

Chapter 2

Literature Review

This chapter reviews the previous literature related to this study. It discusses the major findings concerning the following topics: definitions of social media; current social media penetration in China; U&G studies—both history and the most recent findings in U&G studies on IM, SNS, blogs, and microblogs; Internet addiction—both in Greater China and western countries; the sociopsychological traits of the need for affiliation, impression management, narcissism and leisure boredom, and the relationship of these traits with Internet use, social media use, and Internet addiction; and positive or negative impact of Internet use, social media use, and Internet addiction on adolescents' academic performance and social capital. Grounded in previous literature, hypotheses are proposed and research questions are raised.

2.1 What Are Social Media?

Social media are applications that enable people to interact with each other and build social networks that increase social capital (Barnes 2008). This massive phenomenon is changing the way we create and use content (Comm 2010). As Comm (2010) suggested, the definition of social media is vague. In the broadest sense, it describes a form of publishing in which stories are exchanged rather than published within a community “like a chat in a restaurant” (Comm 2010, p. 3). In the narrowest sense, however, social media describes how publishers can distribute their messages to thousands of people, encouraging them to build strong connections and firm loyalty (Comm 2010).

Castells (2000) describes the network society as a culture that is constructed virtually “by pervasive, interconnected, and diversified media systems” (p. 1). In addition, the network society is based on the idea of using computer-mediated communication (CMC) to promote cooperation between two or more individuals and build social capital (Barnes 2008). Comm (2010) suggested that perhaps the best definition of social media is that its content has been created by its audience because the “social” part of social media means that “publishing is now about participation”

(Comm 2010, p. 3). Those who use social media sufficiently create not only content but also conversations, and those conversations combine further to create communities (Comm 2010). Spannerworks (2007) gave a similar working definition of social media as new kinds of online media that share most or all of the characteristics of participation, openness, conversation, community, and connectedness. Kaplan and Haenlein (2010) defined social media more theoretically as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, which allow the creation and exchange of user-generated content” (p. 64).

The concept of “social media” might be new, but the idea of using media environments for socializing practices goes back to the age of the telegraph and telephone (Barnes 2008). Nowadays, popular social media include instant messenger (IM), social network sites (SNS), blogs, microblogs like Twitter, bulletin board systems (BBS), YouTube, and Wikipedia, for example.

Results from focus groups among adolescents in urban China indicated that in 2010, IM, SNS, blogs, and microblogs were their four most widely used social media. These results were in accord with the statistics reported by CNNIC (2010) showing that by the end of 2009, IM, blogs, and SNS were the three most popular online communication applications among adolescents in China. Microblog is added to the list because in the focus groups, adolescents pointed out that although microblog was a new kind of social medium, it had gained popularity quickly among them. One reason was that they could use microblogs through their mobile phones while they were at school during the day, although they had to do so “secretly.” In their latest report, CNNIC also emphasized that microblogs were becoming more and more popular; by the end of 2010, 63 million microblogs users already existed, and an even greater number was predicted for 2011 (CNNIC 2011). For the reasons discussed above, the social media this study focuses on consist of IM, SNS, blogs, and microblogs.

2.2 Social Media and Their Penetration in China

2.2.1 *Instant Messaging (IM)*

IM is a computer application that allows synchronous text communication between two or more people through the Internet. Parties at both ends of a conversation see each line of text right after it is typed (line by line). Thus, IM is more like a written telephone conversation than an exchange of letters (Bambooweb Dictionary 2008). IM is a composite of e-mail, chat rooms, pagers, telephones, voice mail, caller ID, and bulletin boards with a multiparty “chat” model (Chung and Nam 2007). As a relational maintenance tool, IM has been used for entertainment, work, and team relationships (Ramirez and Broneck 2003). In addition, IM has been found useful when discussing topics that are uncomfortable to talk about in face-to-face situations (Lenhart et al. 2001). The IM discussed here includes QQ, MSN Messenger, Yahoo! Messenger, Skype, and all other kinds of IM applications.

According to CNNIC (2011), IM had 353 million users by the end of 2010, making it the most popular online communication application in China. Meanwhile, IM is also the most popular mobile phone online application (CNNIC 2011). The number of IM users is still increasing every year, with an increase of 29.5 % more users in 2010 compared with 2009. More than three-quarters (77.1 %) of Internet users in China use IM (CNNIC 2011), while more than four out of five (80.5 %) middle-school Internet users use IM (CNNIC 2010). These statistics indicate the dominant popularity of IM in China, particularly among middle-school adolescents.

2.2.2 *Social Network Sites (SNS)*

SNS are “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (Boyd and Ellison 2007, p. 211). SNS enable users to connect with each other by creating personal information profiles, inviting friends to have access to those profiles, and sending messages and comments back and forth to each other (Kaplan and Haenlein 2010).

From another point of view, SNS are virtual collections of users’ profiles (Raacke and Bonds-Raacke 2008). Those personal profiles can include any type of information, such as text description, photos, audio, or video (Kaplan and Haenlein 2010). The profiles can be shared with others to create lists of companions and maintain contact with them (Raacke and Bonds-Raacke 2008). The lists show each user’s network, that is, the user’s profile or updated messages are accessible by individuals included on the user’s list (Lenhart 2009). SNS allow a varying amount of flexibility in communication style (Murphy 2005).

SNS have become popular among Chinese netizens in the past 2 years, especially since the dominant 2009 popularity of the SNS game, “Happy Farm.” SNS had 235 million users in China by the end of 2010. The number is still expanding, with an increase of 33.7 % in 2010 compared with 2009 (CNNIC 2011). SNS have garnered 51.4 % participation among Chinese Internet users (CNNIC 2011), while 40.1 % of the middle-school Internet users participate in them (CNNIC 2010). Renren (previously known as Xiaonei) and Kaixin are the two most widely used SNS among Chinese users.

The SNS discussed in this study include Renren, Kaixin, Facebook (which has very few Chinese users because of the Great Firewall of China), and all other kinds of social networking websites.

2.2.3 *Blogs*

Blogs are special types of websites that usually display date-stamped entries in reverse chronological order (OECD 2007). On these sites, blog owners can share

their feelings, photos, ideas, issues, and opinions (Huang et al. 2008; Riva 2002). Blog users can also “develop an individualized web presence that reflects facets of their personal style and idiosyncratic intellectual approaches” (Oravec 2002, p. 622). A blog is like an online diary, one that usually is managed by only one person, but that provides the opportunity for blog readers to interact with the owner by adding comments (Kaplan and Haenlein 2010). Bloggers can select personally contextualized information, present individual viewpoints, and invite critical comments without any pressure from external agendas (Blood 2002). Anyone can publish on the site, and their voices can be heard, communicated, and connected (Jung et al. 2007).

Blog is now the second most popular online communication application in China, with 295 million users by the end of 2010 (CNNIC 2011). The number of bloggers is greater every year, with an increase of 33 % in 2010 compared with 2009. Approximately 64.4 % of the Internet users in China use blogs (CNNIC 2011), while 69.5 % of middle-school Internet users use blogs (CNNIC 2010). CNNIC (2011) suggested that the rapid growth of blog use is related closely to the rapid growth of IM and SNS use. One major reason is that many IM and SNS applications now provide personal blog spaces. Thus, blogs based on the interpersonal networks built on IM and SNS are now important media for deeper communication and mutual understanding among friends and acquaintances.

2.2.4 *Microblogs*

The microblog can be considered a “mini blog.” It is an online platform where users post short messages of up to 140 characters and share with others within their social networks (Murphy 2008) comments about what they are doing, reading, or watching online or any other topic (Martinez 2009). People use microblogs to describe their current status and daily activities in short posts and to seek or share information (Java et al. 2007). Anyone with an Internet connection or a mobile phone can use microblogs through text messaging or web browsers (Johnson and Yang 2009). In microblogs, users can subscribe to one’s feed and become that person’s “follower” (Honeycutt and Herring 2009). On a microblog interface, an individual user can see the messages published by those he or she follows, while his or her published messages can be seen by his or her followers.

Microblogs grew rapidly in China during 2010, becoming popular not only among Internet users but also among mobile phone users. By the end of 2010, microblog users had reached 63 million in China. There are 13.8 % of the Internet users use microblogs, while 15.5 % of the mobile phone Internet users use microblogs (CNNIC 2011). Microblogs are now becoming important social media for self-expression, interpersonal communication, information seeking, and social sharing.

