

THE INFLUENCES OF DUAL SOCIAL NETWORK SITE USE AND SOCIAL
CAPITAL DEVELOPMENT ON SOCIOCULTURAL ADAPTATION

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Use of social network sites (SNSs) has been shown to lead to social capital, connections people can rely on for support. Most previous research has focused on the case in which people participate in only one SNS (usually Facebook). However, for some people, legal, linguistic, cultural and other barriers make it impossible to interact with all friends and acquaintances on a single site. For example, Chinese international students in the U.S. often use Facebook to connect with American peers but Renren their friends back home. This dissertation explores the effects of this dual SNS use on social capital development. Specifically, I address four research questions: a) How do the awareness of relational benefits and motivation to have casual and close friends affect relational maintenance and communication with different sub-networks on Facebook/Renren? b) How do relational maintenance and communication with different networks lead to psychological investment in Facebook/Renren? c) What forms of social capital are developed on Facebook/Renren? d) How do forms of social capital on Facebook/Renren contribute to the participants' sociocultural adaptation in the U.S.? I conducted a survey of 287 Chinese international students in the U.S. and used structural equation modeling to analyze the relationships among key constructs. The results show that a) the awareness of relational benefits of *casual* friends significantly relates to relational maintenance and

communication with friends on Facebook/Renren but the motivations yield mixed results; b) relational maintenance and communication with different networks are significantly related to psychological investment in Facebook/Renren, but not communication with Americans; c) psychological investment significantly contributes to bonding and bridging social capital, but not bonding social capital on Facebook; d) bonding and bridging social capital significantly contribute to the participants' adaptation, but not bridging social capital on Facebook. This work contributes to theories of SNS use by showing that awareness and motivation are two important indicators to study in terms of social capital development and by providing evidence that Chinese users acquire different forms of social capital through networks on different SNSs. It also introduces a new scale for measuring bridging social capital scale that ties more closely to the literature.

BIOGRAPHICAL SKETCH

Chien Wen (Tina) Yuan was born in Tao-yuan, Taiwan. She attended National Taiwan Normal University as an English major in the Department of English Literature and Linguistics. Later on, she discovered her interest in communication, technology, and media while she was studying for her Master's degrees in the Institute of Journalism at National Taiwan University and the program of Communication and Education at Columbia University. Tina received a three-year Oversea Study Fellowship, which selected one person per research area per year, from the Ministry of Education, Taiwan for her graduate study in the U.S. Under the tutelage of Dr. Susan R. Fussell, Tina began to conduct research on multilingual communication and social media using both quantitative and qualitative research methods. Her main research interests lie in the intersections of communication, culture, and technology. Her goal is to inform the understanding of technology supported work in multilingual and intercultural contexts as well as how technology design can support such teamwork.

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CHAPTER ONE: INTRODUCTION AND MOTIVATION

Communication technologies have continued to evolve and support diverse types of interaction beyond the limitation of time and space (Shklovski, Kraut, & Cummings, 2008). Relationships can be formed, maintained, or extended through the mediation of communication technologies. Relationships that originate offline are less constrained today by physical boundaries and time differences; they can be maintained and extended with a variety of media such as instant messaging, Skype, or Facebook. Similarly, new relationships are formed online among people who have never seen each other in person before based on shared interests like playing online games or attending online discussion forums.

Social network sites (SNSs) have the potential to transcend the boundary between online and offline relationships (Ellison, Steinfield, & Lampe, 2007; Gibbs, Ellison, & Heino, 2006) and have become more and more common tools for managing social networks of friends and acquaintances (boyd & Ellison, 2007; Ellison et al., 2007). SNSs provide users with opportunities to maintain existing relationships with old friends regardless of geographical distance or temporal difference (Ellison et al., 2007; Joinson, 2008), keep up with acquaintances, or turn latent connections (friends of friends) into acquaintances (Ellison & boyd, 2013; Haythornthwaite, 2005). Instead of forging completely new relationships online, people's online networks tend to consist of people they have met in offline settings (Ellison, Steinfield, & Lampe, 2011; Lampe, Ellison, & Steinfield, 2006; Steinfield, DiMicco, Ellison, & Lampe, 2009).

Through using SNSs, people can obtain a variety of resources or “social capital”. Many scholars distinguish between bonding and bridging social capital. Bonding social capital is obtained from close personal friends and family, who can provide benefits such as emotional

support. Bridging social capital is obtained from a more diverse set of people who can provide things such as instrumental resources and information (Burt, 2001). Both types of social capital have valuable benefits. For example, greater bonding social capital is associated with enhanced trust and group identification (Coleman, 1988); greater bridging social capital is associated with more opportunities to gain new information and facilitates innovation (Rogers, 2010; Burt, 1997). Since SNSs can help transcend time and space for distant social connections and facilitate involvement in local community networks, they can make it easier to manage social relationships with friends from different aspects of life and allows people to obtain social capital derived from these social connections (boyd & Ellison, 2007).

The ability to maintain and develop social relationships both locally and at a distance may be especially valuable for people who are relocated to a new place, such college students (Ellison et al., 2007), corporate employees working abroad (Skeels & Grudin, 2009), or international students (Choi, Kim, Sung, & Sohn, 2011; J.-H. Lin, Peng, Kim, Kim, & LaRose, 2012). In addition to providing a mechanism for maintaining bridging and bonding ties with friends from home, SNSs can make it easier to access local social networks, build new relationships, and adapt to the new environment (J.-H. Lin et al., 2012; Steinfield, Ellison, & Lampe, 2008; Tufekci, 2008). Affordances of SNSs, such as socialization, association, and knowledge sharing, allow newcomers to familiarize themselves with the norms of the new environment (K.-H. Kim, Yun, & Yoon, 2009; Treem & Leonardi, 2012).

In many cases, people can use a single SNS to both maintain relationships with friends and acquaintances back home and build new relationships in a new location. With over 1.4 billion active users (Facebook, 2014) and a broad international user base (Hampton, Goulet, Rainie, & Purcell, 2011; Nierhoff, 2013), Facebook is one site that can often accommodate both

sets of needs. Indeed, many previous studies have looked at how users manage their social networks and acquire social capital on Facebook (e.g., Bryant & Marmo, 2012; Vitak, 2012; Burke et al., 2011; Barkhuus & Tashiro, 2010; Ellison et al., 2007; Lampe et al., 2006), or compared how different groups of users use *different* sites (e.g., Choi et al., 2011; J.-H. Lin et al., 2012; Shin, 2010). .

However for some groups of people, such as Chinese international students studying in the U.S., Facebook can only be used for friends and acquaintances outside of the People's Republic of China due to legal restrictions. At the same time, Renren, their home country SNS, is not easily accessible to non-Chinese speakers. Thus, Chinese international students need to use two separate SNSs if they want to both manage existing relationships with friends in China and build new relationships in the U.S. (C. W. Yuan, Setlock, Cosley, & Fussell, 2013).

Needing to maintain an active profile on multiple SNSs can create challenges for people relocating to a new area. Users need to put in twice the effort to keep their network up to date on their activities, or selectively choose to post news items in one or the other site. Social queries similarly need to be posted twice or selectively targeted to one site or the other. Users may also need to spend more time checking the news feed on both sites, and liking and commenting on others' posts. And because the two networks are entirely separated, there may be fewer opportunities to foster new connections. The added complexity of maintaining two separate active SNSs may have implications for people's ability to build bridging and bonding social capital, as more use of one site and social interaction engaged with networks on the site may lead to less on the other. Social capital on the less used site may not be fully developed or accessed (Lampe et al. 2013; Brandtzæg, 2012; Burke et al., 2011).

Scholars have started to explore dual site use by the same group of users and how their social capital development on both sites influences adaptation (Li & Chen, 2014; Park et al., 2014). Li and Chen (2014) investigated types of social capital on Renren and Facebook and found that bridging social capital is associated with using both sites. Park et al. (2014) looked at the influence of home-country site use and Facebook use on adaptation and found that Facebook use contributes to international students' adaptation. But the studies did not directly address the implications of different social networks on the sites as the sources of social capital and how different forms of social capital across the sites contribute to sociocultural adaptation.

While people from a number of countries (e.g., Iran, Syria, China) may need to use multiple SNS when studying or working in the U.S., I focus in this work on Chinese international students studying in the U.S. The size of Chinese international student population is the largest, accounting for 31%, of all international student population in the U.S. (IIE, 2014) and collaboration between China and the U.S. is prosperous in many organizations and the academia. To understand Chinese users' interaction with different networks across sites for social capital development and sociocultural adaptation in the U.S. contributes to building smooth and sustainable interaction and collaboration across national boundaries.

This dissertation addresses four main research questions regarding the relationships among activity on Facebook and Renren, identification with the site, social capital, and socio-cultural adjustment:

A) How do the awareness of relational benefits and motivation of having social relationships with casual and close friends affect relational maintenance and communication with different sub-networks on Facebook/Renren? An awareness of the relational benefits from different types of friends and a motivation to access them have been shown to be key driving

forces for developing and making use of social capital (Totterdell, Holman, & Hukin, 2008). I develop new measures for these constructs and examine how they affect people's behaviors on SNS.

B) How do relational maintenance and communication with different networks on SNSs lead to psychological investment in the site? Previous SNS studies often treated social networks on SNSs as a homogenous entity without distinguishing it into sub-categories (e.g., Choi et al., 2011; Ellison et al., 2007; J.-H. Lin et al., 2012). However, a more nuanced categorization of social networks may allow us to better understand how network composition informs the development of social capital (Y. C. Yuan & Gay, 2006). In this research, I distinguish between three components of Chinese international students' social networks: Chinese friends on Renren, Chinese friends on Facebook and American friends on Facebook. I examine how relational maintenance and communication behaviors with these different networks contribute to psychological investment on the SNSs.

C) What forms of social capital are developed through social relationships on Facebook/Renren? Previous studies have shown a positive relationship between site use and social capital (Ellison, Lampe, Steinfield, & Vitak, 2010; Steinfield et al., 2008), but this work generally does not distinguish different types of social capital (bridging, bonding) provided by different components of the network (e.g., friends from China, new acquaintances in the U.S.) on different SNS (e.g., Facebook vs. Renren). To address this issue, I include the distinction of networks and sites in the survey instrument

D) How do forms of social capital on Facebook/Renren contribute to the participants' sociocultural adaptation in the U.S.? Previous work suggests that both bridging and bonding social capital can be valuable for sociocultural adaptation. Bridging social capital can offer new

information for Chinese international students to function proficiently in the new place (e.g., (Y.Y. Kim, 2000), whereas bonding social capital can offer social support in the time of transition (e.g., Baumeister & Leary, 1995). By taking bridging and bonding social capital with different groups of people on different SNS into consideration, this dissertation aims to identify the contribution of each type of social capital on sociocultural adaptation.

To address the research questions, I conducted a survey of 287 Chinese international students in the U.S. and used structural equation modeling (SEM) to analyze the relationships among key constructs. The survey results show that a) the awareness of relational benefits of casual friends significantly relates to relational maintenance and communication with friends on both sites but the motivations of having Chinese close and casual friends in China and American close friends are associated with interaction with them on either Renren or Facebook; b) relational maintenance and communication with different networks are significantly related to psychological investment in the sites, with one exception, communication with American network on Facebook; c) psychological investment in the sites significantly contributes to both bonding and bridging social capital, with the exception that Facebook use was not associated with bonding social capital; d) both bonding and bridging social capital significantly contribute to the participants' adaptation, with the exception of bridging social capital on Facebook.

Contributions

This work contributes to theories of SNS use by showing that awareness and motivation are two important indicators to study in terms of social capital development and by providing evidence that Chinese users acquire different forms of social capital through networks on different SNSs. It also contributes to theories of SNS by demonstrating the importance of distinguishing between friendship types (casual/close), networks (American/Chinese), and sites

(Facebook/Renren) when examining the relationships of SNS use and social capital development. Finally, the work provides a refined operationalization of social capital that encompasses more of the key concepts surrounding bridging social capital than previous scales.

Structure of the Dissertation

The remainder of this dissertation is structured as follows: In Chapter 2, I present the overall theoretical model guiding the research, describe the motivation for each component of the model, and present my research questions and hypotheses. In Chapter 3, I present the survey study design. In Chapter 4, I present the structural equation modeling techniques used to analyze the data and the results from the SEM analysis. I conclude with a discussion of the findings and their theoretical implications in Chapter 5.

CHAPTER TWO: THEORETICAL BACKGROUND SOCIAL NETWORKS AND SOCIAL CAPITAL ON SOCIAL NETWORK SITES

In this chapter I first discuss the concept of social capital and how I will measure it in this study. I then present my theoretical model and associated hypotheses and the research questions.

Social Capital

Social capital is the sum of tangible and intangible resources derived from people's social connections in their network (Bourdieu, 1985). The underlying components of social capital are two-fold: the relationships people have with others in the network that allow them to access resources they wish to use and the actual resources requested/obtained. The relationships one holds are appropriable and convertible in the sense that people can use them to their own advantage, as the connotation of "capital" indicates that the investment of social relationships is made in exchange of future return in the form of access to novel information, mobilization for collective action, or tangible goods (Adler & Kwon, 2002). The phrase "social capital" is also used as an umbrella term that encompasses network structure, access to social capital, and individuals' motivations to acquire the resources (Adler & Kwon, 2002). Differences in social capital have been used to account for many dimensions of human behavior, including community trust and education issues (Coleman, 1988), organizational behaviors like job searching or career development (Granovetter, 1973; Podolny & Baron, 1997), and democracy and governance in civil society (Putnam, 2000).

As an expansive, all-inclusive concept, social capital elicits confusion theoretically and practically. It has been interpreted, appropriated, and operationalized differently among scholars in different fields (e.g., Adler & Kwon, 2002; Burt, 1997c; Coleman, 1988; Granovetter, 1973; N. Lin, 1999; Streeten, 2002). For example, scholars from sociology and economics highlight

the *micro* or *individual* level of social capital gain in terms of job opportunities and strategic position in the network (Burt, 2001; Ferlander, 2007; Granovetter, 1973). Scholars from political science or education take social capital at a *macro* or *collective* level that explores how a collective asset like social cohesion is formed through trust among network members (Coleman, 1988; Putnam, 2000). For the purpose of this dissertation, I focus on the micro level of social capital and the following sections are devoted to the discussion about the aspects that should be included for measuring perceived social capital on SNSs in order to derive a consistent match between the literature and the measurement of the concept for this dissertation.

Scholars generally distinguish between two types of social capital: bridging and bonding. This distinction is based on the network structure in which these two forms of sources are embedded. Bridging social capital is resources derived from loosely connected networks with non-redundant instrumental resources and information (Burt, 2001), whereas bonding social capital is obtained from closely knitted networks, which can provide benefits such as trust and emotional support (Putnam, 2000; Coleman, 1988).

Bridging social capital encompasses a number of dimensions. First, it provides access to *diverse and novel information* (Quan-Haase, Wellman, Witte, & Hampton, 2002; Gargiulo & Benassi, 2000; Burt, 1997a; 1997b), allowing people to expand their existing pool of resources and increasing coordination. Second, social connections to others of higher social and economic rank can provide *instrumental favor*, or access to tangible and intangible resources such as financial support, career advantages, or information exchange (Poldony & Baron, 1997). Third, connections to a *diverse and broader group of people* enables new opportunities and possibilities of innovation (Rogers, 2010). Fourth, *reciprocal small favors with a broader community* refers to a gesture of goodwill by offering small favor to people of a bigger community so that a need

comes up in the future can be fulfilled too (Williams, 2006; Putnam, 2000). Last, the dimension of *outward looking* indicates open-minded-ness, a sense of curiosity about differences through interacting with people outside the community (Williams, 2006; Putnam, 2000).

Bonding social capital also includes a number of dimensions. First, it can provide *emotional and social support* that helps people go through different situations (Coleman, 1998). Second, it can provide access to *scarce or limited resources* such as clearly shaped norms, expected reciprocity, and embedded trustworthiness (Coleman, 1988; Portes, 1998). Third, bonding social capital can provide an *ability to mobilize solidarity*, which is advantageous for people who need help (Putnam, 2000). Last, bonding social capital can provide *critical and instrumental help* that helps resolve ambiguity and transmit information, especially in critical moments (Levin & Cross, 2004; Burt, 2001).

