Cultural Values, Connection, and Participatory Cultural Divide:

Chinese Generation Cohort Differences in Adoption and Use of WeChat

by

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ABSTRACT

This study explores how WeChat, one of the most popular Chinese-based Social Network Sites (SNSs), has been adopted and used under different patterns between two Chinese generation cohorts, namely “The post-70” (i.e., people who were born in the 1970s) and “The post-90” (i.e., people who were born in the 1990s). Three major issues were examined in this Study: (1) what are the differences in WeChat connection between two generations; (2) how Chinese post-70 and the post-90 cohorts differ regarding their cultural value orientations and how those differences influence their WeChat connection; (3) if there is a participatory cultural divide between two generation cohorts. Two hundred and eight the post-70 cohort and 221 the post-90 cohort were recruited to complete a 91-item survey. Results indicated significant differences between the post-70 and the post-90 cohorts in WeChat adoption and use, collectivistic/individualistic (COL/IND) orientations, and participation in creating and spreading of popular online memes. Moreover, factors influencing human capital-enhancing activities on WeChat were examined. Also explored were the influence of cultural values on the motivations to connect to the Internet and frequencies of different types of WeChat activities. Major findings and limitations were discussed.

TABLE OF CONNTENTS

Page

CHAPTER Page

CHAPTER Page

CHAPTER Page

LIST OF TABLES

LIST OF FIGURES

Figure Page

Cultural Values, Connection, and Participatory Cultural Divide: Chinese Generation Cohort Differences in Adoption and Use of WeChat

CHAPTER 1 INTRODUCTION

What is This Study About?

This study explores how WeChat, one of the most popular Chinese-based Social Network Sites (SNSs), has been adopted and used under different patterns between two Chinese generation cohorts, namely "The post-70" (i.e., people who were born in the 1970s) and "The post-90" (i.e., people who were born in the 1990s).

Three major issues will be discussed in this Study. First, this study examines differences in WeChat connection between two generations. The study investigates two parts of WeChat connection: (1) adoption, which explores what factors are influencing differences in WeChat adoption between active and inactive adopters and if there are intergenerational differences in these factors; (2) use, which examines what WeChat activities generation cohorts participate in and how they could be associated with disparities in socio-economic status, internet skill, the scope, intensity, and centrality of connection. According to China Internet Network Information Center's (CNNIC) report, 29.1% of China's internet users are the post-90s whereas the post-70 generation constitutes only 14.1% (2017, July 1). Applying the statistics to WeChat adoption, the study assumes there are more active WeChat adopters in the post-90 generation than those in the post-70 generation and attempts to explore factors that may explain the intergernational differences in WeChat adoption. The study also

examines WeChat activities generation cohorts do and how differences in them could be associated with disparities in socio-economic status, internet skill, the scope, intensity, and centrality of connection.

Second, this study aims to explore how Chinese post-70 and the post-90 cohorts differ regarding their cultural value orientations and how those differences, if there are, influence their WeChat connection. The post-70 and the post-90 cohorts are conceptualized as two culturally different generations partly due to three historical events that the post-90 cohort was more likely to experience in their childhoods than the post-70 cohort was: (1) the One Child Policy (1979, which has changed the formation of Chinese families), (2) implementation of the Economic Reform (1978-, which has highlighted the importance of monetary achievement and personal success), and (3) mandatory nationalism education (1990-, which helps consolidate the traditional Chinese collective values). This study investigates inter-generational cultural value differences through the lens of Individualism and Collectivism (Triandis & Gelfand, 1998). The study postulates that cultural values influence people's motivation for using the Internet and online activities. Therefore differences in Individualism and Collectivism between the post-70 and the post-90 cohorts would lead to intergenerational differences in why they are connected to the Internet and what they do on WeChat.

Third, the study attempts to explore the participatory cultural divide between two generation cohorts. This study defines participatory cultural divide as the disparity

among users in the understanding and participating in creating and spreading online memes. Memes refer to small cultural units that seek replication for their own survival (Dawkins 1976; 2006). Blank and Reisdorf (2012) classify online activities into two types: (1) web 1.0 activities are those focusing on receiving information other than contributing, such as searching for news, listening to music, and read others' posts; and (2) web 2.0 activities focus on the participatory part of the Internet and are more contributive——such as sharing information with others online, posting photos, and commenting on others' posts. Web 2.0 activities are more contributive than web 1.0 activities in creating and spreading of online memes, but require more skills than the latter. This study postulates that generation cohorts have different levels of Internet skills, which put them into different positions in the understanding, creating and spreading of online memes: The post-90 cohort is more technically competent, and thus more frequently participate in online activities that contribute to greater participation in the participatory digital culture. Therefore participatory cultural divide is becoming more and more evident between two generations in that the post-90 cohort are active contributors of online memes, while the post-70 cohort are turning to be less efficient receivers of them.

China's Internet Landscape and WeChat

Ever since the establishment of the first Internet line in 1994 (CNNIC, 2009, May 26), China's internet and related industries have experienced dramatic development and expansion through the last three decades. According to CNNIC's

data (1997, October 31; 2017, July 1) in past 30 years the number of China's Internet user has increased by 1,251%, from .6 million (1997) to 751 million (2017), and the number of websites has grown from 1,500 (1997) to 5.6 million (2017). Compared to other countries, China has the largest number of internet users and cell phone users (724 million, CNNIC, 2017, July 1). On average, Chinese Internet users spend about 3.5 hours online every day (CNNIC, 2017, July 1).

WeChat is a Chinese-based multi-function and multi-platform social network site (SNS) application. WeChat first launched to market in 2011, and after five years' of rapid development it is now one of the most popular SNS applications in China (Sohu, 2017). Ellison and Boyd (2007) defined SNS as online platforms through which one can (1) construct profile, (2) articulate a list of other users whom they share a connection, and (3) view and traverse their list of connections. As an SNS application, WeChat was developed based on these attributes. Users can build their profiles and search for new "friends" through various ways, such as putting in telephone number or searching for people that are near them. They can communicate with friends through WeChat messages, or even make voice and video calls. Similar to Instagram, WeChat users can share news and updates through posting and commenting on "moments," which is, in most situations, accessible only to friends.

Why is WeChat selected as the targeted platform for this study? First, WeChat is currently one of the most popular SNS applications or applications in general in China. According to CNNIC (2017, July 1), 85.8% of the 731 million Chinese

Internet users are WeChat users. The *2016 Tencent* (the company that developed and owns WeChat) *Annual Performance Report (*Tencent*,* 2017, March 31*)* showed that in 2016 WeChat had an average daily online population of 700 million (Globally). More than half of the users use WeChat for at least one hour per day (Tencent, 2017, March 31). On average there are about 38 billion messages sent on WeChat every day (China Tech Insights, 2017, November 29). Therefore WeChat is a gigantic online platform on which a vast number of users interact with each other and vast information is transmitted. Compared to its popularity, however, there is limited research on WeChat adoption and use. So it is necessary to explore why people adopt WeChat, what they do on WeChat, and how they differ across generations.

Second, the study of WeChat would be influential because WeChat is deeply integrated into many users' lives. WeChat is more than just an SNS application. Besides “moments” and instant messaging, it also provides with a lot of other functions. It is an information center through which users can search for, subscribe, and interact with news and updates from online public accounts, including news corporations, celebrities, merchants, governments, and so on. WeChat is also a financial center, through which users can deposit some money into the application, make purchases, and pay bills. Another function of WeChat is that it is a gaming platform, offering users various online games. Last of not the least, WeChat provides a variety of plug-ins that enable users to book hotels, buy train tickets, make food orders, shop clothes online, and so on. It helps users to participate in economic, social,

commercial, and even political activities. With all these functions users can use WeChat to participate in many of their everyday activities. So this research is influential in terms of how it could help users understand their online behavior and improve their everyday lives.

Third, WeChat provides a broad research scope concerning the variety of functions and activities it offered. Like a miniature of the Internet, many activities people participate on Internet could also be done on WeChat, such as communicating with friends, entertaining, online purchasing, and information seeking, and so on. In the meantime, many issues about Internet may also be found occurring on WeChat. For example, digital divide scholars (e.g., DiMaggio et al., 2004) argued that some people use the Internet primarily to participate "Human capital- enhancing" activities (e.g., working) whereas some other do not, therefore leading to socioeconomic disparities. Similar cases could also be found on WeChat: while some people are using WeChat for entertainment (e.g., playing games), some others may use it to enhance their capital (e.g., online banking). Therefore WeChat offers a venue in which many topics could be discussed, and many Internet-related studies could be replicated and reexamined.

Fourth, the hybridity of WeChat makes it a typical representative of Chinese SNS applications and an enlightening example of the worldwide trend of SNS application development. WeChat's characteristics of being "versatile" could also be observed in other Chinese SNS applications. For instance, QQ and Weibo also provide multi-

functions like instant messaging, news watching, updates posting, picture and video posting, listening to music, gaming, and online purchasing. Besides multi-functional, WeChat is cross-platform. Similar to other Chinese SNS applications (e.g., QQ and Weibo), WeChat can be installed and used on personal computers, cell phones, and portable devices with OS, Windows or Android systems. Looking at issues related to WeChat's hybridity would shed light on explaining the boom of China's SNS applications as well as contributing to the development of SNS applications worldwide.

Why is This Study Important?

Examining cross-generational differences in cultural values and adoption and use of WeChat is motivated by practical and theoretical considerations and has significant transnational implications. Importance of this could be found in, but is not limited to, the following five aspects:

First, the study serves as a lens through which readers and researchers could form more comprehensive understandings of the social transformation that has started almost four decades ago and is still undergoing in China. Chinese society has been experiencing drastic changes since 1978. One is the Economic Reform, which has been implemented in 1978 to transform China from a Stalinist centrally planned economy to a socialist market economy (White, Howell, & Xiaoyuan, 1996). As a result, China's Gross Domestic Product (GDP) per capita has increased from $156.396 in 1978 to $8,027.684 in 2015, and 800 million people have been lifted out of poverty

(World Bank, 2015). Another is the One Child Policy that reduced childbirths per woman from 2.945 in 1978 to 1.562 in 2014 (World Bank, 2014). A third change is the fast development of the Internet starting from 1993 when China launched the Golden Bridge Project (or the Chinese version "Information Superhighway", China Internet Network Information Center (CNNIC), resulting in great leaps of the number of Internet users: .62 million in 1997 (CNNIC, 1997, July 1), 8.9 million in 2000 (CNNIC, 2000, July 1), 94 million in 2005 (CNNIC, 2005, July 16), and 731 million in 2017 (CNNIC, 2017, July 1). Research on above changes mainly examines them separately and often focuses on the impact of one or two changes, such as how One-Child policy changed the family formation (Hesketh, Lu, & Xing, 2005) and how access divide has been closing (Wensheng, 2002). However, these changes are but just three parts of a greater social transformation that has been turning China from an agricultural society into an industrialized and informationized society. Therefore there is a necessity to integrate research on sporadic social changes to explore a larger and more holistic part of an overarching question: how has the social transformation as a whole influenced Chinese population? Examining intergenerational differences could shed light on answering how Chinese culture has been changed in the past four decades. In this way, this study is significant not only because it looks at two Chinese generations, but more importantly it integrates and investigates changes of social contexts in which generations are embedded.

Second, the target generation cohorts represent two Chinese groups that have significant social, political, and economic influences. To begin with, populations of the post-70 and the post-90 cohorts together equals approximately 390 million, which constitutes about 29% of the Chinese population. The post-70 and the post-90 cohorts also contribute to about 58% of the 7310 million Chinese internet users and more than 11% of the world internet users (CNNIC, 2017, July 1), and outnumber the whole internet user population in North America (Internet World Stats, 2016). In this sense, studying these two generation cohorts is to study more than 1/4 of the Chinese population, more than half of Chinese Internet users, and more than 1/10 of world Internet users. What are their cultural values? What do they do online? How do they contribute to the online culture? The effort to answer these questions offers an opportunity to depict what is happening in a considerable part of the networked society. Moreover, explaining why far less the post-70 cohort are connected than the post-90 cohort, and investigating how well Internet users are using Internet for societal participation will benefit China's political endeavor which aims to reduce inequality in civic engagement and social conflict and build a "harmonious country" (the Communist Party of China (CCP), 2004). In addition, when conducting this study the post-70 cohort are between the ages of 38-47, which indicates that they may be more financially independent and competent than the post-90 cohort who are between 18 and 27. Although the post-70 cohort outnumbers the post-90 cohort, they are far less connected than the latter in terms of both number of Internet users and time spent

online (CNNIC, 2017, July 1). Examining the post-70 cohort's motivations for adoption and their online activities will help companies targeting on the post-70 generation figure out what this group of people expect from the Internet and how should the Internet better serve them, and therefore increase these companies' earning potential and attract more the post-70 cohort to go online and be their customers.

Third, the study extends research on intercultural communication, technology adoption, digital divide, and digital culture. In intercultural communication research, China has been conceptualized by scholars (e.g., Hofstede, 1984; Triandis & Gelfand, 1998; Singeles et al., 1995) as a country with high collectivism. However, there is a lack of investigation on country/culture-specific reasons for individualism/collectivism, within-country variations, and dynamics of culture change. This study serves as an attempt to respond to the above limitations by examining how cultural values have changed over decades and what China-specific factors may be associated with these changes. For technology adoption, as Rogers (1995) indicated, one shortcoming of current studies is the "pro-innovation" bias, meaning people look into adoption while neglecting rejection and discontinued use. The study will look into non-adoption and discontinued connection by introducing a new user category that investigates not only active adoption, but also rejection and discontinued use, or inactive adoption, of WeChat. Another limitation of current research is the lack of explanation for the "often significant age differences" in adoption (e.g., Rice & Pearce, 2015; Zhu & He, 2003). This study looks into stories

behind age—— that is, China's specific contexts that result in differences in people's willingness and capability of WeChat adoption across ages. For digital divide studies, this study will respond to the lack of "beyond access divide" research in China by conducting a survey with integrated concepts and findings concerning the "skill divide" (DiMaggio & Hargittai, 2001) and "inequality in societal participation" (Mossberger et al., 2012) and other beyond access issues. Moreover, this study explores a concept that is closely related to digital culture——participatory cultural divide. Dimensions of and methods to examine participatory cultural divide are introduced and limitations are discussed.

Fourth, this study could offer a model to investigate the interplay between culture and technology adoption and use in different contexts and countries. The development of intercultural communication as a field over 60 years has yielded a bunch of research on defining and comparing indigenous cultural values across cultures or countries (e.g., Japan is a high power distance country and the US is a low power distance country, Hofstede, 1984). The boom and prevalence of the Internet have brought a question to what intercultural scholars have achieved in the past: how would the use of Internet reflect and impact culture? While aspects of cultural values has been examined and discussed in the past, few studies look into how cultural values interact with adoption and use of the Internet. This study provides a model to explore the above question. This model could be applied to not just China, but other

contexts as well, such as looking at the interplay between individualism and Internet use in the US.