Although the above statistics showed the general popularity of social media among Chinese Internet users, particularly among adolescents, they did not

indicate in detail the degree of use for each kind of social medium in terms of the time or number of friends. As this study focuses on social media addiction among adolescents in urban Chinese cities, it is first asked:

RQ₁: To what degree do adolescents in urban China use social media, including IM, SNS, blogs, and microblogs?

2.3 Uses and Gratifications

2.3.1 History

U&G is a psychological communication theory that focuses on studying how people use media. It attempts to explain how individuals use mass media to gratify their needs. U&G seeks to discover the underlying motives for an individual's use of the media and to identify the positive and negative consequences of individual media use (Katz et al. 1974). The principal elements of U&G research are the individual's social and psychological needs and motives to communicate, their communication behavior, and the consequences of such behavior (Rubin 2002). Katz et al. (1974) described the U&G approach to media studies as:

(1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media and other sources, which lead to (5) differential patterns of media exposure, resulting in (6) need gratifications and (7) other consequences, perhaps mostly unintended ones. (p. 20)

Research using the U&G approach has offered insights into the reasons why individuals use a certain medium, the socio-demographic or psychological differences among various types of media users, media behavior, and the relationship between gratifications-sought and gratifications-obtained resulting from motivations of media use (Papacharissi and Rubin 2000).

U&G uses a limited-effects media perspective, emphasizing that media effects are constrained by individual differences among users. It is based on certain assumptions (Katz et al. 1974):

- (a) Individuals select media and media content actively rather than passively to satisfy their needs.
- (b) Individuals use the media to fulfill certain expectations.
- (c) Individuals' use of media can be conceived as goal oriented, and all kinds of media compete with each other to satisfy users.
- (d) Individuals are aware of and can state their own motives for using media.
- (e) Motives and gratifications of using media should be fully understood before addressing the cultural significance of media content to individuals.

Adolescent users of social media are considered to select actively the types of social media to fulfill their various needs for interpersonal communication channels. Social media compete with other computer-mediated communication (CMC)

applications or other communication tools, such as mobile phones or telephones, to satisfy adolescents. Adolescents are aware of and can state their own motives for using social media.

One limitation of U&G assumptions is that they emphasize more on personal expectations. As social media are mainly for social purposes, it is possible for individuals to use social media for fulfilling social expectations as well.

Historically, the U&G approach has a long tradition in research concerning media uses and effects (Blumler and Katz 1974). According to Ruggiero (2000), Wimmer and Dominick (1994) suggested that U&G originated as early as the 1940s, when researchers began to pay attention to why people use a certain medium, while Dozier and Rice (1984) referred to the immediate-and-delayed-reward model of media gratification by Schramm (1949) as the starting point of U&G research. Early U&G research focused around the findings of Lasswell (1948) on why people use media. Lasswell (1948) identified three functions of mass communication: surveillance of the environment, correlation of events in the environment, and transmission of social heritage. Later, Wright (1960) completed the list by adding entertainment as the fourth function.

Early U&G research concentrated primarily on describing and classifying individual media uses and motives into a typology (Ruggiero 2000). For example, some U&G research studied newspaper reading (Berelson 1949), comics reading (Wolfe and Fiske 1949), and radio listening (Cantril and Allport 1935; Herzog 1944). However, these earlier studies neglected the relationship between media gratification and the psychological or sociological origins of individual needs (Ruggiero 2000).

U&G research during the 1950s and 1960s began to identify social and psychological variables as antecedents of media gratifications (Wimmer and Dominick 1994). Researchers also began to focus on analyzing the consequences of use rather than simply to classify the use (Klapper 1963). Many functions of media use were identified during that period, such as companionship, changing mood, relief from loneliness or boredom, and escape (Katz and Foulkes 1962; Mendelsohn 1964).

Later in the 1970s, Rosengren (1974) tried to refine U&G theoretically. He pointed out that an individual's basic needs, personal characteristics, and the social environment interact with each other, resulting in perceived problems and potential solutions for that individual (for example, loneliness and listening to the radio). These problems and solutions constitute the motives for seeking gratifications, which can be obtained from media consumption or other activities (Ruggiero 2000). Palmgreen and Rayburn (1979) proposed to study simultaneously the gratifications sought and obtained from media use, while researchers later differentiated gratifications-sought and gratifications-obtained as two different concepts that require separate examination (McLeod et al. 1982).

In the 1980s, U&G researchers reevaluated the concept of "active audience" (Levy and Windahl 1984). At that point, U&G regarded audiences "to be variably—not universally—active." That is, all audience members are "not equally active at all times" (Rubin 2002, p. 534). During that period of time, TV played a major role in U&G research. After identifying relaxation, companionship, passing time, learning, excitement, and escape as six reasons why children and

adolescents use TV (Rubin 1979), Rubin (1984) further identified two types of TV viewers: ritualized users, who are habitual, time-passing viewers and instrumental users, who are selective and goal-oriented, using media content primarily for information. Studies also looked at different types of TV programming, such as cable TV in general (Shaver 1983), or specific content types such as soap opera (Lemish 1985), and religious TV (Abelman 1987; Pettersson 1986).

Ball-Rokeach and Defleur first proposed the media dependency theory in the 1970s, and it was conceptually elaborated and empirically assessed in the 1980s. According to this theory, media influence is determined in the ecological conception of a dependency relationship. That relationship originates from individual (micro), and moves through interpersonal (meso) to social environment and media system (macro conditions), results in structural dependency relations (macro relationships) (Ball-Rokeach and Jung 2009). Rubin (2002) pointed out that an individual's dependency upon a medium may result from motives or strategies for obtaining gratifications and from restricted functional alternatives.

Social media provide gratifications that satisfy certain needs for adolescents. When those expected gratifications can be obtained largely during the process of using social media, and functional alternatives available to the user are limited, it might result in dependency.

As information and communication technologies (ICT) developed rapidly in the 1990s, new media technology brought many more media choices. Researchers have had more opportunities to apply the U&G approach to studying a wider range of popular media technology such as cable TV (Donohew et al. 1987; Jacobs 1995; LaRose and Atkin 1991), video cassette recorders (VCR) (Lin 1993), bulletin board systems (BBS) (James et al. 1995), computer and video games (Funk and Buchman 1996), and home computers (Perse and Dunn 1998).

At the beginning of the twenty-first century, the development of new technologies shifted focus from mass media to mediated interpersonal communication technology. The Internet and many mediated interpersonal communication devices have become very popular. As a result, a large number of U&G studies have been conducted on these new technologies, such as Internet use (Charney and Greenberg 2002; Leung 2003; Papacharissi and Rubin 2000; Stafford and Stafford 2004), Web use (Eighmey and McCord 1998; Ferguson and Perse 2000; Perse and Ferguson 2000), e-mail (Dimmick et al. 2000), BBS (Rafaeli 1986), Short Message Service (SMS) (Leung 2007), mobile phone (Auter 2007; Leung and Wei 2000; Wei and Lo 2006), and personal digital assistant (PDA) (Peters and Allouch 2005). There have also been many U&G studies about social media such as IM, SNS, blogs, and microblogs in recent years. The following section will discuss the latest U&G studies on social media.

2.3.2 U&G Studies on IM

As the most popular online communication tool, IM has attracted the attention of many researchers. Many of these studies have investigated IM use from a U&G approach.

As early as 10 years ago, Leung (2001) investigated college students' motives for chatting on ICQ and found that for college students, relaxation, entertainment, and fashion are instrumental motives for using ICQ, while inclusion, affection, sociability, and escape are their intrinsic motives. Students who use ICQ heavily are motivated by affection and sociability (Leung 2002). Ljungstrand and Segerstad (2000) suggested that college students use IM both to collaborate on assignments and to coordinate social activities. Recchiuti (2003) compared the use of IM with e-mail and an online chat room and found that students used IM more than the other two for social and ritualized communication, which provided the unique gratifications of companionship and anonymity for users.