In general, knowing with whom to connect, or having the right connection already in place, provides better access to both forms of social capital, be it potential access when a need arises in the future or actual access when there is an immediate need (Glanville & Bienenstock, 2009; Finsveen & van Oorschot, 2008). Glanville and Bienenstock (2009) posit that just like monetary investment, different forms of social capital are required in the social investment portfolio so that individuals can make use of appropriate capital as they see fit.

Theoretical Model

This current research examines how Chinese international students' SNS use and social activities on the SNSs influence their social capital development on the sites and overall sociocultural adaptation in the U.S. Figure 1 illustrates my proposed theoretical model. In this model, two antecedent factors (awareness of relational benefits of and motivations to build relationships with casual or close friends) influence relational and communication activities on

Facebook and Renren. These activities in turn are posited to influence psychological investment in each site. Social investment in the site is predicted to influence the development of bridging and bonding social capital, which in turn shape sociocultural adaptation. By investigating the relationships among these variables for both Facebook and Renren, the current study extends the existing literature by analyzing users' motivations and behavior across sites and the consequences of such use in terms of social capital and sociocultural adaptation.

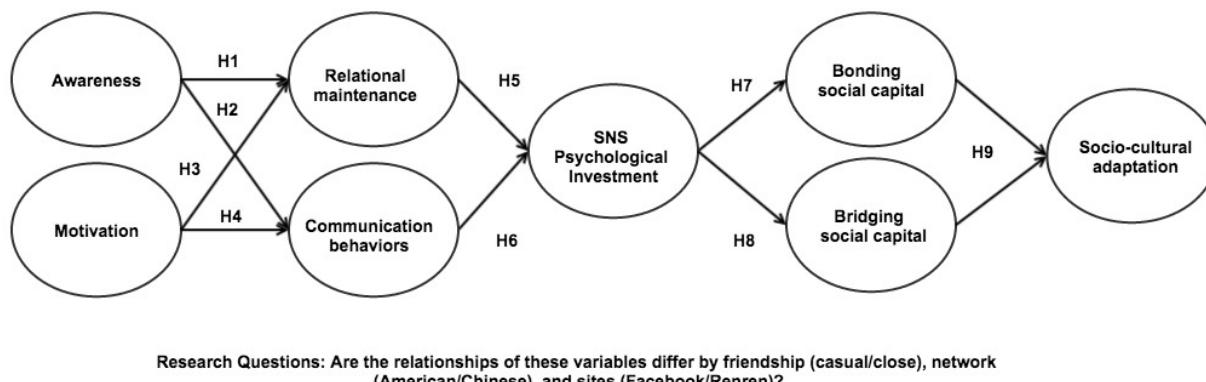


Figure 1. Theoretical model: Awareness of relational benefits and motivations to have social relationships with different types of friends are hypothesized to predict relational maintenance and communication behaviors. These in turn are hypothesized to predict psychological investment in the SNS. Psychological investment in a site is hypothesized to predict bonding and bridging social capital on that site. Both types of social capital are hypothesized to predict sociocultural adaptation in the U.S.

Although not depicted in Figure 1, the model also differentiates between different sub-networks on Facebook and Renren. In China, the social network components are predominantly Chinese, and the variables of relational maintenance and communication behaviors are directed

to this network of Chinese friends for Renren. In the U.S., Chinese international students' social network includes fellow Chinese, Americans, and other international students (Hendrickson et al., 2011), with ties to Americans and fellow Chinese international being especially important for sociocultural adaptation (Y.Y. Kim, 2000; Park et al., 2014; Trice, 2004). In the model, I distinguish between relational maintenance and communication behaviors directed toward fellow Chinese international students vs. American students on Facebook.

In the following paragraphs, I describe each component of the model in greater detail and outline specific hypotheses.

Antecedent Variables: Awareness and Motivation

Research shows that people's attitudes and strategies for communicating and maintaining relationships influence the extent to which they can benefit from social capital in their social networks (Bohn et al., 2014; Finsveen & van Oorschot, 2008; Totterdell et al., 2008). If people lack awareness of the benefits social connections can bring, they are less likely to want to develop social relationships and reap social capital benefits on SNS (Adler & Kwon, 2002; N. Lin, 1999; Price, Ritchie, & Eulau, 1991).

Awareness of relational benefits. Awareness of relational benefits is defined as the knowledge and an accurate assessment of the resources people can derive from their social connections (Fukuyama, 1995, 2001). Without an awareness of relational benefits, individuals may not engage in activities of relationship building and communication behaviors. Furthermore, different types of friends can bring distinct kinds of resources (e.g., N. Lin, 1999; Krackhardt, 1992; Granovetter, 1973). Having an awareness of how resources are distributed in a network allows individuals to adopt the right strategy to access these resources (Cross & Borgatti, 2004).

The knowledge of who knows what and where to obtain help can be critical determinant prior to SNS use for Chinese international students. For example, if an international student wants to find a trustworthy local dentist, it may be more efficient to post the question on Facebook rather than on Renren to solicit answers from American friends who know better about the local medical system and have first-hand experience. On the other hand, if it is a Chinese-specific topic, seeking information from Renren networks may be more efficient. A fit between the type of information or social support needed and the context to obtain it requires an awareness of the functions of the social connections (Cross & Borgatti, 2004), which drives social interaction and communication with friends in the specific context.

It is assumed that an awareness of relational benefits of friends works as an antecedent variable to relationship maintenance (H1) and communication behaviors (H2) on SNSs (see Figure 1).

H1: Chinese international students' awareness of relational benefits is positively associated with their relational maintenance activities on SNSs.

H2: Chinese international students' awareness of relational benefits is positively associated with their communication activities on SNSs.

Motivations to build social relationships. Another important but understudied antecedent variable is people's motivations to build social relationships with different types of friends (Totterdell et al., 2008). For example, international students who intend to stay in the U.S. after graduation are more motivated to develop social relationships with American friends and those who intend to pursue career after graduation value friends from the same country (C. W. Yuan et al., 2013). Motivation of social relationships building contributes to engagement in social interaction (Caughlin & Scott, 2009). While previous studies have discussed the

relationships among international students' SNS use, social capital development, and social adaptation (J. Kim & Lee, 2011; J.-H. Lin et al., 2012; Shin, 2010), the link between international students' relational goals and the correspondent interaction is less clear. Totterdell et al. (2008) point out that a scale that specifically highlights the propensity to form network ties might clarify individuals' motivations. Therefore, I included motivation as an antecedent factor in the model and posited that it would affect both relational maintenance (H3) and communication behaviors (H4; see Figure 1).

H3: Chinese international students' motivation of building relationships is positively associated with their relational maintenance activities on SNSs.

H4: Chinese international students' motivation of building relationships is positively associated with their communication activities on SNSs.

Distinction of friendship, network, and site. People's motivations to develop relationships can vary depending on the type of person (e.g., close vs. casual friends, fellow Chinese students vs. Americans). In order for Chinese international students to adapt to the U.S. environment culturally, socially, and academically, they need an array of different types of social capital embedded in their diverse networks from different types of friends. For example, relationships with local native-speaking people are useful for acquainting themselves with the new environment (Y. Y. Kim, 2000), but relationships with close friends are useful for emotional support. Thus, I ask the following research questions:

RQ1: How do the awareness of relational benefits and motivation of having social relationships differ by types of friendship: casual and close?

RQ2: How do the variables of awareness and motivation, distinguished by types of friends, affect relational maintenance and communication with different networks: American and Chinese networks on Facebook and Chinese networks on Renren?

Activities on Social Network Site: Relational Maintenance and Communication Behaviors

SNSs support a wide range of activities, only some of which contribute to the development of relationships and social capital (Valkenburg, Peter, & Schouten, 2006). People may use SNS for such purposes as seeking information, entertainment, or social interaction (Lampe, Wash, Velasquez, & Ozkaya, 2010; McCully, Lampe, Sarkar, Velasquez, & Sreevinasan, 2011). Previous studies indicate that spending more time on SNSs or having a large network can lead to accumulation of bridging social capital (Bohn, Buchta, Hornik, & Mair, 2014; N. B. Ellison et al., 2007). Two specific types of activities on SNSs, relational maintenance and communication behaviors, have been shown to be especially important to the development of psychological investment in SNSs -- the extent to which people are emotionally connected to the sites and how the sites are integrated into their daily activities (Ellison et al., 2007). Psychological investment in turn has been shown to be positively related to social capital development (Steinfield et al., 2008; Ellison et al. 2011; Vitak et al., 2011).

Relational maintenance. Relational maintenance is defined as the behaviors necessary to maintain relationships with others (Dindia & Canary, 1993). In CMC, reciprocal communication, self-presentation, and time spent on social interaction can contribute to relational maintenance (Treem & Leonardi, 2012; Walther, 2007; Walther & Parks, 2002). Activities on SNSs, such as public and visible information and communication as well as articulation of social networks, serve as perceivable features that help users learn more about others and fulfill social grooming needs for interpersonal relationship building (Donath, 2007;

Tufekci, 2008; Wilson et al., 2012). Since social capital is a resource derived from social relations, engaging in social activities with others are ways to invest in the relationships (Ellison & boyd, 2013; N. Lin, 1999). Ellison, Vitak, Gray, and Lampe (2014) argue that more visible interactions serve to signal users' social relationships, not just to the recipient alone, but also to the entire network, through highlighting the relationships and potentially providing others with information needed. Relational maintenance activities contribute to psychological investment in the sites, which in turn paves for social capital development (Vitak et al., 2011; Steinfield et al., 2008; Ellison et al., 2007).

H5: Chinese international students' relational maintenance with friends on SNS is positively related to psychological investment in the site.

Communication behaviors. Another factor that contributes to social relationship building is communication behaviors (Walther, 2007). SNSs support different kinds of activities, including public posting or private messaging, active communicating or passive information receiving. For example, actively seeking friends' information is a connection strategy to keep up with acquaintances on SNSs (Ellison et al., 2011; Vitak, Ellison, & Steinfield, 2011; Joinson, 2008). People can also exchange small talk with close friends via the messaging tool or expressing support by commenting on other's posts (Bohn et al., 2014; Burke & Kraut, 2014). Directed outbound communication, such as sending Facebook messages to one's friends, and directed inbound communication, such as friends commenting on one's posts, can maintain a sense of connection and thus foster both bonding and bridging social capital accumulation (Burke & Kraut, 2014; Burke et al., 2011). Even lightweight interactions like "Liking" others' posts can be a way to maintain the social relationships (Shklovski, Kraut, & Cummings, 2008). For the purpose of this study, I define communication behaviors as a

combination of passive consumption of friends' updates, directly interaction with friends in public and private ways, and receiving interaction from friends on SNSs. I hypothesize that engaging in these relational communication with friends can positively contribute to psychological investment in the sites.

H6: Chinese international students' communication behaviors with friends on SNS is positively related to psychological investment in the site.

Network distinction on sites. It is unclear from the existing literature how Chinese international students engage in relational maintenance and communication with different networks on different SNSs (i.e. American and Chinese networks on Facebook and Chinese network on Renren) and how these patterns of relational maintenance and communication behaviors account for psychological investment in a SNS and subsequent social capital development. Therefore I ask:

RQ3: How do relational maintenance and communication with American/Chinese networks on Facebook and Chinese networks on Renren lead to psychological investment in Facebook/Renren?

Bridging and Bonding Social Capital

Social capital can be conceived as the sum of tangible and intangible resources derived from people's social connections in their network (Bourdieu, 1985). Bridging social capital includes resources like access to novel information, control of key information, and a reach of diversity, whereas bonding social capital includes social support and trust (Adler & Kwon, 2002). Scholars have investigated the potential for SNSs to activate both bonding and bridging social capital from different types of relationships and networks (Brooks, Hogan, Ellison, Lampe, & Vitak, 2014). SNSs sustain closely knitted networks from which bonding social

capital can be obtained, such as a sense of belongingness to the social networks and different forms of social support (Vitak et al., 2011). Psychological investment in SNSs has the potential for obtaining bonding social capital:

H7: Greater psychological investment in the sites will lead to greater bonding social capital on the site.

With large, loosely connected networks, psychological investment in SNSs has the potential for obtaining bridging social capital (Barkhuus & Tashiro, 2010; Burke, Kraut, & Marlow, 2011; Donath & boyd, 2004), as the diversity of the social connections on SNSs can provide non-redundant and new information. Therefore, it is hypothesized that:

H8: Greater psychological investment in the sites will lead to greater bridging social capital on the site.

In the case of Chinese international students in the U.S., I have argued that they may have different relationships with different groups of people on Facebook and Renren and thus their bonding and bridging social capital will span two or more SNSs. Previous studies assumed that users from collectivistic cultures such as that of China seek bonding social capital on SNS, whereas those from individualistic cultures such as that of the U.S. seek bridging social capital on SNS (Choi et al., 2011; Li & Chen, 2014; Shin, 2010). These studies often ignored that fact that different SNSs can offer both bonding and bridging social capital and users need both types of social capital (Norris, 2004). Therefore I ask:

RQ4: How are forms of social capital developed on Facebook/Renren? Can both types of social capital be developed on both Facebook and Renren?

Sociocultural Adaptation

In general, sociocultural adaptation is a process of social learning in which people familiarize themselves with a new environment by socializing with others, developing cultural awareness about diversity, and negotiating interpersonal and group conflicts (Astin, 1977). For international students, sociocultural adaptation is a gradual process of experiencing and understanding the cultural norms and appropriate behaviors in the new environment (Ward & Kennedy, 1999). Relationships with a diverse set of local native English speakers have the potential to help international students acquire informal and cultural knowledge about the cultural norms and appropriate behaviors in the U.S. (Cohen & Hoberman, 1983; Y. Y. Kim, 2000; Ye, 2006). At the same time, relationships with existing close groups of friends are important for emotional support and wellbeing during sociocultural adaptation (Baumeister & Leary, 1995). Therefore, I hypothesize that:

H9: Chinese international students' social capital on SNSs is positively related to their sociocultural adaptation in the U.S.

For Chinese international students in the U.S., it can be assumed that bonding and bridging social capital are derived from American and Chinese friends on Facebook and Renren, and that all these forms of social capital contribute to social adaptation. However, it is not yet clear exactly how each of these types of social capital influence sociocultural adaptation. Thus, I ask:

RQ5: How do different forms of social capital, bonding or bridging, on Facebook or Renren contribute to the participants' sociocultural adaptation in the U.S.?

CHAPTER THREE: SURVEY STUDY

The survey study investigates the predicted relationships between components of the theoretical model outlined in Figure 1 (Chapter 2) as it applies specifically to the context of Chinese international students studying in the U.S. Specifically, I examine how awareness of relational benefits (H1-2) and motivation to have social relationships (H3-4) work as antecedent variables that account for relational maintenance and communication activities on SNSs, how these in turn contribute to psychological investment in Facebook and Renren (H5-6), how psychological investment in a site is associated with bridging and bonding social capital on that site (H7-8) and how social capital is associated with sociocultural adaptation (H9). I further distinguish between friendship types (casual/close), network components (American/Chinese), and SNS (Facebook/Renren) in order to examine the roles of these factors in social capital development and sociocultural adaptation.

Study Design

Participants completed an online survey study. The survey items covered questions about their general and specific SNS use and social capital development on both Facebook and Renren, differentiating interactions with American vs. Chinese friends and acquaintances. The results were analyzed using structure equation modeling (SEM).

Participants

A total of 287 participants completed the survey (101 male; 155 female; 31 gender unknown). Of these, 27% were from Cornell University and 55.6% were from other colleges and universities in the U.S. Participants' ages ranged from 19 to 42, with a mean of 26.3 (SD=3.7). They consisted of 2% freshmen, 1.3% sophomores, 2.6% juniors, 3% seniors, 38.8% master students, 33.9% doctoral students, and 2.6% post-docs. The average time they stayed in

the U.S. was 2.7 years (SD= 1.4 years). The information of their school year or education level was documented so that a post-hoc analysis can be conducted to distinguish differences in newcomers and those who have already spent some time in the U.S.

