daily life. This change can often result in a break with the individual’s traditional past and create distance between the individual and his/her peers. From this perspective, technological change could be disruptive. It might mean the rejection of Confucianism and mainstream doctrine. Therefore, examining attitude toward change would facilitate a better understanding of the microblogging’s diffusion in China. Therefore, these two variables were chosen for the present study.

**Dogmatism.** Rogers (2003) predicted that “earlier adopters may be less dogmatic than are later adopters” (p. 289). He defined dogmatism as “the degree to which an individual has a relatively closed belief system, that is, a set of beliefs which are strongly held” (p. 289). By emphasizing the ability of accepting new ideas, Rogers believed that a dogmatic person who preferred to hew to the tenets of his or her belief system would not easily accept an innovation. Empirical studies also have studied the relationship between dogmatism and acceptance of new products. Studies in marketing demonstrated that innovators tended to be low dogmatic individuals (Jacoby, 1971), and individuals with low dogmatism were more likely to try new and recently marketed products than the ones with high dogmatism (Blake, Perloff, & Heslin, 1970; Coney, 1972). In the case of online consumption, Sharma’s (2008) study found that individuals who were less dogmatic were more willing to purchase online than individuals who were more dogmatic. On the other hand, some studies reported that there was no relationship between dogmatism and adoption of farmers’ technological innovation and Internet (Reisenwitz & Cutler, 1998;
Rogers, 1957). Overall, the majority of the studies reviewed indicated there exists a significant negative relationship between dogmatism and acceptance of innovations. Therefore, following Rogers’ (2003) generalization, the eleventh hypothesis stated the following:

\[ H_{11}: \text{Dogmatism will have a negative effect on an individual’s adoption of microblogging.} \]

**Attitude toward change.** Rogers (2003) stated that “earlier adopters have a more favorable attitude toward change than do later adopters” (p. 290). Attitude toward change refers to “a person’s cognition about change, affective reaction to change, and behavioral tendency toward change” (Dunham, Grube, Gardner, & Pierce, 1989). By emphasizing an individual’s response to change, one’s attitude toward change may reflect whether he or she welcomes the change. Empirical studies also have studied the relationship between attitude toward change and acceptance of innovations. In the case of technological innovations, Lockett and Littler (1997) concluded that adopters of direct banking services had a more favorable attitude toward change than non-adopters. Although there is no empirical research examining the effect of attitude toward change on the adoption of a new communication technology, Lockett and Littler’s study provided some initial supportive evidence for the following hypothesis:

\[ H_{12}: \text{Attitude toward change will have a positive effect on an individual’s adoption of microblogging.} \]

To summarize, the hypotheses lead to the second research model of the predictors of the first three stages of microblogging’s innovation-decision process as shown in Figure 2.3:
Figure 2.3 Proposed Research Model of the First Three Stages of Microblogging’s Innovation-Decision Process
CHAPTER III. METHODOLOGY

This chapter describes the research methodology employed to test the hypotheses proposed in the previous chapter. The first section discusses the data collection procedure, including the research design, sampling method, and survey administration. The second part explains the development of the survey instrument and reports the results of a pilot study. The third section introduces mixture modeling as the statistical analysis method utilized in this study.

Data Collection

Sampling Method

A convenience sample of 3,150 college students from fifteen colleges and universities in Beijing, China, was recruited to complete a paper-and-pencil survey questionnaire in November 2011. College students were selected because the college-level population is of special interest to study microblogging in China. A recent survey has reported that among the Chinese microblogging users, 67% had a college degree (Data Center of China Internet, 2010). Also, the college-level population represents a key market share of microblogging services. According to another 2009 report on the microblogging use in China, 69.0% of youth were aware of microblogging, 25.6% were using microblogging, and 43.4% planned to adopt it (Wang, 2009). Microblogging in China is increasingly attracting more and more young and well-educated people. Therefore, as a representative of early adopters, college students represent an ideal population to examine the diffusion of microblogging in China.

As the capital of China and one of the world’s largest cities, Beijing was selected as the location to recruit the participants. As of the 2010 census, the city has a population
of 19.6 million (National Bureau of Statistics of China, 2011). Beijing is the political, cultural, and economic center of China. Also, as a national education center, at least 70 colleges and universities are located in Beijing. From the pool of colleges and universities in Beijing, respondents were drawn from 15 relatively large universities – Tsinghua University, Renmin University of China, Beijing Normal University, Communication University of China, Beijing Institute of Technology, Beijing Technology and Business University, Central University of Finance and Economics, China Youth University for Political Sciences, Graduate University of the Chinese Academy of Sciences, University of Science and Technology Beijing, Beijing University of Technology, Beijing Wuzi University, Beijing Institute of Fashion Technology, Capital Normal University, and Minzu University of China – to which the author had access. Several classes from each university were selected for the study.

The requirement of sample size depends on the purpose of the study, the methodology employed, the statistical analysis method, and the financial and time constraints. In terms of statistical analysis method, multivariate studies usually need a larger sample size compared to univariate studies (Wimmer & Dominick, 2002). Thus, the present study will need a relatively large sample size.

**Survey Procedures**

Two pilot studies were first performed during the second and third week of October, 2011. The initial questionnaire was pretested in the pilot studies. For each pilot study, one hundred college students who originally came from China and currently studied at the University of Miami were asked to fill out the survey questionnaire in Chinese. An exploratory factor analysis was conducted using the data collected from the
pilot studies to document the validity of each construct in the research model and the instrument in the final version of the questionnaire. The findings of the pilot study facilitated the development of the final version of the questionnaire.

This study used the self-administered survey research method, following the previous studies in the field of communication technology adoption (e.g., Chang et al., 2006; Lin, 2009). The self-administered survey was conducted during a three-week period between November 3 to November 22 in 2011. With the prior permission of instructors, the survey questionnaires were distributed in the selected classes of the selected colleges from Beijing. Sixty classes were selected. A total of 3,150 questionnaires were distributed, and 3,112 copies were collected, resulting in a response rate of 98.7%. In order to stimulate a high response rate, extra credit was provided to the participants as an incentive. Extra credit is a common incentive given to college students for their participation in a mass-administration survey study (Wrench, Thomas-Maddox, Richmond, & McCroskey, 2008). The original survey questionnaire (Appendix C) was created in English and translated into simplified Chinese (Appendix E) for the convenience of respondents. To ensure equivalency of two versions of the questionnaire, two Chinese graduate students studying at the University of Miami and speaking both English and Chinese translated it back to English. Ambiguous wording detected in this back translation process was then modified. The study (#20110858) was approved by the University of Miami’s Institutional Review Board. (see Appendix A).

**Measurement**

The self-administered survey instrument was developed based on the previous empirical research on communication technology adoption and marketing and adapted to
the current study on microblogging. In order to assess the reliability of the constructs proposed in the research model, Cronbach’s alpha was calculated for each scale. A Cronbach’s alpha value of 0.70 is commonly considered acceptable (Nunnally & Bernstein, 1994). All the scales appeared to be satisfactory (ranged from .81 to .95). The measurement of each construct or variable and the reliability of each construct are described below. The final version of the questionnaire is reproduced in Appendix C.

Knowledge

This study measured knowledge of microblogging in two ways – self-reported familiarity and actual knowledge. In terms of familiarity, respondents were asked how they were familiar with, knowledgeable about, and aware of microblogging on a 7-point scale from 1 (unfamiliar/unknowledgeable/unaware) to 7 (familiar/knowledgeable/aware). Cronbach’s alpha was 0.95. In terms of actual knowledge, respondents were asked 10 true/false questions concerning microblogging in China. The questions dealt with differences between traditional blogging and microblogging, the number limit for characters per post, the different varieties of microblogging posts, such as photo/audio/video, verified users, privacy settings, the means for posting messages (i.e., webpages and mobile phones), and other microblogging’s features, such as checking other users’ photo album, reposting and commenting mechanism, online chatting, and linking personal location information (see Appendix C). Each item was coded as a dummy variable and then combined into a summated index to reflect the respondents’ actual knowledge about microblogging. The index ranged from 0 to 10. To obtain a more robust measurement of knowledge, the self-
reported familiarity and actual knowledge were then added up to yield a microblogging knowledge index ranging from 0 to 17.

**Persuasion**

Respondents were asked three questions to report their attitude toward microblogging on a 7-point semantic differential scale ranging from 1 (unfavorable/bad/negative) to 7 (favorable/good/positive). The attitude scale was adapted from MacKenzie, Lutz, and Belch’s (1986) study. Cronbach’s alpha was 0.94.

**Decision**

Respondents were asked whether they currently had a microblogging account.

**Ownership of Communication Technologies**

Respondents were asked whether they owned, used, or subscribed to five products or services with similar or complementary functions to microblogging in their places of residence. These technologies were personal computer/laptop, Internet access, smartphone, tablet, and other social media services, such as Facebook. Each item was coded as a dummy variable and then added up to yield a technology cluster index ranging from 0 to 5.

**Social Participation**

Respondents were asked how frequently they participated in student organizations, did volunteer service, and joined informal groups. All three statements were measured on a 5-point scale ranging from 1 (once a month or less) to 5 (everyday).

**Media Use**

Respondents were asked how frequently they used the following four media on a 5-point scale ranging from 1 (once a month or less) to 5 (everyday): online news reading,
online radio listening, online television programs viewing, and online movie viewing. An open-ended question was also used to measure the respondents’ amount of daily Internet use.

**Cosmopolitaness**

Five questions were asked to determine the respondents’ level of cosmopolitaness. These questions measured cosmopolitaness from the following perspectives: meeting people from different culture, living abroad, exploring foods from different countries, being open to living style, and traveling. All the statements were assessed by a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement of cosmopolitaness was adapted from Dupagne and Driscoll’s (2010) study. Cronbach’s alpha was 0.81.