Cheuk and Chan (2007) studied high school students in Hong Kong and suggested that the main reasons for their use of ICQ were entertainment, relaxation, and socializing. Huang (2008) also studied IM use among Chinese adolescents and found that a sense of belonging, peer influence, escape, avoiding presence, and habit as gratifications. Ramirez et al. (2008) compared the gratification niches of IM with e-mail and telephone and found that among 23 general gratifications statements, IM had a substantial niche overlap with e-mail and the cell phone, which indicated a certain degree of substitutability between these media.

Hwang (2009) discussed both gratifications-sought and gratifications-obtained from IM use among college students in the United States. He found that college students used IM to seek five gratifications: interpersonal utility, social utility, convenience, entertainment/relaxation, and information needs. Convenience and social utility were two of the most salient for both gratifications-sought and gratifications-obtained. Quan-Haase and Young (2010) compared Facebook and IM use from a U&G perspective and found that Facebook is about having fun and knowing about the social activities in one's social network, while IM is more suitable for maintaining and developing relationships.

2.3.3 U&G Studies on SNS

Since SNS has become very popular these days, many recent U&G studies have examined this form of social media.

Raacke and Bonds-Raacke (2008) studied SNS among students at a university in the United States. They found that popular gratifications-obtained from having a MySpace or Facebook account included keeping in touch with old and current friends, sharing photos, and making new friends as well as locating old friends. Some less commonly reported gratifications included learning about events, feeling connected, sharing information about oneself, satisfying academic purposes, and dating.

Park and his colleagues (2009) surveyed 1,715 university students about their Facebook use and found that socializing, entertainment, information, and self-status seeking were the four major gratifications. The researchers pointed out that individuals who participate in Facebook to satisfy their socializing needs are generally

interested in meeting and talking with others, as well as obtaining peer support and a sense of community. Users gain entertainment gratification by being involved in Facebook groups for their leisure and amusement needs. University students satisfy their information needs by learning about on- and off-campus events or details regarding specific products and services through Facebook. Users were also likely to participate in Facebook to gain and maintain their personal status by participating in online groups. These university students also pointed out that they joined Facebook groups because they felt peer pressure to do so, wanted to make themselves look cool, and to develop their career (Park et al. 2009). After both surveying and interviewing undergraduate students, Quan-Haase and Young (2010) added to the SNS gratifications list that using SNS is a way to pass time, gain or give affection, keep up with fashion, and share problems.

Cheung et al. (2011) recently proposed an interesting idea of what users express by “we-intention” when they use SNS. They pointed out that “we-intention” emphasizes that it is the presence of “we,” that is, together as a group instead of each individually, that creates an intention to continue using SNS, and “this is a joint intention made by a group of people that everyone will perform his own part to perform a joint action together with others” (p. 1338).

Using qualitative research, Dunne and Lawlor (2010) studied the gratifications from SNS and found that the SNS use among young people (aged 12–14) was motivated by communicating, making friends, identity creation and management, entertainment, escapism and alleviation of boredom, information search, and interacting with boys. Meanwhile, the gratifications-obtained from using SNS were quite different. They included portraying one’s ideal image, peer acceptance, relationship maintenance, and safety from embarrassment and rejection (Dunne and Lawlor 2010). Urista and her colleagues (2009) held focus groups to examine the use of MySpace and Facebook among young adults. They identified five gratifications as efficient communication, convenient communication, curiosity about others, popularity, and relationship formation and reinforcement.

2.3.4 U&G Studies on Blogs

Jung et al. (2007) found that entertainment, self-expression, professional advancement, passing time, communication with family and friends, and following the trend are key motives for blogging. Lee et al. (2008) proposed similar motives, including self-presentation, relationship management, keeping up with trends, information sharing, information storage, and entertainment.

Leung (2009) studied gratifications of user-generated content on the Internet, such as blogs, Wikipedia, and YouTube and found the following gratifications-sought (1) recognition need, illustrating that Internet users try to establish their personal identity, gain respect and confidence, and demonstrate their expertise through generating online content; (2) cognitive needs, stating that users try to broaden their knowledge base, keep abreast with the latest developments, and know what is

happening in the community through online contents; (3) social needs, reflecting how Internet users find the Internet a comfortable place to reveal their feelings, share views and experiences, and update their latest information to family and friends; and (4) entertainment needs, indicating that generating content online cannot only pass the time but also be entertaining, fun, interesting, and trendy.

In a content analysis of 358 randomly selected blogs in the Polish language, Trammel et al. (2004) identified six major motivations for blogging: self-expression, social interaction, entertainment, passing the time, gaining information, and professional advancement.

In analyzing users' gratifications or motives for reading and browsing blogs, Wang and Fesenmaier (2004) suggested that people who participate in blogging activities are mainly for the social benefits—they hope to provide assistance or discuss their views with other members. Huang et al. (2008) revealed that the motives for reading blogs were affective exchanges, information search, entertainment, and getting on the bandwagon. The authors illustrated the effects of these motives on three major responses: interaction intentions, opinion acceptance, and word-of-mouth intentions. They pointed out that readers who focus on affective exchanges believe what they read in blog messages and interact with bloggers. For those motivated by information search and entertainment motives, blogging is mainly aimed at opinion acceptance; they also view blogs as trustworthy sources and transmit messages to others.

2.3.5 *U&G Studies on Microblogs*

Microblogs were introduced not very long ago and recently have become more and more popular. Microblogs have begun to attract researchers' attention lately, and so far just a few researches have discussed this form of social media.

Martinez (2009) interviewed some microbloggers in Southeast Texas who wrote about their everyday happenings, made friends with similar interest through their microblog, and organized regular offline meetings. Those microbloggers pointed out that using microblog is for gratification of an immediate emotional response.

Johnson and Yang (2009) studied both the gratifications-sought and gratifications-obtained of using Twitter. They identified 15 gratifications-obtained variables: be entertained, have fun, relax, pass the time, keep in touch with friends or family, see what others are up to, express oneself freely, communicate more easily, communicate with many people at the same time, get information, learn interesting things, give or receive advice, participate in discussions, meet new people, and share information with others. The authors grouped these gratifications into social and information motives for using Twitter. Interestingly, their data suggested that Twitter is used primarily as an information source rather than for satisfying social needs.

In contrast, Chen (2011) found the most important gratification-sought from using Twitter is a need to connect with others, and the more months a person is active on Twitter and the more hours per week the person spends on Twitter, the

more gratifications he or she obtains. U&G research on microblogging is scarce and further investigation is needed.

The literature review of U&G research shows that for over 70 years the U&G perspective has developed into a more sophisticated theoretical model. The inquiry has shifted from a mechanistic perspective focusing on the direct effects of media on users to a psychological perspective stressing individual use and choice (Rubin 2002; Ruggiero 2000). Lin (1996) stressed the importance and strength of U&G theory in investigating “mediated communication situations via a single or multiple sets of psychological needs, psychological motives, communication channels, communication contents, and psychological gratifications within a particular cultural context” (p. 574).

For these reasons, U&G approach is adopted in this research to study social media use and addiction. Thus, this study asks and hypothesizes:

RQ₂: What gratifications do adolescents in urban China obtain from using social media?

H₁: The more the adolescents in urban China find social media gratifying, the more they will use social media.

According to William Miller (2006), addiction is fundamentally a problem of motivation. For example, shopping addicts were motivated mainly by escape (Elliott et al. 1996). Only a few studies discuss the relationship between gratifications and media addiction. Rubin (1984) suggested that, compared with instrumental use of media, ritualistic/habitual use of media was more likely to relate to media dependency. Supporting Rubin’s proposition, Park (2005) found that ritualistic motives explained mobile phone addiction more strongly than instrumental motives. TV addicts watched television mainly to divert their disturbing thoughts and to pass the time (McIlwraith 1998). Internet gratifications such as diversion, virtual community, and relationship maintenance were likely to lead to Internet addiction, while information seeking and aesthetic experience negatively explained Internet addiction (Song et al. 2004). Internet addicts mainly used the Internet to seek social support, but seldom used it to seek information (Tao et al. 2007). To understand further the relationships between gratifications and media addiction, this study applied U&G approach to investigate the relationships between social media gratifications and social media addiction. The next section reviews the literature of Internet and social media addiction.

2.4 Internet Addiction and Social Media Addiction

2.4.1 Internet Addiction

Traditionally, the concept of “addiction” was based on a medical model and properly reserved for bodily and psychological dependence on a physical substance. Researchers have argued that the concept of addiction should be widened to cover

a broader range of behaviors (Lemon 2002; Orford 2001; Shaffer 1996). Peele (1985) suggested that any compulsive or overused activity could be considered as addiction.