Fifth, this study touches a topic that has attracted global attention for decades——the aging society. The United Nations (UN) (2015) defines an older person as someone that is 60 or above. The arrival of the aging society is not a single country issue but a global trend. According to UN (2015), by 2030 there will be 1.4 billion people at the age of 60 or above, and by 2050 the world's older people will reach nearly 2.1 billion and for the first time outnumber adolescents and youth aging 10-24 years. As the aging society approaching, it is necessary to investigate the cultural values and patterns of behavior of "future older people" to understand their expectations and feelings in order to reduce the potential of conflict in the future. The post-70 cohort will be turning 60 by 2030, and the post-90 cohort will be "aged" by 2050. This study could contribute to the knowledge of the aging society and shed light on reducing the age gap in online participation to improve older people's lives in the networked aging society.

CHAPTER 2 LITERATURE REVIEW

In this chapter, I will discuss historical events that helped shape differences in characteristics between Chinese post-70 and the post-90 cohorts. Applying those differences to WeChat adoption and use, cultural values, and participatory cultural divide, three questions arise: (1) what are the disparities between Chinese post-70 and the post-90 cohorts in WeChat adoption and use (e.g., WeChat adoption rate, WeChat activities, Internet skill, technology environment, and perceived attributes of WeChat)? (2) How differences in cultural values, especially collectivism and individualism orientations, may result in disparities in motivations of using Internet and WeChat activities between the post-90 and the post-70 cohorts? (3) What are the roles played by the post-70 and the post-90 cohort in participation in digital culture? Related research questions and hypothesis will be formulated.

Chinese Post-70 and Post-90 Cohorts

Generation and Different Classifications of Chinese Generations

A generation refers to a group of people differentiated from others in terms of their age, while sharing a community of experiences and feelings within the group (Mannheim, 2013). Generation members share a set of values, beliefs, expectations, and behaviors which are greatly influenced by their experiences of youth and remain relatively stable through lifetime (Fornas, 1995; Inglehart & Baker, 2000).

Different scholars have different classifications of Chinese generations. For example, Egri and Ralston (2004) argue that currently there are four Chinese

generations: Republican (born in 1911-1949, experienced extreme poverty, the World War II, and China's 1947-1949 civil war), Consolidation (born in1950-1965 when the Chinese Communist party implemented national reforms to replace Confucianism with Maoist and Marxist-Leninist ideology), Cultural Revolution (born in 1966-1976 when there was the great cultural revolution for ideological purity), and Social Reform (born in 1978-present when Economic reform started and has been undergoing). Sun and Wang (2010) classified Chinese generations as The Great Leap Forward generation (born in 1965 and before), Cultural Revolution generation (born in 1965-1975), Economic Reform generation (born in 1975-1990), and Transition Period generation (born after 1990, when China started a total societal transformation, including not only economy mode, but also other fields such as politics and education). Shuai, Mi, and Zou (2015) defined Chinese generations that were born after 1970 for every 10-year's interval——after-70's, -80's and -90's.

Although there seems to be no consensus on the classification of Chinese generations, many scholars agree that Chinese generations should be categorized according to historical events, since these events have significant influence on people's values, beliefs, expectations, and behaviors (Egri & Ralston, 2004; Erikson, 2009; Ralston, et al., 1999; Sun & Wang, 2010).

The Post-70 and the post-90 as Two Chinese Generations

In this study the post-70 cohort (i.e., Chinese born in 1970-1979) and the post-90 cohort (i.e., Chinese born 1990-1999) are conceptualized as two distinct generations.

Nation-wide historical events that may be associated with differences (and similarities) between the two generations include but are not limited to: (1) One-Child policy (1979-), (2) Economic Reform (1978-), (3) mandatory education of nationalism and traditional collective values (1990-), and (4) Internet skill education (2000-). Next is a brief introduction of these events. Their influences on cultural value differences between the post-70 and the post-90 cohort will be discussed later in this section.

(1) One-child policy. In the late 1970s, after ten year of economic recession of the Great Cultural Revolution (1966-1976), Chinese government needed to revitalize the nation's economy. However, the sharply increasing population might be a big issue because at that time two-thirds of the population was under 30, and the Boomers (born in 1949-1964) were just entering their productive age (Zhu, 2003). Under such circumstances, the one-child policy, meaning each family could only have one child, was introduced. This policy has greatly decreased the Chinese's family size. According to a National Family Planning Survey, from 1979 to 2003, Chinese prevented 250-300 million births, and the average number of children born per woman decreased from 2.9 to 1.7, with only 1.3 in urban areas (Kang & Wang, 2003).

(2) Economic Reform. In 1978, Chinese government introduced two major policies to improve the nation's economic situation. One includes serials of smaller reforms to change the planned economy to market economy (Lin, Cai, & Li, 2003). The other is the Openness, or Open-Door, meaning opening Chinese market to foreign capital (Lin et al., 2003). The economic reform resulted in tremendous boosts of

China's economy and Chinese economic status. From 1979 to 2012, China's economy increased with an annual rate of 9.8%, and Gross National Income (GIN) per capita increased from $190 to $5,680 (Liu et al., 2013). Foreign investments increased with more and more foreign corporations coming to China, from $.9 billion in 1983 to $ 111.7 billion in 2012 (National Bureau of Statistics of China, 2012). According to the World Bank (2015), from 1978 to 2015, China changed from World's tenth largest economy to the second, and China's Gross Domestic Product (GDP) per capita increased from $156.396 in 1978 to $8,027.684 in 2015, and 800 million people were lifted out of poverty.

(3) Nationalism education. After 1989 Tiananmen Square protests, the Communist party of China (CPC) introduced a nation-wide nationalism education to consolidate its authority and enhance the harmony of the society. On May 3, 1990, CPC president Zemin Jiang addressed a speech named *Nationalism and the Destiny of Intellectuals*, which was the starting signal of nationalism education. CPC explicated the concept, content, and plan of nationalism education in *An Outline of Nationalism Education* published on August 23, 1994. One major argument about Nationalism is that nationalism, socialism, and collectivism are interdependent, and good traditional knowledge, including arts, philosophies, and ethics, should be brought into class (CPC, August 23, 1994). It indicates CPC's change of attitude towards traditional Chinese values, including collectivism, from something that should be abandoned since 1949, to something that can benefit national security. The outline urged that

nationalism education be implemented in every educational institution. Consequently, mandatory courses about nationalism, socialism, and collectivism have been introduced to primary schools, high schools, and colleges and universities, and become parts of entrance exams for college and graduate schools.

(4) Information skill education. China began to build its information superhighway since 1993 through launching the "Golden Bridge Project," which resulted in rapid development of the Internet infrastructure (CNNIC, 2009). Besides infrastructure, the Chinese government also realized the importance of teaching people how to use computers to connect to the Internet and work, therefore conducted a nation-wide information skill education reform (CNNIC, 2009). In 2000, in the *Outline of the Tenth (2001-2005) "Five Year Plan"* (which is published every five-year as the official guideline for the next five-year's national development) CPC highlighted informationization as an important aspect of modernization, and later in *Recommendations for the Outline* (2000) CPC explicated that schools of all levels should introduce education on computer and Internet skill (Dai, 2002). Consequently, information skill education has become compulsory in the majority of higher education institutions (except for those with no or poor information infrastructure). For many universities, passing the test for certificate of information skill even influences whether or not one can graduate. Although there have been debates on whether the importance of information skill education is overemphasized, it helped

train Chinese students, especially college students, into technically capable Internet users (Dai, 2002).

Section 1: WeChat Adoption and Use

In this section I will review two areas of studies, diffusion of innovation and digital divide, which focus on adoption and use of WeChat, respectively. Diffusion studies primarily investigate factors that affect adoption; whereas digital divide studies focus on examining disparities associated with use. Applying those finding to study Chinese post-70 and the post-90 cohorts' WeChat adoption and use, two research questions arose: (1) Are individuals' socioeconomic status, social environment, technological environment, perception of WeChat, and Internet skills associated with their online human human capital- enhancing activities on WeChat? (2) Does the post-70 cohort differ from the post-90 cohort in terms of their motivation to use the Internet, WeChat adoption rate, time spent on WeChat, frequency of WeChat activities, social environment, technological environment and Internet skills?

Diffusion of Innovation Theory

Introduced by Rogers (1962; 1995), Diffusion of Innovation Theory explains why, how, and to what rate an innovation is diffused in a culture. Rogers (1995) defined innovation as the idea, practice, or object that is perceived as new by an individual or other units of adoption and diffusion as a special type of communication in which the message is about a new idea. Rogers (1995) argued that there are five stages of technology diffusion: knowledge, persuasion, decision, implementation, and

confirmation, during which people make decisions on acceptance/rejection of the technology based on a variety of factors, such as personal traits, social-economic status, communication (interpersonal, mass, and mediated), and perceived attributes of the technology (i.e., relative advantage, complexity, compatibility, observability, and trialability). Relevant research confirmed these factors (Pearce & Rice, 2015; Zhu & He, 2002) as well as providing with new evidence (e.g., attitude in Vishwanath & Goldhaber, 2012; perceived popularity in Lin et al., 2015; social support in Jung et al., 2005) that people's adoption/rejection is socially and culturally embedded.

Factors Influencing Adoption

Literature indicates multiple factors that significantly influence people's adoption of an innovation. These factors could be applied to study WeChat adoption. There are, but not limited to, three dimensions of factors: (1) Individual-level, (2) Social-Level, and (3) Innovation-specific.

First, Individual-level factors include personal attributes such as (non)adopter's age, socioeconomic status (SES), motivation for Internet use, and technology cluster. Literature indicates that age and socioeconomic status (e.g., income, education level, and occupation) are significant factors in predicting adoption decision (e.g., Rice & Pearce, 2015; Vishwanath, & Goldhaber, 2003; Zhu & He, 2002). Young people tend to adopt the innovation at earlier stages than older people, and so do people with higher SES than those with lower SES (Rice & Pearce, 2015; Vishwanath, & Goldhaber, 2003).

Motivation also predicts people's adoption of an innovation, which could shed light on understanding why some people with innovation-friendly attributes (e.g., young age, high SES) reject certain types of innovation. For example, since WeChat is an SNS application, it may be more attractive to those who use the Internet mainly to communicate with family and friends than those who prefer less contact with people online. Technology cluster refers to the idea that using similar technologies increases the likelihood of adoption (Lin et al., 2011; Rice & Pearce, 2015). Leung (2001) investigated the adoption of ICQ by 576 Hong Kong students and found that students using emails had higher likelihoods to adopt ICQ than those did not have email accounts. Therefore those who use other Chinese SNS applications (e.g., QQ and Weibo) may have a higher chance to adopt WeChat than people who do not use SNSs.

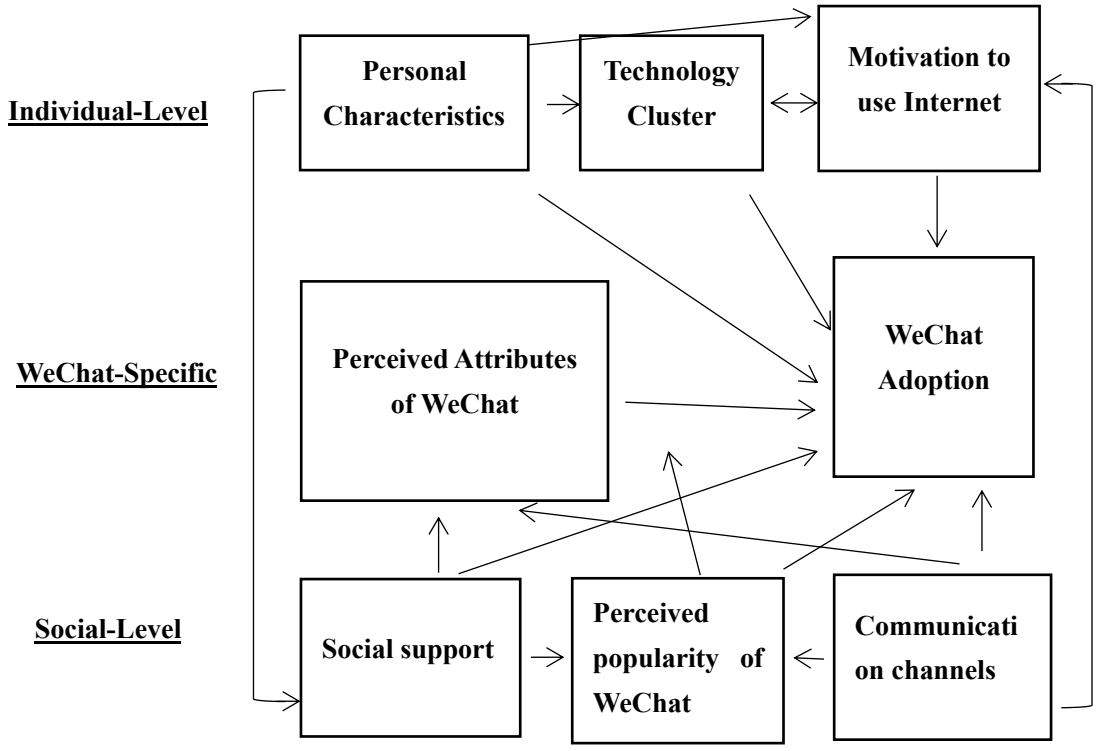
Second, Social-level factors include social support, perceived popularity of the innovation, and communication channels. Jung et al. (2005) introduced a category of factors labeled as "social environment" to examine the influences of social support, parents' use of the technology, and peer group on adoption. Based on their study, I will extend the category by looking at not just parents' WeChat adoption, but also friends' and classmates'/coworkers', and add a new factor in regards to communication channels, as indicated by Rogers' (1995) model of diffusion, through which the individual gets information about WeChat.

To begin with, social support refers to the help an individual receives from others when learning how to install and use the innovation (Lin et al., 2011). Lin et al.'s

(2011) study indicates that the more social support one receives, the more likely he/she will adopt the innovation. Perceived popularity, which refers to how popular one thinks the innovation is, may also influence his/her adoption (Zhu & He, 2002; Lin et al., 2011). For example, Zhu and He (2002) found that the perceived popularity of the Internet in family, work, and among friends associate with Chinese decision on Internet connection. Communication channel focuses on the extent to which an individual is surrounded by information about WeChat from media and during interpersonal communication. According to Rogers (1995), communication helps increase the likelihood of adoption. So the more an individual received information about WeChat, the more he/she tends to adopt WeChat.

Figure 1

Conceptual Model of Factors Influencing WeChat Adoption



Third, technology-specific factors focus on how an individual perceives the technology before and after adoption. According to Rogers (1995), perceived attributes of innovation may influence adoption. He (199) introduced five attributes: (1) relative advantage (the degree to which the innovation is perceived as better than the idea it supersedes), complexity (the degree to which the innovation is difficult to understand and use), compatibility (the degree to which the innovation is perceived as being consistent with existing values, experience, and needs of potential adopters), observability (the degree to which the results of the innovation are visible to others), and trialability (the degree to which the innovation can be experimented on a limited basis). Zhu and He (2002) and Lin et al. (2011) tested these attributes and results show that relative advantage, complexity, and compatibility are significant factors.