**Opinion Leadership**

Respondents were asked six questions about their level of opinion leadership. The questions focused on how influential they were in adopting and using microblogging service, such as whether other people asked them for advice and whether they persuaded other people to use their favorite microblogging service. Response choices ranged from 1 (strongly disagree) to 5 (strongly agree). The measurement of opinion leadership was adapted from Flynn, Goldsmith, and Eastman’s (1996) study. Cronbach’s alpha was 0.89. Open-ended questions were also used to measure the approximate number of people they were following as well as the number of people who were following them on their primary microblogging accounts.
Innovation Attributes

Originally, Rogers (2003) generalized that perceived attributes of innovation, such as perceived relative advantage, perceived compatibility, and perceived observability, are positively related to rate of adoption of a certain innovation, while perceived complexity is negatively related to rate of adoption. However, investigating the rate of adoption of one innovation requires asking current microblogging users when they began opening a microblogging account, a challenging recall question. Instead, most of the new media studies use a dichotomous variable to measure adoption (e.g., Dupagne & Driscoll, 2010; Li, 2004a; Lin & Jeffres, 1998). The current study will follow the same approach.

Respondents were asked to report their perceptions of microblogging. Four sets of four questions measured microblogging’s relative advantage, compatibility, complexity, and observability on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement of these four innovation attributes was adapted from Dupagne and Driscoll’s (2011) study. Cronbach’s alphas for relative advantage, perceived compatibility, perceived complexity, and perceived observability were 0.94, 0.92, 0.91, and 0.89, respectively.

Privacy Concerns

Four questions were asked to evaluate the respondents’ concerns for privacy on the Internet. These questions reflected individuals’ concerns of whether the information would be misused, whether the credit card information would be stolen, whether others would use the information they submitted, and whether the information would be used in an unforeseeable way. All the statements were measured on a 5-point scale ranging from
1 (strongly disagree) to 5 (strongly agree). The measurement of privacy concerns was adapted from Dinev and Hart’s (2004) study. Cronbach’s alpha was 0.91.

**Dogmatism**

A 10-item shorter form was used to measure the respondents’ level of dogmatism (Steinfatt, 1985; 1987), which asked respondents whether they strongly held a set of beliefs. All the statements used a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach’s alpha was 0.88.

**Attitude Toward Change**

The measurement of attitude toward change consisted of 18 items (Dunham et al., 1989), which asked the respondents whether they would like to support change and try new ideas out. All the items were measured on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach’s alpha for the overall measurement was 0.95.

**Implementation**

Respondents were asked whether they were currently using a microblogging service. Several questions were also used to measure the respondents’ amount of microblogging use by asking how many hours they spent on microblogging on average per day, when was the last time they used microblogging service, and how frequently they used microblogging per day on a 7-point scale ranging from 1 (never) to 7 (always).

**Confirmation**

Non-adopters were asked whether they planned to open a microblogging account in the next 12 months. Adopters were asked whether they planned to continue using a microblogging service in the next 12 months.
Demographics

Respondents were asked about their demographic information including gender, age, and family annual income. College student-related information – major and current year in college – were also collected.

Data Analysis

Mixture modeling was used to test the hypothesized innovation-decision model for microblogging. It refers to “modeling with categorical latent variables that represent subpopulations where population membership is not known but inferred from the data” (Muthén & Muthén, 2010, p. 141). Although it is not as advanced as conventional structural equation modeling, mixture modeling allows researchers to use both categorical (e.g., dummy) and continuous dependent variables (Muthén & Muthén, 2010). According to McLachlan and Peel (2000) and Muthén & Muthén (2010), mixture modeling not only can be applied to any modeling analysis dealing with a mix of continuous and categorical variables from both non-experimental and experimental data, but also allows for testing relationships between constructs in a hypothesized model. However, no conventional model fit measures were provided by mixture modeling analysis. Due to the multiple categorical dependent variables (i.e., decision, implementation, and confirmation) employed in Model 1 and Model 2, mixture modeling was used as the primary statistical method to test the hypothesized models in the current study. The data were analyzed via Mplus 6.0 (Muthén & Muthén, 2010).

In a causal model, the exogenous variable is presumed to be the cause. There is no path pointing towards it. The endogenous variable is presumed to be the effect. There are paths pointing towards it in the model. In the proposed Model 1, only knowledge about
microblogging is the exogenous variable, with persuasion, decision, implementation, and confirmation all considered endogenous variables. In the proposed Model 2, exogenous variables include family income, technology ownership, communication behavior including social participation, media use, cosmopoliteness, opinion leadership, and opinion seeking, innovation attributes including relative advantage, compatibility, complexity, trialability, and observability, privacy concerns, and personality traits including dogmatism and attitude toward change. Endogenous variables include knowledge, persuasion, and decision of microblogging.
CHAPTER IV: RESULTS

This chapter reports the results of the study. First, descriptive results from the collected data are reported. Second, the results obtained from the mixture modeling analysis are presented, and the tests of hypotheses developed in chapter II are reported.

Descriptive Results

Demographics

A total of 3,112 Chinese college student participated in the survey. Out of these 3,112 responses, 2,801 were complete. The incomplete responses were excluded from further data analysis. As shown in Table 4.1, there were more females (59.8%) than males (40.2%). The majority of the respondents were from Schools of Arts and Sciences (58.9%), while the rest majored in Schools of Communication (26.5%), Schools of Business (9.0%), Schools of Engineering (5.0%), Schools of Education (0.5%), and Schools of Music (0.1%). Of all students, 38.2% were in their second year, 27.0% were in their third year, 22.6% were in their first year, while the remainder consisted of graduate students (11.3%) and fourth year students (0.9%).

With respect to annual family income, which measured socioeconomic status, 35.9% of the respondents reported that their annual family income was less than 24,000 yuan ($3,774.41), 15.1% in the range of 24,000 – 36,000 yuan ($3,774.41– $5,661.61), 11.6% between 36,001 yuan and 48,000 yuan ($5,661.77- $7,548.82), 12.8% in the category of 48,001 – 60,000 yuan ($7,548.98 – $9,436.02), 8.1% in the range of 60,001 – 72,000 yuan ($9,436.18 – $11,323.23), and 16.5% of the respondents indicated that their annual family income was more than 72,000 yuan ($11,323.23). The sample had a median annual family income category of 24,000 – 36,000 yuan ($3,774.41– $5,661.61)
and a mode category of less than 24,000 yuan ($3,774.41). The mean age of the survey respondents was 20.44 ($SD = 1.65$). Table 4.1 summarizes the demographic characteristics of the sample.

Table 4.1 Demographic Characteristics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percentage</th>
<th>M</th>
<th>S.D.</th>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
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<tr>
<td>Male</td>
<td>1,126</td>
<td>40.2%</td>
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<tr>
<td>Female</td>
<td>1,675</td>
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<tr>
<td><strong>Major</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Arts &amp; Sciences</td>
<td>1,650</td>
<td>58.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>252</td>
<td>9.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>742</td>
<td>26.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>14</td>
<td>0.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>140</td>
<td>5.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>3</td>
<td>0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>School year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First year</td>
<td>633</td>
<td>22.6%</td>
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<tr>
<td>Second year</td>
<td>1,070</td>
<td>38.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third year</td>
<td>756</td>
<td>27.0%</td>
<td></td>
<td></td>
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<tr>
<td>Fourth year</td>
<td>26</td>
<td>0.9%</td>
<td></td>
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</tr>
<tr>
<td>Graduate</td>
<td>316</td>
<td>11.3%</td>
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</tbody>
</table>
Table 4.1 Demographic Characteristics (Continued)

<table>
<thead>
<tr>
<th>Family income</th>
<th>N</th>
<th>Percentage</th>
<th>M</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 24,000 yuan</td>
<td>1006</td>
<td>35.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24,000-36,000 yuan</td>
<td>423</td>
<td>15.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36,001-48,000 yuan</td>
<td>324</td>
<td>11.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48,001-60,000 yuan</td>
<td>359</td>
<td>12.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60,001-72,000 yuan</td>
<td>227</td>
<td>8.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 72,000 yuan</td>
<td>462</td>
<td>16.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>20.44</td>
<td>1.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other Descriptive Characteristics**

The respondents also reported their average levels of online media use. In the case of online news reading, 10.1% of the sample read online news once a month or less, 14.9% did so several times a month, 11.3% did so about once a week, 32.5% did so several times a week, and 31.2% read news online every day. As for the average level of online radio listening, 82.4% of the sample reported a level of once a month or less, 7.5% indicated a level of several times a month, 4.7% listened to radio online about once a week, 4.0% had an online radio listening level of several times a week, and 1.4% listened to radio online every day. With regard to the average level of online TV viewing, 20.5% of the sample watched TV online once a month or less, 20.1% did so several times a month, 19.4% did so about once a week, 28.2% did so several times a week, and 11.8% did so every day. As for the average level of watching movies online, 10.9% of the
sample reported a level of once a month or less, 21.3% indicated a level of several times a month, 21.4% watched movies about once a week, 32.0% viewed movies online several times a week, and 14.4% watched them every day.

Moreover, the respondents reported their average level of social participation. In the case of participating in student organizations, 25.8% of the sample took part in student organizations once a month or less, 31.3% did so several times a month, 20.5% did so about once a week, 16.2% did so several times a week, and 6.1% did so every day. As for their average level of social participation in volunteer service, 47.2% of the respondents indicated a level of once a month or less, 30.9% reported a level of several times a month, 15.2% took part in volunteer service about once a week, 5.9% participated in this activity several times a week, and 0.8% participated in volunteer service every day. With respect to their average level of participating in informal groups, 26.3% of the sample reported a level of once a month or less, 27.2% indicated a level of several times a month, 18.3% joined informal groups about once a week, 19.5% participated in such activity several times a week, and 8.8% took part in informal groups every day.

Among the 2,801 respondents, 70.8% were adopters of microblogging service and 29.2% were non-adopters. Among the adopters, 27.5% used microblogging the day when they participated in the survey, 21.1% used microblogging within the last seven days, 25.8% used microblogging within one month, 17.9% used microblogging within the last three months, 6.2% used it within the last year or more, and 1.5% never used microblogging after they adopted. With respect to the frequency of microblogging use, 15.2% used microblogging very rarely, 9.9% reported a use frequency of rarely, 23.4% indicated a use frequency level of occasionally, 21.1% used microblogging service
frequently, 16.2% used microblogging very frequently, and 14.2% reported a frequency level of always. Table 4.2 represents the means and standard deviations for all the variables included in Model 2.