Griffiths (1996) proposed the concept of “technological addiction,” which is nonchemical but behavioral in nature and involves excessive human-machine interaction. Technological addiction can be either passive, such as viewing television, or active, such as gaming on the computer or chatting online and usually comprises inducing and reinforcing features that may contribute to the promotion of addictive tendencies (Griffiths 1996). It also features the core components of addiction, including salience, mood modification, tolerance, withdrawal, conflict, and relapse (Griffiths 1998). Griffiths (1998) argued that any behavior that fulfills these criteria could be defined operationally as addiction. Some research also supported the notion that excessive use of technology can be considered problematic (Griffiths and Hunt 1998; Shotton 1989).

Internet addiction disorder (IAD) was first proposed by Ivan Goldberg in 1995. Derived from the substance-dependence criteria of the *Diagnostic and Statistical Manual of Mental Disorders* (4th Ed.) (DSM-IV) (American Psychiatric Association 1994), IAD is the first listed Internet-related disorder. It is defined as a behavioral addiction consisting of six core components: salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse (Griffiths 1998). Young (1998) proposed that by using pathological gambling as a model, Internet addiction could be defined as an impulse-control disorder that does not involve an intoxicant. Young (1996) characterized Internet addiction as staying online for pleasure averaging 38 h or more per week, largely in chat rooms, and concluded that Internet addiction can shatter families, relationships, and careers.

Utilizing an adapted version of the criteria for pathological gambling defined by the DSM-IV, Young (1998) developed eight criteria to provide a screening instrument for addictive Internet use. Individuals who meet five of eight criteria for Internet addiction qualify as addicts: (1) preoccupation with Internet use; (2) need for longer amount of time online; (3) repeated attempts to reduce Internet use; (4) mood modification on Internet use; (5) staying online longer than intended; (6) loss of significant relationship, job, and educational or career opportunity; (7) deception around time spent online; and (8) Internet use as a way of escaping from problems. Several other studies on Internet addiction were conducted over the past decade (Beard 2002; Beard and Wolf 2001; Chak and Leung 2004; Griffiths 2000; Leung 2004; Scherer 1997; Young 1999).

2.4.2 Internet Addiction Among Adolescents

Both researchers and the Chinese government have paid a great deal of attention to Internet addiction problems among adolescents in recent years. Besides the official reports mentioned in the introduction section of this study, many other scholars also focused their studies on Internet addiction among adolescents in China.

Cao and Su (2007) surveyed 2,620 Chinese high school students in Changsha and found that 2.4 % of the respondents were addicted to the Internet. Those adolescents who were addicted to the Internet showed significantly lower time-management skills than the normal group in the sense of control over time, value of time, and time efficacy. Internet-addicted adolescents also showed significantly more emotional symptoms, conduct problems, hyperactivity, and less pro-social behaviors than the normal group.

In Guangzhou, among 1,560 high school students, 10.2 % were found moderately addicted to the Internet, 0.6 % were severely addicted, and boys were more likely to be addicted than girls. The study also found drinking behavior, family dissatisfaction, and experience of recent stressful events were all associated with Internet addiction among adolescents (Lam et al. 2009).

In another big Chinese city, Wuhan, Gong, and his colleagues (2009) found among 3,018 adolescents, 5 % were addicted to the Internet, and the adolescents' use of drugs and the intention to use drugs were significantly related to Internet addiction. Other studies also used Young's 8-item or 20-item scale to study adolescents' Internet addiction and found Internet addiction levels among adolescents ranging from 3.5 to 11.34 % (Geng et al. 2006; Li et al. 2006; Liu 2007).

Many studies have focused on adolescent Internet addiction in Greater China, including Hong Kong and Taiwan. As early as 2004, Chak and Leung (2004) surveyed among the net generation in Hong Kong, most of whom were adolescents. Results showed that 14.7 % of them were Internet addicts, and the shyer the person was, the more likely she or he was addicted to Internet. The study also indicated that adolescents who were addicted to the Internet made intense and frequent use of it, with more days per week and longer time each session, especially for online interpersonal communication via ICQ and chat room. A recent study among 719 Hong Kong adolescents found that 17.2 % were addicted to the Internet and that Internet addiction was significantly correlated with the adolescents' depression and insomnia (Cheung and Wong 2011).

Yang and Tung (2007) studied 1,708 Taiwan high school students and identified 13.8 % as Internet addicts. The results showed that on average, the Internet addicts spent almost twice as many hours online as the nonaddicts and that surfing with social and entertainment motivations were positively associated with Internet addiction. It is interesting that Internet-addicted adolescents perceived the Internet to have significantly more negative influences on daily routines than nonaddicts, such as school performance and teacher and parental relations. However, both Internet addicts and nonaddicts adolescents considered that Internet use could enhance their peer relations.

A survey conducted by Ko and his colleagues (2008) among 2,114 high school students in Taiwan showed that Internet addiction was associated with problematic alcohol use. Ko and his colleagues (2007) also did a longitudinal study in Taiwan on Internet addiction among 517 young adolescents from junior middle school over a 1-year follow-up. The results revealed that within 1 year, 7.5 % of the nonaddicts became addicts, while 49.5 % of the addicts went into remission. They found that

low self-esteem, low family function, and more online game playing predicted the Internet addiction, while low hostility and low interpersonal sensitivity predicted remission of Internet addiction.

In an in-depth interview among ten Taiwanese adolescents who were Internet addicts, Tsai and Lin (2003) found that almost all the adolescents exhibited most of the symptoms of Internet addiction, including compulsive use, tolerance, withdrawal, and related problems of school, health, family, finance, and time management. The respondents stated that they were addicted to the messages and activity on the Internet, but not by the Internet as a medium per se because the Internet helped them to relieve their depression. The adolescents interviewed self-declared that they were Internet addicts, but commented they did not know what to do about the problem.

Internet addiction is a problem not only for adolescents in China; it also presents headaches for parents and teachers all over the world. In an online survey in Italy, Young's Internet Addiction Test was administered to groups of people who differed in terms of gender, age, and occupation (Ferraro et al. 2007). Results revealed that adolescents were more at risk than adults for Internet addiction, "perceiving a compromised social and individual quality of their life that led them to make a compensatory usage of the Internet" (p. 174). Furthermore, nightly users were more at risk for developing an Internet addiction disorder because it diminished their quality of life and disabled their time control (Ferraro et al. 2007).

In Greece, Siomos and his colleagues (2008) surveyed 2,200 Greek adolescent students and showed that 8.2 % of them were addicted to the Internet, mainly male students who play online games and visit Internet cafés. In Iran, a study conducted in Iranian high schools revealed that, among 1,968 high school students, 977 students were Internet users: 37 were classified as Internet addicts, 304 as possible Internet addicts, and 636 as moderate users. Researchers found that Internet addicts were lonelier than moderate users and had lower self-esteem and poorer social skills (Ghassemzadeh et al. 2008).

Most of the above-mentioned research discussed Internet addiction as a general phenomenon. Griffiths (1998) proposed that Internet addiction could originate from one or more aspects of Internet use, including the process of typing, the medium of communication, and the lack of face-to-face contact, Internet contents, or online social activities. Other researchers also suggested that Internet addiction could further be categorized into online game addiction, cyber-sexual addiction, cyber-relationship addiction, online information addiction, and online shopping addiction and so on (Liang 2006; Tao et al. 2007). Although cyber-relationship addiction was mentioned, none of previous research has ever tested it empirically. To fill the gap, this study focuses on examining social media addiction.

2.4.3 Social Media Addiction

Social media such as IM, SNS, blogs, and microblogs are very popular these days. Adolescents spend a great deal of time on them, and some heavy users might be addicted.

Yuen and Lavin (2004) found that the length of time Internet dependents spent on IM was twice as much as that spent by nondependents, while Anderson (1999) found that daily use of synchronous communication Internet applications among Internet-dependent students was nearly 10 times as high as the use by nondependent students. Leung (2004) suggested that being emotionally open on the net and heavy use of ICQ were the most influential factors in predicting problematic use of the Internet among the net generation. This study reinforces research by Wellman (1996) who found that Internet dependents spent most of their time in the synchronous communication environment, engaging in interactive activities including ICQ for pleasure seeking or escape. Research by a nonprofit youth organization, Breakthrough (2000), showed that 5 % of the respondents who were secondary school students in Hong Kong were addicted to ICQ.