Digital Divide

Digital Divide studies have rapidly developed since the 1990s (e.g., DiMaggio & Hargittai, 2001; Hargittai 2002; Mossberger et al., 2003; Norris, 2001), but its conceptual origin could be traced back to 1970s. “Knowledge Gap” (Tichenor et al., 1970) is thought to be the forerunner of “Digital Divide” (Jin & Xiong, 2002; van Deursen & van Dijk, 2014). Knowledge gap focuses on the social-economic (SES) disparity between information rich and poor (Tichenor et al., 1970). Compared to audience of mass media in the 1970s, however, Internet adopters are more actively involved in the communication process, and the usage is more complicated than simply watching TV. Therefore since the 1990s the term "digital gap" began to use

more and more frequently referring to the disparities in possessing and using the Internet. In his book, Norris (2001) argued that there are three types of digital divide: global (between industrialized and developing countries), social (between information rich and poor), and democratic.

Early digital divide research focused mainly on the disparities between Internet haves and have-nots (e.g., Wensheng, 2002), which was later defined by scholars as the “digital divide 1.0” (Harambam et al., 2013). Warschauer (2002) argued that the there are three shortcomings if researchers only look into disparities in Internet access: first, they focus too much on the physical presence of the device and may overlook other important issues of connection such as language, content, and skill; second, the binary classification is problematic; third, only focusing on the possession while neglecting other factors of disparities (e.g., language) of access may not be much helpful for development. In line with Warschauer's (2002) idea, DiMaggio and Hargittai (2001) suggested that digital divide should focus not only on inequality between haves and have-nots, but also on disparities among those who already have access to the Internet. With the increase of Internet penetration rate, digital divide studies change its foci to disparities of digital 2.0 (Hargittai, 2002) or beyond Digital Divide (Mossberger et al., 2003) issues such as skill and societal participation.

A line of research deals with the skill divide (DiMaggio & Hargittai, 2001; Hargittai 2002; Harittai, 2010). Hargittai (2002) argued that digital divide 2.0 (or skill divide) includes five dimensions of disparities: equipment (hardware and means of

connections through which people access the Web), skill (techniques that people bring to their use of the Internet), social support (help from others), autonomy (the freedom to use the technology when and where one wants to), and what the Internet is used for (the purpose of using internet).

Another line of research investigates disparities in societal participation (Mossberger et al., 2012). Mossberger defined digital citizenship as the ability to participate in society online. According to her (2003; 2012), the disparity in digital citizenship are influenced by people's differences in technical competence (the ability to operate a technology), digital literacy (the ability to recognize what information is needed, and locate, evaluate, and use effectively the needed information), and what they do online (Mossberger et al., 2012).

There is also research on how the disparities in connection are embedded in and affected by communication infrastructure surrounding adopters and non-adopters. (e.g., Jung et al., 2005; Kim et al., 2004). For example, Kim et al. (2004) developed the Internet connectedness index (ICI) to examine how one is connected through his/her history and context, scope and intensity, and centrality of Internet connection.

Above ideas reveal scholars' agreement that in the "digital divide 2.0" or "beyond access" era people's online activities differ regarding how they are influenced by various factors and how they could benefit the users, and therefore calls for more individual attention and government policies. Scholars view different types of activities with different levels of importance. For example, DiMaggio et al. (2004)

argued that online activities related to work, health, and education are more "capital-enhancing" than online entertainment because they enhance life opportunities. Similarly, van Deursen and van Dijk (2014) indicated that online political and economic activities are more beneficial than gaming because, consequently, it will influence people's social well-being and civic engagement online.

Disparities in WeChat Use

Integrating findings from literature exploring digital divide, there are six dimensions of disparities regarding the use of information and communication technologies (ICTs), which could be applied to study how WeChat activities influence its (non) adopters. The six dimensions are: (1) personal characteristics, (2) social environment, (3) technological environment, (4) perception of the importance of the technology, (5) societal participation, and (6) skill.

The first dimension focuses on disparities in personal characteristics between adopters and non-adopters and among adopters with different levels of connection. The characteristics include but are not limited to SES, gender, age, occupation, employment, and place of living (e.g., van Deursen & van Dijk, 2014). The second dimension refers to inequality in the social environment in which an individual's (dis)connection is situated (Jung, 2008). It includes factors such as communication about the technology, social support, and number of friends and family members using the technology. (Birnie & Horvath 2002; Jung, 2008). The third dimension, which integrates DiMaggio and Hargittai's (2001) definition of equipment and

autonomy and Jung's (2008) conception of the history of connectedness, focuses on the device used for connection, place of connection, experience with similar applications, and time spent online.

The fourth dimension empathizes adopter's perception of the importance of WeChat. It is formed based on Jung's (2008) revised Internet Connectedness Index. Jung (2008) argued that disparities in the adopter's perception of the depth, breadth, and centrality of connection are part of the skill divide because they are associated with activities and purposes of connection. Therefore when examining WeChat connection, one should take into consideration adopter's perception of the importance of WeChat, including the importance of each of its functions, the overall importance of WeChat as an application, and the centrality of WeChat to adopters lives.

The fifth dimension, unlike the fourth, focuses on the actual activities that adopters do on WeChat. According to DiMaggio (2004) some activities (e.g., work- and education- related) are more "capital-enhancing" in the sense that they are more likely to contribute to personal well-being than other activities (e.g., socializing with strangers). Similarly, van Deursen and van Dijk (2014) indicated that online political and economic activities are more beneficial than gaming. Therefore it would be interesting to look at how disparities work- and education-related WeChat activities correlate lead to differences in education level, income, and so on.

The sixth dimension emphasizes skills that enable adopters to fully and freely use WeChat. This dimension has been introduced and investigated by many scholars

(e.g., Alexander et al., 2015; DiMaggio & Hargittai, 2001; Mossberger et al., 2012) as an important aspect of the Digital Divide. For this study, I will employ Alexander et al.'s (2015) conception of Internet Skill. Alexander et al.'s (2015) argued that concept of Internet skills are broader than computer skills because to use Internet efficiently, one needs to know only how to operate a computer, but also other skills such as how to create online content. Building upon previous works (e.g., "digital competence" in Ferrari, 2012; "communication Internet skills" in van Dijk & van Deursen, 2014), Alexander et al.'s (2015) introduced five dimensions of the Internet Skill Scale (ISS): operational (i.e., the ability to operate digital media), information navigation (i.e., the ability to search for and deal with online information), social (i.e., the ability to communicate online), creative (i.e., the ability to create online content), and mobile (e.g., the ability to use mobile media).

Literature indicated interrelation among the six dimensions. The personal characteristics, social environment, and technological environment could influence perceived importance, skills, and WeChat activities. For example, how often Internet is discussed positively may associate with adopter's perception of the importance of it (Birnie & Horvath 2002). Perceived importance, skills, and WeChat activities could also reflect personal characteristics, social environment, and technological environment. For instance, van Deursen and van Dijk's (2014) study indicates that differences in online activities associated with differences in adopters' gender, age, and education. Furthermore, each of the dimensions may associate with one another.

For example, literature indicates that socioeconomic status and place of living are associated with the device one uses for connection (e.g., Mossberger et al., 2012; Pearce & Rice, 2013), and skills influence the extent to which one can fully participate online (e.g., Mossberger et al., 2003).

Integrating Diffusion and Digital Divide Studies

Diffusion of Innovation research focuses on the adoption of innovation whereas digital divide research deals with disparities at and after adoption. These two aspects are conceptually related when discussing people's adoption and use of an innovation. However, there is limited research trying to integrating these two aspects. For example, Rice and Pearce (2015) attempted to apply both Diffusion of Innovation and digital divide to examine mobile phone adoption. However, their research only looks at adoption/rejection and did not include different types of mobile phone use and disparities associated with them.

There are some similarities between two fields of research. First, they both view adoption and non-adoption as different conditions that are influenced by personal, social, and technology-related factors. Second, they share with similar factors and concepts. For example, social support, perceived popularity, and communication channels in Diffusion of Innovation studies (e.g., Rogers, 1995; 2003) could also be found as components of social environment (e.g., Jung, 2008) in the digital divide studies. Therefore two fields of research are compatible with each other. Moreover, integrating them could shed light on exploring the influence of factors that are

significant in one field but missing in the other, and investigating the WeChat adoption-use process in a more holistic way.

The Post-70 and the Post-90 Cohorts and WeChat Adoption and Use

Applying findings from Diffusion of Innovation and digital divide studies to investigate the post-70 and the post-90 cohorts' WeChat adoption and use lead to some research questions. Two of them are discussed below.

To begin with, there is limited research on disparities associated with WeChat adoption and use. Previous diffusion and digital divide studies primarily treated Internet as the targeted platform on which the majority of findings were observed (e.g., Rice & Pearce, 2015; van Deursen & van Dijk, 2014; Zhu & He, 2002). Research focusing on a website or an application is scarce. WeChat provides a broad research scope concerning the variety of functions and activities it offers. Like a miniature Internet, many activities people participate on Internet could also be done on WeChat, such as communicating with friends, entertaining, online purchasing, and information seeking, and so on. Therefore WeChat offers a venue in which many topics could be discussed, and many Internet-related studies could be replicated and reexamined.

Moreover, WeChat is well-integrated into users lives that the importance of studying adoption and use of WeChat should be highlighted. WeChat is more than just an SNS application. Besides "moments" and instant messaging, it also provides a lot of other functions. It is an information center through which users can search for,

subscribe, and interact with news and updates from online public accounts, including news corporations, celebrities, merchants, and governments. WeChat is also a financial center, through which users can deposit some money into the application, make purchases, and pay bills. Another function of WeChat is that it is a gaming platform, offering users various online games. Last but not the least, WeChat provides a variety of plug-ins that enable users to book hotels, buy train tickets, make food orders, shop clothes online, and so on. It helps users to participate in economic, social, commercial, and even political activities. With all these functions users can use WeChat to participate in many of their everyday activities. According to CNNIC (2017, July 1), on average Chinese spend 1-2 hours every day on SNSs. So how adopters use WeChat could and would be influential to their everyday lives.

Zillien and Hargittai (2009) argued that different patterns of media usage influence life chances to different degrees depending on the particular activities in which people engage online. Hargittai and Hinnant (2008) conceptualized activities that influence life chances as "human capital- enhancing" activities. They (2008) suggested that capital-enhancing activities included activities that may lead to more informed political participation, help with professional development, or benefit for finance and health. Human capital- enhancing activities could be conducted on WeChat. For example, one can manage their finance through online banking on WeChat. There is a lack of research on the association between human activities on WeChat and an individual's characteristics such as socioeconomic status, perception

of WeChat, and Internet skills and the social and technological environment they were situated in. Therefore the first research question is formulated as follows:

RQ_1: Are individuals' socioeconomic status, social environment, technological environment, perception of WeChat, and Internet skills associated with their human capital- enhancing activities on WeChat?

Research indicated that the post-90 cohort has a higher rate of WeChat adoption. According to CNNIC's (2017, December 31) report, 32.1 % of China's SNS users are between 20-29 years old; whereas there are only 13.7% of SNS users aged 40-49. Given the fact that the entire the post-70 population is larger than the post-90 population (approx. 215 million vs. 175 million, China Bureau of Statistics, 2010), the adoption rate the post-70 cohort's adoption rate would be lower than that of the post-90 cohort's.

The likely lower rate of adoption by the post-70 cohort may be resulted from factors previously discussed. For example, personal characteristics may play a part, since younger, more educated, and wealthier people adopt technology innovation earlier than those older, less educated, and with lower income (Rice & Pearce, 2015). Internet skill may be another factor. When the information skill education (2000-) started, the majority of the post-70 cohort had graduated from school. Therefore, unlike the post-90 cohort they were not forced to learn information skills, and they were not taught for free. So on overage the post-90 cohort should know and use

information technology better than the post-70 cohort, which further resulted in higher rate of adoption.

As for the frequency of WeChat use by the post-70 and the post-90 cohorts, research indicates a worldwide trend that the older generation spends less time on SNS than the younger generation (Statista, 2018). However, since so far published data on how much time each generation spends on WeChat are scarce, it is still not clear if two generation's use of WeChat is consistent with or contradicts the worldwide trend.

There is limited research investigating the disparities in factors associated with WeChat adoption and use between two Chinese generations. Therefore, it would be worthwhile to explore how the post-70 and the post-90 cohorts are different in those factors to provide explanations for, and implication of, differences in their Wechat adoption rate and frequency of WeChat use.

RQ$_2$: Does the post-70 cohort differ from the post-90 cohort in terms of their motivation to use the Internet, WeChat adoption rate, time spent on WeChat, frequency of WeChat activities, social environment, technological environment and Internet skills?

Section 2: the post-70 and the post-90 Cohorts and Collectivism/Individualism

In this section, I will review studies on the post-70 and the post-90 cohorts and collectivism/individualism. I argue that cultural value orientations would influence

WeChat user's motivation and online activities. Moreover, since literatures indicated that Chinese are becoming more and more individualistic, the post-90 cohort's would be more individualistically motivated for using the Internet and more frequently participate in individualistic WeChat activities than the post-70 cohort. Two research questions and two hypotheses will be proposed.

Cultural Values and Individualism/Collectivism.

Cultural values. Cultural values are shared conceptions of what is good and desirable in cultures; they shape beliefs, actions, and goals of group members, and represent central features of cultures (Schwartz, 1999; 2006). Different scholars have different views on dimensions of cultural values. For example, Kluckhohn and Strodtbeck (1961) introduced five dimensions of cultural values for cross-cultural comparison: what is the basic nature of people (evil, mixed, good), what is the form of social relation (hierarchical, collateral, individual), what is the mode of activity (being, becoming, doing), how time is viewed (past, present, future), what is the relationship between human and nature (subordinate, dominant, harmony). Schwartz (2006) argued that there are three dimensions of cultural values: embeddedness versus autonomy (which focus on the relationship between individual and group), hierarchy versus egalitarianism (which focus on the social fabric), and mastery versus harmony (which focus on the relationship between human of nature). Hofstede (1984) found there are four cultural dimensions that distinguish one culture from another: power distance (i.e., tolerance of inequality); individualism versus collectivism (i.e.,

relationship between individual and group), feminism versus masculinity (i.e., cultural preference for achievement, heroism, assertiveness and material rewards for success), and uncertainty avoidance (i.e., tolerance of uncertainty and ambiguity).

Collectivism/Individualism. This study will employ collectivism/individualism (COL/IND) as an important cultural value dimension to conduct cross-generational comparisons. COL/IND emphasizes the relationship between individuals and groups. Individualism refers to a focus on the self as being independent of groups or organizations, while collectivism emphasizes on one's membership in society (Triandis et al., 1988). Triandis (1995; 2005) argued that there are four attributes of COL/IND: personal goals versus group goals (priority given to individual goal or group goal), definition of self (self is independent of the others versus self is part interdependent to the collective), rationality versus relatedness (the extent to which people stay in groups that they do not like), and attitude versus norms (attitude, personal concerns, and beliefs versus norms, roles, and in-group goals).