**Hypothesis Results**

To test the hypotheses, a mixture modeling analysis was performed with Mplus 6.0. Prior to the analysis, all variable data were carefully screened to ensure the assumption of multivariate normality for variables assumed to be multivariate normal. Correlation matrixes for the two proposed models are shown in Table 4.3 and Table 4.4. In the stage of microblogging decision, where dependent variable was categorical, odd ratios were provided to offer additional interpretation information about the predictors’ effects on microblogging adoption. The reference level for an odds ratio is 1.0 (Hosmer & Lemeshow, 2000). An odds ratio higher than 1 means that the odds of adopting microblogging would increase, whereas an odds ratio lower than 1 would decrease the odds of microblogging adoption behavior.

**Model 1**

Model 1 proposed one major hypothesis stated below:

\[ H_2: \text{The knowledge stage will have a positive effect on the persuasion stage, which in turn will have a positive effect on the decision stage, which in turn will have a positive effect on the implementation stage, which in turn will have a positive effect on the confirmation stage of microblogging’s innovation-decision process.} \]

This hypothesis was supported. Knowledge positively predicted persuasion \((b = .28, SE = .01, p < .001)\), which exerted a positive effect on decision \((b = .79, SE = .04, p < .001)\), which positively affected implementation \((b = 14.29, SE = .06, p < .001)\), which
had a positive influence on confirmation \((b = 3.44, SE = .27, p < .001)\). The hypothesis testing results are shown in Figure 4.1.

Model 2

Model 2 included three stages. For the stage of knowledge, six major hypotheses were proposed; for the stage of persuasion, two major hypotheses were formulated; and for the stage of decision, eleven major hypotheses were developed. In the following section, a summary of the hypotheses are listed below, followed by a detailed discussion of each hypothesis testing for each stage.

**Predictors of microblogging knowledge.**

\(H_{3a}: \text{socioeconomic status} \rightarrow \text{microblogging knowledge.}\) Hypothesis 3a predicted that socioeconomic status (family income) would have a positive effect on an individual’s knowledge of microblogging. Results supported this hypothesis and indicated that socioeconomic status (family income) was a significant predictor of knowledge about microblogging \((b = .20, SE = .03, \beta = .12, p < .001)\). Therefore, \(H_{3a}\) was supported.

\(H_{4a}: \text{technology ownership} \rightarrow \text{microblogging knowledge.}\) Hypothesis 4a posited that ownership of related communication technologies would have a positive effect on an individual’s knowledge of microblogging. Results supported this hypothesis and indicated that technology ownership significantly predicted knowledge about microblogging \((b = .46, SE = .05, \beta = .18, p < .001)\). The higher technology ownership one individual enjoyed, the more knowledge about microblogging he or she would have. Therefore, \(H_{4a}\) was supported.
**H5a: social participation → microblogging knowledge.** Hypothesis 5<sub>a</sub> stated that social participation would have a positive effect on an individual’s knowledge of microblogging. Results showed that students’ social participation in volunteer services showed a significant positive effect on knowledge about microblogging (b = .11, SE = .05, β = .04, p < .05). However, their participation in student organizations (b = .02, SE = .05, β = .01, p > .05) was not a significant predictor. In addition, contrary to expectation, students’ social participation in informal groups (b = -.11, SE = .05, β = -.05, p < .05) negatively influenced their knowledge about microblogging. Therefore, H5<sub>a</sub> was partially supported.

**H6a: media use → microblogging knowledge.** Hypothesis 6<sub>a</sub> posited that media use would have a positive effect on an individual’s knowledge of microblogging. Results demonstrated that online news reading (b = .69, SE = .04, β = .30, p < .001) exerted a significant positive effect on knowledge about microblogging. But the other two measures of media use, online TV viewing (b = -.01, SE = .04, β = .001, p > .05) and online movie watching (b = -.03, SE = .05, β = -.01, p > .05), were not significant predictors. In addition, contrary to expectation, online radio listening (b = -.39, SE = .06, β = -.11, p < .001) showed a negative effect on knowledge about microblogging. Therefore, H6<sub>a</sub> was partially supported.

**H7a: cosmopoliteness → microblogging knowledge.** Hypothesis 7<sub>a</sub> predicted that cosmopoliteness would have a positive effect on an individual’s knowledge of microblogging. Results supported this hypothesis and indicated that cosmopoliteness positively influenced knowledge about microblogging (b = .77, SE = .07, β = .19, p < .001). Therefore, H7<sub>a</sub> was supported.
Hypothesis 8a: opinion leadership → microblogging knowledge. Hypothesis 8a stated that opinion leadership will have a positive effect on an individual’s knowledge of microblogging. Results showed that opinion leadership ($b = .74, SE = .06, \beta = .21, p < .001$) had a significant positive effect on knowledge about microblogging. Therefore, $H_{8a}$ was supported. All hypothesis testing results in the stage of knowledge are shown in Table 4.5.

Predictors of microblogging persuasion.

Hypothesis 9a: innovation attributes → microblogging persuasion. Hypothesis 9a predicted that perceived relative advantage, perceived compatibility, and perceived observability will have a positive effect on an individual’s attitude toward microblogging. However, perceived complexity will have a negative effect on an individual’s attitude toward microblogging. Results showed that innovation attributes exerted mixed effects on attitudes toward microblogging. Specifically, perceived relative advantage ($b = .21, SE = .03, \beta = .17, p < .001$), perceived compatibility ($b = .28, SE = .03, \beta = .21, p < .001$), and perceived observability ($b = .06, SE = .02, \beta = .04, p < .01$) all had positively influenced attitudes toward microblogging, while perceived complexity had a statistically significant negative effect on attitudes toward microblogging ($b = -.12, SE = .02, \beta = -.10, p < .001$). Therefore, $H_{9a}$ was supported.

Hypothesis 10a: concerns for privacy → microblogging persuasion. Hypothesis 10a posited that concerns for privacy will have a negative effect on an individual’s attitude toward microblogging. Results showed that concerns for privacy ($b = -.04, SE = .02, \beta = -.03, p > .05$) was not a significant predictor. Therefore, $H_{10a}$ was not supported. All hypothesis testing results in the stage of persuasion are shown in Table 4.6.
Predictors of microblogging decision.

\textit{H3b: socioeconomic status \(\rightarrow\) microblogging decision.} Hypothesis 3\textsubscript{b} predicted that socioeconomic status (family income) will have a positive effect on an individual’s adoption of microblogging. Results showed that socioeconomic status \((b = .24, SE = .04, OR = 1.27, p < .001)\) was a significant predictor of microblogging adoption. Therefore, \(H_{3b}\) was supported.

\textit{H4b: technology ownership \(\rightarrow\) microblogging decision.} Hypothesis 4\textsubscript{b} posited that ownership of related communication technologies will have a positive effect on an individual’s adoption of microblogging. Results supported this hypothesis and indicated that technology ownership \((b = .17, SE = .05, OR = 1.18, p < .01)\) positively influenced adoption of microblogging. Therefore, \(H_{4b}\) was supported.

\textit{H5b: social participation \(\rightarrow\) microblogging decision.} Hypothesis 5\textsubscript{b} stated that social participation will have a positive effect on an individual’s adoption of microblogging. Results showed that as hypothesized by \(H_{5b}\), students’ social participation in students organizations \((b = .49, SE = .07, OR = 1.62, p < .001)\) exerted a significant positive effect on adoption of microblogging. However, their participation in volunteer services \((b = -.06, SE = .06, OR = .94, p > .05)\) and informal groups \((b = -.07, SE = .06, OR = .94, p > .05)\) were not statistically significantly associated with their adoption of microblogging. Therefore, \(H_{5b}\) was partially supported.

\textit{H6b: media use \(\rightarrow\) microblogging decision.} Hypothesis 6\textsubscript{b} posited that media use will have a positive effect on an individual’s adoption of microblogging. As predicted by \(H_{6b}\), online news reading \((b = .30, SE = .05, OR = 1.35, p < .001)\), online radio listening \((b = .15, SE = .07, OR = 1.16, p < .05)\) both showed significant positive power on
adoption of microblogging. Surprisingly, online movie watching ($b = -.14$, $SE = .05$, $OR = .87$, $p < .01$) showed a negative influence on adoption of microblogging, while online TV viewing ($b = .08$, $SE = .05$, $OR = 1.09$, $p > .05$) did not produce a significant effect on adoption of microblogging. Therefore, $H_{6b}$ was partially supported.

**$H_{7b}$: cosmopoliteness → microblogging decision.** Hypothesis $7_b$ predicted that cosmopoliteness will have a positive effect on an individual’s adoption of microblogging. Results supported this hypothesis and indicated that cosmopoliteness ($b = .25$, $SE = .09$, $OR = 1.29$, $p < .01$) had a significant positive effect on adoption of microblogging. Therefore, $H_{7b}$ was supported.

**$H_{8b}$: opinion leadership → microblogging decision.** Hypothesis $8_b$ stated that opinion leadership will have a positive effect on an individual’s adoption of microblogging. Results supported this hypothesis and indicated that opinion leadership ($b = .29$, $SE = .08$, $OR = 1.33$, $p < .01$) exerted a positive effect on adoption of microblogging. Therefore, $H_{8b}$ was supported.

**$H_{9b}$: innovation attributes → microblogging decision.** Hypothesis $9_b$ posited that perceived relative advantage, perceived compatibility, and perceived observability will have a positive effect on an individual’s adoption of microblogging. However, perceived complexity will have a negative effect on an individual’s adoption of microblogging. Results indicated that innovation attributes exerted mixed effects on adoption of microblogging. Specifically, as indicated in $H_{9b}$, perceived compatibility ($b = .20$, $SE = .09$, $OR = 1.23$, $p < .05$) and perceived complexity ($b = -.55$, $SE = .07$, $OR = .56$, $p < .001$) showed a significant influence in the hypothesized direction on adoption of microblogging. However, contrary to expectations, perceived relative advantage ($b = .13$, ...
SE = .08, OR = 1.14, p > .05) did not reach statistical significance. Surprisingly, perceived observability (b = -.16, SE = .06, OR = .85, p < .01) showed significant negative power on adoption of microblogging. Therefore, H_{9b} was partially supported.

**H_{10b}: concerns for privacy → microblogging decision.** Hypothesis 10_b predicted that concerns for privacy will have a negative effect on an individual’s adoption of microblogging. Results supported this hypothesis and indicated that concerns for privacy were negatively related to adoption of microblogging (b = -.29, SE = .07, OR = .75, p < .001). Therefore, H_{10b} was supported.