A study by Huang and Leung (2009) on IM addiction among adolescents in China found that 9.7 % of respondents were addicts. They found four addiction symptoms:

1. Preoccupation with IM, that is, acting annoyed when interrupted during an online chat, feeling preoccupied by online chatting and fantasizing about chatting online when offline, feeling depressed and moody when unable to chat online, sacrificing sleep to chat online, and needing to increase IM time to achieve satisfaction.
2. Loss of relationships due to overuse of IM revealed that addicted adolescents hide the length of time they spend chatting online, try to cut down their IM use but failing, choose to spend more time chatting online than going out with friends, and jeopardize friendships or educational opportunities because of online chatting.
3. Loss of control, illustrated by adolescents being unable to control the time they spend on IM; addicts always spend more time on IM than they intended, neglect other responsibilities and obligations, resulting in complaints from family and friends.
4. Escape, indicated that adolescents use IM as an alternative way to escape from responsibilities; they chat online when they are in a bad mood, and they always anticipate chatting online again.

Results of their study also showed that shyness and alienation from family, peers, and school are significantly and positively associated with the level of IM addiction among Chinese adolescents (Huang and Leung 2009).

In a case study, Karaiskos and his colleagues (2010) stated that a 24-year-old woman was referred to a clinic due to excessive use of SNS, which severely interfered with her daily life. She had been spending approximately 5 h per day checking her Facebook webpage and already accumulated over 400 web friends in the 8 months since she began to use Facebook. She ceased several of her routine activities, remained home most of the day in order to check her Facebook, and lost her job as a waitress because she repeatedly left her post to visit the nearest Internet café. During her examination at the clinic, she took out her mobile phone and tried to establish an Internet connection to check her Facebook account. Karaiskos and his colleagues (2010)

concluded that Facebook addiction can be considered an “urge-driven disorder” with a strong compulsive component and suggested that Facebook addiction may be another distinct subcategory of Internet addiction.

In an article called “Blogs: My New Addiction,” Bates reported that writing and reading blogs can also qualify as new addiction (2003). A study in Greece applying Young’s addiction scale to 646 Greek college students showed that 7.9 % of them were addicted to the Internet, and that on average, those Internet-addicted students spent more time per week on blogs, chat rooms, and forums than nonaddicted students did (Frangos 2009).

USA Today organized an interesting activity in which it tried to put some of its readers with addiction to their virtual connections “on a digital diet.” One of the participants stated that after she downloaded the Twitter and Facebook applications to her BlackBerry, “thumbing became an obsession,” and she really needed a digital-free virtual vacation away from her virtual connections (Barker 2009). It seems that social media addiction really exists and is becoming pervasive worldwide.

According to the above literature review, the heavy users of social media tend to be gratified by them and are likely to be heavily immersed in social media for various online activities. To explore the latest situation of social media addiction in China, especially among urban Chinese adolescents, this study raised the following research questions and hypotheses:

RQ₃: To what degree are adolescents in urban China addicted to social media, and who are the social media addicts?

RQ₄: What symptoms of social media addiction can be identified among adolescents in urban China?

H_{2.1}: The more the adolescents in urban China use social media, the more likely they will be addicted to social media.

H_{2.2}: The more the adolescents in urban China find social media gratifying, the more likely they will be addicted to social media.

2.4.4 Parents’ Role in Adolescents’ Internet Addiction

Parents play an important role in dealing with the problems of Internet addiction among adolescents. In the China Youth Internet Addiction Report (CYIA 2010), the results showed that a higher percentage of adolescent Internet addicts than nonaddicts came from a less-educated or single-parent family or were not living with their parents. Internet-addicted adolescents tended to have less communication with their parents and enjoy less family harmony. It is worthy to note that Internet-addicted adolescents tended to come from families that imposed stricter discipline on them. The researchers explained that adolescents from these families might see the Internet as a haven to relieve pressure and escape from strict parental supervision, thus they could easily become addicts (CYIA 2010).

Some other studies also revealed that an authoritarian parenting style easily triggered rebellious behaviors and could result in counteraction (Tao et al. 2007; Zhao 2010). The study by the Addiction Medicine Center, General Hospital of Beijing Military Region showed that Internet-addicted adolescents consistently rated parental rearing behaviors as being over-intrusive, punitive, and lacking in responsiveness, suggesting that parenting and family functionality are important factors affecting adolescents' Internet addiction (Huang et al. 2010).

Huang and his colleagues (2009) found that lack of love from the family was associated significantly with Internet addiction. In another survey among 3,662 adolescents in Taiwan, results indicated that higher parent-adolescent conflict, habitual alcohol use by siblings, a perceived positive parental attitude toward adolescent substance use, and lower family function constructed a predictive model for adolescents' Internet addiction (Yen et al. 2007).

In contrast, participative and supportive parental monitoring can substantially decrease the probability of adolescents' becoming addicted to the Internet (Lin et al. 2009). Liu and Kuo (2007) also revealed from a group of Taiwanese students that healthy parent-child relationships and interpersonal relationships correlated negatively with Internet addiction.

Suggested by the above literature, it is hypothesized that:

H_{2.3}: The more strictly parents control the adolescents' online behavior, the more likely the adolescents will be addicted to social media.

2.5 Sociopsychological Traits

In previous addiction research, some studies suggested that it is the substance itself that causes addiction (Haddock and Beto 1988), some studies pointed out that certain genetic predispositions or brain differences might lead to addiction (Schuckit 1987), and some scholars believed that certain social and psychological traits might be related to addiction (Haddock and Beto 1988). This study discusses social media addiction from the standpoint of the effects of adolescents' sociopsychological traits.

2.5.1 Need for Affiliation

The need for affiliation is "the disposition to seek out or retain emotional relationships with people" (Veroff et al. 1984). The term describes an individual's desire to seek and maintain interpersonal relationships (Murray 1938). Seeking social dependency and belonging are common human behaviors (Bell and Daly 1984). The need for affiliation is the basis for human interaction; it is characterized by a strong tendency to seek connection and approval (Boyatzis 1973).

In this sense, Murray (1938) defined the need for affiliation as a tendency to receive social gratification from harmonious relationships and from a sense of communication with others. Since people exert large amounts of energy trying to obtain appreciation and affection from others (Bell and Daly 1984), the need for affiliation is a very important social motivation for human interaction. It can inspire more positive social interaction and the reciprocity of social relationships (Gable 2006).

People with a strong need for affiliation are more emotionally involved in relationships (Baron and Byrne 2003), and they show more concern in their thoughts and actions for achieving warm, close relationships with others (McClelland 1976). In the past, people with a strong need for affiliation wrote more letters (Lansing and Heyns 1959). In the Internet era, people, especially those with social limitations such as shyness and social anxiety, tend to be interested in using online communication to satisfy their need for affiliation (McKenna et al. 2002). CMC users with long-term interactions “have a greater affiliation need, seek and exchange more personal information, and evaluate each other more positively than those emerging from short-term interactions” (Walther et al. 2001, p. 112).

In online interpersonal interactions, the need for affiliation leads individual to establish and maintain self-image and to participate in various online activities, such as online chatting, online dating, and self-presentation (Gibbs et al. 2006). Research revealed that the greater an adolescent’s need for affiliation, the more often they considered Internet communication to be deeper than face-to-face communication and the more interpersonal communication gratifications they would obtain from online communication (Peter and Valkenburg 2006).

Social media have a high potential to satisfy adolescents’ need for affiliation. Chung and Nam (2007) suggested that the need for affiliation is an important variable for explaining why young people use IM because the frequency and the depth of a person’s contacts with others depend on the degree to which he or she desires to maintain a positive and affective relationship with others. Chung and Nam (2007) also found in their research that IM users have significantly stronger need for affiliation than nonusers. Moreover, receiving friends’ comments on personal blogs or microblogs indicate their care and attention, which may gladden and comfort those who have a strong need for affiliation.