A set of screening requirements were built into the survey questions to make sure the correct group of participants was recruited. An upfront screening question concerning participants' nationality was used to ensure that all respondents were Chinese international students in the U.S. Other recruiting requirements included age (18 and above), site use (respondents had to be both Renren and Facebook users), and time spent in the US (no more than 5 years).

Participants were recruited through the Chinese Student Association at different schools using their Facebook page, mailing list, Renren group, or WeChat group. Participants recruited at Cornell University could choose either 1 course credit or a \$15-dollar gift card as compensation for their participation. Participants recruited from other schools were rewarded with a \$15-dollar gift card. Individuals who missed more than 70% of the entire survey and who took less than five minutes to complete the survey (N =245) were dropped from the sample in order to maintain the integrity of the data set.

Procedure

The survey data were collected from September to December 2014. The survey was hosted by Cornell University's web survey tool, Qualtrics, and included a set of parallel questions about participants' use of Facebook and Renren. Within the site, the questions were directed towards different networks: Chinese on Renren and Chinese and American on Facebook. The wording for the two sets of the questions was exactly the same; only the names of the sites changed. In order to avoid response order effect, the participants were randomly

assigned to do the Facebook part of the survey or the Renren part first based on their birth month (Krosnick, 1995). The survey was conducted in English. After giving consent to participating in the study, participants were prompted to answer the screening questions. Only those who fulfilled the recruiting requirements could proceed to complete the survey. The survey took around 30 minutes to complete.

Measures

Most of the measures used in the survey were validated scales from previous studies, including psychological investment in SNSs (Ellison et al., 2007), relational maintenance (Vitak, 2014), and sociocultural adaptation (Ward & Kennedy, 1999). Several additional scales to measure awareness of relational benefits, motivation of developing social relationships, communication behaviors on SNSs, and bridging/bonding social capital were specifically developed for the study. (See Appendix 1 for detailed survey instrument). Questions about general SNS use included time spent on the site and the number of friends. Demographic information such as gender, age, education level, the time spent in the U.S., and the intention of staying in the U.S. after graduation were asked at the end of the survey.

Awareness of relational benefits. As I discussed in Chapter 2, an awareness of the relational benefits of different types of friends may be an important factor in determining people's behaviors on SNS (Fukuyama, 1995, 2000; Adler & Kwon, 2002; Glanville & Bienenstock, 2009; Sabatini, 2009). I developed six items for measuring if the participants have an awareness of the benefits different friends can bring, among which three are the general relational benefits from casual friends and three from close friends (see Table 1). The questions were asked twice, in the context of China and the U.S., and answered on a scale of 1 (strongly disagree) to 7 (strongly agree).

The results of factor analysis were consistent in the context of China and the U.S. and indicated that the items contained two factors, one was relational benefits for close friends ($\alpha = .88$, $M = 5.63$, $SD = 1.26$ for U.S.; $\alpha = .91$, $M = 5.67$, $SD = 1.29$ for China) and the other casual friends ($\alpha = .80$, $M = 4.67$, $SD = 1.28$ for the U.S.; $\alpha = .87$, $M = 4.88$, $SD = 1.21$ for China).

Table 1. Items for Relational Awareness with Means and Standard Deviations

Items	Mean (SD)
Casual friends from the U.S. can introduce new perspectives on different things to me	5.07 (1.38)
Casual friends from the U.S. are good sources of job/internship opportunities	4.85 (1.42)
Casual friends from the U.S. are good resources for small favors	4.71 (1.49)
Close friends from the U.S. can support me to go through hard times	5.73 (1.48)
Close friends from the U.S. can offer me advices for important decisions	5.62 (1.39)
Close friends from the U.S. are the ones I trust most	5.76 (1.43)
Casual friends from China can introduce new perspectives on different things to me	4.88 (1.42)
Casual friends from China are good sources of job/internship opportunities	4.50 (1.41)
Casual friends from China are good resources for small favors	4.63 (1.47)
Close friends from China can support me to go through hard times	5.66 (1.34)
Close friends from China can offer me advices for important decisions	5.59 (1.36)
Close friends from China are the ones I trust most	5.63 (1.41)

Motivations of social relationship building. In addition to awareness, being motivated

to develop relationships with different friends is also posited to be an important antecedent variable for activating social capital from those friends. Six items were generated to measure if the participants consider that having close and casual social relationship with friends in the U.S. and in China is important (see Table 2). Questions were answered on a scale of 1 (strongly disagree) to 7 (strongly agree). Each item is a stand-alone measure for motivation of having a specific social relationship (close or casual) in a place (the U.S. or China) and treated as an independent factor in the analysis.

Table 2. Items for Motivation to Build Relationships with Means and Deviations

Items	Mean (SD)
It's important to me to have casual American friends in the U.S.	4.87 (1.60)
It's important to me to have close American friends in the U.S.	4.32 (1.59)
It's important to me to have casual Chinese friends in the U.S.	5.80 (1.28)
It's important to me to have close Chinese friends in the U.S.	6.04 (1.17)
It's important to me to have casual Chinese friends in China	5.52 (1.25)
It's important to me to have close Chinese friends in China	6.00 (1.18)

Relationship maintenance. I adapted the Facebook Relationship Maintenance Behavior Scale (Ellison et al., 2011; Vitak, 2014) to capture users' relational maintenance behaviors with respect to American friends and acquaintances on Facebook (5 items; $\alpha = .91$), Chinese friends and acquaintances on Facebook ($\alpha = .92$), and Chinese friends and acquaintances on Renren ($\alpha = .90$). Responses were on a scale of 1 (very unlikely) to 5 (very likely). (See Table 3.)

Table 3. Items for Relational Maintenance with Means and Standard Deviations

Items	American Friends on Facebook Mean (SD)	Chinese Friends on Facebook	Chinese Friends on Renren
When I see an [nationality] friend or acquaintance sharing good news on [site], I try to respond	3.32 (1.12)	3.47 (1.17)	3.23 (1.13)
When I see an [nationality] friend or acquaintance sharing bad news on [site] I try to respond	3.11 (1.14)	3.15 (1.11)	2.99 (1.12)
When I see an [nationality] friend or acquaintance asking for advice on [site] I try to respond	3.24 (1.10)	3.39 (1.14)	3.11 (1.13)
When an [nationality] [site] friend has a birthday, I try to post something on their wall	3.64 (1.23)	3.60 (1.16)	3.16 (1.22)
When I see an [nationality] friend or acquaintance asking a question on [site] that I know the answer to, I try to respond	3.49 (1.11)	3.53 (1.15)	3.24 (1.15)
Scale Mean (SD)	3.36 (0.97)	3.43 (0.99)	3.15 (0.97)

Communication behaviors. Burke et al. (2011) distinguish three types of communication behaviors on SNSs: directed inbound (interactions initiated by friends), directed outbound (interactions initiated by the participants), and passive consumption (reviewing activities on the sites). I developed three items for each type of communication and asked each

question for American friends on Facebook, Chinese friends on Facebook, and Chinese friends on Renren (see Table 4). Questions were answered on a scale of 1 (never) to 7 (more than three times a day). All questions factored into a single component per target group: communication with American friends on Facebook ($\alpha = .97$), Chinese friends on Facebook ($\alpha = .97$), and Chinese friends on Renren ($\alpha = .97$).

Table 4. Items for Communication Behaviors with Means and Standard Deviations

Items	American Friends on Facebook M (SD)	Chinese Friends on Facebook M (SD)	Chinese Friends on Renren M (SD)
My friend sent me a message via [SNS]	2.92 (1.52)	2.88 (1.62)	2.61 (1.46)
My friend commented on my post on [SNS]	3.96 (1.60)	3.04 (1.47)	2.81 (1.56)
My friend “liked” my posts on [SNS]	3.14 (1.57)	3.19 (1.58)	2.84 (1.57)
I sent a message to my friend via [SNS]	2.90 (1.59)	2.95 (1.69)	2.62 (1.64)
I commented on my friend’s post on [SNS]	3.22 (1.72)	3.12 (1.60)	2.89 (1.68)
I liked my friend’s posts on [SNS]	3.55 (1.63)	3.45 (1.69)	2.94 (1.66)
I reviewed news feeds of my friend on my page on [SNS]	3.77 (1.86)	3.57 (1.71)	3.20 (1.71)
I viewed photos posted by my friend on [SNS]	3.91 (1.69)	3.74 (1.73)	3.37 (1.68)
I viewed links posted by my friend on [SNS]	3.68 (1.81)	3.42 (1.66)	3.24 (1.62)
Scale Mean (SD)	3.35 (1.47)	3.26 (1.47)	2.95 (1.44)

Psychological investment. Psychological investment on Facebook and Renren was measured using Ellison et al.’s (2007) scale (see Table 5). Questions were answered on a scale of 1 (strongly disagree) to 5 (strongly agree). The questions factored into a single component for Facebook ($\alpha = .92$), and Renren ($\alpha = .92$).

Table 5. Items for Psychological Investment in the Sites with Means and Standard Deviations

Items	Facebook	Renren
[SNS] is part of my everyday activity	2.80 (1.19)	2.44 (1.17)
I am proud to tell people I am on [SNS]	2.98 (0.99)	2.68 (0.99)
[SNS] has become part of my daily routine	2.89 (1.23)	2.48 (1.22)
I feel out of touch when I haven’t logged on to [SNS] for a while	2.63 (1.15)	2.44 (1.24)

I feel part of the [SNS] community	2.82 (1.09)	2.61 (1.19)
I would be sorry if [SNS] shut down	3.05 (1.27)	2.85 (1.27)
Scale Mean (SD)	2.86 (0.98)	2.59 (1.00)

Bridging and bonding social capital. The survey takes the individual level of bridging

and bonding social capital as its primary focus. For measuring micro-level social capital, how people perceive the accessibility of social capital is as important as the structural aspect of social capital. Most previous work on social capital in SNS used a scale adapted from Williams's (2006). Williams distinguished social capital gained from the internet use from that gained from older media such as television, so he came up with a validated scale specifically for social capital obtained from using the internet in general. Ellison et al. (2007) adapted this scale by replacing *the internet* with *Facebook* in the items and many SNS studies have adopted the revised scale. However, Williams' scales has some validity issues in that it does not adequately reflect what the literature suggest are relevant components of social capital, particularly bridging social capital (Ellison et al., 2014). In the current study, I used a combination of questions adapted from Williams (2006) and Ellison (2007) scales and new questions specifically developed for this study.

Bridging social capital. Heavily drawn on Putnam (2000), the existing scale for bridging social capital focuses on dimensions like *outward looking, contact with a broad range of people, participation in a broader group, and reciprocal small favors with a broader community* (Williams, 2006). However, bridging social capital has other major functions that are not captured in Williams' scale, such as access to novel and non-redundant information, referral for job opportunities, or task-oriented resources (Burt, 1997c; N. Lin et al., 1981; Granovetter, 1973). I developed eight new items to meet address this omission, including dimensions of *access and acquisition of instrumental favor, diverse and novel information, and reach of a diverse and broader group* (Rogers, 2010; Burt, 1997, 2001; Granovetter, 1973). I also adapted

four items from Ellison (2007), which represented dimensions of *outward looking* and *reciprocal small favors with a broader community* (see Table 6). Questions were answered on a scale of 1 (strongly disagree) to 5 (strongly agree).

Table 6. Items for Bridging Social Capital with Means and Standard Deviations

Items	Facebook M (SD)	Renren M (SD)
New items		
If I need someone to share the link I post, my casual friend on [SNS] would do it for me	3.30 (.88)	3.34 (1.00)
If I want to have small chitchat with my casual friends on [SNS], there is someone I can talk to	3.45 (.98)	3.10 (1.01)
I pay attention to what my casual friends are up to on [SNS] by clicking “Like” or commenting on their posts	3.35 (.96)	3.12 (1.03)
If something new happens at Cornell, I know I can find out the information on [SNS]	3.32 (0.97)	3.09 (1.04)
I cannot learn about opportunities of activities, internships, or jobs on [SNS] (R)	2.84 (1.06)	2.90 (1.03)
I can get quick responses to my question about where/who/how to find resources I need on [SNS]	3.14 (0.94)	3.08 (1.06)
Friends on [SNS] cannot help me connect to important people in my field or job (R)	2.82 (1.05)	2.92 (1.06)
I have friends from different countries and different backgrounds on [SNS]	3.47 (1.00)	2.75 (1.06)
Items adapted from Ellison (2007)		
Interacting with contacts on [SNSs] makes me want to try new things	3.51 (0.90)	3.06 (0.97)
Interacting with contacts on [SNS] makes me interested in what people unlike me are thinking	3.72 (0.97)	2.54 (1.19)
Talking with contacts on [SNS] makes me curious about other places in the world	3.18 (0.93)	3.03 (1.01)
Interacting with contacts on [SNS] makes me feel like connected to a larger community	3.55 (1.03)	3.09 (1.07)
Scale Mean (SD)	3.37 (0.71)	3.00 (0.77)

There were two items with reversed wording that did not yield reasonable factor analysis and correlation results and were dropped from the scale. The remaining 11 items factored into one component for Facebook ($\alpha = .91$) and Renren ($\alpha = .92$).

Bonding social capital. Williams' (2006) scale for bonding social capital is more rounded, including dimensions like *emotional support*, *access to scarce or limited resources*, and *ability to mobilize solidarity*. Ellison's (2007) wording for these items in the context of SNS were adapted for the case of multiple SNSs. Four new items were developed to address the dimension of *critical and instrumental use of bonding social capital* (Levin & Cross, 2004; Burt, 2001) (see Table 7). Questions were answered on a scale of 1 (strongly disagree) to 5 (strongly agree).

Table 7. Items for Bonding Social Capital with Means and Standard Deviations

Items	Facebook M (SD)	Renren M (SD)
New items		
My relationship with people on [SNS] is significant	3.38 (0.98)	3.24 (0.95)
There is someone on [SNS] I can turn to for advice about making very important decisions	3.23 (1.02)	3.26 (1.00)
If I needed an emergency loan of \$500, I know someone on [SNS] I can turn to	2.81 (1.05)	2.93 (1.17)
I know I can get important information about what is going on in China/at Cornell on [SNS]	3.35 (0.93)	3.38 (0.99)
Items adapted from Ellison (2007)		
There are several people on [SNS] I trust to solve my problems	3.33 (0.95)	3.22 (1.00)
I cannot get help or support from my friends on [SNS] when I need it I	2.89 (1.04)	3.16 (1.05)
When I am feeling down, there is someone I can turn to on [SNS] who can offer me support	3.24 (1.04)	3.25 (1.02)
When my friend on [SNS] need an emergency loan of \$500, I am not willing to lend a hand I	3.01 (1.05)	3.12 (1.05)
Scale Mean (SD)	3.19 (0.82)	3.21 (0.84)

There were two items with reversed wording that did not yield reasonable factor analysis and correlation results and were dropped from the scale. The remaining six items factored into a single component for Facebook (6 items; $\alpha = .90$) and Renren ($\alpha = .89$).

Sociocultural adaptation. I adapted Ward & Kennedy's (1999) scale to measure international students' adaptation, both socially and culturally, to the new environment, the U.S.

(5 items; $\alpha = .91$) (see Table 8). Questions were answered on a scale of 1 (strongly disagree) to 7 (strongly agree).

Table 8. Items for Sociocultural Adaptation with Means and Standard Deviations

Items	M (SD)
I understand the local value system	4.66 (1.34)
I see things from the locals' point of view	4.41 (1.33)
I understand cultural differences	5.22 (1.27)
I make friends	5.16 (1.32)
I communicate with people of a different ethnic group	5.30 (1.27)
Scale Mean (SD)	4.95 (1.12)

General use. Questions like percentage of Chinese or American friends on Facebook, percentage of Chinese friends on Renren, percentage of time spent on interaction with Chinese or American friends on Facebook, percentage of time spent on social interaction with Chinese friends on Renren, total number of friends on Facebook/Renren, Facebook/Renren as the major site for social interaction, time spent on the site for the past one day on Facebook and Renren, and time spent on the site on average before coming to the U.S. on Renren were included for a general overview of the participants' Facebook and Renren use (see Table 9 below).

Demographic variables. Age, gender, education level, relationship status, and time spent in the U.S. were included as demographic background variables.