COL/IND has been widely applied to map cross-national differences (e.g., Hofstede, 1984; Gudykunst et al., 1996; Hui & Triandis, 1986; Kashima et al., 1995; Oyserman, Coon, & Kemmelmeier, 2002; Triandis, Bontempo, Villareal, Asai, & Lucca., 1988; Triandis, 1995). For example, Triandis (2001) argued that in individualist societies such as the U.S., people give priority to their personal goals and behave "primarily on the basis of their attitude rather than the norms of their in-groups" (p. 909), whereas in collectivist societies, such as Japan and China, people

are interdependent within their group members (e.g., family), focus more on group goals than on individual ones, and treat maintaining in-group relationship as their first concern. Hofstede (1984) found that people in East Asia are more likely to be collectivistic and people from North and West Europe and North America tend to be more individualistic.

Why do some countries/cultures have high collectivism and some others have high individualism? Efforts have been taken to provide explanations on these cultural value differences (e.g., Ahuvia, 2002; Hofstede, 1984, Hui, 1988; Oyserman, Coon, & Kemmelmeier, 2002; Voronov & Singer, 2002; Zhang et al., 2005). Some scholars look into universal factors that impact COL/IND. For example, Hofstede (1984) and Hui (1988) argued that most individualistic cultures are found in developed countries, indicating that individualism might be associated with industrialization. Ahuvia (2002) argued that economic development and subjective well-being (SWB) help create more individualistic cultures. Some other scholars tried to find culture-specific reasons. For example, Zhang et al. (2005) studied four collective countries——China, Japan, Korea, and Taiwan——and found their views on harmony, social structure, and tradition were influenced (with cross-country nuances) by Confucianism.

Limitations of COL/IND studies and Horizontal/Vertical Patterns of COL/IND. Many scholars have addressed limitations of current COL/IND studies (e.g., Oyseman, et al., 2002; Voronov, 2002). One limitation is that COL/IND helps generalize values at country-level while overlooks within-country variations

(Voronov, 2002). For example, according to Hofstede (1984), the USA is an individualistic country. However, research also shows that in the USA Asian-Americans are more collectivistic than European-Americans (Kim & Omizo, 2005). In collectivistic countries such as Indonesia, the middle class is more individualistic than lower class (Marshall, 1997). Therefore to better understand a culture, COL/IND studies should be extended in a more culture-specific way, looking at not only similarities and generalizations, but more importantly unique attributes that contribute to the COL/IND of a culture.

The second limitation is that using COL/IND oversimplifies patterns of cross-cultural differences while neglects culture-specific values. For example, although both China and Colombia are marked by Hofstede (1984) as countries with high collectivism, it does not mean their collectivistic cultures are resulted from the same reasons and people in the two countries share the same values. Confucianism, which is assumed to be one of the most important roots for China's collectivism (Winefield et al., 2000; Zhang et al., 2005), does not even exist in Colombia.

To respond to above two limitations, this study will employ Triands and Gelfand's (1998) conception on the vertical and horizontal dimensions of COL/IND to examine within-country variations. Triands and Gelfand (1998) argued that the vertical (i.e., one self is different from other selves) and horizontal (i.e., one self is like another self) social relationships are the most important attributes that distinguish among different kinds of individualism and collectivism. Instead of using the

dichotomy of COL/IND, they suggested the quartering classification: vertical collectivism (VC), horizontal collectivism (HC), vertical individualism (VI), and horizontal individualism (HI).

What makes the difference between vertical and horizontal social relations? Triands and Gelfand (1998) indicated that the self-serving basis and conformity might be more prevalent in vertical COL/IND societies (e.g., US) than in horizontal COL/IND societies (e.g., Norway). Chen, Meindl, and Hunt (1997) indicated that HC and VC have a difference in preference of reward systems (i.e., egalitarian vs. hierarchical). Moreover, some scholars (e.g., Soh & Leong, 2002; Wong, 2001) argue that the four patterns can co-exist in one society because they are linked to different attributes. For example, Soh and Leong (2002) compared cultural value orientations between US and Singapore and found that HC was linked to benevolence values, VC by conformity values, VI by power values, and HI by self-direction values. Wong (2001) studied Chinese work behaviors and suggested that horizontal dimension is more related to the Confucian value of cohesion, whereas vertical dimension reflects acknowledgment and acceptance of social hierarchy and willingness to social reform.

COL/IND and Online Behaviors

Scholars (e.g., Lee & Choi, 2005; Kim, Sohn, & Choi; 2011) explored from different perspectives on how COL/IND could influence people's motivation and online behaviors. For example, Lee and Choi (2005) studied the role of COL/IND orientation in people's Internet use and attitude towards web advertising and found

that horizontal individualists expressed negative attitude towards web advertising because they value informative and entertaining online messages. Jackson and Wang's (2013) comparison between Chinese and American SNS users showed that relationship-beneficial motivation (i.e., "keeping touch with friends") was rated by people from collective culture (i.e., Chinese) as the number one reason why they use SNSs, whereas people from individualistic culture (i.e., American) rated individual-beneficial motivation (i.e., "obtaining information") as the top. Kim, Sohn, and Choi (2011) examined motivations for using social network sites among college students and found that Korean college students (i.e., collective user) put more weight on obtaining social support whereas American college students (i.e., individualistic user) focus more on seeking entertainment. They also found differences in SNS use patterns by Korean and American students: Americans tend to have larger online social venue than Koreans because their culture is more horizontal and less bounded by relationship-oriented ideas than Koreans'.

Literature indicates that some motivations and online behaviors are more related to collective values than others. For example, in Kim, Sohn, and Choi's (2011) study they argued that Korean and American SNS users weigh their motivations differently: for Koreans "gaining social support" is the most important reason for using SNS, whereas for Americans that comes to "entertaining." "Gaining social support" could be identified as "collective motivation" because it reflects collective societies' emphasis on relationship (Triandis & Gelfand, 1998). Building upon the concept of

COL/IND, in this study I will distinguish between different types of motivations and activities: Individualistic motivations and activities are those related to self-benefit (e.g., entertainment), self-expression (e.g., expressing opinion), and self-promotion (to advertise merchant goods); whereas collectivistic motivations and activities are those focus on group-benefit (e.g., to share knowledge with friends), collective well-being (e.g., to know updates of friends), relationship-development (e.g., to connect with friends).

Table 1

COL/IND Motivations for Using Internet and WeChat Activities

		Characteristics	Examples
Motivation for Using Internet	Individualistic	Self-Benefit	To have fun
		Self-Expression	To express feeling
		Self-Promotion	To promote self
	Collective	Group-Benefit	To share knowledge
		Collective Well-being	To know friends' updates
		Relationship Development	To contact with friends
WeChat Activity	Individualistic	Self-Benefit	Watching news
		Self-Expression	Posting selfies
		Self-Promotion	Selling products
	Collective	Group-Benefit	Sharing information
		Collective Well-being	Joining group discussion
		Relationship Development	Liking friend's posts

As previous argued COL/IND influence people's Internet motivation and online activities. Moreover, there is abundant research on how motivations shape online activities (e.g., Papacharissi & Rubin, 2000; Wang et al., 2015). However, since there is a lack of study focusing on the COL/IND aspects of motivations and behaviors, it is still not clear how COL/IND WeChat activities could be predicted by COL/IND motivations and cultural orientations. Therefore two research questions are formulated:

RQ3: Are users' collectivistic motivations and collectivistic orientations associated with collectivistic WeChat activities?

RQ4: Are users' individualistic motivations and individualistic orientations associated with individualistic WeChat activities?

The post-70 and the Post-90 Cohorts and COL/IND

Are Chinese becoming more and more individualistic? Literature conceptualizes and indicates that China is a country with high collectivism (e.g., Gudykunst et al., 1996; Hui & Triandis, 1986; Kashima et al., 1995; Oyserman, Coon, & Kemmelmeier, 2002; Triandis, 1995). There are two major philosophical roots for Chinese's collectivistic values. One is traditional Chinese philosophies such as Confucianism and Taoism which highly value one's relationship to family, tribe, and country, old traditions and norms, the spirit of sacrificing little self (individual) to a greater self (group), and harmony among people and between human being and the nature (Leung, 2010; Ralston et al., 1999; Winfield et al., 2000; Zhang et al., 2005).

Another is the socialism thoughts which primarily include thoughts from famous communist philosophers such as Marx, Lenin, Mao, and Deng. Socialism advocates that individuals should sacrifice their youth, material comforts, and sometimes family life for the welfare of the party's plan in creating an equal world (Hung et al. 2007). Above philosophies both emphasize the importance of relationship between individuals and groups and guide Chinese' codes of conduct in their everyday lives.

Recent research indicates, however, that Chinese are becoming more and more individualistic (e.g., Egri & Ralston, 2004; Raltson et al., 1999). Egri and Ralston (2004) compared four Chinese generation cohorts (Republican, Consolidation, Cultural Revolution, and Reform) and found that the younger generation is more open to change and focus more on self-enhancement (which is similar to the "individual goal versus group goal" difference, in Tirandis & Gelfand, 1998) and is less conservative (which is similar to the "attitude versus norm" difference, in Tirandis & Gelfand, 1998) than older generations, including the post-70 generation. Ralston et al. (1999) compared Chinese born in 1949-1965, 1966-1976, and 1976-present, and results indicate that the new generation cohorts (1976-present) are more willing to take the risk in pursuing profit and put personal goals above group goals.

Influence of One-Child Policy and Economic Reform on Individualism. The increases of aspects of individualism may be associated with One-Child policy (1979-) and Economic Reform (1978-). To begin with, embraced with collectivistic cultural traditions, Chinese have long valued one's interdependence with his/her

siblings and parents, which are thought to be the origin of all interpersonal relationships of the collective/interdependent society in China (Bond & Hwang, 1986). With the progress of the One-Child policy, the new Chinese family interpersonal relationship structure after 1978 is described by Lee (1992) as “4-2-1”, meaning four grandparents and two parents taking care of one kid. Consequently, the new pattern produced many “little princesses” or “little princes” in one-child families (Chung et al., 2009). Recent literature indicates that only children differentiate from children with siblings in terms COL/IND. For example, Fan, Wan, Lin, and Jin (1994) surveyed 787 children in Xi'an and found that only children, both boys and girls, were more self-centered and achievement motivated than children with siblings. In another research, Wang, Leichtman, and White (1998) examined differences in self-description and childhood memory between 99 only children and 156 children with siblings in Beijing and found that only children had fewer collective self-descriptions (e.g., “We”), but more self-focused memories (e.g., “I”), than children with siblings.

Another historical event that may be associated with the increase of individualism is the Economic Reform (1978-). Before 1978 the majority of Chinese people got livestock through government's planned allocation other than purchasing with free will. Along with the Economic Reform, the prices for products and production factors were liberalized and the market was gradually formed (Lin et al., 2003). The market economy advocates and popularizes entrepreneurship, efficiency first (other than relationship first), and personal success, which somewhat contradict

to collectivism (Ralston et al., 1999). Being aware of the cultural influence of advertisements, Zhang and Shavitt (2003) made a content analysis on 463 Chinese advertisements regarding their cultural values (i.e., modernity, tradition, individualism, and collectivism). The results indicated that modernity and individualism values were predominant in Chinese advertisement market. Moreover, from 1979 to 2012, China's economy increased with an annual rate of 9.8%, and Gross National Income (GIN) per capita increased from $190 to $5,680 (Liu et al., 2013). According to Ahuvia (2002), economic development and increase of subjective well-being (SWB) help create more individualistic cultures. Therefore, besides the delivery of individualism through media and word-of-mouth, the increase of Chinese socioeconomic status of may also result in an increase of individualism.

Influence of Nationalism Education on Collectivism. As argued by many scholars (e.g., Triandis, 2001; Singelis et al., 1995), individualism and collectivism can coexist in one person and should be measured separately. A person can have both high collectivism and individualism. Therefore, the uprising of individualistic values does not necessarily mean the loss or abandonment of collective values.

Partly thanks to the Nationalism Education (1990), young Chinese are mandatorily taught knowledge and principles about nationalism, socialism, and collectivism, which enables them to embrace collective values as their predecessors do. Shuai and Zuo (2015) investigated the COL/IND in Chinese born in the 1970s, 1980s, and 1990s, and found that there is no significant cross-generational difference

in collectivism. Similar results were found in Ralston et al.'s (1999) study on three Chinese generations (born in 1949-1965, 1966-1976, and 1976-).

As previous argued COL/IND orientations would predict COL/IND motivations for using Internet and WeChat activities. Since the post-90 cohort may be more individualistic than the post-70 cohort, they may embrace more individualistic motivations and participated in more individualistic activities than the later.

H_1: The post-90 cohort is more individualistically motivated than the post-70 cohort.

H_2: The post-90 cohort more frequently participates in individualistic WeChat activities than the post-70 cohort.

Section 3: the post-70 and the post-90 Cohorts and Participatory Cultural Divide

In this section, I will review studies on the digital culture and memes to introduce the idea of participatory cultural divide. I argue that participatory cultural divide is resulted from differences in Internet skills and participation in the creating and spreading of online cultural units. Due to the post-70 cohort's lack of participation in China's information education program, they may have less Internet skills than the post-90 cohort, and therefore leading to the participatory cultural divide between two generation cohorts. Two research questions will be proposed.

Participatory Digital Culture

Digital culture as a participatory culture. One way to look at digital culture is to view it as a participatory culture (Blank & Reisdorf, 2012; Bruns, 2012). There are

two characteristics of the participatory digital culture. First, every user is a producer of the online culture in the sense that every activity they participate online is productive, though with different levels of contributions (Bruns, 2012). This characteristic implies: (1) to contribute to online culture one has to be a user; and (2) different users have different contributions to online culture.

Second, online culture is created and spread through network effect——that is, the more people participate, the more valuable and dominant the online culture is (Blank & Reisdorf, 2012). In other words, participating creating and spreading of popular online cultures is more valuable and mainstreaming than those of less popular online cultures. Therefore when examining how WeChat adoption and use influence online culture, a key aspect is to look at people's contribution to or participation in the creation and spreading of popular online cultural units.

Closely related to the concept of participatory digital culture, Blank and Reisdorf (2012) argued that there are two types of online activities in terms of how participatory and contributive they are: (1) Web 1.0 activities are those focusing on receiving information other than contributing, such as searching for news, listening to music, read other's posts, and so on; (2)Web 2.0 activities focus on the participatory part of the Interent and are more contributive——such as sharing information with others online, posting photos, commenting on others' posts, and so on. Compared to Web 1.0 activities that mainly focus on receiving information or knowledge about memes, Web 2.0 activities enable WeChat users to be more contributive to the

creation and spreading of digital contents. Literature indicates that the Internet skill predicts how often one does Web 1.0/2.0 activities: while there is no significant difference in how often one does Web 1.0 activities between those with different Internet skill levels, the higher internet skill levels predicts more frequent Web 2.0 activities (Blank & Reisdorf, 2012).