In SNS, friends link to each other, write on each other’s wall, and share many kinds of information. These makes adolescents feel like living in a close community and can satisfy their need for affiliation. Prior research also revealed that the need for affiliation is the main predictor for the intensity of SNS use (Zhou 2009). Social media can be ideal places for individuals to satisfy their need for affiliation and attract them to overly indulge in online interpersonal communication. Based on the literature, this study is designed to investigate the relationships among the need for affiliation, the gratifications, the level of using social media, and the social media addiction among adolescents.

Thus, it is hypothesized:

H_{3.1}: The stronger the need for affiliation of adolescents in urban China, the more they will find social media gratifying.

H_{3,2}: The stronger the need for affiliation of adolescents in urban China, the more they will use social media.

H_{3,3}: The stronger the need for affiliation of adolescents in urban China, the more likely they will be addicted to social media.

2.5.2 Impression Management

Goffman (1959) was among the first to acknowledge that individuals need to present themselves to others as an acceptable person. He described how the self-as-performer has a basic motivational core and how people can be strategic in managing the impression they give. Individuals wear masks, play roles, and present themselves in the ways they see themselves or in the ways they desire to be seen by others (Goffman 1959). They engage in complex intra-self negotiations in order to project a desired impression and maintain it through consistently performing coherent and complementary behaviors (Schlenker 1980; Schneider 1981).

Gilmore and his colleagues defined impression management as “conscious or unconscious attempts to influence images during interaction” (Gilmore et al. 1999, p. 322). Individuals manage their impressions when they wish to present a favorable image of themselves to others (Bolino et al. 2008). Thus, the concept of impression management is based on the assumption that individuals have an inherent need to be accepted and included and therefore act accordingly (Leary 1996). Self-presentation serves the goal of impression management (Goffman 1959). Therefore these two concepts are inseparable and interchangeable (Tedeschi and Riess 1981).

Jones and Pittman (1982) proposed that individuals typically use five impression management tactics: self-promotion, ingratiation, supplication, intimidation, and exemplification (Jones and Pittman 1982). The opportunity to manage impressions has been advanced by new communication technologies (Walther 1993). In the Internet era, people can make and remake themselves, choosing the details of their online impression (Mnookin 1996). Adolescents now can manage the impression they make through social media in many ways. These impression management opportunities come with the visual anonymity of the social media, providing users much greater degrees of freedom (Joinson 2003). People can manipulate various characteristics online to present themselves as more humorous, more friendly, or more likable than in daily life (Chester 2004). Dominick (1999) found that the five impression management tactics proposed by Jones and Pittman (1982) in offline communication extended to the online setting of personal home pages.

One feature that distinguishes online impression management from impression management in daily life lies in the full control users have over their published information, allowing the self-presentation to be more strategic (Kramer and Winter 2008). Online impression management can be based on longer and more systematic considerations than in a lively self-presentation (Leary 1996).

Thus, users can highlight certain aspects of themselves (Marwick 2005) or think about which photos convey the best images of themselves (Ellison et al. 2006). Studies showed that people tend to exaggerate and are not always honest when they present themselves online. For example, “fakesters” publish fake profile information in SNS and pretend to be more interesting and successful (Boyd 2004). Some individuals just switch between their “real” self and their “fake” self on SNS (Jung et al. 2007).

Thus, users actively participate in SNS to manage their impression (Kramer and Winter 2008). Indeed, social media provide an ideal place for impression management. In IM, users can manage their impression through chatting with others, trying to be more humorous, more interesting, or more knowledgeable. They can also provide an explanation to friends through IM if they did something wrong or deliver an apology if they hurt others. In SNS, users can manage their impression by creating personal profiles, uploading photos, writing on others’ wall, or commenting on others’ files. In blogs and microblogs, users can manage their impression through writing diaries, sharing their personal lives everywhere, or showing their care and friendliness to friends by commenting on others’ blogs or microblogs.

Similar to Jones and Pittman (1982), Jung et al. (2007) discussed four impression management tactics in blogs: (1) demonstration of competence revealing that the bloggers showed their abilities, performance, and qualifications indirectly; (2) supplication indicating that the bloggers deprecated themselves indirectly and showed weakness to others; (3) exemplification showing that the bloggers tend to be self-disciplined and devoted to others; and (4) ingratiation demonstrating that the bloggers showed humor and familiarity in the blogs. Rosenberg (2009) also studied the management of online impressions and identified four self-presentation tactics used in Facebook: manipulation, damage control, self-promotion, and role model.

Many other features might also contribute to online impression management in social media. For example, more friends presented on one’s profile leads to a positive evaluation; popularity and pleasantness were greater when profile owners had a larger number of linked friends (Kleck et al. 2007).

It is assumed that adolescents who excel at impression management will use social media more often for self-presentation and find social media more gratifying and efficient than face-to-face communications. If they are dedicated to managing their impression through social media instead of socializing with friends face to face in daily life, they are likely to be addicted to social media. Accordingly, the following research question and hypotheses are proposed:

RQ₅: What impression management tactics are used by urban Chinese adolescents for self-presentation in social media?

H_{4.1}: Adolescents in urban China who are better at impression management tactics tend to find social media more gratifying.

H_{4.2}: Adolescents in urban China who are better at impression management tactics tend to use social media more.

H_{4.3}: Adolescents in urban China who are better at impression management tactics are more likely to be addicted to social media.

2.5.3 *Narcissism*

Narcissism is a term derived the Greek myth about a handsome young man who falls in love with his own reflection in the water. In its extreme form, narcissism is a personality disorder that involves “grandiose views of self, an inflated sense of entitlement, and exploitative attitudes toward others” (American Psychiatric Association 1994). Most current research studied normal narcissism, which is a trait varying among people in the general population (Morf and Rhodewalt 2001).

Twenge and Campbell (2009) defined narcissism as excessive vanity and a sense of entitlement. People who show such qualities are more likely to lack empathy for others, behave aggressively when offended, and ignore the feelings of others. Miller (1981) proposed both core narcissism and narcissistic defenses. Core narcissism is the experience and expression of a very positive self-esteem, disproportionate to the individual’s level of ability and achievement. This element of narcissism manifests as feelings of entitlement, grandiosity, and exhibitionism. In contrast, the narcissistic defenses appear to maintain the individual’s level of self-esteem against threat (Miller 1985). However, narcissism should not be confused with self-esteem (Brown and Zeigler-Hill 2004).

Developmental psychology suggested that the grandiose and inflated self-views that characterize narcissism are part of normative self-development in young children. Young children typically are unable to differentiate their actual self-views from their ideal self-views (Harter 1999, 2006). Therefore, their self-views are unrealistically positive (Marsh et al. 1998). After children are about 7 or 8 years old, they start to base their self-views on social comparisons, making their self-views become more realistic. Thus, in growing children, self-views develop coexisting positive and negative attributes (Harter 1999, 2006).

Narcissism may emerge in response to either lack of parental attention and guidance (Kernberg 1975) or excessive parental admiration (Millon 1981). Narcissism increased significantly from age 14 to 18, followed by a slight but nonsignificant decline from ages 18 to 23 (Carlson and Gjerde 2009). Pinsky and Young (2009) suggested that a celebrity-obsessed culture is causing more narcissism in America.

Narcissism is reflected in SNS personal profiles or web pages, with more self-promoting contents (Correa et al. 2010), more frequent profile pictures and status updating, and choosing more attractive photos of themselves to affirm their inflated beliefs (Buffardi and Campbell 2008). Such narcissism can largely predict the intensity of SNS use (Correa et al. 2010). Narcissists are gratified largely by the exhibitionistic nature of SNS (Bibby 2008). If those narcissists enjoy the exhibitionistic nature of social media a great deal and overly indulge in self-presentation through social media, they will be most likely become social media addicts.

LaPorta (2009) discussed the unexpected consequences of heavy social media use such as MySpace, Facebook, YouTube, and Twitter, pointing out that heavy social media use would eliminate the real relationships and social contacts between people, prolong the normal narcissism of adolescence, and create isolation and alienation.

In a survey among 1,068 college students in 2009, Twenge and Campbell (2009) found that two-thirds of the students said that their current generation was more self-promoting, narcissistic, overconfident, and attention seeking than other generations. The authors also pointed out that such narcissistic traits revealed a very positive and inflated sense of self, which is illustrated by a preoccupation with MySpace, Facebook, and YouTube (Twenge and Campbell 2009).