CHAPTER FOUR: DATA ANALYSIS

Structural equation modeling (SEM) was adopted for data analysis. SEM includes the observed variables in the path analysis, the latent variables in the structural relation model, and the unexplained residual terms in the observed variables (Kline, 2011; Muthén & Muthén, 2010). In SEM, the relations among the variables are specified in a proposed model to confirm if these a priori specifications can be supported by the observed data. Based on the data, suggestions for model modifications can be given to improve model fit but the decisions of making model modification are based on hypotheses (Muthén & Muthén, 2010). Unlike multiple regression that highlights individual effects, SEM enables a holistic evaluation of the entire model (Kline, 2011). In addition, due to the data structure of the survey, interdependence among variables measured for sites and networks can be adjusted using SEM.

My analysis followed the recommended two-step approach (Anderson & Gerbing, 1988; Mueller & Hancock, 2008). First, the measurement model was constructed before the proposed theoretical structural relation models and evaluated based on multiple fit criteria. Then the structural model was run to test the research hypotheses and the overall model fitness. The analyses were run with Mplus 7.3 using maximum likelihood estimation with robust standard errors (MLR) and χ^2 test statistics because this approach, unlike standard maximum likelihood estimation, does not assume strict normality (Muthén & Muthén, 2010).

A sequence of model modifications was pursued in an effort to improve the overall model fit, and the fit indices include the Satorra-Bentler scaled chi-square statistic, root mean-square error of approximation (RMSEA) and its 90% confidence interval, the comparative fit index (CFI), and the standardized root mean square residual (SRMR) (Kline, 2011). Based on the conventional threshold for each index, a non-significant chi-square value is considered a good

model fit, for it suggests the hypothesized model is not different from the observed data. RMSEA should be less than .05. The lower bound of its 90% CI should be less than .05 and upper bound .10. GFI should be larger than .90 and SRMR smaller than .08. Among all the indices, χ^2 test statistics are sensitive to sample size that may easily yield significant p-value (indicating a poor model fit) even with a modest sample size (Iacobucci, 2010). Scholars have proposed that other indices like CFI, RMSEA, or SRMR are more reliable indices (Barrett, 2007; Bentler, 2007). However, if the χ^2 statistic adjusted by its degrees of freedom does not exceed 3.0 ($\chi^2 / df \leq 3$), the model is considered a moderate fit (Iacobucci, 2010). Descriptive analyses and SEM model modifications are described in the following sections.

Descriptive Analysis

Preliminary analyses were conducted using SPSS 20.0 to describe the participants' site use and the differences between the sites (see Table 9) (Kirkpatrick & Feeney, 2012). The participants reported having higher percentage of Chinese friends than American friends on Facebook, $t(287) = 2.04$, $p < .000$. They also reported having more Chinese friends on Renren than on Facebook, $t(265) = -2.73$, $p < .000$. Participants' social interaction on Facebook was largely devoted to Chinese friends, $t(287) = 1.29$, $p < .000$. Participants rated Facebook lower than Renren in terms of being a major site they used, $t(265) = -.31$, $p < .001$, and their overall network size was smaller on Facebook than Renren, $t(267) = -414.35$, $p < .009$. There was no significant difference in terms of the time spent on either site; however, participants spent more time using Renren prior to their arrival in the U.S., than after their arrival $t(275) = 18.04$, $p < .000$. In sum, the time spent on the site may not be a significant indicator of site reliance, but from the network components, it can be inferred that the participants constructed their networks

with fellow Chinese on Facebook and spent the majority of time interacting with them while they used Facebook.

Table 9. Items for General Use with Means and Standard Deviations

Items	Facebook (N = 272) M (SD)	Renren (N=288) M (SD)
Percentage ¹ of Chinese friends	63.2% (23.8%)	89.3% (22.6%)
Percentage of American friends	42.8% (24.8%)	--
Percentage of interaction with Chinese friends	56.5% (29.3%)	85.9% (27.3%)
Percentage of interaction with American friends	43.6% (26.7%)	--
Major network site to use ²	3.33 (1.13)	3.58 (1.12)
Total number of friends	196.89 (266.13)	414.92 (372.23)
Time spent on the site before coming to U.S. ³	--	64.01 (65.37)
Time spent on the site after coming to U.S. ⁴	46.69 (54.24)	45.88 (63.06)

1 The scale that measured percentage was broken down to 10 points, each interval of which stands for 10 percent (e.g., 1=0-10%).
 2 Measured on a scale of 1 to 5.
 3 Measured by minutes and use for the past one day
 4 On an average day

SEM Model Modifications

Before constructing the model, the raw data was screened to detect and avoid problems leading to a non-positive definite matrix that would jeopardize further data analysis. Missing data was imputed using full-information-maximum-likelihood in Mplus 7.3. Before data imputation, the total sample size was 287 with an effective sample size of 251; after imputation, the effective sample size was 275. Tests of multivariate normality indicated that the majority of the variables had high skew and kurtosis indices (see Table 10, 11). However, since the raw data was used, from which asymptotic covariance matrices were generated, the problems of significant skewness and kurtosis became less important (Anderson & Gerbing, 1988). In addition, the estimation chosen, MLR, for fitting the model adjusted the normality assumption.

Last, multi-collinearity was not a serious issue, as correlation coefficients among scale scores did not exceed .85 (see Table 10, 11).

The model was subject to a series of modification process, including adjusting for error covariance at the measurement level, allowing the error covariance of the same measure across sites to correlate to account for interdependence of the data structure, and removing insignificant error covariance to ensure model parsimony. Additional paths suggested by Mplus 7.3 were added to reach model fit. Last, tests of common method variance and alternative models were performed to ensure that the current proposed model better fitted the observed data.

Common Method Variance Tests

In the survey design, the predictors in the study were measured on either five or seven rating scale points and with different scale anchor (e.g., always vs. never; extremely disagree vs. extremely agree) in order to avoid common method biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In the analysis stage, common method variance (CMV) that may bias correlations among measurements may still be posed as a potential threat to the data because the dependent variables and independent ones were collected in the same cross-sectional survey and the measurement structure of the survey instrument was identical for Facebook and Renren (Podsakoff et al., 2003). Two approaches were run to examine common method variance, including Harman's single-factor test and common latent factor (CLF). In Harman's single-factor test, all the observed variables were loaded on the latent CMV variable to diagnose if any one of the indicators emerged and accounted for most of the covariance. According to the result, the model did not indicate a good fit ($\chi^2 [324] = 2873.47; p = 0.00$; RMSEA = 0.16; C.I. (.16; .17); CFI = 0.35; SRMR = 0.14) and no one single factor emerged to account for most of the covariance.

Then in CLF, in addition to the proposed measurement model, all the observed variables were loaded on the latent CMV variable and the covariance among all the latent variables was set free. CLF includes estimation and models direct effects for measurement errors. According to the result, the model did not indicate a good fit. Compared with the model without CLF, the difference between the two was small ($\chi^2 [781] = 2790.87; p = 0.00$; RMSEA = .07; C.I. (.06; .07); CFI = .90; SRMR = .07). Based on the two tests for CMV, it can be confirmed that the common method effect was not a serious issue at the initial stage of model trimming, a series of model modification were conducted. A detailed description of the process is provided in Appendix 2.

Table 10. Descriptive Statistics for the Variables in the Antecedent Model

	M	SD	SI	KI	1	2	3	4	5	6	7	8	9	10
1. Awareness: Casual, US	14.02	3.84	1.61	1.29										
2. Awareness: Casual, CN	14.63	3.63	11.09	156.6	.79***									
3. Awareness: Close, US	16.88	3.79	8.26	82.83	.45***	.49***								
4. Awareness: Close, CN	17.01	3.87	1.57	3.55	.37***	.57***	.76***							
5. Motivation: Casual, American, US	4.87	1.60	10.27	132.4	.35***	.33**	.15*	.17*						
6. Motivation: Casual, Chinese, US	5.80	1.28	1.46	5.64	.47***	.49***	.45***	.41***	.38***					
7. Motivation: Close, American, US	4.32	1.59	0.66	2.33	.24***	.20**	-.01	.04	.74***	.20**				
8. Motivation: Close, Chinese, US	6.04	1.17	9.20	121.7	.38***	.50***	.51***	.49***	.32***	.86***	.03			
9. Motivation: Casual, Chinese, CN	5.52	1.25	0.44	-1.10	.52***	.49***	.47***	.41***	.35***	.76***	.24**	.66***		
10. Motivation: Close Chinese, CN	6.00	1.18	2.57	5.84	.04	.42***	.63***	.55***	.27***	.66***	.14+	.73***	-.50	

⁺p<.10 *p<.05 **p<.01 ***p<.001

1. Awareness of the benefits of having casual friends in the U.S.; 2. Awareness of the benefits of having casual friends in China; 3. Awareness of the benefits of having close friends in the U.S.; 4. Awareness of the benefits of having close friends in China; 5. Motivation of having American casual friends in the U.S.; 6. Motivation of having Chinese casual friends in the U.S.; 7. Motivation of having American close friends in the U.S.; 8. Motivation of having Chinese close friends in the U.S.; 9. Motivation of having Chinese casual friends in China; 10. Motivation of having Chinese close friends in China

Table 11. Descriptive Statistics for the Variables in the Site Model

	M	SD	SI	KI	1	2	3	4	5	6	7	8	9	10	11	12	13
1. FB PI	15.51	6.01	17.36	11.25													
2. RR PI	17.17	5.89	4.14	-3.46	.21***												
3. Comm w/A on FB	17.21	13.45	7.47	6.30	.52***	.21***											
4. Comm w/C on FB	26.51	13.01	17.23	11.41	.69***	.25***	.73***										
5. Comm w/C on RR	29.35	13.26	7.89	1.58	.38***	.68***	.57***	.44***									
6. RM w/A on FB	12.87	6.47	8.33	2.76	.44***	.29***	.55***	.51***	.33***								
7. RM w/C on FB	15.73	4.86	13.00	8.31	.50***	.24***	.30***	.50***	.29**	.54***							
8. RM w/C on RR	17.14	4.96	12.73	8.90	.14**	.13***	.10+	.16**	.51***	.24***	.29**						
9. Bonding on FB	29.24	5.20	18.48	12.01	.29***	.11***	.17***	.26***	.15***	.25***	.43***	.09***					
10. Bonding on RR	28.89	4.65	7.36	3.12	.11***	.53***	.11**	.13***	.36***	.15***	.13***	.54***	.06***				
11. Bridging on FB	38.88	7.72	6.01	-0.46	.83***	.29***	.45***	.59***	.39***	.40***	.46***	.24***	.26***	.15***			
12. Bridging on RR	42.71	6.96	10.12	8.09	.23***	.67***	.19***	.25***	.48***	.28***	.35***	.67***	.16***	.35***	.37***		
13. Adaptation	24.75	5.61	6.74	3.94	.14**	.44***	.12**	.12**	.32***	.20***	.26***	.45***	.31***	.43***	.20**	.55***	

⁺ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

FB=Facebook; RR=Renren; PI=Psychological Investment; A=American friends; C=Chinese friends; Comm=Communication behaviors; RM=Relational Maintenance

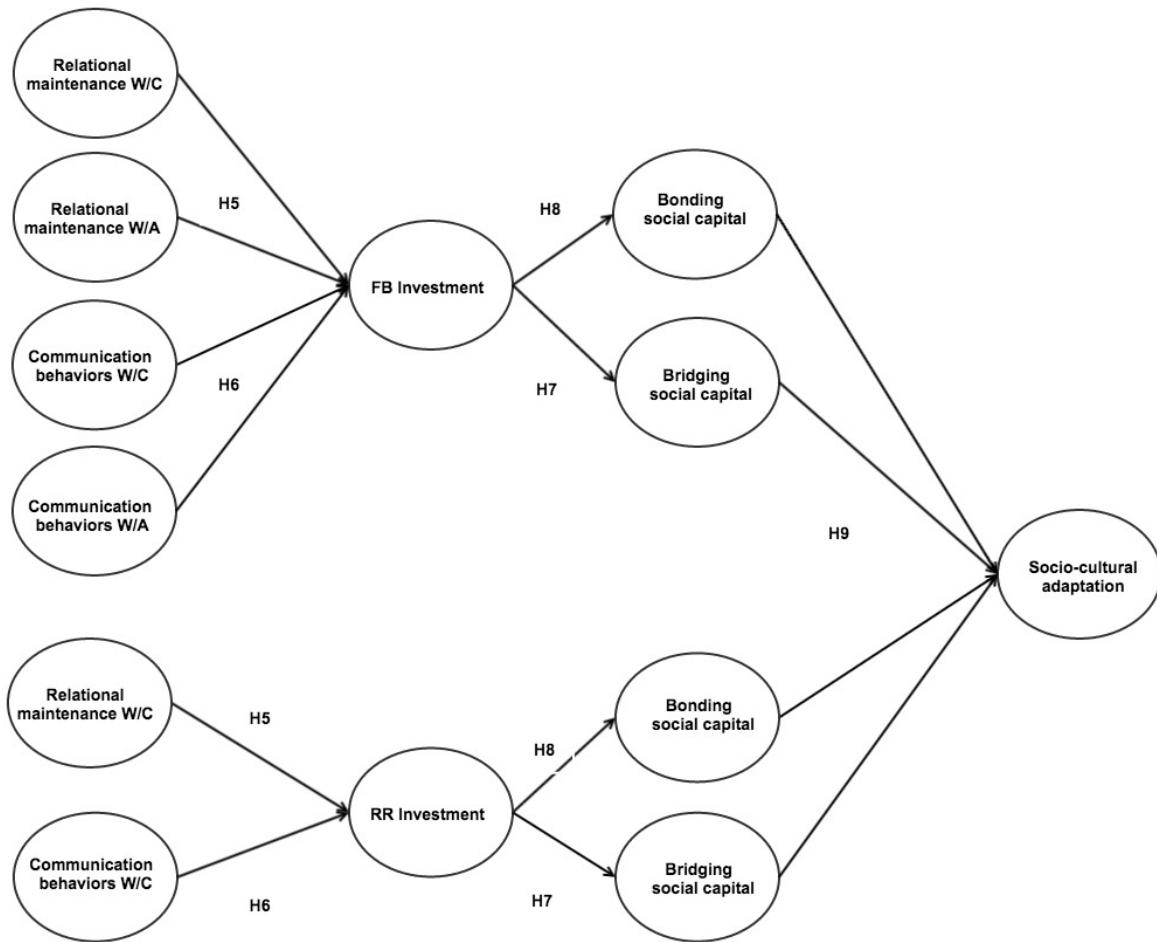


Figure 2. Hypotheses testing for the site model: Distinction of activities on Facebook/Renren.

Hypotheses Testing

The following sections report the results of the hypotheses based on the previous model modifications.

Awareness of relational benefits and relational maintenance. There was a trend for awareness of the relational benefits of having Chinese casual friends in China to predict relational maintenance with Chinese friends on Renren, $B = .25$, $\beta = .18$, S.E. = .14, $p < .075$). There was also a trend for awareness of relational benefits of having Chinese close friends in the U.S. to predict relational maintenance with Chinese friends on Facebook, $B = .18$, $\beta = .14$, S.E. = .10, $p < .06$). Awareness of relational benefits of having Chinese casual friends in the U.S.

was significantly associated with relational maintenance with Chinese friends on Facebook ($B = .24$, $\beta = .19$, S.E. = .09, $p < .006$). Relational maintenance with American friends on Facebook was also significantly predicted by awareness of having American casual friends, $B = .24$, $\beta = .15$, S.E. = .11, $p < .03$. Thus, H1 was partially supported (see Table 12).