Meme. Digital culture could be viewed as consisting of memes. Meme refers to small cultural units that seek replication for their survival (Dawkins 1976; 2006). Memes, like genes, are inherently selfish and virulent, competing to infect individual minds and use those minds as vehicles for replication (Dawkins, 1976; 2006). Understanding online memes and their creation and spreading is the key to understand the digital culture (Shifman, 2014). For example, Shifman (2012) studied 30 popular YouTube memes and found six common features that to some extent reflect what audience contributed online: focus on ordinary people, flawed masculinity, humor, simplicity, repetitiveness and whimsical content.

Besides participation in creation and spreading, people's ability to recognize and understand popular memes should also be considered as an important factor that influences online culture. According to Spitzberg's (2014) model of meme diffusion, memes tend to be messages that are created and spread through communication. One should have enough knowledge to recognize and understand what the message is and decide how it should be communicated (Spitzberg, 2014). The more knowledge about the meme one has, the more efficient he/she could copy, reproduce, and spread it.

Therefore memes could be viewed as units of digital culture, and both the ability to recognize memes and the participation in creating and spreading of memes could be viewed as two aspects which influence online culture and in which disparities should be examined.

This study introduces the concept of participatory cultural divide to examine the inequality in knowledge and participation in creating and spreading digital culture. Based on studies on memes, this study defines participatory cultural divide as the disparities in knowledge about and participation in creating and spreading online memes. Knowledge and participation are associated with different types of online activities and Internet skills: Internet Skills would be positively associated with Web 2.0 activities, and Web 2.0 activities should predict creating and spreading of memes; Internet skills, especially information navigation skills, would influence Web 1.0 activities, and the latter would be positively associated with knowledge. Moreover, knowledge and participation should be interrelated: knowledge contributes to effective participation, and participation enhances knowledge.

The Post-70 and the Post-90 Cohorts and Participatory Cultural Divide

As previously argued, higher Internet skills enable users to participate in more web 2.0 activities and therefore more participation in the creating and spreading of digital cultural units, or memes. Moreover, knowledge of memes may be positively associated with Internet skills, especially skills related “information navigation”

(Alexander et al., 2015) which help Internet users to search for and deal with online information.

The nation-wide Internet skill education reform started in 2000 (CNNIC, 2009, May 26) when the majority of the post-70 cohort already graduated from schools. So the post-70 cohort might have lesser chance than the post-90 cohort to receive Internet skill education. The question is: how is this historical event related to differences in Internet skills? Figuring out the impact of information education will shed light on explaining differences, there are, between the post-70 and the post-90 cohorts in Internet skills.

RQ_5: Is experience with information education programs associated with the differences in Internet skills between the post-70 and the post-90 cohorts?

Another research question focuses on the roles played by two generations in participating in creating and spreading digital culture. Intergenerational differences in Web 1.0 and 2.0 activities, knowledge about meme, and participation in creating and spreading memes will be examined. Results of RQ_5 and RQ_6 together will provide a comprehensive view on (if there is) participatory cultural divide between the post-70 and the post-90 cohorts and how historical event (i.e., Internet skill education) may play a part.

RQ_6: Do the post-70 and the post-90 cohorts differ in terms of their frequency of participation in web 1.0 and 2.0 activities, knowledge about memes, and participation in creating and spreading memes?

Table 2

Summary of Research Questions and Hypotheses

Topic	Research Questions and Hypotheses
WeChat Adoption and Use	*RQ1*: Are individuals' socioeconomic status, social environment, technological environment, perception of WeChat, and Internet skills associated with their online human capital-enhancing activities? *RQ2* Does the post-70 cohort differ from the post-90 cohort in terms of their motivation to use the Internet, WeChat adoption rate, time spent on WeChat, frequency of WeChat activities, social environment, technological environment and Internet skills?
Cultural Values	*RQ3:* Are users' collectivistic motivations and collectivistic orientations associated with collectivistic WeChat activities? *RQ4*: Are users' individualistic motivations and individualistic orientations associated with individualistic WeChat activities? *H1:* The post-90 cohort is more individualistically motivated than the post-70 cohort. *H2:* The post-90 cohort more frequently participates in individualistic WeChat activities than the post-70 cohort.
Participatory Cultural Divide	*RQ5:* Is experience with information education programs associated with the differences in Internet skills between the post-70 and the post-90 cohorts? *RQ6:* Does the post-70 and the post-90 cohort differ in terms of their frequency of participation in web 1.0 and 2.0 activities, knowledge about memes, and participation in creating and spreading memes?

CHAPTER 3 METHODOLOGY

In this chapter, I will start with a preliminary study that was conducted in order to get some new insights on generating measurements for the main study. Then I will provide details about participants, procedures, and measurements of the main study.

Preliminary Study

There are three questions the literature either does not provide sufficient answers or fails to focus on the Chinese context and therefore requires more exploration: (1) what motivations and activities should be regarded as being collectivistic/individualistic? (2) what activities do WeChat users do? (3) what are the Chinese standards for being a skilled Internet user? To begin with, there is limited research on conceptualizing collectivistic/individualistic motivations for using the Internet and online activities. For example, literature indicates various motivations for adopting Internet and SNSs, such as information seeking, self-expression, professional development, entertainment, social, escapism, and so on (Papacharissi & Rubin, 2000; Zhang & Pentina, 2012). However, there is a lack of focus on how motivations are shaped (differently) by cultural values. Kim, Sohn, and Choi's (2011) studied Korean and American SNS users and suggested that users from collectivistic cultures value more on developing and maintain existing social relationships on SNS than those from individualistic cultures do. But there is little research validating and applying this finding. Since we don't have sufficient knowledge about the conception of COL/IND motivations for using Internet and WeChat activities, measurements

need to be generated from literature as well as interviews with WeChat users.

Second, there is scarce research attempting to examine WeChat activities from WeChat user's perspective. Previous studies either focus on general SNS activities offered by WeChat (e.g., socialization, Song, Wang, & You, 2014, November) or look at one of WeChat's functions and its benefits (e.g., WeChat payment, Mao, Song, & Yu, 2015). They did not treat WeChat as a multi-function platform that has different features and usage patterns than other SNSs. What functions does WeChat offer? What activities do users do? Answers to these questions could help construct items that best represent some of the major activities on WeChat.

Third, it is not clear how the term "Internet skill" is conceptualized and perceived by Chinese. Measurements of Internet skill (e.g., Internet skill scale, Alexander et al., 2015) mainly come from studies focusing on the US context, or other contexts that were sharing similar Internet characteristics (e.g., open Internet and less censorship) with the US. The Chinese context, however, is different from them in at least two aspects: one is the great firewall that prevents Chinese from accessing to some of the major Internet services (e.g., Google search and Gmail); the other is the nation-wide mandatory information education. What does it mean to be a skilled internet user? Different contexts may provide with different answers. For example, since Chinese could not (legally) use google search engine, will they still put information navigation as one dimension of Internet skills? Li and Kirkup (2007) study indicate that China's information education helped Chinese college students to

be confident about their Internet skills than those from the UK. Do Chinese have higher standards for evaluating Internet skill level?

Exploring above three questions may bring new insights into adopting measurements that target at topics and participants of the study. Therefore, between June and July 2017 the researcher conducted four focus group interviews on Chinese post-70 and the post-90 cohorts' perception of COL/IND motivations and activities, use of WeChat, and standards about Internet skills. The main objective of the interviews is not constructing new measurements but enhancing knowledge from potential participants' perspective.

Interviewees are 10 the post-70 cohorts (M = 44.2, SD = 1.93) and 10 the post-90 cohorts (M = 20.8, SD = 1.62). Two of the post-70s self-identified as non- WeChat users. Four focus group interviews (2 the post-70s, 2 the post-90s) were conducted. Each group took 40 minutes - 60 minutes to respond to and discuss the following major questions: (1) "what motivates you to connect to the internet?"; (2) "can you list activities that one can do on WeChat?"; (3) "can you list things you often do one WeChat?"; (4) "are there any WeChat activities you feel are more self-centered or self-beneficial than others?"; (5) "Are there any activities that you feel are group-and relationship-oriented?"; (6) "What are the qualities of a skilled/learned Internet user?". IRB approval was obtained before the interviews. Each interviewee was given ¥20 (≈$3) as compensation. Based on interviewees' answers and literature, modifications were made on the Internet skills scale (ISS), and items were selected regarding

different types of motivations for using Internet and WeChat activities. Details will be discussed in the section about measurements.

Participants

Participants of the main study were 448 (male = 199, female = 232, 17 unspecified) Chinese post-70 and the post-90 cohorts. Among them 208 (male = 106, female = 100, 2 unspecified) were born in the 1970s and 221 (male = 89, female = 132) were born in the 1990s. Nineteen did not report the year of birth. Participants' age was calculated using the formula: Age = 2017 - Year of birth. The post-70 cohorts ranged in age from 38-47 (M = 43.94, SD = 2.43). The post-90 cohorts ranged in age from 18-22 (M = 20.29, SD = 1.13). The most frequently reported ages were 47 for the post-70 cohorts and 20 for the post-90 cohorts.

Participants came from diversified education backgrounds, occupations, and areas of living. Thirty-four (7.6%) received no higher than primary school education. Eighty (17.9%) stopped education after graduating from junior high school, and 52 (11.6%) did not continue after senior high school. The majority of participants (231, 51.6%) held or were pursuing bachelor's degrees when the survey was conducted. Thirty-one (6.9%) had master and/or doctoral degrees. Two-hundred and seven (46.2%) were self-identified as student, the rest came from a variety of professions, such as industrial workers (41, 9.2%), farmers (20, 4.5%), businessmen/businesswomen (8, 1.8%), teachers (8, 1.8%), government employees (8, 1.8%), and so on. More than half (252, 56.3%) of the participants lived in urban areas. Seventy-five (16.7%) and 101 (22.5%) are from suburban and rural areas, respectively. Twenty participants (4.5%) did not report areas. Regarding their originality, 269 (63.29%) were from Southwest (i.e., Chongqing, Sichuan, Yunnan,

and Guizhou), 57 (13.41%) were from Central (i.e., Hubei, Hunan, Shanxi, Hebei, Henan, Anhui, and Jiangxi), 61 (14.35%) were from East (i.e., Beijing, Tianjin, Shanghai, Shandong, Zhejiang, and Jiangsu), 13 (3.06%) were from South and Southeast (i.e., Guangdong, Guangxi, and Fujian), 8 (1.88%) were from Northeast (i.e., Liaoning, Jilin, and Heilongjiang), 7 (1.65%) were from Northwest (i.e., Shaanxi, Ningxia, Gansu), and 10 (2.5%) were from minority autonomous regions (i.e., Tibet, Xinjiang, Qinghan, Inner Mongolia, and Hainan). Twenty-four (5.4%) did not report which provinces they were from. No participants were from Hong Kong, Macaw, or overseas.

Procedures

Questionnaire Design

The questionnaire asked participants to self-report information regarding four aspects: (1) WeChat adoption and use, (2) collectivism and individualism orientations, (3) participatory cultural divide, and (4) demographics. Items were adopted and revised from literature and results of the preliminary study. Details of measurements will be discussed later in this chapter. Originally the questionnaire included 92 questions. Between October and November 2017, the researcher made three major revisions to the questionnaire. First, the questionnaire was reviewed by committee members and then revised mainly on adoption of measurements and organization of questions. Because Chinese participants may not have high proficiency in understanding and responding to questions in English, the questionnaire was then back-translated into Chinese.

Second, after translation, the researcher sent the questionnaire to three WeChat users who have more than 2000 followers for review. Based on their comments

another round of revision were made primarily on the apprehensibility of questions. Third, the researcher invited 3 the post-70 and 3 the post-90 cohorts to do a trial test and report their experiences on the clarity of instructions and options, and easiness of participation on desktops and cell phones. Refinements were made accordingly. The final questionnaire included 96 multiple choices and 4 short open-ended questions (e.g., "in what year did you start using the Internet?").

Data Collection

The data were collected through online. Before conducting the survey, the questionnaire was uploaded onto *SurveyMonkey.com* (SurveyMonkey, 1999). Survey Monkey is an online platform that provides remote and paperless survey distribution and data collection services. Once the questionnaire is uploaded, an online link will be generated. After clicking that link participants will be guided to the online questionnaire. All participants' responses are automatically converted into EXCEL or SPSS files and can be downloaded.

The data were collected from Jan 10, 2018, to Jan 22, 2018. The researcher asked two instructors working in a large public university in western China to send recruitment advertisements to the classes they taught and students' parents, and to their friends who were born either in the 1990s or the 1970s. Those interested then joined online discussion groups by scanning QR code or putting in group serial number provided in the advertisement. In order to avoid online fraud, participants were asked to label with their real names in the group. Their identities were verified by instructors and other group members. After the verification was complete, the researcher sent the link to all group members and made the survey available. Once a participant submitted the questionnaire, he/she would send to the researcher the time

of completion. After checking the participation records on SurveyMonkey.com, the researcher would send to each participant ¥20 (≈$3.0) compensation through red e-packets. Sending e-packet is a popular online payment method in China, and no online banking account and private information of the receiver (e.g., date of birth and residence address) is needed in the process. Participation was voluntary and anonymous. IRB approval was obtained before conducting the survey.

Measurements

WeChat Adoption and Time Spent on WeChat

Zhu and He (2002) introduced a two-question method to distinguish among four different types of Internet adopters (i.e., continuous adopter, discontinuous adopter, potential adopter, and continuous non-adopter). Participants were asked to answer two questions: (1) "do you have access to Internet?"; (2) "are you going to use it for the next year?". Continuous adopters were those having account and going to use it for the next 6 months; discontinuous adopters were those having account but not going to use it for the next 6 months; potential adopters were those not having account but going to get one for the next 6 months; continuous non-adopters were those not having account and not going to get one for the next 6 months (Zhu & He, 2002). However, this category and its measurements could not be directly applied to study WeChat adopters because they could not reflect cases that some WeChat users may have accounts but seldom use it. What adopter category should light WeChat users belong to? To answer this question a new four-dimension adopter category was introduced: (1) active adopter are those who have WeChat account and use WeChat

frequently; (2) inactive adopter are those who have WeChat account but use WeChat for very limited time; (3) potential adopter are those who do not have account but plan to get one in the next 6 months; and (4) continuous non-adopter are those who do not have account and do not intend to get one in the next 6 months.

According to CNNIC's (2017, December 31) report, on average Chinese spend 1-2 hours a day on SNS applications. About Eighty-nine percent of WeChat users spent at least 30 minutes per day (Tencent, 2017). Rogers (2006) suggested that there would be 16% of the population behind the mainstream in innovation adoption. Therefore, users who spend less than 30 minutes per day on WeChat should be categorized as non-mainstream users or inactive users.