**H_{11}: dogmatism → microblogging decision.** Hypothesis 11 stated that dogmatism will have a negative effect on an individual’s adoption of microblogging. As predicted by H_{11}, dogmatism (b = -.95, SE = .10, OR = .39, p < .001) had a significant negative effect on adoption of microblogging. Therefore, H_{11} was supported.

**H_{12}: attitude toward change → microblogging decision.** Hypothesis 12 posited that attitude toward change will have a positive effect on an individual’s adoption of microblogging. Results supported this hypothesis and indicated that attitude toward change (b = .44, SE = .13, OR = 1.56, p < .001) showed a significant positive effect on adoption of microblogging. Therefore, H_{12} was supported.

**H_{1}: microblogging knowledge → microblogging persuasion → microblogging decision.** Hypothesis 1 predicted that the knowledge stage will have a positive effect on the persuasion stage, which in turn will have a positive effect on the decision stage of microblogging’s innovation-decision process. Results showed that, as suggested by H_{1}, knowledge about microblogging (b = .17, SE = .01, β = .40, p < .001) positively predicted
attitudes toward microblogging, which had a significant positive effect on adoption of
microblogging ($b = .37, SE = .06, OR = 1.45, p < .001$). Therefore, $H_I$ was supported.

In summary, $H_I$, $H_{3b}$, $H_{4b}$, $H_{7b}$, $H_{8b}$, $H_{10b}$, $H_{11}$, and $H_{12}$ were fully supported; $H_{5b}$,
$H_{6b}$, and $H_{9b}$ received partial support. All hypotheses testing results in the stage of
decision are presented in Table 4.7, and the overall analysis results for the proposed
model of first three stages of microblogging’s innovation-decision model are shown in
Table 4.8 and Figure 4.2.
Table 4.2 Means and Standard Deviations for the Variables Included in Model 2 ($N = 2,801$)

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### Table 4.3 Correlations between Five Stages of the Innovation-Decision Model

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<td>.54</td>
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Table 4.5 Predictors of Knowledge about Microblogging

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$</th>
<th>$b$</th>
<th>SE</th>
<th>Hypothesis</th>
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<tbody>
<tr>
<td>Socioeconomic Status</td>
<td>.12***</td>
<td>.20</td>
<td>.03</td>
<td>$H_{3a}$: Supported</td>
</tr>
<tr>
<td>Technology Ownership</td>
<td>.18***</td>
<td>.46</td>
<td>.05</td>
<td>$H_{4a}$: Supported</td>
</tr>
</tbody>
</table>

Communication Behavior

Social Participation

- Student organizations: $\beta = .01$, $b = .02$, SE = .05, $H_{5a}$: Not supported
- Volunteer services: $\beta = .04*$, $b = .11$, SE = .05, $H_{5a}$: Supported
- Informal groups: $\beta = -.05*$, $b = -.11$, SE = .05, $H_{5a}$: Not supported

Media Use

- Online news reading: $\beta = .30***$, $b = .69$, SE = .04, $H_{6a}$: Supported
- Online radio listening: $\beta = -.11***$, $b = -.39$, SE = .06, $H_{6a}$: Not supported
- Online TV viewing: $\beta = .001$, $b = -.01$, SE = .04, $H_{6a}$: Not supported
- Online movie watching: $\beta = -.01$, $b = -.03$, SE = .05, $H_{6a}$: Not supported

Cosmopoliteness: $\beta = .19***$, $b = .77$, SE = .07, $H_{7a}$: Supported

Opinion Leadership: $\beta = .21***$, $b = .74$, SE = .06, $H_{8a}$: Supported

Note. * $p < .05$; *** $p < .001$. 

Table 4.6 Predictors of Attitudes towards Microblogging

<table>
<thead>
<tr>
<th>Variable</th>
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<th>$b$</th>
<th>SE</th>
<th>Hypothesis</th>
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<td>Perceived Relative Advantage</td>
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<td>.03</td>
<td>$H_{9a}$: Supported</td>
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<td>.28</td>
<td>.03</td>
<td>$H_{9a}$: Supported</td>
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<td>-.12</td>
<td>.02</td>
<td>$H_{9a}$: Supported</td>
</tr>
<tr>
<td>Perceived Observability</td>
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<td>.06</td>
<td>.02</td>
<td>$H_{9a}$: Supported</td>
</tr>
<tr>
<td>Concerns for Privacy</td>
<td>-.03</td>
<td>-.04</td>
<td>.02</td>
<td>$H_{10a}$: Not supported</td>
</tr>
<tr>
<td>Knowledge</td>
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<td>.17</td>
<td>.01</td>
<td>$H_{1}$: Supported</td>
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*Note.** $p < .01$; *** $p < .001$. 
Table 4.7 Predictors of Decision of Adopting Microblogging

<table>
<thead>
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<th>OR</th>
<th>B</th>
<th>SE</th>
<th>Hypothesis</th>
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</thead>
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<tr>
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<td>.24</td>
<td>.04</td>
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</tr>
<tr>
<td>Technology Ownership</td>
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<td>.17</td>
<td>.05</td>
<td>( H_{4b} ): Supported</td>
</tr>
<tr>
<td>Communication Behavior</td>
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<td></td>
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</tr>
<tr>
<td>Social Participation</td>
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<tr>
<td>Student organizations</td>
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<td>( H_{5b} ): Not supported</td>
</tr>
<tr>
<td>Informal groups</td>
<td>.94</td>
<td>-.07</td>
<td>.06</td>
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<tr>
<td>Media Use</td>
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<td>.30</td>
<td>.05</td>
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</tr>
<tr>
<td>Online radio listening</td>
<td>1.16*</td>
<td>.15</td>
<td>.07</td>
<td>( H_{6b} ): Supported</td>
</tr>
<tr>
<td>Online TV viewing</td>
<td>1.09</td>
<td>.08</td>
<td>.05</td>
<td>( H_{6b} ): Not supported</td>
</tr>
<tr>
<td>Online movie watching</td>
<td>.87**</td>
<td>-.14</td>
<td>.05</td>
<td>( H_{6b} ): Not supported</td>
</tr>
<tr>
<td>Cosmopoliteness</td>
<td>1.29**</td>
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<td>( H_{8b} ): Supported</td>
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<tr>
<td>Innovation Attributes</td>
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<td>Perceived Relative Advantage</td>
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<td>.13</td>
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<td>1.23*</td>
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<td>.07</td>
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<td>.06</td>
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*Note. OR = odds ratio; * \( p < .05 \); ** \( p < .01 \); *** \( p < .001 \).
Table 4.8 Analysis Results of the Innovation-Decision Model of Microblogging

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</table>

Note. OR = Odds Ratio; * p < .05; ** p < .01; *** p < .001
Figure 4.1 Results of Proposed Research Model of the Five Stages of Microblogging’s Innovation-Decision Process
Figure 4.2 Results of Proposed Research Model of the First Three Stages of Microblogging’s Innovation-Decision Process
CHAPTER V. DISCUSSION

This final chapter discusses the results of hypothesis testing and the overall model with regard to every predictor’s effect on the knowledge of, attitudes towards, and adoption of microblogging. Based on the findings, theoretical and practical implications are presented. Limitations of the current study and suggestions for future research are also stated.

Discussion of Findings and Future Research

The main objective of this study was to apply the Diffusion of Innovations theoretical framework (Rogers, 2003), particularly the innovation-decision process model, to identify the significant predictors affecting the knowledge, persuasion, and decision stages for microblogging’s diffusion in China. The study findings generally supported the hypotheses derived from the innovation-decision theoretical model and were consistent with the Diffusion of Innovations theory and existing research. The findings can be interpreted in the following ways.

Model 1

First of all, the study confirmed the predictive effect of constructs suggested by the Diffusion of Innovations theory and emphasized the significance of the innovation-decision process model for studying new media technologies. As noted in the literature review, the Diffusion of Innovations theory has been utilized to explain people’s adoption behavior of many different types of communication technology in the last several decades, and it was demonstrated to be one of the most robust and complete theoretical frameworks. However, no known prior study has examined the five stages of the innovation-decision model in this context. To fill the gap, as a modest starting point, the
current study tested the linear model of five stages of innovation-decision model and confirmed the linear relationships among the five stages: from knowledge to persuasion, to decision, to implementation, and to confirmation.

Although the evidence was not very strong for a sharp divide between the decision stage and the implementation stage, the result still indicated the existence of implementation as a stage of innovation-decision process that is different from the stage of decision. In this study, most adopters of microblogging were also current users: 48.6% of the adopters used microblogging within one week when the survey was conducted. Microblogging is still a new media innovation that remains relatively active and increasingly receives huge attention and media coverage. Microblogging service providers in China keep upgrading their service in China and including more features that are appealing to the users. Therefore, it is highly possible that the rate of microblogging implementation was so high that the distinction between the stages of decision and implementation was no longer very clear cut. To advance the knowledge about the five stages of the innovation-decision model, an investigation of the distinction between the decision, implementation, and confirmation stages should be conducted when additional types of new media technology reach market saturation (a period of time after a certain type of new media technology has been almost diffused).