Table 12. Hypothesis 1--Relational Awareness vs. Relational Maintenance

Regressed on Weights	B	β	SE	<i>p</i>
Relational awareness of Chinese close friends in CN → Relational maintenance w/Chinese friends on RR	-.11	-.09	.24	.645
Relational awareness of Chinese casual friends in CN → Relational maintenance w/Chinese friends on RR	.25	.18	.14	.075
Relational awareness of Chinese close friends in the U.S. → Relational maintenance w/Chinese friends on FB	.18	.14	.10	.056
Relational awareness of Chinese casual friends in the U.S. → Relational maintenance w/Chinese friends on FB	.24	.19	.09	.006
Relational awareness of American close friends in the U.S. → Relational maintenance w/American friends on FB	.07	.04	.11	.510
Relational awareness of American casual friends in the U.S. → Relational maintenance w/American friends on FB	.24	.15	.11	.027

In general, relational awareness did not significantly account for relational maintenance with close friends on either site. On Renren, the relational benefit of having casual friends showed a trend to have correlation with relational maintenance with Chinese friends. On Facebook, the relational benefit of having Chinese and American casual friends was more significant in accounting for relational activities than the awareness of relational benefit of having Chinese and American close friends.

Awareness of relational benefits and communication behaviors. Awareness of relational benefits was a good indicator for communication behaviors with *casual* but not close friends on both sites. Awareness of having Chinese close friends in China was negatively associated with communication with Chinese friends on Renren, $B = -1.96$, $\beta = -.56$, S.E. = .56, $p < .000$, and awareness of having Chinese close friends in the U.S. was negatively associated

with communication with Chinese friends on Facebook, $B = -.59$, $\beta = -.17$, S.E. = .26, $p < .02$.

Awareness of having American close friends in the U.S. was also negatively associated with communication with American friends on Facebook, $B = -1.12$, $\beta = -.31$, S.E. = .23, $p < .000$.

Thus, H2 was partially supported (see Table 13). In sum, relational awareness of having Chinese close friends was negatively associated with engaging in communication with Chinese friends on Renren and Facebook. Also, the benefits of having American close friends did not lead to communication with them on Facebook.

Table 13. Hypothesis 2--Relational Awareness vs. Communication

Regressed on Weights	B	β	SE	<i>p</i>
Relational awareness of Chinese close friends in CN → Communication w/Chinese friends on RR	-1.96	-.56	.56	.000
Relational awareness of Chinese casual friends in CN → Communication w/Chinese friends on RR	1.49	.40	.42	.000
Relational awareness of Chinese close friends in the U.S. → Communication w/Chinese friends on FB	-.59	-.17	.26	.023
Relational awareness of Chinese casual friends in the U.S. → Communication w/Chinese friends on FB	1.03	.30	.23	.000
Relational awareness of American close friends in the U.S. → Communication w/American friends on FB	-1.12	-.31	.23	.000
Relational awareness of American casual friends in the U.S. → Communication w/American friends on FB	1.08	.30	.24	.000

Motivation of relationship building and relational maintenance. Motivation to have both Chinese close friends ($B = .79$, $\beta = .17$, S.E. = .41, $p < .055$) and Chinese casual friends ($B = 1.02$, $\beta = .24$, S.E. = .40, $p < .01$) in China was positively associated with relational maintenance with Chinese friends on Renren. On Facebook, the only significant relationship was between the motivation to having American close friends and relational maintenance with their American network ($B = 1.27$, $\beta = .29$, S.E. = .48, $p < .008$) (see Table 14). Motivations to have Chinese close and casual friends in China and American close friends in the U.S. accounted for participants' engagement in relational activities with these networks on the SNSs.

Table 14. Hypothesis 3—Motivation vs. Relational Maintenance

Regressed on Weights	B	β	SE	p
Motivation of having Chinese close friends in CN → Relational maintenance w/Chinese friends on RR	.79	.17	.41	.055
Motivation of having Chinese casual friends in CN → Relational maintenance w/Chinese friends on RR	1.02	.24	.40	.011
Motivation of having Chinese close friends in the U.S. → Relational maintenance w/Chinese friends on FB	-.013	-.003	.85	.988
Motivation of having Chinese casual friends in the U.S. → Relational maintenance w/Chinese friends on FB	.41	.10	.86	.630
Motivation of having American close friends in the U.S. → Relational maintenance w/American friends on FB	1.27	.29	.48	.008
Motivation of having American casual friends in the U.S. → Relational maintenance w/American friends on FB	-.78	-.18	.49	.112

Motivation for relationship building and communication behaviors. Motivation to have Chinese casual friends in China was positively associated with communication with Chinese friends on Renren ($B = 1.83$, $\beta = .16$, S.E. = .69, $p < .008$). Motivation to have American close friends in the U.S. was positively associated with communication with American friends on Facebook ($B = 2.10$, $\beta = .23$, S.E. = .94, $p < .03$). H4 was partially supported (see Table 15). The result of H4 was similar to that of H3. Having Chinese casual friends in China and American close friends in the U.S. motivate the participants to communicate with these networks on the sites.

Table 15. Hypothesis 4—Motivation vs. Communication

Regressed on Weights	B	β	SE	p
Motivation of having Chinese close friends in CN → Communication w/Chinese friends on RR	1.14	.09	.77	.139
Motivation of having Chinese casual friends in	1.83	.16	.69	.008

CN → Communication w/Chinese friends on RR				
Motivation of having Chinese close friends in the U.S. → Communication w/Chinese friends on FB	-.94	-.08	1.98	.634
Motivation of having Chinese casual friends in the U.S. → Communication w/Chinese friends on FB	.72	.06	1.92	.709
Motivation of having American close friends in the U.S. → Communication w/American friends on FB	2.10	.23	.94	.026
Motivation of having American casual friends in the U.S. → Communication w/American friends on FB	-.81	-.09	.94	.390

Relational maintenance and psychological investment. Hypotheses 5 addressed the direct effects of relational maintenance with different networks on psychological investment in Facebook and Renren. The results showed that activities of relational maintenance were directed toward Chinese networks on both sites. Relational maintenance with Chinese network was associated with psychological investment in Renren ($B = 1.11$, $\beta = .92$, S.E. = .13, $p < .000$) and Facebook ($B = .22$, $\beta = .18$, S.E. = .07, $p < .001$). Hypothesis 5 was supported with respect to Chinese friends and acquaintances (see Table 16). The results further show a trend for relational maintenance with American friends to predict psychological investment in Facebook ($B = .09$, $\beta = .10$, S.E. = .05, $p < .08$; see Table 16).

Table 16. *Hypotheses 5—Relational Maintenance vs. Psychological Investment*

Regressed on Weights	B	β	SE	<i>p</i>
Relational maintenance w/Chinese friends → RR psychological investment	1.11	.92	.13	.000
Relational maintenance w/Chinese friends → FB psychological investment	.22	.18	.07	.001
Relational maintenance w/American friends → FB psychological investment	.09	.10	.05	.08

Communication behaviors and psychological investment. Hypothesis 6 predicted that engaging in communication behaviors on an SNS would be associated with psychological

investment in those sites. Consistent with the results of relational maintenance (Hypotheses 5), communication with Chinese friends was significantly associated with psychological investment in Renren ($B = .09$, $\beta = .21$, S.E. = .03, $p < .001$) and Facebook ($B = .24$, $\beta = .54$, S.E. = .03, $p < .000$). But communication with American friends did not lead to psychological investment in Facebook. Therefore, H6 was partially supported (see Table 17).

Table 17. Hypothesis 6—Communication vs. Psychological Investment

Regressed on Weights	B	β	SE	<i>p</i>
Communication w/Chinese friends → RR psychological investment	.09	.21	.03	.001
Communication w/Chinese friends → FB psychological investment	.24	.54	.03	.000
Communication w/American friends → FB psychological investment	.01	.03	.03	.638

Psychological Investment and social capital. In Hypotheses 7 and 8, the associations between psychological investment in the sites and social capital development were tested. Psychological investment in Renren contributed to perceived bonding ($B = .42$, $\beta = .53$, S.E. = .04, $p < .000$) and bridging social capital ($B = .73$, $\beta = .62$, S.E. = .07, $p < .000$), whereas psychological investment in Facebook use was only associated with perceived bridging social capital ($B = 1.04$, $\beta = .79$, S.E. = .10, $p < .000$) (see Table 18). In general, the coefficient estimate of SNS use for bridging social capital was higher than that for bonding social capital on Renren and Facebook, which is consistent with the previous studies that bridging social capital was a prominent resource associated with social relationships on SNSs (e.g., Ellison et al., 2007; Burke et al., 2011).

Table 18. Hypothesis 7&8—Psychological Investment vs. Social Capital

Regressed on Weights	B	β	SE	<i>p</i>
RR psychological investment → Bridging social capital on RR	.73	.62	.07	.000

RR psychological investment → Bonding social capital on RR	.42	.53	.04	.000
FB psychological investment → Bridging social capital on FB	1.04	.79	.10	.000
FB psychological investment → Bonding social capital on FB	.08	.10	.06	.16

Sociocultural adaptation and social capital. The last set of hypotheses examined the influence of social capital on participants' overall sociocultural adaptation in the U.S. In general, the effects of both bridging ($B = .35$, $\beta = .44$, S.E. = .05, $p < .000$) and bonding social capital ($B = .32$, $\beta = .27$, S.E. = .06, $p < .000$) on Renren are helpful sources of support for sociocultural adaptation (see Table 19). However, bridging social capital on Facebook did not yield significant result for sociocultural adaptation, contrary to previous studies (e.g., J.-H. Lin et al., 2012). Bonding social capital on Facebook was significantly associated with adaptation, $B = .27$, $\beta = .24$, S.E. = .07, $p < .000$. H9 was partially supported.

Table 19. *Hypothesis 9—Social Capital vs. Sociocultural Adaptation*

Regressed on Weights	B	β	SE	p
Bridging social capital on RR → Sociocultural adaptation	.35	.44	.05	.000
Bonding social capital on RR → Sociocultural adaptation	.32	.27	.06	.000
Bridging social capital on FB → Sociocultural adaptation	-.05	-.07	.04	.224
Bonding social capital on FB → Sociocultural adaptation bonding social capital	.27	.24	.07	.000

Additional findings. According to model modification suggestions given by Mplus 7.3 for the site model, additional paths were added to the final model (see Table 20). For the final site model, relational maintenance with Chinese network on Facebook was an important factor associated with perceived bonding social capital on Facebook ($B = .40$, $\beta = .38$, S.E. = .07, $p < .000$) and perceived bridging social capital on Renren ($B = .28$, $\beta = .20$, S.E. = .06, $p < .000$).

Last, perceived bridging social capital on Renren was positively associated with perceived bridging social capital on Facebook, $B = .22$, $\beta = .19$, S.E. = .06, $p < .000$. This may indicate that the major source of bridging social capital on Facebook is embedded in the Chinese network.

Table 20. Additional Findings

Regressed on Weights	B	β	SE	<i>p</i>
Relational maintenance w/Chinese on FB → Bonding social capital on FB	.40	.38	.07	.000
Relational maintenance w/Chinese on FB → Bridging social capital on RR	.28	.20	.06	.000
Bridging social capital on RR → Bridging social capital on FB	.22	.19	.06	.000

The final site model is shown in Figure 3. This figure shows a) relational maintenance and communication with Chinese networks contributed to psychological investment in both Facebook and Renren, whereas only relational maintenance with American was related to psychological investment on Facebook; b) both bonding and bridging social capital were derived from psychological investment in Renren but only bridging social capital from Facebook; c) the forms of social capital that contributed to sociocultural adaptation were bonding from Facebook and bridging and bonding from Renren.

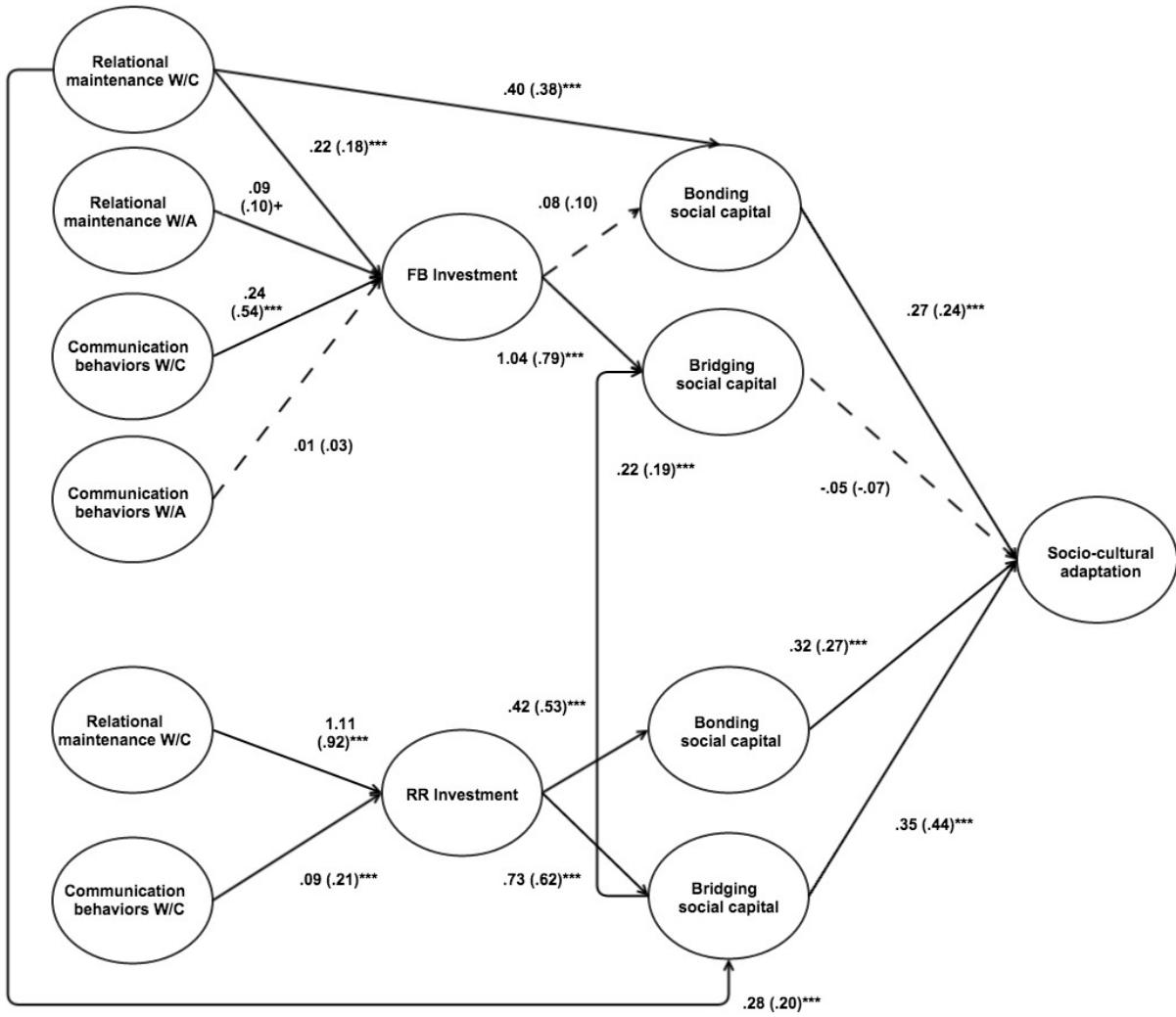


Figure 3. The final site model: The importance of relational maintenance with Chinese networks across sites and its influence on social capital on the sites. Links are labeled with B-values (beta values in parentheses).

CHAPTER FIVE: DISCUSSION

In this study, I surveyed 287 Chinese international students about their awareness, motivation, relational maintenance, communication, and psychological investment on Facebook and Renren and see how sociocultural adaptation is influenced by SNS use. They answered these questions separately for close and casual American and Chinese friends on Facebook and close and casual Chinese friends on Renren. Structural equation modeling was performed to analyze the data. This approach allowed me to account for the interdependence of the parallel survey questions for friendships (casual/close), networks (American/Chinese), and sites (Facebook/Renren).

Based on the descriptive statistics, the time spent on Facebook and Renren was not significantly different, although participants rated Renren slightly but significantly more important as a SNS. Chinese networks on Renren and Facebook accounted for a greater percentage of their friends and are their main interactants.

Structural equation modeling was performed to analyze the data because it allowed me to account for the interdependence of the parallel survey questions for friendships (casual/close), networks (American/Chinese), and sites (Facebook/Renren).