Three questions were employed to measure participants WeChat adoption and time spent on WeChat: Q_1: "Do you have WeChat account" (yes, no); Q_2 "are you planning to start using WeChat in the next 6 months (yes, no)?"; Q_3: "how much time do you spend on WeChat" (1-7; 1= "not using, or rarely"; 7 = "more than 5 hours a day"). Participants who answered "yes" to the first question would automatically skip the second question. The researcher used "30 minutes to 1 hour" ("4" in question 3) as the threshold that distinguishes active adopter from inactive adopter. Active adopter = "Yes" for Q_1 and "4 or above" for Q_3; discontinued adopter = "Yes" for Q_1 and "3 or below" for Q_3; potential adopter = "No" for Q_1 and "Yes" for Q_2; continuous non-adopter = "No" for Q_1 and "No" for Q_2.

Motivation for Using the Internet

Ten items were adopted from literature and results from preliminary study to measure participants motivations for using the Internet. Participants were asked to respond to the statement “the motivation for my Internet connection included” by rating each item on a 5-point Likert scale (1-5; 1= strongly disagree, 5 = strongly agree). The items were: “Gain information and knowledge”; “Have fun (entertainment)”; “Buy things online”; “Doing school or work-related things (e.g., pay bills, do assignments)"; "Find a place where I can express myself"; "Gain support from others"; "Promote myself or products"; “Connect with family members and friends”; “Developing and maintaining relationships online”; and “Share what I see and know with others”. The main criteria of adopting items were: (1) items should reflect major types of motivations people have for using the Internet, (2) some motivations can be defined as being collectivistic or individualistic.

First, these items, although could not exhaust all motivations, were frequently observed and discussed in literature (e.g., Papacharissi & Rubin, 2000; Zhang & Pentina; 2012), as well as mentioned by interviewees in the preliminary study. Second, among the 10 motivations, 3 were collectivistic, and 3 were individualistic. "connect with family members and friends," "share what I see and know with others" and "developing and maintaining relationships online" referred to collectivistic purposes because they were relationship- and collective-oriented (Triandis, 1989). “Find a place where I can express myself," "promoting myself or products" and “gain support or help from others” referred to individualistic motivation because they

focused on self-expression, self-promotion, and self-benefit, which reflected individualistic orientations (Kim & Sherman; 2007; Triandis, 1989). Analysis indicated acceptable reliability of the two sets of items: collectivistic motivation = .71; individualistic motivation = .70.

WeChat Activities

Nineteen items are adapted from literature (e.g., Blank and Reisdorf; 2012; Junco, 2012; Zillien, & Hargittai; 2009) and results of the preliminary study. Participants were asked to respond to the statement "How frequently do you participate in following WeChat activities?" by rating each item on a 7-point Likert scale (1-7; 1= never, 7 = more than 3 times of day). The items were: "posting original essay"; "posting selfie"; "watching news or articles from public accounts"; "promoting products or self-promotion"; "using online banking and/or making payments"; "using third-party plug-ins"; "commenting on or like other's post"; "watching other's updates"; "share information with others"; "communicate with friends and relatives"; "online entertainment"; "receiving or sending red packet"; "hearing school- and work- related discussions"; "joining school- and work- related group discussion"; "asking support, help, or blessing from friends"; "self-expressing/ self-disclosing"; "supporting, helping, or sending blessing to friends and relatives or others online"; "gaining information that satisfied personal needs and benefit personal development"; and "making phone call/video chat". The criteria of adopting items were: (1) items should include major types of activities users do on WeChat; (2) items

should include some “capital-enhancing activities”; (3) some activities can be defined as being collectivistic or individualistic; (4) items should include web 1.0 and web 2.0 activities.

First, these items were adopted from literature on SNS activities (e.g., Junco, 2012; Yang & Brown, 2013) and activities (e.g., sending and receiving red packets) mentioned by interviewees in the preliminary study. They could not exhaust all activities but to some extent represents what WeChat users frequently do in everyday lives.

Second, capital-enhancing activities included “promoting products or self-promotion”; “using online banking and/or making payments”, "hearing school- and work-related discussions", "joining school- and work- related group discussion"; "asking support, help, or blessing from friends", and "gaining information that satisfied personal needs and benefit personal development". According to Hargittai and Hinnant (2008), capital-enhancing activities included activities that may lead to more informed political participation, help with professional development, or benefit for finance and health. These five items may contribute to career achievement and financial wellbeing. Therefore, they were considered as human capital- enhancing activities. Analysis indicated good inter-rater reliability (.83) of the five items.

Third, there were 5 collectivistic activities and 5 individualistic activities. Collectivistic activities included: “commenting on or like other's post," "sharing information with others," "communicate with friends and relatives," "joining group

discussion," and "supporting, helping, or sending blessing to friends and relatives or others online." Individualistic activities included: “posting selfies," "promoting products or self-promotion," "asking support, help, or blessing from friends," "self-expressing /self-disclosing," and “gaining information that satisfies personal needs and benefits personal development." The items were adopted and selected based on interviewees perception of individualistic and collectivistic WeChat activities in the preliminary study and literature. For example, interviewees argued that using WeChat to promote products were selfish because it helped the seller take advantages of WeChat friendship for self-benefits. Moreover, Triandis (2005) argued that individualism and collectivism are different in terms of personal goals versus group goals (priority given to individual goal or group goal), definition of self (self is independent of the others versus self is part interdependent to the collective), rationality versus relatedness (the extent to which people stay in groups that they do not like), and attitude versus norms (attitude, personal concerns, and beliefs versus norms, roles, and in-group goals). The 5 collectivistic activities focused on relationship development and maintenance, group-benefits, interdependence; whereas the 5 individualistic activities emphasized on self-wellbeing, self-benefits, and independence. Analysis indicated good reliability for the two sets of items: collectivistic activities = .85; individualistic activities = .81.

Fourth, based on Blank and Reisdorf‘s (2012) research on web 1.0 and 2.0 activities, 4 were categorized as web 1.0 activities and 9 were selected as web 2.0

activities. Web 1.0 activities are those focusing on receiving information other than contributing, such as searching for news, listening to music, read other's posts, and so on; whereas web 2.0 activities focus on the participatory part of the Internet and are more contributive——such as sharing information with others online, posting photos, commenting on others' posts, and so on (Blank & Reisdorf, 2012). In this study web 1.0 activities included: "watching news or articles from public accounts," "watching other's updates," "listening to school- and work-related group discussion," and "gaining information that satisfies personal needs and benefits personal development. Web 2.0 activities included: "posting original essay", "posting selfie", "promoting products or self-promotion", "commenting on or liking other's post", "sharing information with others", "join school- and work-related group discussions", "asking support, help, or blessing from friends", "self-expressing/ self-disclosing" and "supporting, helping, or sending blessing to friends and relatives or others online". Analysis indicated good inter-rater reliability for web 1.0 and 2,0 activities: web 1.0 activities = .77; web 2.0 activities = .89.

Social Environment

Six items were included to measure three aspects of social environment: social support, communication about WeChat, and perceived popularity. Items were adopted and revised from Jung (2008) and Jung et al. (2005). One statement measured social Support: "I have received help from friends, parents, and relatives when learning to use WeChat" (1-5; 1 = "never"; 5 = "too many to remember"). Communication of

WeChat was measured by three statements (Cronbach's *a* = .67): “I heard people discussing news happened WeChat”;" I heard media mentioned about WeChat (e.g., scanning the QR code to subscribe on WeChat) ”; and “I have been in situations where people want to know my WeChat account”. Perceived Popularity was measured by two statements (Cronbach's *a* = .76): "a lot of my friends and relatives are using WeChat," and "a lot of people related to my school and/or profession are using WeChat." Participants were asked to give ratings to the statement on 5-point Likert Scale (1-5; 1 = never, 5 = several times a day).

Technological Environment

Three items (adopted from Jung (2008) and Lin et al. (2011)) were used to measure technological cluster and years of Internet use. Two multiple choice questions were used to measure technological cluster: “check the following devices you have: cellphone, laptop, desktop, tablet, *wearable electronic device,* and other (please specify)”. Each option was 1 point, and the technology cluster score was the sum of all selected items. One question asked "in which year did you start using the Internet?" Year of Internet use was calculated by 2017 minus the year participants started using the Internet.

Internet Skills

Eleven items were employed to measure Internet skills. Items were adapted from Alexander et al.'s (2015) Internet Skill Scale (ISS) and revised based on interviewees’ perception of Internet skills in the preliminary study. According to Alexander et al.'s

(2015), there were five dimensions of Internet skills: operational (i.e., the ability to operate digital media), information navigation (i.e., the ability to search for and deal with online information), social (i.e., the ability to communicate online), creative (i.e., the ability to create online content), and mobile (e.g., the ability to use mobile media). Similar to Alexander et al.'s (2015) study, Spitzberg's (2006) truth claim was used to ask participants rate to what extent they agree the statements are true of them based on a 5-point Likert scale (1-5; 1 = "not at all true of me"; 5 = "very true of me").

Two items measured operational skills: "I know how to download and open files (e.g., photos, documents) on computer," and "I know how to connect to a WiFi network." Information navigation skill was measured by 2 items: "I am very efficient in using keywords to search for information online"; and "I find it hard to find a website I visited before." The last item was reverse coded. Social skill was measured by 2 items: "I know how to search, rename, and categorize friends on SNSs"; and "I know how to comment, like, and message friends on SNSs." Creative skill was measured by 3 items: "I know how to edit photos/videos"; "I know how to make and edit online post"; and "I am comfortable with creating something new from integrating existing online images, music or video." Mobile skill was measured by 2 items: "I know how to download and install apps on cellphone"; and "I know how to manage (update, delete) apps on a cell phone." Analysis indicated good reliability for the four skills (operational = .85; social = .89; creative = .88, mobile = .96). The reliability for information navigation is low (.36). This was probably because the

question “I find it hard to find a website I visited before” asked in the reverse way, which confused the participants and made some their answers on this question contradicted with their overall internet skill levels. Therefore the item was deleted. The revised Internet skill scale (ISS) included 10 items with good reliability (.96).

Perception of WeChat

Perception of WeChat included perception of the attributes of WeChat and perception of the importance of WeChat. Perception of the attributes of WeChat included 4 items measure relative advantage, complexity, compatibility, and observability (Vishwanath & Goldhaber, 2003; Zhu & He, 2002). Participants were asked to give ratings to 5 statements (1-5; 1 = “strongly disagree”, 5 = “strongly agree”): (1) "WeChat is better than any other SNSs in China"; (2) "WeChat is hard to use"; (3) "WeChat are well embedded in my life and work"; (4) “The benefits of WeChat are immediately obvious”; (5) “Use of WeChat become a symbol of social status”.

Six items measured perception of the importance of WeChat. Similar methods were used by Jung (2008) in her study on user's perception of the intensity and centrality of the Internet. Intensity was measured by asking participants to respond to the question "how important is the following WeChat function to you? (1-5; 1= “totally do not care”; 5 = “very important”). Functions included: “Moments”, “Individual and group messaging”, “WeChat wallet and payment”, “Voice and video call”, and “Third-party plug-ins.” Intensity score was calculated by averaging ratings

on five functions. Centrality was measured by asking participants to rate the statement: “I will miss WeChat very much if one day it disappears” (1-5; 1= “strongly disagree”; 5= “strongly agree”).

Knowledge about Popular Memes

Participants were asked to respond to the question “to what extent they know the following five popular online memes: “Lanshou, Xianggu (蓝瘦香菇)”, “Pipixia, let’s go(皮皮虾我们走)”, “make a call for you (为你打 Call)”, “Zhaxinle, laotie(扎心了老铁)”, “Boat of friendship(友谊的小船).” The five memes were selected based on two facts: (1) they were listed as the hottest memes in 2016 and 2017 (e.g., *Top 10 popular memes*, Ministry of Education of China PR, 2017, December 12th); (2) they had high popularity in terms of the number of related web pages and times being searched (e.g., *Annual search report of Baidu*, Baidu, 2017, December, 18th). Each meme was rated by participants on a 5-point Likert scale (1-5; 1 = “never heard about it”; 5= “know well and can use well”). Analysis indicated good inter-rater reliability (.96) of the items.

Participation in Spreading and Creating Memes

Participants were asked to respond to the question “how often do you do the following things” on a 5-point Likert scale (1-5; 1 = "never"; 5= " every day"). Three items measured participation in spreading memes (Cronbach's a = .87): "downloading and using pictures of memes," "using memes in your Wechat post or communication,"

and "meme duel on WeChat." Participation in creating memes was measured by one item “developing new content to make your own memes."

COL/IND

The 16-item scale introduced by Triandis & Gelfand (1998) was adopted to measure participants’ COL/IND. The scale tested four dimensions of COL/IND: horizontal Collectivism (HC), vertical Collectivism (VC), horizontal Individualism (HI), and vertical Individualism (VI). Each dimension included four statements (e.g., "I'd rather depend on myself than others"). Participants are asked to rate each statement on 7-point Likert scale (1-7; 1 = “strongly disagree”, 7 = “strongly agree”). Analysis indicated acceptable reliability of HC (.74), VC (.80), HI (.82), and VI (.75).

Demographics

Ten questions were included to ask participants self-report their year of birth, gender, urbaneness (urban, suburb, and rural), which part of China they were from, education level, socioeconomic status, number of siblings, occupation, information education history, and nationalism education history.

Participants born in the 1970s were coded as “1” and those born in the 1990s were coded as “2”. Socioeconomic status was measured by asking participants to self-report their annual household income. The 7-point scale was made based on a nation-wide survey conducted by China Household Finance Research Center and the Southwestern University of Finance and Economics in 2013. Based on the proportion of the number of families to the entire Chinese population, the 2013 survey indicated

seven levels of annual household income: less than ¥1,000 (6%, coded as "1"), ¥1,001~¥10,000 (17%, coded as "2"), ¥10,000~¥50,000 (48%, coded as "3"), ¥50,001~¥100,000 (17%, coded as "4"), ¥100,001~¥200,000 (7%, coded as "5"), ¥200,001~¥1,000,000 (4%, coded as "6"), and more than ¥1,000,000 (1%, coded as "7"). Based on the number of siblings participants reported, a categorical variable labeled as "One-Child" was created (1 = children with no siblings, 2 = children with siblings). One question asked participants' information education history: "Whether you took/are taking a mandatory computer class in high-school and university? (1 = "yes"; 2 = "no")" One question asked participants' nationalism education history: "have you ever received nationalism education in school? (1 = "yes"; 2 = "no")"

Data Analysis Methods

Data were analyzed using IBM SPSS Statistics v.25 (IBM, 2017). Multiple regression analysis was conducted to explore RQ_1 because: (1) it looked into the association between an individual's socioeconomic status, social environment, technological environment, perception of WeChat, and Internet skills and human capital- enhancing activities; (2) all variables were continuous. The dependent variable was human capital- enhancing activities (1-7, 1 = "never", 7 = "more than three times a day"). The independent variables were socioeconomic status, social environment (social support, communication about WeChat, and perceived popularity of WeChat), technological environment (technological cluster and years of Internet use), perception of WeChat (relative advantage, complexity, compatibility, and

observability of WeChat, and intensity and centrality of WeChat), and Internet skills. We used the stepwise method trying to find out what model could best predict human capital- enhancing activities on WeChat. Multicollinearity diagnostics were run in order to examine the assumption of lack of multicollinearity. Results indicated that we should not worry about violating the assumption of lack of multicollinearity.