Model 2

Also, as discussed earlier, the innovation-decision model is a dynamic process from building up knowledge, to forming attitudes, to making decisions. However, no known previous diffusion research had studied the predictors of the innovation-decision model as a dynamic process across these three stages. To fill the void, the current study
further identified the predictors of knowledge, persuasion, and decision. The findings from Model 2 were consistent with the innovation-decision theoretical framework, and a hierarchical flow from cognition to affection to behavior was confirmed. Specifically, the research indicated that people need to build up some knowledge of microblogging before they form a favorable attitude toward it. Consequently, a more favorable attitude toward microblogging will lead directly to adoption of microblogging. With regard to the included predictors, socioeconomic status, technology ownership, communication behavior, innovation attributes, personality traits, and concerns for privacy explained individuals’ knowledge, attitudes, and adoption behavior of microblogging. More specifically, microblogging knowers had higher level of socioeconomic status and technology ownership; took part in more volunteer service and less informal group activities; read more news stories online; listened to less radio online; and enjoyed higher levels of cosmopolitaness and opinion leadership than those with less microblogging knowledge. Moreover, individuals with a higher level of perceptions of microblogging’s relative advantage, compatibility, easiness, and observability had more favorable attitudes toward microblogging than those with lower perceptual innovation attributes. In addition, microblogging adopters had greater socioeconomic status and technology ownership; participated in more student organizations activities; read more news stories online; listened to more radio online; watched less movie online; enjoyed higher levels of cosmopolitaness and opinion leadership; reported higher perceived compatibility, lower perceived complexity, and lower observability of microblogging; had lower levels of concerns for privacy; enjoyed more favorable attitudes toward change; and were less dogmatic than non-adopters of microblogging.
**Concerns for privacy.** In addition to validating the innovation-decision theoretical framework in a social media context, the current study contributed to the literature by incorporating concerns for privacy as a predictor of attitude toward and adoption of microblogging. Based on the data analysis results, concerns for privacy only negatively influenced microblogging adoption behavior. In addition to its social networking functions, microblogging in China has been regarded as a social media innovation that provides real-time news, evokes social change, and prompts conversation between the authorities and citizens (Chin, 2012; Yang & Meng, 2011). Microblogging has become the most popular social medium in China, particularly gaining huge attention and favorable attitudes among youth (Wang, 2009). College students might have developed a favorable attitude toward microblogging due to its media richness, social interaction functions, and other favorable innovation attributes. But privacy issues also emerged with the increasing popularity of microblogging (*Fenghuang*, 2012) because

It is noted that when one user posted more than 1,200 original messages on his microblogging page, it will provide quite a lot of information about him and create some possibilities to know about this person. By analyzing who this user is following on microblogging, it is possible to know famous users he admired and friends he cared about; by analyzing his comments, it is likely to find out the topics that interest him; by analyzing the messages he reposted, it is probable to figure out his values and beliefs. A complete analysis of his microblogging would make it easy to grasp his personal information. (*Modern Express*, 2011, n. p.)

In the meantime, the fragmented information and location-based information sharing on microblogging could be easily used to piece together information on a user’s
personal life. More importantly, once the information is posted via microblogging, it would be difficult to figure out how the information would be used or misused (Xinhua Agency, 2011, n. p.). Therefore, when they started making the decision of adopting microblogging, college students might take into consideration the fact that the adoption of microblogging might lead to misuse of the information they posted on their microblogging pages.

**Communication behavior.** Another contribution of the current study is the inclusion of four communication behavior variables, which were examined in very few previous studies. The findings indicated that social participation, media use, cosmopolitaness, and opinion leadership exerted significant effects on adoption of microblogging to some extent.

**Social participation.** With respect to the role of social participation, it is interesting to note that in the stage of knowledge, students’ participation in volunteer services showed a significant positive influence on knowledge of microblogging. But their social activities in students’ organizations and informal groups did not have any such effects. It seemed that whether a respondent engaged in student organizations and informal groups or not, he or she would be able to know about microblogging and its functions via other channels or communication behavior. However, if one student took part in volunteer service more actively, then he or she might have more knowledge about microblogging, possibly because those organizations utilized microblogging to connect with all the members and share messages at a low cost (see United Nations, 2010). In the adoption phase of microblogging, students’ engagement in on campus students’ organization became a critical predictor. One plausible reason for the different effects of
respondents’ participation in students’ organization might be that the respondents who participated in students’ organizations more frequently and extensively would need to adopt and use microblogging to maintain their offline social relationships on campus. The difference in the coefficients might also have to do with group norms. Future research may incorporate group norms into the theoretical framework to further the understanding of social media diffusion, particularly among college students.

**Online media use.** It is interesting to see the role of online media use in the knowledge building and decision making of microblogging. Consistent with the Diffusion of Innovations theory, online media use overall played a vital role in the innovation-decision model. However, among the four types of online media use, only online news reading and radio listening had significant influence on knowledge of microblogging. Online TV viewing and movie watching did not show any predictive power. One possible explanation for this result might be that online news reading is carried out for the purpose of news consumption, which paralleled with the real-time news features of microblogging; in contrast, online TV viewing and movie watching are performed to meet entertainment-seeking needs (Jiangnanke, 2009; Yang, 2009). College students are the largest population of online video users in China, accounting for 31.1% of users (China Internet Network Information Center, 2011). Because college students’ dormitory rooms are usually not equipped with TV sets in China, online video is an essential channel for college students to seek entertainment because only personal computers and Internet access will provide them with a variety of online videos (Yang, 2009). Among all different types of online TV programs, Chinese college students mainly watched foreign variety shows/talk shows (18.9%), followed by foreign movies (15.6%),
Chinese TV dramas (14.7%), foreign TV dramas (13.1%), animations (12.3%), and Chinese movies (11.9%). The data from Yang’s study indicated that seeking news and information/news consumption (7.0%) was not a major reason for college students to use online video. College students basically viewed online video to seek relaxation and entertainment (Yang, 2009). Therefore, there was no overlap between online video users and microblogging adopters among Chinese college students. In addition, Chinese college students’ favorite online video – foreign variety shows, TV dramas, movies, and animations (Yang, 2009) – may not include a lot of information on microblogging, which is a recently developed social media innovation, so college students would not get to know about microblogging via online TV viewing and online movie watching.

It is also worth noting that online movie watching produced a significantly negative effect on adoption of microblogging, which means individuals with heavier online movie consumption would be less likely to adopt microblogging. It is difficult to explain this result, but it might be related to innovation needs. It could be that college students who watch movie online more frequently would not experience stronger needs to adopt microblogging as a social media innovation, since online movie watching might pretty much satisfy their needs for media use. Future research may incorporate needs for innovation into the theoretical framework and employ the Uses and Gratifications Theory to understand why online movie watching exerted negative power on adoption of microblogging and offer insights to explain this finding.

It is surprising that online radio listening exerted a significantly negative effect on knowledge of microblogging, which means individuals with less online radio listening would be more likely to gain knowledge about microblogging. One possible explanation
for the negative effect might be the overall low level of these respondents’ online radio consumption. As discussed earlier, college students could easily become aware of and know about microblogging via reading news stories and interpersonal communication with classmates and friends. Therefore, it seemed that even though a respondent rarely listened to radio online, he or she would still be able to gain as much knowledge as relatively heavy online radio listeners.

In contrast to its effect on knowledge of microblogging, online radio listening showed a significantly positive influence on microblogging adoption. The reason for the finding is unclear, but it may have to do with mobility provided by smart phones and tablets. With the diffusion of smart phone and tablets and increasing development of applications for these mobile devices, online radio listening is no longer limited to the personal computer or laptop. With the mobility features, smart phones and tablets are important channels used by college students to listen to radio online anytime and anywhere. Therefore, when it came to the adoption decision, those online radio listeners who owned smart phones or tablets and enjoyed both regular and mobile platforms would be more likely to adopt microblogging than those who did not own these technologies.

Overall, online media use played critical roles in gaining knowledge and making the decision of adopting microblogging. It seemed that although the inconsistency of media use’s effect has been shown in communication technologies diffusion research, at least in the case of microblogging, online media use exerted great influence on its diffusion.

**Cosmopolitaness and Opinion leadership.** In addition to social participation and online media use, the significant effects of cosmopolitaness and opinion leadership in the
innovation-decision model were also uncovered in the current study. Respondents with higher levels of cosmopoliteness or opinion leadership were more likely to have more knowledge of microblogging and adopt microblogging than those with lower levels.

Although cosmopoliteness was only studied in a few new media studies and its testing showed inconsistency, the current study confirmed its role in diffusion of microblogging, particularly in the Asian context. In regard to opinion leadership, as the first new media study to include opinion leadership, this study acknowledged its critical influence in the knowledge and adoption of microblogging. The findings suggested that for social media that operate based on users’ online networks and following-followers system (subscribing system), at its early stage of diffusion, cosmopoliteness and opinion leadership could play important roles. Future social media diffusion research should continue integrating these two communication behavior variables into the theoretical framework.

In the meantime, it is worth noting that media use showed stronger predictive effects on knowledge and adoption of microblogging than the other three communication behavior variables. One possible explanation would be that, due to the extensive media coverage of microblogging and its popularity, college students would easily become aware of microblogging. Thus, respondents did not have to participate in many social activities, be very cosmopolite, and/or enjoy very high opinion leadership to have knowledge about microblogging. Also, due to the nature of social media, microblogging played the role of alternative media, which complemented the users’ other traditional and online media use. Overall, all of these communication behavior variables contributed to the understanding of the diffusion of microblogging. Future research on communication
behavior and use of social media needs to be undertaken to clearly understand the relationship between offline communication behavior and online social media use.

**Personality traits.** Perhaps the most fruitful finding of the current study is the incorporation of personality trait variables—dogmatism and attitude toward change—that are particularly relevant to the adoption of social media in China. The analysis results showed that, as expected, dogmatism negatively affected surveyed college students’ adoption of microblogging. It was found that respondents with a lower dogmatism level were more likely to adopt microblogging than those with a higher level. In addition, attitude toward change, another personality trait variable included in the current study, also showed a significantly positive effect on adoption of microblogging. Respondents with a more favorable attitude toward change were more likely to adopt microblogging than those with a less favorable attitude toward change. As a social media innovation, microblogging represented public opinion more than any other media channels did previously in China, particularly by providing an effective platform for the netizens to communicate with authorities and organizations, challenge existing belief systems, question social injustice, and advocate for social change (Chin, 2012; Hu, 2010; Yang & Meng, 2011). Microblogging had been chosen as innovation of the year by elite traditional media in 2009, 2010, and 2011 in China (New weekly, 2011; Southern Weekly, 2009), due to its “promoting and facilitating every individual’s micro power into collective action” (New weekly, 2011, n. p.). Chinese were usually regarded to be less likely to challenge authority and question basic assumptions (Leung, 2010). Although it was believed that college students would be receptive to enlightenment by college education, one study showed that college education did not function to enlighten students due to the
stronger effect of Chinese culture, which is known for authoritarianism and traditionalism (Cheung & Kwok, 1998). However, the current generation of Chinese college students might benefit from the economic reforms, having grown up with the Internet and having enjoyed access to abundant information. Therefore, some current Chinese college students might enjoy a lower level of dogmatism and a more favorable attitude toward change than others.