There were several major findings from the SEM results (see Figure 3 in Chapter 4): a) the awareness of relational benefits of casual friends was significantly related to relational maintenance and communication with friends on both sites but the motivations to have Chinese close and casual friends in China and American close friends are associated with interaction with them on either Renren or Facebook; b) relational maintenance and communication with different networks were significantly related to psychological investment in both sites, with one exception, communication with the American network on Facebook; c) psychological investment in the

sites generally significantly contributed to both bonding and bridging social capital, although psychological investment in Facebook was not associated with bonding social capital; d) both bonding and bridging social capital (with the exception of bridging social capital on Facebook) significantly contributed to the participants' sociocultural adaptation.

In the remainder of the Discussion, I elaborate on each of these sets of findings, highlight the contributions of the work, discuss possibility limitations of the study, and suggest future directions for this line of research. An informal follow-up interview was conducted among a sub-set of the survey participants (N=19) to explore their social activities with different networks across sites. Relevant quotes were provided in support of the discussion of the survey analysis.

Awareness and Motivation

My results suggest that the antecedent variables of awareness and motivation worked as important indicators that account for social interaction and communication with different networks on the sites (H1-H4; RQ1-2). However, the awareness of relational benefits of different types of friends and the motivation to have social relationships with different types of friends functioned in different ways. The results thus build on previous studies (e.g., Cross & Borgatti, 2004; Adler & Kwon, 2002; Fukuyama, 1995, 2000) that suggested connecting these two antecedent variables to specific types of relationships and networks.

In general, relational awareness works better in accounting for relational and communication activities with *casual* friends than close friends on both sites, which suggests that knowing what benefits casual friends can bring significantly contributes to engagement in interaction with them. On the other hand, the perceived relational benefits of close friends were not associated with communication with these close friends. This suggests that Facebook and Renren may not be good venues for communicating with close friends. As people have a general

inclination of spending time with close friends (Barkhuus & Tashiro, 2010), it may require additional awareness of what the benefits are to have casual friends to engage in relational and communication activities with them on SNSs. The pattern of cross-site and cross-network results suggest that awareness of relational benefits needs to be considered when accounting for users' relationship building and communication activities on SNSs, especially among casual friends.

As for the motivation for relationship building, the results are mixed. I found that participants' motivation to have Chinese casual friends in China and American close friends in the U.S. were associated with relational maintenance and communication with these networks. The motivation to have Chinese close friends in China was significantly associated with engaging in relational maintenance but not communication with Chinese friends and acquaintances on Renren. This mixed pattern of results may indicate that participants were motivated to maintain social relationships with both Chinese close and casual friends on Renren but they did not engage in communication with Chinese close friends on Renren. The motivation of having American close friends contributed to relational maintenance and communication with them, indicating that greater motivation to have American close friends may be needed to interact with this network.

The study also suggests that the participants were more motivated to engage in relational and communication activities with their fellow Chinese friends using Renren than Facebook. The network effect of home-country sites has consolidated members in the network through site use for Chinese international students.

In addition, the mixed results of motivation may suggest that people are driven by instrumental or normative motivations before initiating relational activities (Adler & Kwon, 2002). That is, people may need to have clear goals in mind for advancing individual benefits,

like a key position for controlling information flow (Burt, 2001). In terms of normative motivations, people may expect reciprocity and trust from network members (Putnam, 1993). Given the mixed results here, it can only be concluded that people may have different kinds of motivations when interacting with different networks. Future work is needed to tease out which type of motivation matches with relational and communication activities with different networks.

Based on the results of the present study, even among SNS users, different levels of awareness of relational benefits of, and motivation for, relationship building with close/casual friends make a difference in relational and communication activities with these friends on SNSs and further, social capital development. More work is required to tease apart the effect of these variables on social capital building.

Social Activities and Social Capital

Participants' Chinese networks on Facebook and Renren were their primary ones in terms of network components and in terms of interactions on the site. The participants had larger Chinese networks than American networks even on Facebook. This network structure sheds light on the participants' activities on the sites (H5-6) and their perceived social capital (H7-8).

The activities of relational maintenance (H5) and communication (H6) were mainly directed to Chinese networks on both sites (RQ3), and contributed to participants' investment in the sites. As for the American network on Facebook, there was a trend for relational maintenance (H5) but not communication (H6) with American friends to predict psychological investment in Facebook. The findings suggest that interaction with American friends on Facebook may be for the purpose of social learning and might consist of lightweight activities like "Liking" or passively reading posts, as echoed in several of the interview participants' comments.

I guess, for most time, I just look what others are doing but not participate in that that much especially on Facebook. So, these two social media [Facebook & Renren] are, for me, the chance to see what people's life and what they are doing and to know about them. (I#03, Female)

Because you let the person know that you are watching his or her posts, you care about his or her life, you are interested on things he is doing, you will evoke some common interests. Even you don't say any words, but clicking the "like" button is like "I'm here. I know what you are doing now." (I#05, Female)

According to Shklovski et al. (2008), even such lightweight interaction, instead of directed communication, can be seen as a way to maintain relationships with friends on SNSs, as the effort and attention is spent on keeping oneself in the loop of what their social networks are up to. Even if it is not as active as direct communication, the simple click of "Like" on Facebook is associated with consolidating bonding social capital (Lee, Kim, & Ahn, 2014). Given the multiple choices of communication tools the participants have at hand, different activities with different networks can take place on different venues because they have different purposes of using them. According to the participants, Facebook work as a "face book" for them to keep track of their American network. Meaningful and active communication with American friends may not necessarily take place on Facebook. The actual communication with them takes place in person or via tools that feature more bounded interaction, such as WhatsApp or text message. It may also indicate that communication behavior is not necessarily an exclusive factor in accounting for psychological investment in SNSs and social capital development. In the interviews, the participants pointed out that they preferred to use other tools to communicate with their American friends over Facebook.

If it's a friend I already know, I wouldn't talk to them on Facebook because it feels too far away. It feels distant. (I#01, Female)

[how do you interact with your American friends?]Text message...see? Facebook doesn't really build up your close relationships. It just gives you a general concept about what kind of person you are dealing with. (I#02, Female)

You gather information on Facebook but the real communication are done through person. (I#08, Female)

Such psychological investment was associated with more perceived bridging social capital than bonding social capital (H8; RQ4) on Facebook, which suggests that Chinese and American networks on Facebook were perceived to be good resources for bridging social capital. Chinese networks on Renren are sources for both bonding and bridging social capital. With its diverse networks on the site, Facebook can be a good venue for Chinese international students to learn about new lifestyles, cultural knowledge, and new information from their American network (Park et al., 2014). It is not surprising that these different kinds of bridging social capital are embedded on social relationships on Facebook. On Renren, instrumental information can be shared among acquaintances and different sub-groups.

Previous research indicated that Facebook helped international students have a smoother adjustment to the U.S. (Park et al., 2014). Here the interview results indicate the specific forms of support the international students tended to draw from Facebook use include cultural learning and information obtaining. One feature of Facebook that the participants valued is it works as a window for them to learn about other cultures and increase an understanding of different life styles, contemporary important issues, and ways of thinking. As one participant put it:

It's used as a tool for me to kind of understand their life. I mean the western people, the international students, their life is very different to mine, and their interests are very different to mine. (I#17, Male)

While the function of bridging social capital through SNS use is re-confirmed across different sites, even under the circumstance of dual SNS use, the results extend and complement the previous studies that bonding social capital is developed and accessed from social relationships on home-country site. It suggests that networks on home-country sites like Renren

may offer both bridging and bonding social capital, in contrast to studies that report that only bonding social capital is sought on home-country sites (e.g., Li & Chen, 2014; Choi et al., 2011). Site differences may be present when more than one SNS and sub-network are considered simultaneously in terms of social capital development.

During the SEM model modification process, cross-site correlational relationships not in the original model were found. Relational maintenance with the Chinese network on Facebook seems to be an important factor not only directly associated with perceived bonding social capital on Facebook but also perceived bridging social capital on Renren. This cross-site bridging social capital development may suggest that participants use Renren to check the Chinese friends they meet in the U.S. and connect with them on both Facebook and Renren. Last, perceived bridging social capital on Renren is positively associated with perceived bridging social capital on Facebook. It may indicate that the major source of bridging social capital on Facebook is embedded in Chinese network.

Psychological Investment in Sites and Sociocultural Adaptation

People belong to multiple social groups and may use different technologies to manage social relationships with these groups (Lampe et al., 2006). While the model of sociocultural adaptation points out that new American networks are the primary sources for facilitating international students' adaptation (Y.Y. Kim, 2000), people also have a need to feel that they belong, and can receive support from, their previous networks (Baumeister & Leary, 1995). The existence of two or more different SNSs has diverted use and social interaction for Chinese international students, yet in a way that works towards the participants' benefits.

Drawing on the metaphor of capital, the study shows that the participants have built a portfolio of different types of social investment, which they obtain from different networks and

sites. The participants use the sites to obtain different forms of support they need. Bridging and bonding social capital on Renren contribute to overall sociocultural adaptation. It is not surprising that the participants obtain social and emotional support as well as instrumental knowledge from Chinese networks to help them adapt to the new environment. What is interesting is the discrepancy between the major perceived network resource that Facebook contains and the kind of social capital the participants need for better adaptation. Bridging social capital on Facebook was not related to sociocultural adaptation. Instead, bonding social capital on Facebook was significantly associated with adaptation. Given the results of H8, psychological investment in Facebook did not lead to perceived bonding social capital; it remains a puzzle why bonding social capital on Facebook predicted sociocultural adaptation. It may be that social support from the American network was the type of support participants need for sociocultural adaptation, rather than just learning new information or cultural knowledge from them. Previous studies also show that the more people perceived that they were receiving support from local groups, the more likely they were better adapted to the local culture so as to be able to function in the new environment (Gray et al., 2013; Y.Y. Kim, 2000). Active inclusion provided by the American networks facilitates Chinese international students' adaptation. As one of the participants pointed out that invitations to activities from her American friends made her feel connected to the local community.

It's kind of a way to connect with more people. Like my landlord also added me on Facebook and sometimes she will post some interesting activity and wants me to join. (I#03, Female)

In addition, based on the additional path suggested by Mplus 7.3, relational maintenance with the Chinese network on Facebook was directly associated with perceived bonding social capital on Facebook. An inference can be made that although a general psychological

investment in Facebook use does not necessarily lead to perceived bonding social capital, engaging in relational maintenance Chinese networks may still provide support through bonding social capital for sociocultural adaptation if needed.

Unlike previous studies that showed student users' social lives can be integrated on one site, usually Facebook (Archambault & Grudin, 2012; Pempek, Yermolayeva, & Calvert, 2009; Lampe et al., 2006), the study indicates that different social capital from multiple SNSs was related to deal with different online and offline social networks. Although the underlying assumptions of the model of sociocultural adaptation and the hypothesis of need to belong are contradictory, the participants did need support from both networks to fare better life transitions.

Contributions

The present study offers three main contributions for understanding social networks and perceived social capital on SNSs. First, the study shows the importance of two antecedent factors suggested in the social capital literature yet under-discussed in the communication field, relational awareness and motivation of relationship building (e.g., Cross & Borgatti, 2004; Adler & Kwon, 2002; Fukuyama, 1995, 2000). Social capital is resource derived from social connections embedded in the network but not automatically entitled to whomever is connected in the network. Only those who are equipped with the knowledge and take the initiative can make the best of relational benefits.

Second, by unpacking social network components on SNSs and differentiating the sources of social capital, the study complements existing SNS research. Given the prevalence of SNS studies, there is little research that breaks social network components down to diverse sub-networks and distinguishes simultaneous relation-centric site use. Drawing on the social capital perspective and taking Chinese international students as research target who use multiple SNS

tools to keep in touch with almost non-overlapping networks in the U.S. and in China, I show how different networks contribute to social capital embedded on the sites and how different forms of social capital lead to sociocultural adaptation.

Finally, I have introduced a new scale for measuring bridging social capital scale that ties the measure more closely to the literature.

Limitations and Future Directions

This study examined the use of multiple SNS in a very specific case, that of Chinese international students in the U.S. who cannot use Facebook at home but who need to use it to connect to their new friends and acquaintances in the U.S. In addition, participants were recruited via an online survey rather than random sampling. The extent to which the results generalize to other samples, other international students, or other people who have located to a new environment, remains to be seen. However, the strategy of asking participants about their different sub-networks is likely to be useful in future studies of SNS activity.

As a self-report survey study, the analyses cannot show direction of causality, only predictor paths. Self-reports also may not accurately reflect users' SNS activities. In the future, these findings should be triangulated with other types of data, such as behavioral logs and interviews to assess the influence of dual site use on social capital development.

The current findings only captured the general Renren and Facebook use among Chinese users. The topology of different CMC tools used in different countries may change as time goes by or newer tools appear. Future research should look into the diverse practices of other similar technologies among different population. A longitudinal study can also be conducted so as to better reflect the trajectory of users' technology preference change and how technology use influences their long-term sociocultural adaptation.

Last, although the newly devised scales used in this dissertation all yielded good alpha, indicating decent construct reliability and the multivariate correlation result suggested discriminant validity, the scales still need to undergo a more thorough construct validation process to ensure their rigor.

Conclusion

The current study examined the influence of using multiple social network sites to navigate through different networks and develop social capital on sociocultural adaptation among Chinese international students and two factors that contributed the process: awareness and motivation. The survey results showed that awareness and motivation were two important factors in accounting for relational and communication with different networks on SNSs. In contrast to exclusive use of a certain site and interaction with a certain network, it is found that the participants maintained dual site use to interact with different networks and gained social capital from these networks. The participants relied on an array of different networks and relational resources for sociocultural adaptation.

APPENDICES

Appendix 1: Survey Instruments

7/2/2015

Qualtrics Survey Software

Screening Q and Informed Consent

Please note that you have to use **a university affiliated email (ex. abcd@university.edu)** to receive the compensation at the end of the survey. Thank you for your understanding!

Before you start the survey, please answer the following questions.

What is your nationality?

What year were you born?

How long have you been in the United States?

- Less than one year
- 1-2 years
- 2-3 years
- 3-4 years
- 4-6 years
- More than five years

Do you have a Facebook account?

Yes

No

Do you have a Renren account

Yes

No

What the study is about:

Thank you for taking time out of your schedule to come participate in this study today. We are requesting your participation in this study which aims to discover more about how users from China use social network sites specific to their home country, such as Renren, and more internationally popular forms of communication, such as Facebook. Please read this form carefully and ask any questions you may have before agreeing to take part in the interview.

What we will ask you to do:

If you agree to take part in this study, you are to answer survey questions about your social network site usage and your daily social activities with different groups of friends online and in person. You will be given \$10 dollars or 1 SONA credit as a token of our appreciation for your participation.

Risks and discomfort:

There are no obvious legal, or economic risks associated with participating in this study other than those encountered in day-to-day life. However, you will be asked questions about yourself and these questions can sometimes make people feel uncomfortable. You do not have to answer any questions that you do not wish to answer. Participation in this study does not guarantee any beneficial results for you. However, many people enjoy answering questions about themselves. As a result of participating, you may better understand your own use of communication and use of information technology.

Your answers will be confidential:

The records of this study will be kept private. In any sort of public report of this study, we will not include any information that could make it possible to identify you or your friends. Research records will be securely kept in a locked file; only the researcher will have access to the records. The audio tape on which your interview will be recorded will be destroyed after the interview is transcribed, which is anticipated to be within two months of recording.

Taking part is voluntary:

Your participation in this study is voluntary, you may refuse to participate before the study begins, discontinue at any time, or skip any questions/procedures that may make you feel uncomfortable, with no penalty, and no effect on compensation earned before withdrawing, or your academic standing, record, or relationship with the university or other organizations or services that may be involved with the research.

Privacy and confidentiality:

Please note that email communication is neither private nor secure. Though I am taking precautions to protect your privacy, you should be aware that information sent through e-mail could be read by a third party.

The main researcher conducting this study is Chien Wen, Yuan, a PhD student and Susan Fussell, an Associate Professor at Cornell University. Please ask any questions you have now. If you have questions later, you may contact Chien Wen at cy294@cornell.edu or Dr. Susan Fussell at srf72@cornell.edu. If you have any questions or concerns regarding your rights as a subject in this study, you may contact the Institutional Review Board (IRB) for Human Participants at 607-255-5138 or access their website at <http://www.irb.cornell.edu>. You may also report your concerns or complaints anonymously through Ethicspoint online at www.ethicspoint.com or by calling toll free at 1-866-293-3077. Ethicspoint is an independent organization that serves as a liaison between the University and the person bringing the complaint so that anonymity can be ensured.