Independent sample t-tests and chi-square tests were employed to explore RQ_2. For all tests the independent variable was generation (1 = the post-70, 2 = the post-90). For t-test, the dependent variables were continuous, including motivation to use the Internet, time spent on WeChat, frequency of WeChat activities, social environment, technological environment and Internet skills. For chi-square tests, the dependent variables included different adopter types, which were categorical. Multiple Chi-square tests were employed to explore differences in adopter type between the post-70 and the post-90 cohorts. First, the intergenerational difference between those with and without WeChat account was examined by using WeChat account (1 = yes, 2=no) as the dependent variable. Second, different types of adoption were examined by using adopter category (1 = continuous non-adopter, 2 = potential adopter, 3 = inactive adopter, 4 = active adopter) as the dependent variable. Third, to examine intergenerational differences in each adopter type, the variable adopter type was recoded into four categorical variables (1=yes, 0 = no) representing continuous non-adopter, potential adopter, inactive adopter, and active adopter.

Path analysis was conducted to explore the direct effects of COL orientations and

collectivistic motivations (CM) on collectivistic WeChat activities (CA) and indirect effects of COL orientations on CA through CM (RQ_3). The procedure was introduced by Baron and Kenny (1986). The effects of HC and VC were examined separately. For HC: first, the researcher conducted three simple regression with HC predicting CM, HC predicting collectivistic CA, and CM predicting CA, respectively; second, a multiple regression was conducted with HC and CM predicting CA. For VC: the procedure was repeated with HC replaced by VC. Because originally SPSS did not offer the option to test indirect effects, it was examined using Preacher and Hayes' (2004) simple mediation procedure (SOBEL).

Path analysis was conducted to explore the direct effects of IND orientations and individualistic motivations (IM) on individualistic WeChat activities (IA) and indirect effects of IND orientations on IA through IM (RQ_4). The procedure was introduced by Baron and Kenny (1986). The effects of HI and VI were examined separately. For HI: first, the researcher conducted three simple regression with HI predicting IM, HI predicting collectivistic IA, and IM predicting IA, respectively; second, a multiple regression was conducted with HI and IM predicting IA. For VI: the procedure was repeated with HI replaced by VI. Indirect effect was examined using Preacher and Hayes' (2004) simple mediation procedure (SOBEL).

T-tests were employed to explore if the post-90 cohorts reported higher IM (H_1) and IA (H_2) than the post-70 did. For H_1, the independent variable was generation (1 = the post-70, 2 = the post-90) and the dependent variable was the individualistic

motivation. For $H_{2,}$ the independent variable was generation (1 = the post-70, 2 = the post-90) and the dependent variable was the individualistic WeChat activities.

A 2 x 2 factorial design was conducted to explore the effect of information education programs on differences in the Internet skills between the post-70 and the post-90 cohorts (RQ_5). The independent variables were information education program (1 = yes, 2 = no) and generation (1 = the post-70, 2 = the post-90). The dependent variable was Internet skills.

Independent sample t-tests were conducted to explore differences between the post-70 and the post-90 cohorts in frequency of participation in web 1.0 and 2.0 activities, knowledge about memes, and participation in creating and spreading memes (RQ_6). The independent variable was the generation (1 = the post-70, 2 = the post-90). The dependent variables include frequency of participation in (1) web 1.0 and (2) 2.0 activities, (3) knowledge about memes, and participation in (4) creating and (5) spreading memes.

All statistical analyses were performed using SPSS 24 and employed a .05 level of significance.

CHAPTER 4 RESULTS

In this chapter I will start with descriptive statistics about the post-70 and the post-90 cohorts' sociodemographics, WeChat adoption and use, COL/IND orientations, and participatory cultural divide. Then I will provide results of data analysis on research questions and hypotheses.

Data Descriptive Analysis

Sociodemographics

Participants of the main study were 448 (male = 199, female = 232, 17 unspecified) Chinese post-70 and the post-90 cohorts. Among them 208 (male = 106, female = 100, 2 unspecified) were born in the 1970s and 221 (male = 89, female = 132) were born in the 1990s. Nineteen did not report the year of birth. Participants' age was calculated using the formula: Age = 2017 - Year of birth. The post-70 cohort ranged in age from 38-47 (M = 43.94, SD = 2.43). The post-90 cohort ranged in age from 18-22 (M = 20.29, SD = 1.13). The most frequently reported ages were 47 for the post-70 cohort and 20 for the post-90 cohort.

Participants came from diversified education backgrounds, occupations, and areas of living. Thirty-four (7.6%) received no higher than primary school education. Eighty (17.9%) stopped education after graduating from junior high school, and 52 (11.6%) did not continue after senior high school. The majority of participants (231, 51.6%) held or were pursuing bachelor's degrees when the survey was conducted. Thirty-one (6.9%) had master and/or doctoral degrees. Two-hundred and seven (46.2%) were

self-identified as student, the rest came from a variety of professions, such as industrial workers (41, 9.2%), farmers (20, 4.5%), businessmen/businesswomen (8, 1.8%), teachers (8, 1.8%), government employees (8, 1.8%), and so on. More than half (252, 56.3%) of the participants lived in urban areas. Seventy-five (16.7%) and 101 (22.5%) are from suburban and rural areas, respectively. Twenty participants (4.5%) did not report areas. Regarding their originality, 269 (63.29%) were from Southwest (i.e., Chongqing, Sichuan, Yunnan, and Guizhou), 57 (13.41%) were from Central (i.e., Hubei, Hunan, Shanxi, Hebei, Henan, Anhui, and Jiangxi), 61 (14.35%) were from East (i.e., Beijing, Tianjin, Shanghai, Shandong, Zhejiang, and Jiangsu), 13 (3.06%) were from South and Southeast (i.e., Guangdong, Guangxi, and Fujian), 8 (1.88%) were from Northeast (i.e., Liaoning, Jilin, and Heilongjiang), 7 (1.65%) were from Northwest (i.e., Shaanxi, Ningxia, Gansu), and 10 (2.5%) were from minority autonomous regions (i.e., Tibet, Xinjiang, Qinghan, Inner Mongolia, and Hainan). Twenty-four (5.4%) did not report which provinces they were from. No participants were from Hong Kong, Macaw, or overseas.

Regarding annual household income, there were 15 participants (3.3%) below ¥1, 000, 71 (15.8%) between ¥1, 001 and ¥10, 000, 103 (23%) between ¥1, 0001 and ¥50, 000, 114 (25.4%) between ¥5, 0001 and ¥100, 000, 93 (20.8%) between ¥100, 001 and ¥200, 000, 21 (4.7%) between ¥200, 000 and ¥1,000, 000, and 5 (1.1%) above ¥1,000, 000. No significant difference in annual household income was observed between the post-70 and the post-90 cohorts, t (427) = -.96, p = .34.

The mean of the number of siblings were 2.98 for the post-70 cohort and .85 for the post-90 cohort. On average the post-70 cohort had more than 2 siblings and the post-90 cohort had fewer than one. The results were consistent with Kang and Wang's (2003) study on the effect of One-Child policy on Chinses family sizes.

Regarding participants originality, 269 (63.29%) were from Southwest (i.e., Chongqing, Sichuan, Yunnan, and Guizhou), 57 (13.41%) were from Central (i.e., Hubei, Hunan, Shanxi, Hebei, Henan, Anhui, and Jiangxi), 61 (14.35%) were from East (i.e., Beijing, Tianjin, Shanghai, Shandong, Zhejiang, and Jiangsu), 13 (3.06%) were from South and Southeast (i.e., Guangdong, Guangxi, and Fujian), 8 (1.88%) were from Northeast (i.e., Liaoning, Jilin, and Heilongjiang), 7 (1.65%) were from Northwest (i.e., Shaanxi, Ningxia, Gansu), and 10 (2.5%) were from minority autonomous regions (i.e., Tibet, Xinjiang, Qinghan, Inner Mongolia, and Hainan). Twenty-four (5.4%) did not report which provinces they were from. No participants were from Hong Kong, Macaw, or overseas. The majority (56.3%, 252, the post-70 = 102, the post-90 = 150) of participants were living in urban areas. Sixteen-point-five percent (75, the post-70 = 45, the post-90 = 30) were from suburban areas, and 22.5% (101, the post-70 = 60, the post-90 = 41) were from rural areas.

The post-90 cohort received more information education in their schools than the post-70 did. For the post-70 cohort, 42 (20.19%) reported that they received information education and 166 (79.81%) did not. For the post-90 cohort, 178 (80.54%) received information education in schools and 43 (19.46%) did not.

WeChat Adoption and Use

Among 448 participants 18 (4%) did not have WeChat account. Nine (2%) expressed willingness of continuous non-adoption, whereas nine (2%) were going to adopt WeChat in the next 6 months. Most people (116, 25.9%) used WeChat for 30 minutes to 1 hour on a daily basis. Using 30 minutes ~ 1 hour as the cut-off line, there were 92 (20.5%) inactive adopters and 338 (75.4%) active adopters. All the post-90 cohorts were WeChat adopters, with 79.64% being active adopters. The post-70 cohorts have a relatively lower proportion of active adopters (71.63%).

Table 3

Number and Percentage of WeChat Adopter Types among the Post-70 and the Post-90 Cohorts (N = 429)

	The post-70	The post-90
Continuous Non-Adopter	8 (3.85%)	0 (0%)
Potential Adopter	9 (4.33%)	0 (0%)
Inactive Adopter	42 (20.19%)	45 (20.36%)
Active Adopter	149 (71.63%)	176 (79.64%)
Total	208 (100%)	221(100%)

"Connecting with family members and friends" (4.16) was the most highly-rated reason why people were using the Internet and "promoting myself or products" was the least important motivation. The post-70 and the post-90 cohorts weighed motivations differently. For the post-70 cohort, "connecting with family members and

friends" (4.15), "gaining information and knowledge" (3.63), and "developing and maintaining new relationships" (3.62) were top-3 motivations for their Internet connection. For the post-90 cohort, however, the top-3 went to "Connecting with family members and friends" (4.19), "having fun" (4.15), and "doing school or work-related things" (4.05). The post-90 cohort had statistically higher ratings on all motivations than the post-70 cohort except "connecting with family members and friends" (t (427) = - .52, p = .61) and "promoting myself or products" (t (427) = - 1.96, p = .05).

Table 4

Motivation for Using the Internet (N = 448)

Motivation for Using the Internet	Overall	The post-70	The post-90
Gain information and knowledge	3.84	3.63	4.03
Have fun	3.85	3.56	4.15
Buy things online	3.64	3.37	3.89
Do school or work-related things	3.78	3.47	4.05
Find a place where I can express myself	3.50	3.28	3.71
Gain support from others	3.62	3.46	3.74
Promote myself or products	2.97	2.86	3.07
Connect with family members and friends	4.16	4.15	4.19
Share what I see and know with others	3.77	3.57	3.97

Develop and maintain new relationships online	3.78	3.62	3.89

The most frequent WeChat activity was “communicating with friends and relatives” (5.12) and the least frequent WeChat activity was “promoting products or self-promotion” (1.96). On average, WeChat users communicated with their friends and relatives 3-6 times a week, whereas they rarely promote products or themselves on WeChat. The post-70 and the post-90 cohorts had different patterns of WeChat use in terms of the most frequent things they did. For the post-70 cohort, the top-5 most frequent things they did on WeChat were: “communicating with friends and relatives” (4.99), “watching others’ updates” (4.52), “hearing school- and work- related group discussions” (4.28), “making phone call/video chat” (4.22), and “receiving or sending red packet” (4.15). For the post-90 cohort, the top-5 most frequent things they did on WeChat were: “watching others’ updates” (5.64), “commenting on or liking other’s post” (5.31), “communicating with friends and relatives” (5.27), “hearing school- and work- related group discussions” (4.80), and “watching news or articles from public accounts” (4.67). The post-90 cohort was more frequently engaged in all WeChat activities than the post-70 cohort except “communicating with relatives or friends” (t (410) = - 1.85, p = .06), “sharing information with others” (t (410) = - 1.52, p = .13), “asking support, help, or blessing from friends” (t (387.09)= - .17, p = .87), “supporting, helping, or sending blessing to friends and relatives or others online” (t (410) = - .91, p = .37), and “making phone call/video chat” (t (374.39) = .24, p = .81).

Table 5

Frequency of WeChat Activities (N = 430)

WeChat Activities	Overall	Post-70	Post-90
Posting Original essay	3.08	2.75	3.36
Posting selfie	2.35	2.14	2.57
Watching news or articles from public accounts	4.48	4.25	4.67
Promoting products or self-promotion	1.96	2.13	1.83
Using online banking and/or making payments	3.92	3.40	4.36
Using third-party plug-ins	2.16	1.87	2.44
Commenting on or liking other's post	4.74	4.13	5.31
Watching others' updates	5.09	4.52	5.64
Sharing information with others	4.00	3.87	4.14
Communicating with friends and relatives	5.12	4.99	5.27
Online Entertainment	4.24	3.90	4.58
Receiving or sending red packet	4.19	4.15	4.28
Hearing school- and work- related group discussions	4.56	4.28	4.80
Joining school- and work- related group discussion	4.23	3.84	4.57
Asking support, help, or blessing from friends	2.95	2.96	2.99
Self-expression/ Self-disclose	3.00	2.64	3.39
Supporting, helping, or sending blessing to friends and relatives or others online	3.58	3.52	3.67
Gaining information that satisfied personal needs and benefited personal development	3.66	3.38	3.92

Making phone call/video chat	4.40	4.22	4.19

Regarding Internet skills, “I know how to connect to a WIFI network” was one of the highest rated skills for both the post-70 (3.48) and the post-90 (4.59) cohorts. Both the post-70 and the post-90 cohorts rated “I am comfortable with creating something new from integrating existing online images, music or video” as the least proficient skill (the post-70 = 2.21, the post-90 = 3.52). The post-90 cohort reported higher proficiencies in all aspects of Internet skills than the post-70 cohort.