By integrating personality traits into the innovation-decision model, which has rarely been the case in prior new media diffusion studies, this study contributed to understanding the role that personality traits can play in social media adoption in the East Asian cultural context. More research is called for to better understand the effect of these and other personality traits in new media diffusion.

**Socioeconomic status and technology cluster.** In addition, the current study confirmed the role of socioeconomic status and the technology cluster in the context of social media adoption. With respect to socioeconomic status, the study found that it showed significant influence on both microblogging knowledge and adoption behavior. The findings indicated that, although, as discussed earlier, knowledge of microblogging might be easy to acquire, a higher socioeconomic status might provide a larger initial outlay of capital to facilitate social media users’ knowledge gaining and adoption behavior. It is also worth noting that, unlike previous studies on college students’ adoption of new media technology that employed disposable income as the indicator of socioeconomic status, which turned out to be a non-significant predictor (e.g., Chang et al., 2006), the current study used college students’ family income as the representative measurement. The significant finding might indicate a potential direction for the
measurement of socioeconomic status for the sample of college students who usually shared similar educational and personal income levels.

In regard to the effect of the technology cluster, this study confirmed its critical role in both knowledge acquisition and decision making in the context of microblogging. Personal computers, Internet access, smart phones, tablets, and use of other social media services could provide microblogging users with some knowledge of social media’s common features, basic devices to interact with friends and acquaintances, and mobile devices to keep up with microblogging’s timeline anytime and anywhere. These related communication technologies could help those adopters make full use of microblogging.

**Innovation attributes.** Finally, innovation attributes generally played an essential role in the innovation-decision model of microblogging. The study revealed that relative advantage, compatibility, complexity, and observability showed significant influence on attitudes toward microblogging, as well as that compatibility, complexity, and observability significantly predicted adoption of microblogging. An interesting finding about relative advantage is that it exerted a direct effect on attitudes toward microblogging, but showed no direct significant effect on adoption. In other words, relative advantage lost its direct predictive power in the transition from the persuasion stage to the decision stage. It means that more relative advantages facilitate the shaping of a favorable attitude toward microblogging, but when it comes to adoption, respondents may adopt microblogging regardless of whether microblogging owns more relative advantages than other new media technologies or not. The enduring effects of compatibility and complexity indicated that in the social media context, it is critical for a certain type of social media service to be compatible with potential users’ lives and not
be complex to use. It should also be noted that although perceived observability was a
significant predictor in the formation of respondents’ attitudes towards microblogging, its
predictive power was relatively weak compared to the other innovation attributes.
Moreover, when it came to adoption, observability showed a negative effect. However,
this is not a surprise given that social media like microblogging usually do not need to be
experimented with before adopting them for college students who are digital natives. It
seemed that, even though microblogging’s observability could help respondents to hold
favorable attitudes towards microblogging, both college students who had been exposed
to microblogging’s features and those who did not get a chance to observe how
microblogging operated might all adopt microblogging services eventually. Perhaps
observability will exert positive predictive power in social media diffusion among older
users. This result might also be related to innovation needs. It could be that college
students would experience strong needs to adopt microblogging as a social media
innovation, which supplemented their offline social participation (Subrahmanyam, Reich,
Waechter, & Espinoza, 2008) as well as played the role of alternative media, regardless
of whether they experimented with microblogging or not. More research is needed to
clearly understand the role of these innovation attributes in new media diffusion.

Implications

The findings of this study have some important implications for developing
theoretical insights and offering practical implications. First, as the current study
demonstrated, the Diffusion of Innovations theory, particularly the innovation-decision
process model, is a comprehensive and valuable theoretical framework for understanding
the social media innovation-decision process. By identifying the relationships between all
five stages of the innovation-decision process, this study provided evidence that implementation and confirmation stages exist in the innovation-decision process. Given the fact that this approach had never been investigated in prior studies, future research should integrate these two stages into new media diffusion studies and explore possible factors affecting the implementation and confirmation of communication technologies.

Second, by using Diffusion of Innovations theory to develop a model of social media innovation-decision process that explains the factors influencing the knowledge of, attitudes toward, and adoption behavior of social media, the current study confirmed the hierarchical flow from knowledge to attitude to adoption and suggests that the knowledge and persuasion stages present valuable insights that should be integrated into the theoretical framework of future communication technology diffusion studies. The current study did not test the impact of knowledge on adoption of micrologging because of only focusing on direct effects derived from the innovation-decision process model (Rogers, 2003). However, previous studies had showed that knowledge might also exert a direct effect on adoption of new media technologies (Zhang & Wei, 2009). Therefore, future studies may include and examine the direct effect of knowledge on adoption of social media to better understand the new media diffusion process.

Third, as mentioned in the literature review, very few studies tested the effects of personality trait variables on adoption of new communication technologies, particularly the ones referred to by Rogers (2003). By incorporating two personality variables, the current study demonstrated that personality characteristics can offer new insights into new media diffusion. For future research, more personality and psychological factors should be integrated into the innovation-decision model of new media technology. The
evidence from this study also suggests that, although Diffusion of Innovations theory had postulated a number of predictors, other possible factors, particularly social media-related variables, such as concerns for privacy, should be employed to advance theory building and contribute to the understanding of the dynamic process of innovation decision making in the future.

Fourth, unlike most prior research, the current study sampled a Chinese population instead of Westerners. It enriches the literature by examining a different Web user group. However, future research can advance the theoretical understanding of new media diffusion to a deeper level by comparing different population groups. According to Rogers (2003), norms of the social system represent an important antecedent of the innovation-decision model. Therefore, incorporating social norms and cultural factors (e.g., individualism and collectivism) into the innovation-decision model would allow us to better compare new media adopters in different countries.

Finally, as a practical implication, this study suggests that the marketing strategists of social media service need to emphasize privacy issues as well as social media attributes. The findings of this study indicated that consumers take privacy issues related to social media use seriously when they go through the social media innovation-decision process. Optional privacy settings should be available to the potential users of social media to reduce the negative effects of consumers’ privacy concerns. Also, special privacy setting features should be developed and stressed to establish trust for the potential users. In addition, marketing strategists should also realize the essential role of online media use in creating awareness, building up knowledge, and influencing the adoption decision of social media. The findings concerning the effect of online media
consumption on social media adoption can also be utilized to categorize consumers and then develop targeted campaigns aimed at attracting potential social media users. Furthermore, in the regions where social media use has not reached its saturation point, marketing strategists could also target the group(s) of users with high levels of social participation to draw more potential users and open up new markets.

**Limitations**

There are some limitations associated with this study that need to be addressed. First, it should be noted that the current study has a limited external validity due to the sample of college students. The survey respondents were all well-educated and young college students. Compared to a less educated population, they may be heavier users of social media, more likely to favor change and more engaged in communication behavior. Thus, what was discovered in this study might only apply to college students. Although the findings of this study showed practical implications to college students and youth in China, their generalizability must be considered. To address this shortcoming and validate the innovation-decision model and the social media model proposed in this study, replication of the current study with a more representative sample of non-student adults is needed in the future.

Second, the current investigation was also limited by the use of a cross-sectional study design. A one-shot survey hardly identifies cause-and-effect relationships, because the direction of cause and effect cannot be determined. For future research, longitudinal studies are desirable to document the relationships between the five stages of the innovation-decision process and confirm the cause-and-effect relationships between the
predictor and outcome variables in the social media adoption model presented in the current study.

**Conclusions**

Being a popular online platform for social interaction, a large news and information source, and an important representative on online public opinion in China, microblogging has become a novel social style and a new culture on the Internet in China. Given its great importance in today’s Chinese society, this study examined the predictors of microblogging’s diffusion. Grounded in Diffusion of Innovations theory, the current study tested the theoretical framework of five stages of the innovation-decision process and found that respondents went through knowledge, persuasion, decision, implementation, and confirmation about microblogging. The findings of the present study also showed that respondents’ socioeconomic status, technology ownership, social participation in volunteer service and informal groups, online new reading, online radio listening, cosmopolitaness, and opinion leadership all significantly impacted knowledge of microblogging. In addition, the results indicated that relative advantage, compatibility, and observability positively affected persuasion of microblogging, whereas respondents’ perceived complexity negatively influenced their attitudes toward microblogging. Within the decision stage, the findings showed that respondents’ socioeconomic status, technology ownership, social participation in student organizations, online news reading, online radio listening, online movie watching, cosmopolitaness, opinion leadership, perceived compatibility, perceived complexity, perceived observability, concerns for privacy, attitude toward change, and dogmatism level were statistically significant in predicting adoption behavior of microblogging.
References


Li, S. S. (2004b). Examining the factors that influence the intentions to adopt Internet shopping and cable television shopping in Taiwan. New Media & Society, 6, 173-193.


Appendix A

IRB approval letter

EXEMPT - CONFIRMATION

October 12, 2011

Michel Dupage, Ph.D.
University of Miami
School of Communication
Coral Gables Campus
Coral Gables, FL 33124

HSRO STUDY NUMBER: 20110888
STUDY TITLE: Predictors of Knowledge, Persuasion, and Decision Stages of the Innovation-Decision Process of Microblogging in China
IRB ACTION DATE: 10/11/2011
FWA #: FWA00002247

On 10/11/2011, an IRB Chair determined that the above referenced protocol qualifies for exemption from IRB review.

APPROVAL INCLUDES:

New Research Protocol
Research Materials (English Versions Only)
- Verbal Informed Consent Form
- Survey

NOTE: Translations of IRB approved study documents, including informed consent documents, into languages other than English must be submitted to HSRO for approval prior to use.

Please remember that the Human Subjects Research Office (HSRO) must be notified of any proposed changes in research activities. Changes must receive IRB review and approval prior to implementation. Upon completion of the study, submit a closure report via ePost.

Sincerely,

This is a representation of an electronic record that was signed electronically and the page is the manifestation of the electronic signature.