If you agree to participate in this survey study, please click "Yes" to proceed.

- Yes
- No

In what month were you born?

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

Awareness and Motivation

For the following sets of questions,
By **Casual friends**, we refer to people you have met several times but do not contact on a regular basis.
By **Close friends**, we refer to people you interact most frequently and whom you contact on a regular basis.

Please indicate the extent to which you agree with each of the following statements based on the situation [in the U.S.](#)

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Casual friends can introduce me to new perspectives on different topics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casual friends are a good sources of information about job/internship opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casual friends are good resources for small favors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Close friends can support me when I am having a hard time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Close friends can offer me good advice when I'm making important decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Close friends are the ones I trust most	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree with each of the following statements based on the situation while you were [in China](#).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Casual friends can introduce me to new perspectives on different topics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casual friends are a good sources of information about job/internship opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casual friends are good resources for small favors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Close friends can support me when I am having a hard time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Close friends can offer me good advice when I'm making important decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Close friends are the ones I trust most	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[\[In the U.S.\]: It's important to me to have friends who are...](#)

Casual Friends

	Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
Chinese	<input type="radio"/>						

American |

**[In the U.S.]: It's important to me to have friends who are...**

		Close Friends						
		Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
Chinese	<input type="radio"/>							
American	<input type="radio"/>							

[While in China]: It's important to me to have friends who are...

		Close Friends						
		Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
Non-Chinese	<input type="radio"/>							
Chinese	<input type="radio"/>							

[While in China]: It's important to me to have friends who are...

		Casual Friends						
		Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
Non-Chinese	<input type="radio"/>							
Chinese	<input type="radio"/>							

Intensity_FB

Now we're going to ask you a series of questions about your [Facebook](#) use. Please open up your [Facebook](#) page to assist you in answering the following questions.

How many minutes did you spend on [checking your friends' activities on FB](#) yesterday (in contrast to other activities on FB such as playing games) ?

Less than 30 min	<input type="radio"/>	30 min - 1 hour	<input type="radio"/>	1 - 1.5 hr	<input type="radio"/>	1.5 - 2 hr	<input type="radio"/>	2 - 2.5 hr	<input type="radio"/>	2.5 - 3 hr	<input type="radio"/>	3 - 3.5 hr	<input type="radio"/>	3.5 - 4 hr	<input type="radio"/>	More than 4 hr	<input type="radio"/>
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How many FB friends do you have?

Approximately what percentage of your friends on FB are your fellow [Chinese students](#)?

Less than 10%	<input type="radio"/>	10 - 20 %	<input type="radio"/>	20 - 30 %	<input type="radio"/>	30 - 40 %	<input type="radio"/>	40 - 50%	<input type="radio"/>	50-60%	<input type="radio"/>	60-70%	<input type="radio"/>	70-80%	<input type="radio"/>	80-90%	<input type="radio"/>	90-100%	<input type="radio"/>
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Approximately what percentage of your friends on FB are [Americans](#)?

Less than 10%	<input type="radio"/>	10 - 20 %	<input type="radio"/>	20 - 30 %	<input type="radio"/>	30 - 40 %	<input type="radio"/>	40 - 50%	<input type="radio"/>	50-60%	<input type="radio"/>	60-70%	<input type="radio"/>	70-80%	<input type="radio"/>	80-90%	<input type="radio"/>	90-100%	<input type="radio"/>
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Approximately what percentage of your [social interaction](#) with your friends on FB is spent with [Chinese](#)?

Less than 10%	<input type="radio"/>	10 - 20 %	<input type="radio"/>	20 - 30 %	<input type="radio"/>	30 - 40 %	<input type="radio"/>	40 - 50%	<input type="radio"/>	50-60%	<input type="radio"/>	60-70%	<input type="radio"/>	70-80%	<input type="radio"/>	80-90%	<input type="radio"/>	90-100%	<input type="radio"/>
---------------	-----------------------	-----------	-----------------------	-----------	-----------------------	-----------	-----------------------	----------	-----------------------	--------	-----------------------	--------	-----------------------	--------	-----------------------	--------	-----------------------	---------	-----------------------

Approximately what percentage of your [social interaction](#) with your friends on FB is spent with [Americans](#)?

Less than 10%	<input type="radio"/>	10 - 20 %	<input type="radio"/>	20 - 30 %	<input type="radio"/>	30 - 40 %	<input type="radio"/>	40 - 50%	<input type="radio"/>	50-60%	<input type="radio"/>	60-70%	<input type="radio"/>	70-80%	<input type="radio"/>	80-90%	<input type="radio"/>	90-100%	<input type="radio"/>
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7/2/2015

Qualtrics Survey Software

I commented on my friend's post	<input type="radio"/>						
I liked my friend's post	<input type="radio"/>						
I went through my news feeds about my friend	<input type="radio"/>						
I viewed photos posted by my friend	<input type="radio"/>						
I clicked on a link posted by my friend	<input type="radio"/>						

Please indicate how likely it is that you will do the following activities

	Chinese Friends				
	Very Unlikely	Unlikely	Undecided	Likely	Very Likely
When I see someone sharing good news on FB, I try to respond.	<input type="radio"/>				
When I see someone sharing bad news on FB, I try to respond.	<input type="radio"/>				
When I see someone asking for advice on FB, I try to respond.	<input type="radio"/>				
When a FB friend has a birthday, I try to post something on their wall.	<input type="radio"/>				
When I see someone asking a question on FB that I know the answer to, I try to respond.	<input type="radio"/>				

Bridging and Bonding_FB**Please indicate the extent to which you agree with each of the following statements.**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
If I post a link on FB, it is likely that one of my friends would share it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If something new happens at Cornell, I know I can find out information about it on FB	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I cannot learn about opportunities such as activities, internships, or jobs through friends on FB	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On FB I can get quick responses from friends to my questions about where/who/how to find resources I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends on FB help me connect to important people in my field or job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have friends from different countries and different backgrounds on FB	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with friends on FB makes me want to try new things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with people on FB makes me more interested in the opinion and thoughts of people that I consider very different than myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talking with friends on FB makes me curious about other places in the world	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with friends on FB makes me feel like I am connected to a larger community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I put friends on FB in touch with the right person when they need it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I direct people who seek certain expertise to others on FB if I don't have the answer myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I need a job or an internship, my friends on FB cannot help me get interviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
There are friends on FB I trust to solve my problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are friends on FB I could turn to for advice about making very important decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I needed an emergency loan of \$500, I know friends on FB I can turn to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I cannot get help or support from my friends on FB when I need it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I come in contact with my friends on FB on more than one occasions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am feeling down, there is someone I can turn to on FB who can offer me support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I interact with my FB friends using other media (e.g. email, texting, IM, etc.) in addition to FB	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my friend on FB needed an emergency loan of \$500, I would not be willing to lend a hand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I give my friends on FB a favor, I know they would also help me when I need it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Relational outcomes_FB<https://cornell.qualtrics.com/ControlPanel/Ajax.php?action=GetSurveyPrintPreview&T=2mr78Q7iU39VJaHKDMROY5>

5/11

Please indicate the extent to which you agree with each of the following statements.

	Chinese friends				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
FB makes me feel closer to...	<input type="radio"/>				
FB has positively impacted my relationship with....	<input type="radio"/>				
FB helps me understand these friends better	<input type="radio"/>				
Interacting with these friends through FB makes me feel like I know them better	<input type="radio"/>				
Being FB friends with these friends has improved our relationship	<input type="radio"/>				
Without FB, I would fall out of touch with....	<input type="radio"/>				
FB is the only way I stay in touch with....	<input type="radio"/>				
Overall, FB isn't very important in maintaining my relationship with....	<input type="radio"/>				
FB plays an important role in maintaining my relationship with....	<input type="radio"/>				

Please indicate the extent to which you agree with each of the following statements.

	American friends				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
FB makes me feel closer to...	<input type="radio"/>				
FB has positively impacted my relationship with....	<input type="radio"/>				
FB helps me understand these friends better	<input type="radio"/>				
Interacting with these friends through FB makes me feel like I know them better	<input type="radio"/>				
Being FB friends with these friends has improved our relationship	<input type="radio"/>				
Without FB, I would fall out of touch with....	<input type="radio"/>				
FB is the only way I stay in touch with....	<input type="radio"/>				
Overall, FB isn't very important in maintaining my relationship with....	<input type="radio"/>				
FB plays an important role in maintaining my relationship with....	<input type="radio"/>				

Intensity_RR

Now we're going to ask you a series of questions about your [Renren](#) use. Please open up your [Renren page](#) to assist you in answering the following questions.

How many minutes did you spend [checking your friends' activities](#) on Renren per day on average **BEFORE** you came to the U.S.(in contrast to other activities on Renren such as playing games)?

Less than 30 min	<input type="radio"/>	30 min to 1hr	<input type="radio"/>	1-1.5 hr	<input type="radio"/>	1.5-2 hr	<input type="radio"/>	2-2.5 hr	<input type="radio"/>	2.5-3 hr	<input type="radio"/>	3-3.5 hr	<input type="radio"/>	3.5-4 hr	<input type="radio"/>	More than 4 hr	<input type="radio"/>
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How many minutes did you spend [checking your friends' activities](#) on Renren **YESTERDAY** (in contrast to other activities on Renren such as playing games)?

Less than 30 min	<input type="radio"/>	30 min to 1hr	<input type="radio"/>	1-1.5 hr	<input type="radio"/>	1.5-2 hr	<input type="radio"/>	2-2.5 hr	<input type="radio"/>	2.5-3 hr	<input type="radio"/>	3-3.5 hr	<input type="radio"/>	3.5-4 hr	<input type="radio"/>	More than 4 hr	<input type="radio"/>
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How many Renren friends do you have?

Approximately what percentage of your friends on Renren are your fellow [Chinese students](#)?

Less than 10%	<input type="radio"/>	10-20%	<input type="radio"/>	20-30%	<input type="radio"/>	30-40%	<input type="radio"/>	40-50%	<input type="radio"/>	50-60%	<input type="radio"/>	60-70%	<input type="radio"/>	70-80%	<input type="radio"/>	80-90%	<input type="radio"/>	90-100%	<input type="radio"/>
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Approximately what percentage of your friends on Renren are non-Chinese?

Less than 10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%	80-90%	90-100%
<input type="radio"/>									

Approximately what percentage of your social interaction with your friends on Renren is spent with Chinese?

Less than 10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%	80-90%	90-100%
<input type="radio"/>									

Approximately what percentage of your social interaction with your friends on Renren is spent with non-Chinese?

Less than 10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%	80-90%	90-100%
<input type="radio"/>									

Renren is a major social network site that I currently use.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
<input type="radio"/>				

Please indicate the extent to which you agree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Renren is part of my everyday activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am proud to tell people I am on Renren	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Renren has become part of my daily routine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel out of touch when I haven't logged on to Renren for a while	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel part of the Renren community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be upset if Renren discontinued its services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SNS Use_RR

Now think about your interaction with your Chinese friends on Renren. For the past one week, how often have the following occurred on your Renren account? Please pull out your Renren page and have a look.

	Chinese Friends						
	Never	Less than Once a Week	Once a Week	2-3 Times a Week	Once a Day	2-3 Times a Day	More than 3 Times a Day
My friend sent me a message via Renren	<input type="radio"/>						
My friend commented on my post	<input type="radio"/>						
My friend "liked" my post	<input type="radio"/>						
I sent a message to my friend via Renren	<input type="radio"/>						
I commented on my friend's post	<input type="radio"/>						
I liked my friend's post	<input type="radio"/>						
I went through my news feeds about my friend	<input type="radio"/>						
I viewed photos posted by my friend	<input type="radio"/>						
I clicked on a link posted by my friend	<input type="radio"/>						

Please indicate how likely it is that you will do the following activities

	Chinese Friends				
	Very Unlikely	Unlikely	Undecided	Likely	Very Likely
When I see someone sharing good news on Renren, I try to respond.	<input type="radio"/>				
When I see someone sharing bad news on Renren, I try to respond.	<input type="radio"/>				
When I see someone asking for advice on Renren, I try to respond.	<input type="radio"/>				
When a Renren friend has a birthday, I try to post something on their wall.	<input type="radio"/>				
When I see someone asking a question on Renren that I know the answer to, I try	<input type="radio"/>				

Relationship maintenance_RR

Now let's turn to your interaction with your **non-Chinese** friends on **Renren**. For the past one week, how often have the following occurred on your **Renren** account? Please pull out your **Renren page** and have a look.

	Non-Chinese Friends						
	Never	Less than Once a Week	Once a Week	2-3 Times a Week	Once a Day	2-3 Times a Day	More than 3 Times a Day
My friend sent me a message via Renren	<input type="radio"/>						
My friend commented on my post	<input type="radio"/>						
My friend "liked" my post	<input type="radio"/>						
I sent a message to my friend via Renren	<input type="radio"/>						
I commented on my friend's post	<input type="radio"/>						
I liked my friend's post	<input type="radio"/>						
I went through my news feeds about my friend	<input type="radio"/>						
I viewed photos posted by my friend	<input type="radio"/>						
I clicked on a link posted by my friend	<input type="radio"/>						

Please indicate how likely it is that you will do the following activities

	Non-Chinese Friends				
	Very Unlikely	Unlikely	Undecided	Likely	Very Likely
When I see someone sharing good news on Renren, I try to respond.	<input type="radio"/>				
When I see someone sharing bad news on Renren, I try to respond.	<input type="radio"/>				
When I see someone asking for advice on Renren, I try to respond.	<input type="radio"/>				
When a Renren friend has a birthday, I try to post something on their wall.	<input type="radio"/>				
When I see someone asking a question on Renren that I know the answer to, I try to respond.	<input type="radio"/>				

Bridging and Bonding_RR**Please indicate the extent to which you agree with each of the following statements.**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
If I post a link on Renren it is likely that one of my friends would share it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If something new happens at Cornell, I know I can find out information about it from my friends on Renren	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I cannot learn about opportunities such as activities, internships, or jobs from my friends on Renren	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On Renren I can get quick responses from friends to my questions about where/who/how to find resources I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends on Renren help me connect to important people in my field or job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have friends from different countries and different backgrounds on Renren	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with friends on Renren makes me want to try new things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with friends on Renren makes me more interested in the opinion and thoughts of people that I consider very different than myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talking with friends on Renren makes me curious about other places in the world	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with friends on Renren makes me feel like I am connected to a larger community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interacting with friends on Renren makes me feel like I am connected to a larger community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I direct people who seek certain expertise to others on Renren if I don't have the answer myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I need a job or an internship, my friends on Renren cannot help me get interviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate the extent to which you agree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
https://cornell.qualtrics.com/ControlPanel/Ajax.php?action=GetSurveyPrintPreview&T=2mr78Q7iU39VJuHKDMROY5					8/11

There are friends on Renren I trust to solve my problems	<input type="radio"/>				
There are friends on Renren I could turn to for advice about making very important decisions	<input type="radio"/>				
If I needed an emergency loan of \$500, I know friends on Renren I can turn to	<input type="radio"/>				
I cannot get help or support from my friends on Renren when I need it	<input type="radio"/>				
I come in contact with my friends on Renren on more than one occasions	<input type="radio"/>				
When I am feeling down, there are friends I can turn to on Renren who can offer me support	<input type="radio"/>				
I interact with my Renren friends using other media (e.g. email, texting, IM, etc.) friends in addition to Renren	<input type="radio"/>				
If my friend on Renren needed an emergency loan of \$500, I would not be willing to lend a hand	<input type="radio"/>				
If I give my friends on Renren a favor, I know they would also help me when I need it	<input type="radio"/>				

Relational outcomes_RR

Please indicate the extent to which you agree with each of the following statements.