The literature described above implies relationships among narcissism, gratifications, level of social media use, and social media addiction. Thus, it is hypothesized:

H_{5.1}: Adolescents in urban China who are more narcissistic tend to find social media more gratifying.

H_{5.2}: Adolescents in urban China who are more narcissistic tend to use social media more.

H_{5.3}: Adolescents in urban China who are more narcissistic are more likely to be addicted to social media.

2.5.4 Leisure Boredom

Boredom is regarded as a psychological or physiological condition (Mansikka 2009). It is a negative state of mind, reflecting an inner conflict between expected optimal and perceived actual experiences (Lin et al. 2009).

Having an abundance of time might lead to boredom in leisure time (Phillips 1993). Iso-Ahola and Weissinger (1990) looked specifically at the experience of boredom during leisure and suggested that a significant proportion of adolescents experience leisure time as unsatisfying mainly due to boredom. They defined leisure boredom as “the subjective perception that available leisure experiences are not sufficient to instrumentally satisfy needs for optimal arousal” (Iso-Ahola and Weissinger 1990, p. 4). Leisure boredom is likely a consequence of conflicting perceptions of having too much time available with too little to do (Hill and Perkins 1985).

Previous research showed that individuals who experience high levels of leisure boredom may engage in deviant activities such as substance abuse (Iso-Ahola and Crowley 1991). Youths who feel bored are more likely to engage in undesirable health behaviors such as smoking cigarettes and abusing alcohol (Caldwell and Smith 1995). Mattick and Baillie (1992) found that adolescent smokers cite relaxation and relief from boredom as reasons for smoking.

Ziervogel and his colleagues (1998) suggested that one of the most significant motives for the boys’ use of alcohol was that it alleviated boredom. They pointed out that boredom arose mainly from a lack of participation in other activities. Thus, some individuals need to find an enjoyable, time-consuming activity to indulge in (Ziervogel et al. 1998). Adolescents diagnosed with substance abuse or addiction according to the criteria of DSM-IV (American Psychiatric Association 1994) were more likely to experience leisure boredom than non-substance abusers (Iso-Ahola and Crowley 1991).

Avoiding boredom is a major motivation for Internet use (Lin and Yu 2008). Increasingly, social media allows adolescents, who otherwise have nothing to do, to engage in various activities online such as sharing photos or files, updating blogs, reading others' blogs or files, text chatting, or video chatting with friends. These activities probably occur most often during leisure time and in leisure settings.

A survey among Taiwanese adolescents indicated that leisure boredom largely increases the probability of Internet addiction, but family and outdoor activities, as well as participative and supportive parental monitoring, would decrease the probability of Internet addiction behavior (Lin et al. 2009). Leung (2008) revealed that the higher the level of leisure boredom that an individual experiences, the more likely he or she would be addicted to using a mobile phone. Furthermore, leisure boredom is significantly correlated with an inability to control the craving to use a mobile phone, with the accompanying loss of productivity (Leung 2008).

The literature described above suggested that if leisure time is boring and could not satisfy adolescents' expectations, they might consider the Internet as an alternative to relieve their boredom (Lin et al. 2009) and might thereby lead to addiction. Therefore, the following hypotheses are formulated:

H_{6.1}: Adolescents in urban China who are more leisurely bored tend to find social media more gratifying.

H_{6.2}: Adolescents in urban China who are more leisurely bored tend to use social media more.

H_{6.3}: Adolescents in urban China who are more leisurely bored are more likely to be addicted to social media.

Integrating and basing on the literature reviewed above, this study aims at identifying significant predictors for social media gratifications, level of social media use, and social media addiction. Therefore, the following research questions are raised:

RQ₆: How can demographics and sociopsychological traits of adolescents (i.e., their need for affiliation, impression management, narcissism, and leisure boredom) predict the gratifications that adolescents in urban China obtain from social media?

RQ₇: How can demographics, parental control, sociopsychological traits of adolescents, and social media gratifications predict the level of social media use among adolescents in urban China?

RQ₈: How can demographics, parental control, sociopsychological traits, gratifications, and the level of social media use discriminate social media addicts and nonaddicts among adolescents in urban China?

RQ₉: How can demographics, parental control, sociopsychological traits, gratifications, and the level of social media use predict social media addiction and the corresponding addiction symptoms among adolescents in urban China?

2.6 Impact

2.6.1 Academic Performance and Internet/Social Media Use

Researchers have long been interested in determining whether academic performance and the use of the Internet are interrelated. Some studies have examined the effects of Internet-based learning on the academic results of students.

A 16-month field study conducted by Jackson and his colleagues (2006) discovered that children from low-income families who used the Internet more had higher scores on reading achievement tests and obtained higher overall grades than children from low-income families who did not use the Internet very much. A follow-up study based on these findings concluded that academic performance can predict subsequent Internet activities and that Internet activities can predict subsequent academic performance as well (Jackson et al. 2007). In contrast, Barber (1997) reported that 86 % of teachers responding to a survey believed that Internet usage by children does not improve performance, probably because the information that the Internet contains is highly disorganized and unrelated to school curricula.

Previous research has also studied the relationship between problematic Internet use or Internet dependency and academic performance. Scherer and Bost (1997) surveyed 531 students about their Internet use, using a checklist of 10 clinical symptoms to parallel the symptoms of substance abuse and dependency. Results of this survey indicated that 13 % of the participants reported that Internet use interfered with their academic work, professional performance, or social lives. An online survey (Brenner 1997) and two campus-wide surveys conducted at the University of Texas at Austin (Scherer 1997) and Bryant College (Morahan-Martin 1997), respectively, further documented that pathological Internet use is problematic for academic performance. Scherer concluded that “excessive Internet use is problematic when it results in impaired functioning such as compromised grades or failure to fulfill responsibilities” (Scherer 1997, p. 565).

The results of a study by Mythily et al. (2008) among 2,735 adolescents in Singapore showed that excessive Internet use was associated with no rules relating to Internet use at home, fewer close friends, feelings of sadness or depression, and perceived poorer grades and school work. One study among South Korean students by Kim and his colleagues (2010) found that excessive online game playing was related to impaired academic performance. In another study among Greek college students, results also revealed that there is a significant negative relationship between Internet addiction and average marks achieved during the previous semester (Frangos 2009).

Many studies about Internet addiction and academic performance of students have been conducted in China. A recent study by Song and his colleagues (2010) among first-grade junior students in China found that the proportions of respondents demonstrating an Internet addiction tendency and the Internet addiction disorder were 10.87 % and 7.71 %, respectively. Results suggested that adolescents who suffered from poor academic performance were more likely to be

addicted to Internet. Huang and his colleagues (2009) surveyed 3,496 college students from eight different universities in Wuhan, China, and found that 9.58 % were addicted to the Internet. Poor academic achievement was significantly associated with Internet addiction among the respondents. Yang (2006) discussed the impact of the Internet on moral and social aspects of youths in China and mentioned that the Internet may lead to compulsively gathering useless information and gaming for hours, adversely affecting the students' academic performance.

Similar studies were also conducted in Hong Kong. Chang and Law (2008) surveyed Hong Kong university undergraduates using Young's Internet Addiction Test and extracted three addiction dimensions: "withdrawal and social problems", "time management and performance", and "reality substitute" (p. 2609). The results also showed that academic performance was negatively correlated with the Internet addiction scores.

Researchers also tried to evaluate the relationship between social media use and academic performance. Kubey et al. (2001) revealed that heavy leisure Internet use is highly correlated with impaired academic performance, particularly when the use is with synchronous communication applications like chat rooms and Multiple User Dungeons (MUDs). The researchers proposed that the unique social qualities of such applications represent a most significant utility for otherwise lonely individuals able to stay with friends at any time. An unfortunate result is that many adolescents stay up late at night and feel tired the next day, which in turn affects their academic performances (Kubey et al. 2001).

Another study of ICQ (a specific medium of IM) was conducted in Hong Kong to examine its effects on adolescents (Cheuk and Chan 2007). The study reported that 38 % of the respondents indicated that using ICQ affected their academic performance. However, whether such effects were positive and negative could not be understood through the self-report questionnaires. Cheuk and Chan (2007) remained optimistic by concluding that if the participants used ICQ for academic issues such as discussing homework, the effect would then be positive.