Amanda Coltes-Rojas, MPH, CIP
Director
Regulatory Affairs & Educational Initiatives

/cc: IRB File
Yu Liu
VERBAL CONSENT SCRIPT

Predictors of Knowledge, Persuasion, and Decision Stages of the Innovation-Decision Process of Microblogging in China

Purpose of the Study

Hi, my name is Yu Liu. I am a doctoral student. We are asking you to take part in a research study because we are trying to learn more about factors affecting knowledge of, attitude toward, and adoption of microblogging in China. We are asking you to fill out a questionnaire that will take about 20 minutes to complete. There is no personal risk from taking part in this study. You will not be paid for participation. Your response will remain anonymous and your privacy will be protected. Your participation is voluntary. You can decline to participate, and you can stop your participation at any time, if you wish to do so, without any negative consequences to you. By you answering the survey questions that I will ask, this means you consent to participate in this research project. If you have any questions or concerns about the research, please feel free to ask me directly or I can give you the contact information of my faculty advisor Dr. Michel Dupagne.
Appendix C  
Survey questionnaire in English

Part A  
Please circle the number that best represents your agreement with the following statements on a 5-point scale, where “1” means “Strongly Disagree” and “5” means “Strongly Agree.”

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Microblogging has more advantages than other personal message distribution systems like BBS.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. Microblogging has more desirable features than other personal message distribution systems like BBS.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. Microblogging offers more improvements than other personal message distribution systems like BBS.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. Microblogging is better than other personal message distribution systems like BBS.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. Microblogging can help me maintain my lifestyle.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. Microblogging meets my social needs.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. Microblogging is well suited for my way of life.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. Microblogging is compatible with my day-to-day needs.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. I have a difficult time understanding how microblogging works.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. I find microblogging complex.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11. I feel intimidated by microblogging.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12. Using microblogging is uncomplicated.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>13. I have the chance to observe what microblogging can do.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>14. I am able to observe microblogging in action.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>15. I have seen how microblogging operates.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>16. I have been exposed to the features of microblogging.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
Again, please circle the number that best represents your agreement with the following statements on a 5-point scale, where “1” means “Strongly Disagree” and “5” means “Strongly Agree.”

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. I am concerned that the information I submit on the Internet could be misused.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>18. When I shop online, I am concerned that the credit card information can be stolen while being transferred on the Internet.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>19. I am concerned about submitting information on the Internet, because of what others might do with it.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>20. I am concerned about submitting information on the Internet, because it could be used in a way I did not foresee.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>21. My opinion on microblogging seems not to count with other people.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>22. When they choose a microblogging service, other people do not turn to me for advice.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>23. Other people come to me for advice about choosing a microblogging service.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>24. People that I know pick a microblogging service based on what I have told them.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>25. I often persuade other people to use a microblogging service that I like.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>26. I often influence people's opinions about microblogging.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>27. I like to meet people from different cultures.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>28. I would not mind living abroad for 3 months.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>29. I like to try out food from different countries.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>30. I am open to new ideas, even if they run against the Chinese way of life.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>31. I enjoy travelling to different places.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>32. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>33. There are two kinds of people in this world: those who are for the truth and those who are against the truth.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>34. Most people just don't know what's good for them.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>35. Of all the different philosophies which exist in this world there is probably only one which is correct.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>---</td>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>36. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>37. I'd like it if I could find someone who would tell me how to solve my personal problems.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>38. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>39. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>40. While I don't like to admit this even to myself, my secret ambition is to become a great person, like Einstein, Beethoven, or Shakespeare.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>41. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>42. I look forward to change in my school.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>43. Change usually benefits the school.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>44. I usually resist new ideas.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>45. I don’t like change.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>46. Most of my fellow students benefit from change.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>47. I am inclined to try new ideas.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>48. Change frustrates me.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>49. Change often helps me perform better.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>50. I usually support new ideas.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>51. Changes tend to stimulate me.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>52. Other people think that I support change.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>53. I often suggest new approaches to things.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>54. Most changes are irritating.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>55. Change usually helps improve unsatisfactory situations in my school.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>56. I intend to do whatever possible to support change.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>57. I find most changes to be pleasing.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>58. I usually benefit from change.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
<tr>
<td>59. I usually hesitate to try new ideas.</td>
<td>1   2   3   4   5</td>
<td></td>
</tr>
</tbody>
</table>
Part B
Please circle the number that best represents your average frequency of media use.

<table>
<thead>
<tr>
<th>60. How often do you read news stories online?</th>
<th>Once a month or less</th>
<th>Several times a month</th>
<th>About once a week</th>
<th>Several times a week</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>61. How often do you listen to radio online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62. How often do you watch television programs online?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63. How often do you watch movies online?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please circle the number that best represents how often you participate in:

<table>
<thead>
<tr>
<th>64. Student organizations (e.g., sports clubs, music groups)</th>
<th>Once a month or less</th>
<th>Several times a month</th>
<th>About once a week</th>
<th>Several times a week</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>65. Volunteer service (e.g., NGO, NPO, community service)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>66. Informal groups (e.g., social clubs, assignment groups)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Part C
Please circle the number that best represents how you use microblogging.

67. Have you ever had a microblogging account (e.g., Twitter, Sina weibo)?
   1 Yes  (PLEASE CONTINUE)
   2 No   (PLEASE GO TO QUESTION 77)

68. Do you currently have a microblogging account (e.g., Twitter, Sina weibo)?
   1 Yes  (PLEASE CONTINUE)
   2 No   (PLEASE GO TO QUESTION 77)
69. When was the last time you used your microblogging service (e.g., Twitter, Sina weibo)?
   1 Today (PLEASE CONTINUE)
   2 In the last seven days (PLEASE CONTINUE)
   3 In the last 30 days (PLEASE CONTINUE)
   4 In the last three months (PLEASE CONTINUE)
   5 In the last year or more (PLEASE CONTINUE)
   6 Never (PLEASE GO TO QUESTION 76)

70. What is your primary microblogging account?
   1 Twitter
   2 Sina weibo/Fanfou weibo/QQ weibo/Sohu weibo/Netease weibo

71. On average, how many minutes do you spend on microblogging activities (e.g., reading, composing, and commenting) per day?

What is the approximate number of followers you have and the approximate number of people you are following on your primary microblogging account.

72. Number of followers you are having now __________

73. Number of people you are following now __________

74. On average, how frequently do you use microblogging?

Never Rarely Occasionally Frequently Very Always
   Rarely Frequently
   1 2 3 4 5 6 7

75. Do you plan to continue using a microblogging service in the next 12 months (e.g., Twitter, Sina weibo)?
   1 Yes (PLEASE GO TO QUESTION 78)
   2 No (PLEASE GO TO QUESTION 78)

76. Do you plan to use a microblogging service in the next 12 months (e.g., Twitter, Sina weibo)
   1 Yes (PLEASE GO TO QUESTION 78)
   2 No (PLEASE GO TO QUESTION 78)
77. Do you plan to have a microblogging account in the next 12 months (e.g., Twitter, Sina weibo)?
   1 Yes (PLEASE GO TO QUESTION 78)
   2 No (PLEASE GO TO QUESTION 78)

Please circle the number that best represents how much you know about microblogging?

78. Unfamiliar             Familiar
   1 2 3 4 5 6 7

79. Unknowledgeable       Knowledgeable
   1 2 3 4 5 6 7

80. Unaware                Aware
   1 2 3 4 5 6 7

Please circle the number that best represents your overall feeling about using microblogging.

81. Unfavorable            Favorable
   1 2 3 4 5 6 7

82. Bad                     Good
   1 2 3 4 5 6 7

83. Negative               Positive
   1 2 3 4 5 6 7

Please indicate whether each of the following statements about microblogging is true or false.

<table>
<thead>
<tr>
<th>Statement</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>84. Microblogging operates in the same way as blogging.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>85. Microblogging users cannot post an audio link on their microblogging pages.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>86. A microblogging post is limited to 140 characters.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>87. Microblogging users cannot control who can read their posts by changing privacy settings.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>88. Any microblogging user can be authenticated by a microblogging service provider.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>89. Microblogging users still cannot link their location-based service, such as foursquare, to their microblogging pages.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
90. Microblogging users can only post messages via webpages.  
   True  False
   1     2

91. Microblogging users cannot repost and comment on any other user’s microblogging post at the same time.  
   True  False
   1     2

92. Microblogging users can chat with any other microblogging user they follow on their microblogging pages.  
   True  False
   1     2

93. A Microblogging user still cannot view the pictures of other users in a photo album on those users’ microblogging pages.  
   True  False
   1     2

Please tell me whether you have or subscribe to the following technologies in your place of residence.

Yes  No

94. Personal computer/laptop  1  2
95. Internet access  1  2
96. Smart phone  1  2
97. Tablet  1  2
98. Facebook/Renren/Kaixin/Douban  1  2

99. On average, how many hours do you use the Internet per day?  

Part D

Please provide some information about yourself for classification purposes only (again, all information that you provide will remain anonymous).

100. What is your gender?
    1  Male
    2  Female

101. What is your age?  
     ____________________________

102. What is your major?  
     ____________________________

103. What is your current year in college?
    1  First year
    2  Second year
    3  Third year
    4  Fourth year
    5  Graduate
    6  Other
104. Of the following broad categories, what is your estimated family annual income?