	Chinese friends				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Renren makes me feel closer to...	<input type="radio"/>				
Renren has positively impacted my relationship with...	<input type="radio"/>				
Renren helps me understand these friends better	<input type="radio"/>				
Interacting with these friends through Renren makes me feel like I know them better	<input type="radio"/>				
Being Renren friends with these friends has improved our relationship	<input type="radio"/>				
Without Renren, I would fall out of touch with....	<input type="radio"/>				
Renren is the only way I stay in touch with....	<input type="radio"/>				
Overall, Renren isn't very important in maintaining my relationship with...	<input type="radio"/>				
Renren plays an important role in maintaining my relationship with...	<input type="radio"/>				

Please indicate the extent to which you agree with each of the following statements.

	Non-Chinese friends				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Renren makes me feel closer to...	<input type="radio"/>				
Renren has positively impacted my relationship with...	<input type="radio"/>				
Renren helps me understand these friends better	<input type="radio"/>				
Interacting with these friends through Renren makes me feel like I know them better	<input type="radio"/>				
Being Renren friends with these friends has improved our relationship	<input type="radio"/>				
Without Renren, I would fall out of touch with....	<input type="radio"/>				
Renren is the only way I stay in touch with....	<input type="radio"/>				
Overall, Renren isn't very important in maintaining my relationship with...	<input type="radio"/>				
Renren plays an important role in maintaining my relationship with...	<input type="radio"/>				

Social Adaptation

Please indicate the extent to which you agree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I understand the American value system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I see things from Americans' point of view	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand cultural differences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make friends with people from a different ethnic group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I communicate with people from a different ethnic group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This is an awfully long survey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide your email (a school-affiliated one) so that we can give you the compensation. [Note: no matter how you would like to collect the compensation, you have to provide your school email here. Thanks!]

Please indicate how you would like to collect the compensation.

- In person (Kennedy Hall; By appointment)
- Amazon Gift Card (Takes approx. 2 weeks to process)
- Starbucks Gift Card (Takes approx. 2 weeks to process)
- Pay Pal Account (Please leave your account number below. Takes approx. 2 weeks to process)
- 1 SONA Credit

Appendix 2: SEM Model Modification Process

Model Identification and Specification

An optimal ratio between a sample size and the number of free parameters in a SEM model should be 20 to 1 and a ratio below 10 to 1 can jeopardize the trustworthiness of the result (Jackson, 2003). In total, 177 survey items/observed variables were measured, which means there are 15,753 ($177 \times 178 / 2$) unique observations. The number of free parameters to be estimated in this recursive model is 376, including 134 path coefficients, 134 error variance, 44 covariance, and 64 direct effects, which makes the degree of freedom positive and the model overidentified (Kline, 2011). In order to run a full measurement model, second-order confirmatory factor analysis was required. Given the sample size and the complexity of the proposed model, full second-order factor analysis was not feasible. Instead, an alternative method of item parceling was adopted to create a total aggregation model, where all observed items were aggregated for their correspondent latent variable with the scale residual variance adjusted for the influence of measurement errors on the estimate of the hypothesized regression coefficient (Bagozzi & Edwards, 1998; Hall, Snell, & Foust, 1999).

Each latent variable in the structural model ended up with single indicator or item parcel and the model was theoretically identified. The factor loading of each indicator was fixed at 1 as the standard approach in SEM model identification. However, with only a single indicator for each latent variable, the residual variance of each scale score needs to be fixed at a specified value of 1 minus the reliability of the scale ($1 - \text{Cronbach's } \alpha$) times the variance of the scale score (Kline, 2011). With the parallel survey design for both SNSs, the data structure may contain interdependent measurement errors. Treating all measurement errors indicated by Cronbach's α as independent can be unrealistic. In order to have a relatively conservative

estimate of hypothesized regression coefficients, it is decided to correct less measurement errors in the estimation process by setting the residual variance of each scale score at 50% of the measurement error indicated by Cronbach's α .

Model Modifications

The whole hypothesized model (Figure 1) was attempted but the model did not converge due to a small sample size. It is decided to separate the hypothesized model into two sub-models, one including the antecedent variables (motivation and awareness) and their relationships with the relational and communication variables (the antecedent model) and the other containing all the other variables related to SNS use in the model (the site model) (see Figure 2). As the indirect effects between the antecedent variables with site use, perceived social capital on the sites, and sociocultural adaptation were not included in the hypotheses, the decision of separating models did not compromise what the study tries to explore. In the following, the antecedent model is described first, followed by the site model.

The antecedent model modifications. The initial antecedent model did not fit the data well, with $\chi^2 [34] = 125.01; p = .00$; RMSEA = .09; 90% CI (.07; .11); CFI = .95; SRMR = .06. The following steps were performed to reach a good model fit. The error terms of the measurement were allowed to correlate: awareness of relational benefits of having close friends in China was allowed to covary with relational maintenance with Chinese friends on Renren; communication with Chinese friends on Facebook was allowed to covary with motivation of having Chinese casual friends in China; motivation of having Chinese close friends in China was allowed to covary with motivation of having Chinese casual friends in China; communication with Chinese friends on Renren was allowed to covary with awareness of relational benefits of close friends in China; motivation of having Chinese close friends in China was allowed to

covary with awareness of relational benefits of having casual friends in the U.S. (χ^2 [31]= 57.32; $p = .003$; RMSEA = .05; 90% CI (.03; .07); CFI = .99; SRMR = .05). Then I checked the non-significant covariance between awareness of relational benefits of having close friends in China and relational maintenance with Chinese friends on Renren that was added earlier in the model modification process in an attempt to make the model more parsimonious. Removing these covariance links actually worsened the model fit so it was still retained in the model (χ^2 [32]= 56.80; $p = .004$; RMSEA = .05; 90% CI (.03; .07); CFI = .98; SRMR = .05). Although the χ^2 test statistics for the error-interdependent model is significant, the adjusted χ^2/df is < 3 and all the other indices indicate a good fit, this model is considered an adequate one. A detailed summary of the model modifications is in Table 21. The full model diagram is presented in Figure 4.

Summary of the Model Fit Indicators: The Antecedent Model

Model	χ^2	df	p	RMSEA	90% CI	CFI	SRMR	χ^2 -difference test ¹		
								TRd	Δdf	p
Initial Model	124.96	36	.000	.09	(.07 ; .11)	.95	.06	--	--	--
Error Interdependent	57.32	31	.003	.05	(.03; .07)	.99	.05	38.61	5	.000

Note: Threshold for the following indices: CFI $\geq .95$; RMSEA $\leq .05$; 90% CI for RMSEA ($< .05$; $< .10$); SRMR $< .08$ (Kline, 2011).

Table 21. Summary of the Model Fit Indices-- The Antecedent Model.

¹ χ^2 difference test for continuous, non-normal outcomes (TRd) requires a scaling correction to better approximate χ^2 under non-normality. For a detailed discussion and relevant formula please see (Muthén & Muthén, 2010; Satorra & Bentler, 2001).

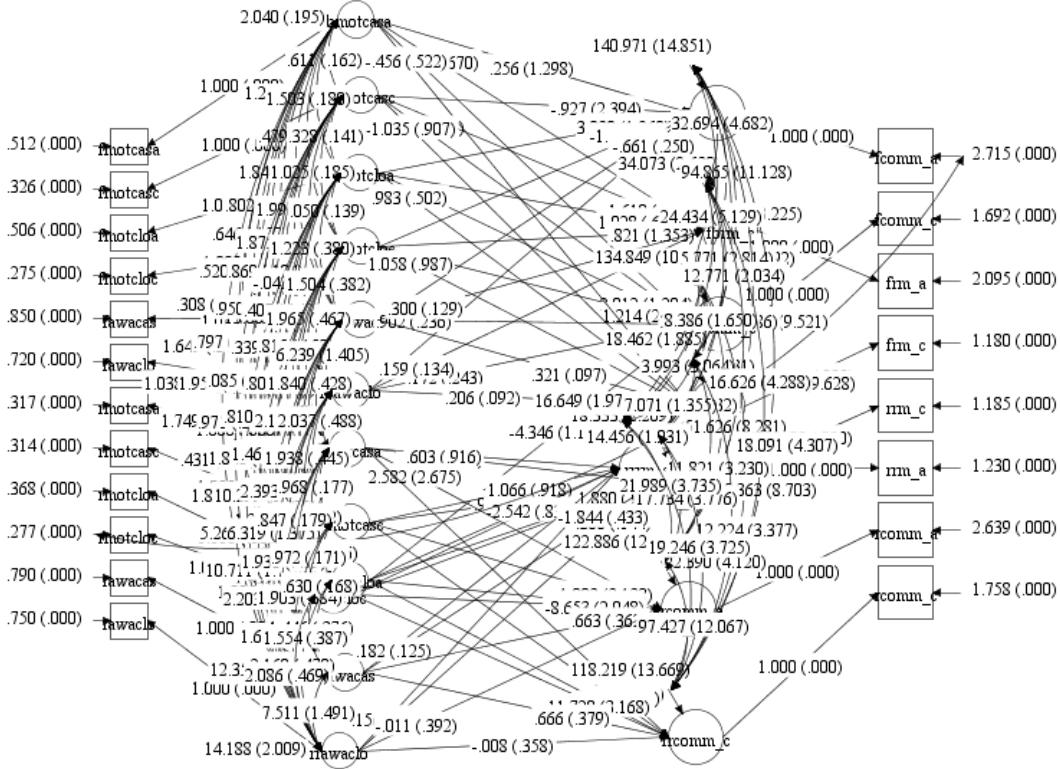


Figure 4. The full antecedent model with co-variances among the variables.

The site model modifications: Error interdependent model. The initial site model did not fit the data well, with $\chi^2 [49] = 402.73; p = .00$; RMSEA = .16; 90% CI (.14; .17); CFI = .77; SRMR = .12. The following steps were taken to improve the model fit. First, measurement errors of indicators measured on the same site were correlated, including perceived bonding and bridging social capital on Renren and those on Facebook. The measurements of perceived bonding and bridging social capital, relational maintenance, and site use across different sites were also allowed to correlate. Also, the following error terms were allowed to correlate: relational maintenance with Chinese friends on Renren and Renren use; perceived bridging social capital on Facebook and Facebook use; communication with American friends on Facebook and Renren use; perceived bonding social capital on Facebook and relational maintenance with Chinese friends on Facebook; perceived bonding social capital on Renren and

communication with Chinese on Facebook (χ^2 [38]= 99.35; $p = .00$; RMSEA = .08; 90% CI (.06; .09); CFI = .96; SRMR = .08). Allowing interdependent across social groups and sites is reasonable due to the survey instrument was phrased in parallel for different networks on the same site and across sites. As summarized in Table 22, *the error interdependent model* significantly improved the initial model with a χ^2 difference (TRd) of 266.37 [11], $p < .00$.

The site model modifications: Additional effects. The model modification solutions provided by Mplus 7.3 suggested three additional direct effects in the site model. First, perceived bridging social capital on Renren is affected by relational maintenance with Chinese network on Facebook. Secondly, perceived bonding social capital on Facebook is affected by relational maintenance with Chinese network on Facebook. Last, a path is suggested from perceived bridging social capital on Renren to perceived bridging social capital on Facebook. Allowing these four effects also significantly improved from the previous model with TRd of 36.33 [3], $p < .00$.

Summary of the Model Fit Indicators: The Site Model

Model	χ^2	df	p	RMSEA	90% CI	CFI	SRMR	χ^2 -difference test		
								TRd	Δdf	p
Initial Model	402.73	49	.00	.16	(.14 ; .17)	.77	.12	--	--	--
Error Interdependent	99.35	38	.00	.08	(.06; .09)	.96	.08	266.37	11	.000
Additional Effects	57.49	35	.01	.05	(.02; .07)	.99	.05	36.33	3	.000
Final Model	46.94	35	.09	.03	(.00; .06)	.99	.05	--	--	--

Note: Threshold for the following indices: CFI $\geq .95$; RMSEA $\leq .05$; 90% CI for RMSEA ($< .05$; $< .10$); SRMR $< .08$ (Kline, 2011).

Table 22. Summary of the Model Fit Indices-- The Site Model.

The site model modifications: Final model. Last, the error covariance between perceived bonding social capital on Facebook and relational maintenance with Chinese friends

on Renren was added. Then I checked the non-significant covariance between perceived bonding social capital on Facebook and relational maintenance with Chinese friends on Facebook that was added earlier in the model modification process in an attempt to make the model more parsimonious. Removing these covariance links actually improved the model fit with χ^2 [35] = 46.94; $p = .09$; RMSEA = .03; 90% CI (.00; .06); CFI = .99; SRMR = .05. Each step of the model modification significantly improved the overall model fit. All indices reflect a goodness of fit and it is considered the model yields valid results (see Table 22). The full model diagram is presented in Figure 5.

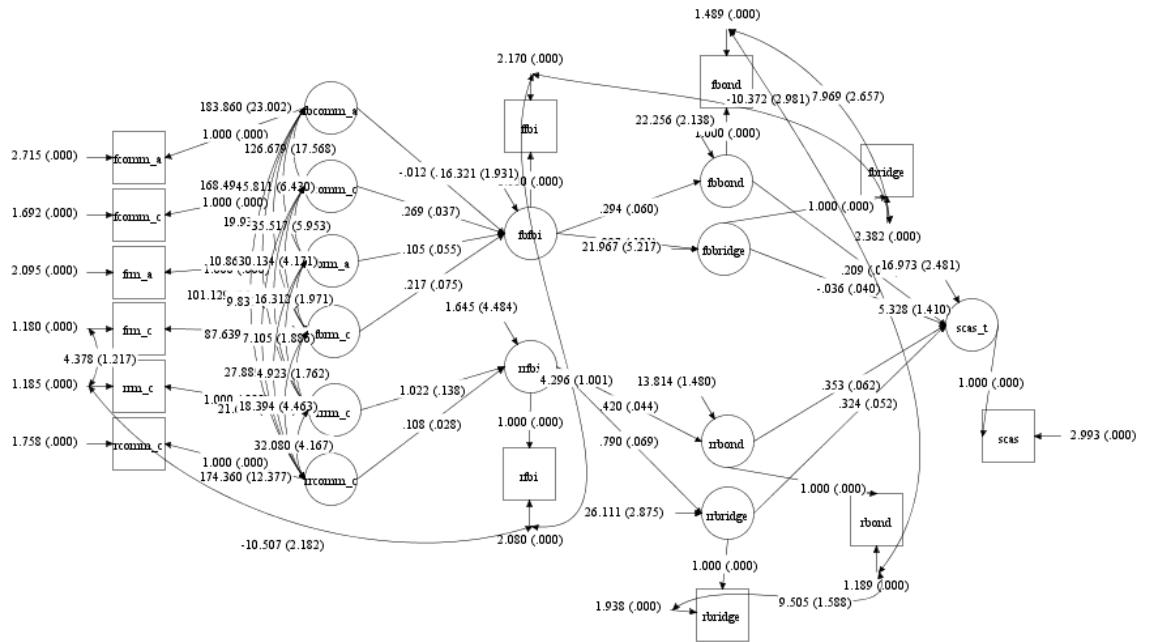


Figure 5. The full site model with co-variances among the variables.

Alternative models. In addition to the proposed model, two alternative models that might account for the same pattern of observed covariance just as well as the proposed model were also run to avoid confirmation bias (Shah & Goldstein, 2006). In the literature of SNS use and social capital development, whether SNS use contributes to the accumulation of social

capital or social capital works as an incentive for people to use SNSs has been a subject of debate. In the alternative model, site use and social capital were exchanged to test if the reversed model also holds true. The results showed that the alternative model fitted worse than the site model ($\chi^2 [55] = 475.06; p = .00$; RMSEA = .16; 90% CI (.15; .18); CFI = .81; SRMR = .10), which disconfirms that social capital works as an incentive for SNS use and corroborates the findings of previous longitudinal studies that site use contributes to social capital development (Burke & Kraut, 2014; Steinfield, Ellison, & Lampe, 2008).

Then, to test the relationships between the three variables, site use, communication behaviors, and relational maintenance, site use was moved from endogenous to exogenous variable to communication behaviors and relational maintenance in the second alternative model. The results also showed that it fitted worse than the site model ($\chi^2 [76] = 989.20; p = .00$; RMSEA = .20; 90% CI (.19; .22); CFI = .59; SRMR = .15), which suggests communication behaviors and relational maintenance are two subset variables to SNS use, as modeled in the site model.

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