Recently, Junco and his colleagues (2011) confirmed this optimistic finding by conducting an interesting semester-long experiment among college students. They separated 125 students in one course into an experimental group of 70 and a control group of 55. The experimental group used Twitter for their academic and cocurricular discussions. At the end of the semester, the authors found that the experimental group had a significantly greater increase in class engagement than the control group, as well as higher average academic scores. The authors also conducted content analysis of the Twitter messages and found that both the teacher and the students were more engaged in the learning process using Twitter than in the traditional classroom (Junco et al. 2011). This is experimental evidence that when used properly and efficiently, social media can facilitate student engagement in the learning process, thus improving academic performance.

Matthews and Schrum (2003) also confirmed this optimistic statement by studying high-speed Internet use in a college residence. They found that a positive perception of Internet use for academic performance significantly correlated with an

internal locus of control for academic efforts. However, they also reported that time spent on IM was negatively associated with the ability to avoid Internet distractions and concentrate on academic tasks (Matthews and Schrum 2003).

Similarly, a study conducted by Huang and Leung (2009) on IM addiction among adolescents in China also confirmed empirically that both the level of IM use and level of IM addiction have significant and positive bivariate correlations with a decrement in academic performance. When examining the relative influence of various predictors on academic performance decrement, stepwise regression showed that four IM addiction symptoms (preoccupation with IM, loss of control, loss of relationship due to overuse, and escape) were the strongest predictors. They thus suggested that adolescents' IM use indeed affected their academic performance and that parents and teachers should pay close attention and provide proper guidance and control of adolescents' IM use (Huang and Leung 2009).

Based on the review of the above literature, the following hypotheses and research question are posed:

H_{7.1}: The more the adolescents in urban China use social media, the more likely their academic performance will be affected negatively.

H_{7.2}: The more severely the adolescents in urban China are addicted to social media, the more likely their academic performance will be affected negatively.

RQ₁₀: Controlling for demographics, parental control, and sociopsychological traits, how can gratifications, the level of social media use, and social media addiction predict the academic performance of adolescents in urban China?

2.6.2 Social Capital

The term social capital has been widely used to refer to the accumulated resources and benefits we receive from our social relationships (Bourdieu 2001; Lin 2001; Putnam 2000). Researchers frequently debate whether social capital is an individual or a collective phenomenon (Lin 2001). Putnam (2000) tended to view social capital as a community-level quality, while Bourdieu (2001), although conceptualizing social capital as a quality of a collective, suggested that individuals possess varying quantities of it by virtue of being qualified members of the collective. The focus of this study is on individual-level social capital.

According to Lin (2001), the instrumental notion of individual investment is central to social capital. The central premise is that individuals who pursue investment in social relations expect returns from that investment, that is, individuals engage in interactions and social networking in order to produce profits. Putnam (2000) distinguished two forms of social capital: bridging social capital and bonding social capital. Bridging social capital arises from weak ties, which are loose connections between individuals who may provide useful information to each other, but are typically lack of emotional support. Bonding social capital refers to the benefits emanating from strong or intimate ties with family and close friends. It is linked to social

and emotional support as well as to substantive tangible support such as financial loans (Putnam 2000).

Ellison and his colleagues (2010) found three distinct types of findings about Internet use and social capital in the literature: (1) Internet use can increase social capital; (2) Internet use can diminish social capital; and (3) Internet use reinforces offline interactions and can supplement the development of social capital.

Past studies have investigated the relationship between social media usage and social capital. Results showed that greater use of SNS is associated with greater perceived amounts of bridging and bonding social capital (Ellison et al. 2007, 2009; Steinfield et al. 2008, 2009). In their study on the workplace, Steinfield et al. (2009), after controlling for a range of organizational demographic variables such as management level and experience in the company, found that SNS usage still associated with both dimensions of social capital. In a longitudinal study, results showed that the intensity of Facebook use in year one strongly predicted bridging social capital outcomes in year two (Steinfield et al. 2008).

Ellison et al. (2007) tried to explore another dimension of social capital, “maintained social capital,” which assesses one’s ability to maintain connection with members of a previously inhabited community. Results showed that after controlling for a number of factors that might explain differences in respondents’ social capital, such as year in school and membership in a fraternity or sorority, the intensity of Facebook use was strongly correlated with bridging, bonding, and maintained social capital, with the strongest relationship being with bridging social capital (Ellison et al. 2007). When they explored the ways in which Facebook use contributed to social capital, Ellison et al. (2009) found that having greater numbers of “actual friends” and using SNS to interact with people known offline were predictive of both bridging and bonding social capital.

However, Valenzuela and her colleagues (2009) found that, although there were positive relationships between the intensity of Facebook use and college students’ social trust, life satisfaction, civic engagement, and political participation, the associations between Facebook use and social capital was small.

Self-disclosure significantly and directly affects the bonding and bridging social capital of bloggers, which in turn enhances the perception of bloggers’ subjective well-being (Ko and Kuo 2009). Bloggers share their inner feelings or moods with others through writing blogs and thus may gain social support and improve their social integration. Social capital built through blogging may improve bloggers’ satisfaction with their interpersonal communication, social network, and overall quality of life (Ko and Kuo 2009).

Cohen (2007) studied the strategy of the candidate in a 2006 senate campaign to build social capital through online communities and proposed four main characteristics of the winner’s digital campaign, which helped him to earn substantial social capital from his blog supporters. The four characteristics were “valuing a web presence, embracing interactivity, empowering the liberal blogosphere, and maintaining relations with the blogosphere in the post-election era” (Cohen 2007, p. 2).

Kerr (2009) suggested that social media, such as blogs and wikis, not only increase social capital for existing communities but also generate new forms of

engagement and connectivity across society. Best and Krueger (2006) also found that, through IM, chat room, and online discussion groups, the online interaction people have with those they meet only online also increase their social capital, even though they do not know each other offline.

In accord with most previous studies, the social capital discussed in this study refers to overall social capital, both online and offline.

Grounded in the above literature, the following hypothesis is proposed:

H_{8.1}: The more the adolescents in urban China use social media, the more social capital they will have.

Although the above-mentioned studies supported the proposition that social media could increase adolescents’ social capital, some research revealed that excessive online communication might decrease the user’s social capital. Li and his colleagues (2009) found that, although the Internet could extend the space for adolescents’ interpersonal communication, their excessive online communication could make adolescents alienated, isolated, and dissocialized, thus decreasing their social capital and even creating a pathological interpersonal mentality. Some researchers agreed with them and demonstrated that virtual online communication might attract adolescents to over indulge to escape from reality and lessen offline interpersonal communication with others. This might cause interpersonal communication disturbances in the adolescents, such as alienation, social phobia, or social anxiety, which could significantly impair their social capital (Wang and Yu 2006; Zhang and Hu 2010).

Thus, following hypothesis and research question are posed:

H_{8.2}: The more severely the adolescents in urban China are addicted to social media, the more likely their social capital will be decreased.

RQ₁₁: Controlling for demographics and sociopsychological traits, how can gratifications, the level of social media use, and social media addiction predict urban Chinese adolescents’ social capital?

The conceptual linkages of all variables are shown in Fig. 2.1.

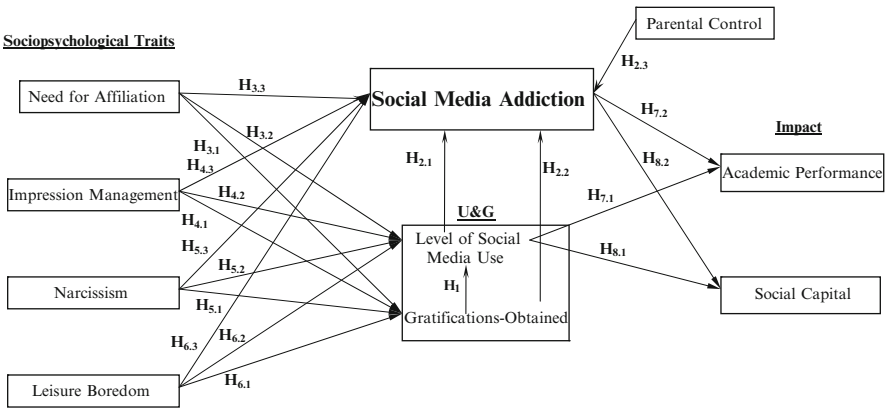


Fig. 2.1 Conceptual linkages

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