1. Less than 24,000 yuan
2. 24,000-36,000 yuan
3. 36,001-48,000 yuan
4. 48,001-60,000 yuan
5. 60,001-72,000 yuan
6. More than 72,000 yuan

Thank you for your cooperation and time. Have a great day!
口头同意书

影响微博在中国创新传播过程中的知识、态度和行为的因素

研究目的

大家好，我叫刘宇，一名博士在读生。今天，我们希望您来参加我们这个调查研究，因为我们想更多地了解，在微博在中国创新传播过程中，都是什么样的因素影响了人们关于微博的知识、对微博的态度和对微博的使用。我们恳请您能花20分钟来帮助我们填写这份有关微博的问卷。填写这份问卷并不会给您增加任何风险。您不会因此得到任何金钱补偿。本研究采用匿名的方式进行调查，您的隐私会得到保护。参与本研究将建立在自愿的基础上，您可以拒绝参加，也可以在任何您不想继续下去的时候停止问卷填写，这并不会给您带来任何负面的影响。填写这份问卷即意味着您同意参与我们这项研究。如果您对这项研究有任何疑问或想法，请直接告诉我，或者，联系我的导师Dr. Michel Dupagne，我会把他的联系方式告诉您。
Appendix E
Survey questionnaire in Chinese

1. 微博比其他个人信息发布系统（如论坛）有更多的优点。

2. 微博比其他个人信息发布系统（如论坛）有更多吸引人的特色。

3. 微博比其他个人信息发布系统（如论坛）有更多的改进。

4. 微博比其他个人信息发布系统（如论坛）更好。

5. 微博能帮助我维持我的生活方式。

6. 微博能满足我的社交需求。

7. 微博非常适合我的生活方式。

8. 微博符合我每天生活的需要。

9. 我不是很了解微博。

10. 我觉得微博很复杂。

11. 我不太敢使用微博。

12. 微博使用起来很简单。

13. 在创建微博账户前，我有机会看看微博都做什么。

14. 在创建微博账户后，我有机会看看微博是怎么回事。

15. 在创建微博账户前，我有机会意识到怎么使用微博。

16. 在创建微博账户后，我有机会知道微博的特点是什么。

您如果在百忙之中抽时间帮助我们完成这项旨在了解大学生对微博的态度及使用情况的研究调查，本研究采用匿名的方式调查。完成这份问卷大概需要10-15分钟，请仔细阅读每部分的说明，然后根据您自身的经历和体验选出最佳答案，您的参与将成就这项研究，再次衷心感谢您的配合！

在下列有关微博特性的问题中，请在数字1-5之间选出你对每道问题的同意程度。1代表完全不同意，5代表完全同意。

在下列有关您的日常生活经验的问题中，请在数字1-5之间选出你对每道问题的同意程度。1代表完全不同意，5代表完全同意。

17. 我担心我在网络上发布的信息会被误用或是错误使用。

18. 我担心在网购购物的过程中，我的信用卡信息可能会被盗用。

19. 我担心我在网络上留下的信息会被别人利用。

20. 我担心我在网络上的信息会被以我想不到的方式利用。

21. 我身边的人并不在意我对微博的看法。

22. 当我身边的人要决定使用什么微博时，他们不会参考我的意见。

23. 我身边的人会向我咨询有关使用微博的意见。

24. 我认识的人会基于我的建议来选择使用什么微博。

25. 我经常说服认识的人选择我喜欢的微博服务。

26. 我经常影响人们关于微博的意见。

27. 我希望结识来自不同文化的人们。

28. 我不介意在园外生活3个月。

29. 我希望参加不同国家的活动。

30. 我愿意接受新观念，即使这些观念与中国的生活方式有冲突。

31. 我喜欢到不同的地方去旅行。
<table>
<thead>
<tr>
<th></th>
<th>完全不同意</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>32. 若想知透复杂的世界到底是怎么回事，我们唯一能做的便是依靠那些可以让人信服的领导者和精英们。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. 这个世界上有两种人，一种人追求真理，一种人反对真理。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34. 大多数的人并不知道什么是真正对他们有益的。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35. 历史上所有的哲学体系中，大概只有一种是正确的。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>36. 最高形式的统治是民主，而最高形式的民主则是由最聪明的人来管理的政府。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>37. 如果可能，我会想要看到一个人来告诉我如何解决我个人的问题。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>38. 人只有完全投入到某个理想中，生活才变得有意义。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>39. 在没得到自己信服或敬佩的人发表对某件事物的看法前，最好保留自己的意见和看法。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>40. 尽管不想承认，但有些时候，我确实有成为爱因斯坦、贝多芬，或是莎士比亚那样的伟人的野心。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>41. 尽管言论自由对所有人都很重要，但不幸的是，限制某些政治团体的言论自由确实是必要的。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>42. 我期待我们的学校有所改变。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>43. 改变会对一所大学有益。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>44. 我通常不接受新的想法。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>45. 我不喜欢改变。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>46. 我的大多数同学会从改变中获益。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>47. 我倾向于尝试新的思维和想法。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>48. 改变经常让我沮丧。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>49. 改变经常使我表现得更好。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>50. 我通常支持新思维。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>51. 改变能激励我。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>52. 其他人认为我是那种支持改变的人。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>53. 我经常建议尝试新的方法。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>54. 大多数的改变都很让人恼火。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>55. 改变会解决目前学校里很多令人不满的情况。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>56. 我会竭尽所能去支持任何改变。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>57. 我发现大多数改变是令人愉快的。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>58. 我通常会从改变中获益。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>59. 我通常对改变的建议感到犹豫不决。</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

第二部分
请在下列有关数字媒体使用情况的问题中选出你对每种媒体使用的程度。

<table>
<thead>
<tr>
<th>每个月一次或更少</th>
<th>每个月几次</th>
<th>每星期一次</th>
<th>每星期几次</th>
<th>每天</th>
</tr>
</thead>
<tbody>
<tr>
<td>60. 你在网上阅读新闻的频率是？</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>61. 你在网上收听广播的频率是？</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>62. 你在网上收看电视节目的频率是？</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>63. 你在网上看电影的频率是？</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
请在下列有关日常社交情况的问题中选出你在各种社交活动中参与的频率。

<table>
<thead>
<tr>
<th>问题</th>
<th>每个月一次或更少</th>
<th>每个月几次</th>
<th>每星期一次</th>
<th>每星期几次</th>
<th>每天</th>
</tr>
</thead>
<tbody>
<tr>
<td>64. 你参加学生团体活动（如运动俱乐部、音乐小组等）的频率是</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>65. 你参与志愿者服务（如非政府机构，非赢利组织，社区服务等）的频率是</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>66. 你参与非正式团体（如校园外的社交活动，学习小组等）的频率是</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

第三部分
请在下列有关微博使用的问题中选出符合你的微博使用情况的答案。

67. 你曾经有过微博帐号吗（如Twitter, 新浪微博等）？
   1. 有过  (请继续)
   2. 没有  (请跳转到问题 77)

68. 你目前有微博帐号吗（如Twitter, 新浪微博等）？
   1. 有   (请继续)
   2. 没有  (请跳转到问题 77)

69. 请问你上一次使用微博（如Twitter, 新浪微博等）是在什么时候？
   1. 今天     (请继续)
   2. 过去7天内 (请继续)
   3. 过去一个月内 (请继续)
   4. 过去3个月内 (请继续)
   5. 过去一年中 (请继续)
   6. 从未使用过 (请跳转到问题 70)

70. 您主要使用微博的帐户是什么？
   1. Twitter
   2. 新浪微博/饭否/腾讯微博/搜狐微博/网易微博

71. 你每天平均使用微博（如阅读,评论,转发,私信）的时间大概是多少小时？

在你的主要微博帐户上，你关注的和被关注的人数分别大致是多少

72. 你关注的人数

73. 你的粉丝数

74. 你日常平均使用微博的频率是？

<table>
<thead>
<tr>
<th>频率</th>
<th>从未用过</th>
<th>非常少用</th>
<th>较少用</th>
<th>偶尔用</th>
<th>较常用</th>
<th>经常用</th>
<th>总是使用</th>
</tr>
</thead>
<tbody>
<tr>
<td>1：</td>
<td>2：</td>
<td>3：</td>
<td>4：</td>
<td>5：</td>
<td>6：</td>
<td>7：</td>
<td></td>
</tr>
</tbody>
</table>
75. 在接下来的一年里，你会继续使用微博吗（如 Twitter，新浪微博等）？
   1. 会  （请跳转到问题 78）
   2. 不会  （请跳转到问题 78）

76. 在接下来的一年里，你打算使用微博吗（如 Twitter，新浪微博等）？
   1. 是的，打算使用  （请跳转到问题 78）
   2. 不，不打算使用  （请跳转到问题 78）

77. 在接下来的一年里，你计划建立一个微博账户吗（如 Twitter，新浪微博等）？
   1. 是  （请跳转到问题 78）
   2. 不  （请跳转到问题 78）

请下列问题中选出你对微博的熟悉和了解的程度

78. 不熟悉
   1   2   3   4   5   6   7

79. 不了解的
   1   2   3   4   5   6   7

80. 毫无概念的
   1   2   3   4   5   6   7

请在下列问题中选出您对微博的看法是

81. 不赞赏的
   1   2   3   4   5   6   7

82. 不好的
   1   2   3   4   5   6   7

83. 负面的
   1   2   3   4   5   6   7

请指出你认为下面的有关微博的特点是否正确。

<table>
<thead>
<tr>
<th>问题</th>
<th>正确</th>
<th>不正确</th>
</tr>
</thead>
<tbody>
<tr>
<td>84. 微博和博客功能相同。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>85. 微博用户不可以在其页面上发布音频链接。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>86. 每篇微博最多只能发 140 个字符。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>87. 微博用户无法通过修改隐私设置来决定谁有权限阅读他的微博。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>88. 任何一个微博用户都可以通过微博服务商进行身份认证。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>89. 微博用户还不能在其页面上推特位置签到服务（如街旁网）来分享自己所在地的信息。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>90. 微博用户只能通过网页来发布微博。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>91. 微博用户不可以同时转发和评论其他微博用户的某发表微博。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>92. 微博用户可以在微博页面上和任何一个自己关注的人在线聊天。</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>93. 微博用户还不能通过相同的方式来浏览其他用户在微博上所发布的所有照片。</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
你是否拥有下列电子产品或设备？

<table>
<thead>
<tr>
<th>序号</th>
<th>产品描述</th>
<th>是</th>
<th>否</th>
</tr>
</thead>
<tbody>
<tr>
<td>94.</td>
<td>个人电脑/笔记本电脑</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>95.</td>
<td>互联网</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>96.</td>
<td>智能手机</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>97.</td>
<td>平板电脑</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>98.</td>
<td>人人网/开心网/豆瓣网</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>99.</td>
<td>你平均每天的上网时间是多少小时？</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

谢谢您的合作，请留下基本个人信息（这些信息不会被公开，仅助样本分类之目的）

100. 性别
     1. 男
     2. 女

101. 年龄

102. 专业

103. 您目前的就读
     1. 大一
     2. 大二
     3. 大三
     4. 大四
     5. 研究生
     6. 其他

104. 您的家庭年收入状况
     1. 低于 24,000 元
     2. 24,000-36,000 元
     3. 36,001-48,000 元
     4. 48,001-60,000 元
     5. 60,001-72,000 元
     6. 72,000 元以上

非常感谢您完成本次问卷调查，祝你有愉快的一天！