Table 6

Internet Skills (*N* = 429)

Internet Skills	Overall	Post-70	Post-90
I know how to download and open files	3.60	2.76	4.38
I know how to connect to a WIFI network	4.05	3.48	4.59
I know how to edit photos/videos	3.17	2.41	3.90
I am very efficient in using keywords to search for information online	3.64	2.97	4.27
I know how to make and edit an online post	3.64	2.85	4.41
I am comfortable with creating something new from integrating existing online images, music or video	2.89	2.21	3.52
I know how to search, rename, and categorize friends on SNSs	3.80	2.99	4.54
I know how to comment, like, and message friends	3.99	3.40	4.54

on SNSs			
I know how to download and install apps on cellphone	3.96	3.27	4.59
I know how to manage apps on cellphone	3.92	3.22	4.57

COL/IND Orientations

The post-70 and the post-90 differed in terms of COL/IND orientations. The post-90 cohort had higher horizontal individualism (t (427) = -4.41, p < .001) and vertical individualism (t (427) = -3.61, p < .001) than the post-70 cohort; whereas the post-70 cohort had higher vertical collectivism (t (427) = 3.69, p < .001) than the post-90 cohort. The results were consistent with previous studies indicating an increase of individualism among younger Chinese (Ralston et al., 1999). Annual household income was positively correlated with horizontal individualism (*r* (427) = 3.18, p < .001) and vertical individualism (*r* (427) = 2.47, p < .001). Compared with people who were the only child in their families, people with siblings tended to have higher vertical collectivism (*t* (427) = 2.17, *p* = .03). To sum up, the post-90 cohort was more individualistic than the post-70 cohort; whereas the post-70 cohort was more collectivistic than the post-90 cohort. Moreover, higher annual household income was associated with higher individualism. And having sibling significantly contributed to one's collectivism.

Table 7

Horizontal and Vertical COL/IND of the post-70 and the post-90 Cohorts (*N* = 429)

	The Post-70	The Post-90

Horizontal Individualism	4.93	5.42
Vertical Individualism	4.54	4.91
Horizontal Collectivism	4.81	4.76
Vertical Collectivism	5.49	5.11

Participatory Cultural Divide

The post-90 cohort had more knowledge on the five online popular memes than the post-70 cohort did. On average, the post-90 cohort had some knowledge about the memes whereas the post-70 cohort heard but did not know the meaning of the memes. Moreover, the post-90 cohort was more frequently participated in spreading memes than the post-70 cohort. Both the post-70 and the post-90 cohorts did not participate in creating memes every week, with the post-70 cohort (1.65) did it less frequently than the post-90 cohort (2.66).

Table 8

Knowledge about Memes and Participation in Spreading and Creating Memes (N = 429)

	The Post-70	The Post-90
Knowledge of Memes		
Lanshou, Xianggu	2.48	4.73
Pipixia, let's go	2.10	4.43
Make a call for you	2.22	4.69
Zhaxinle, Laotie	2.51	4.76
Boat of Friendship	2.72	4.80

Meme Spreading		
Downloading and using *Biaoqingbao (meme picture)*	2.30	3.36
Using memes in WeChat post or communication	2.12	3.29
Biaoqingbao Duel	1.99	3.56
Meme Creating		
Developing new content to make your own memes	1.65	2.66

Data Analysis Results

Research Question 1

The stepwise regression analysis produced 4 models (see table 7). The fourth model (F (3, 162) = 20.68, $p < .001$) included four predictors. Our best guess of the square correlation in the population is .46. That is, the model could explain 46% variance of individual's human capital- enhancing activities on WeChat in the population.

The first significant predictor was the perception of the intensity of WeChat, t (425) = 7.32, $B = .49$, $\beta = .33$, $p < .001$. The importance of WeChat functions an individual perceived significantly predicted the frequency of human capital-enhancing activities on WeChat. With every one-unit increase in the perception of the intensity of WeChat, the frequency of human capital- enhancing activities would

increase by .49 units.

The second significant predictor was the communication about WeChat, t (425) = 7.35, B = .47, β = .28, p < .001. How frequent an individual was participated in communication about WeChat significantly predicted the frequency of human capital-enhancing activities on WeChat. With every one-unit increase in the communication about WeChat, the frequency of human capital- enhancing activities would increase by .47 units.

The third significant predictor was the observability of benefits brought by WeChat, t (425) = 4.31, B = .23, β = .18, p < .001. The more obvious an individual perceived WeChat's benefits to be, the more frequent he/she would participate in human capital- enhancing activities on WeChat. With every one-unit increase in observability of WeChat's benefits, the frequency of human capital- enhancing activities would increase by .23 units.

The fourth significant predictor was the Internet skills, t (425) = 3.75, B = .18, β = .15, p < .001. The higher an individual's Internet skills, the more frequent he/she would participate in human capital- enhancing activities on WeChat. With every one-unit increase in Internet skills, the frequency of human capital- enhancing activities would increase by .18 units.

Table 9

Regression Analysis Results: Factors Predicting Human Capital- Enhancing Activities (N = 430)

Predictor Variables	*B*	*SE*	*β*
Model 1			
Intensity	.86***	.06	.60***
Model 1 Summary: F (1, 428) = 216.03, $p < .001$, $R^2 = .34$, adjusted $R^2 = .33$			
Model 2			
Intensity	.69***	.06	.47***
Communication	.54***	.06	.33***
Model 2 Summary: F (2, 427) = 161.82, $p < .001$, $R^2 = .43$, adjusted $R^2 = .43$			
Model 3			
Intensity	.59***	.06	.40***
Communication	.49***	.06	.30***
Observability	.22***	.06	.17***
Model 3 Summary: F (3, 426) = 116.97, $p < .001$, $R^2 = .45$, adjusted $R^2 = .45$			
Model 4			
Intensity	.49***	.07	.33***
Communication	.47***	.06	.28***
Observability	.23***	.05	.18***
Internet Skills	.18***	.05	.15***
Model 4 Summary: F (4, 425) = 93.91, $p < .001$, $R^2 = .47$, adjusted $R^2 = .46$			

Research Question 2

Results indicated that the post-90 cohort were more motivated to use the Internet to gain information and knowledge (t (397.19) = -4.93, p < .001), have fun(t (394.82) = -7.28, p < .001), buy things online(t (375.19) = -6.04, p < .001), do school- or work-related things(t (347.68) = -6.99, p < .001), find a place for self-expression(t (411.66) = -4.71, p < .001), gain support from others(t (401.57) = -3.30, p = .001), promote self or products(t (414.49) = -1.96, p = .05), share information with friends(t (393.99) = -5.08, p < .001), and develop and maintain new relationships online. No significant difference in the "connecting with family members and friends" motivatio(t (410.74) = -3.83, p = .001)n was found between the post-70 and the post-90 cohorts, t (427) = -.52, p = .61.

First, the post-90 cohort had higher rate of WeChat account owners than the post-70 cohort, χ^2 (1, N = 429) = 18.81, p < .001. Second, different types of adoption were examined by using adopter category (1 = continuous non-adopter, 2 = potential adopter, 3 = inactive adopter, 4 = active adopter) as the dependent variable. The results for the test were significant, χ^2 (3, N = 429) = 18.97, p < .001. Third, to examine intergenerational differences in each adopter type, the variable adopter type was recoded into four categorical variables (1=yes, 0 = no) representing continuous non-adopter, potential adopter, inactive adopter, and active adopter, respectively. Results indicated that the post-70 cohort had more continuous non-adopter (χ^2 (1, N = 429) = 8.66, p = .003) and potential adopter than the post-90 cohort (χ^2 (1, N = 429) =

9.77, $p = .002$). The post-90 cohort included more active adopters than the post-70 cohort, χ^2 (1, $N = 429$) = 3.74, $p = .05$.

Table 10

T-Test Results: Motivation for Using the Internet ($N = 429$)

Motivation for Using the Internet	Post-70	Post-90	*df*	*t*
Gain information and knowledge	3.63	4.03	397.19	-4.93***
Have fun	3.56	4.15	394.82	-7.28***
Buy things online	3.37	3.89	375.19	-6.04***
Do school- or work-related things	3.47	4.05	347.68	-6.99***
Find a place where I can express myself	3.28	3.71	411.66	-4.71***
Gain support from others	3.46	3.74	401.57	-3.30**
Promote myself or products	2.86	3.07	414.49	-1.96*
Connect with family members and friends	4.15	4.19	427	-.52
Share what I see and know with others	3.57	3.97	393.99	-5.08***
Develop and maintain new relationships online	3.62	3.89	410.74	-3.38**

Note. * $.01 \leq p \leq .05$. ** $.001 \leq p < .01$. *** $p < .001$

Results of t-test indicated a significant difference in time spend on WeChat between the post-70 and pot-90 cohorts, t (427) = -3.44, $p = .001$. On average, the post-70 cohort (4.20) spent less time on WeChat than the post-90 cohort (4.77).

Regarding frequency of WeChat activities, the post-90 cohort was more frequently engaged in all WeChat activities than the post-70 cohort except "promoting products or self-promotion" (t (350.93) = 2.09, p = .03), "communicating with relatives or friends" (t (410) = - 1.85, p = .06), "sharing information with others" (t (410) = - 1.52, p = .13), "asking support, help, or blessing from friends" (t (387.09)= - .17, p = .87), "supporting, helping, or sending blessing to friends and relatives or others online" (t (410) = - .91, p = .37), and "making phone call/video chat" (t (374.39) = .24, p = .81).

Table 11

T-Tests Results: Frequency of WeChat Activities (N = 429)

WeChat Activities	Post-70	Post-90	*df*	*t*
Posting Original essay	2.75	3.36	365.16	-3.84***
Posting selfie	2.14	2.57	410	-3.48**
Watching news or articles from public accounts	4.25	4.67	410	-2.52*
Promoting products or self-promotion	2.13	1.83	350.93	2.09*
Using online banking and/or making payments	3.40	4.36	371.48	-5.78***
Using third-party plug-ins	1.87	2.44	409.93	-4.43***
Commenting on or liking other's post	4.13	5.31	373.55	-6.84***
Watching others' updates	4.52	5.64	363.02	-6.21***
Sharing information with others	3.87	4.14	410	-1.51
Communicating with friends and relatives	4.99	5.27	410	-1.85

Online Entertainment	3.90	4.58	410	-3.45***
Receiving or sending red packet	4.15	4.28	410	-.87
Hearing school- and work- related group discussions	4.28	4.80	410	-2.98**
Joining school- and work- related group discussions	3.84	4.57	375.66	-4.10***
Asking support, help, or blessing from friends	2.96	2.99	387.09	-.17
Self-expression/ Self-disclose	2.64	3.39	410	-4.63***
Supporting, helping, or sending blessing to friends and relatives or others online	3.52	3.67	410	-.91
Gaining information that satisfied personal needs and benefit personal development	3.38	3.92	374.30	-3.12**
Making phone call/video chat	4.22	4.19	374.39	.24

Note. * $.01 \leq p \leq .05$. ** $.001 \leq p < .01$. *** $p < .001$

Regarding social environment, there were significant differences in received social support (t (427) = -6.75, p <.001), communication about WeChat (t (393.38) = -2.76, p = .006), and perceived popularity of WeChat (t (386.57) = -3.70, p < .001) between the post-70 and the post-90 cohorts. On average, the post-70 cohort (3.16) received more social support than the post-90 cohort (2.34); the post-70 cohort (2.79) was less frequently engaged in communication about WeChat than the post-90 cohort (2.99); the post-70 cohort (3.99) had lower perceived popularity of WeChat than the post-90 (4.30) cohort.

There was a significant difference in technological cluster between the post-70 and the post-90 cohorts, t (427) = -8.95, p < .001. The post-70 cohort (1.93) employed

fewer information technologies than the post-90 cohort (2.85). No significant difference in years of Internet use between the post-70 and the post-90 cohorts was found, t (326.09) = -1.79, p = .08. On average, the post-70 cohort had used the Internet for 8.32 years, and the post-90 cohort had used it for 9.20 years.

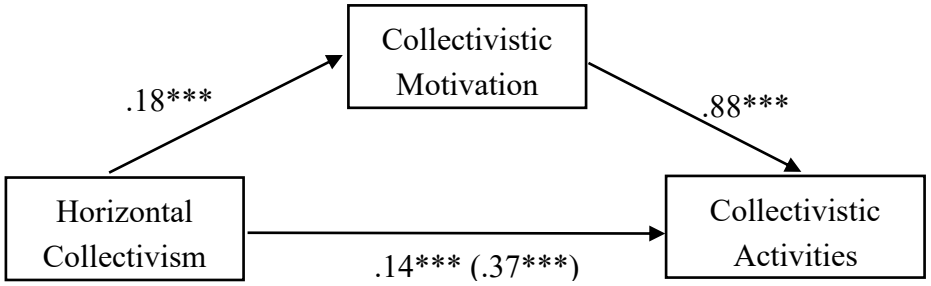
The post-70 cohort had lower Internet skills than the post-90 cohort, t (365.51) = - 14.92, $p < .001$. Examining different aspects of Internet skills, significant differences between the post-70 and the post-90 cohorts were found in skills related to operating digital media (t (369.53) = -13.41, $p < .001$), information navigation (t (427) = -10.53, $p < .001$), creating online content (t (387.16) = -14.47, $p < .001$), online communication (t (346.87) = -13.42, $p < .001$), and utilizing mobile media (t (337.93) = -12.45, $p < .001$).

Research Question 3

Results indicated significant direct effects of HC on CM (B = .18, β = .28, SE = .03, $p < .001$), HC on CA (B = .37, β = .26, SE = .07, $p < .001$), and CM on CA (B = .88, β = .40, SE = .10, $p < .001$). Results of multiple regression indicated both HC (B = .23, β = .16, SE = .06, p <.001) and CM significantly predicted CA (B = .78, β = .36, SE = .10, $p < .001$), when controlling for the other. The model explained 17% of the variance in CA. Indirect effect was examined using Preacher and Hayes' (2004) simple mediation procedure (SOBEL). The indirect effect of HC on CA via CM was significant, B = .14, SE = .03, $p < .001$.

Figure 2

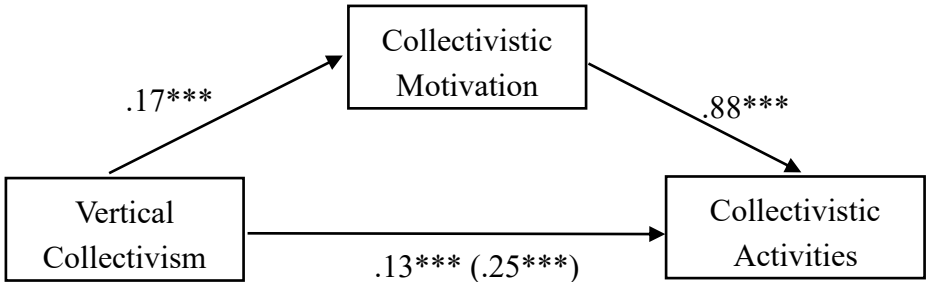
Effects of Horizontal Collectivism and Collectivistic Motivation on Collectivistic Activities (N = 429)



Note. * .01≤ p ≤ .05. ** .001≤ p < .01. *** p < .001

Figure 3

Effects of Vertical Collectivism and Collectivistic Motivation on Collectivistic Activities (N = 429)



Note. * .01≤ p ≤ .05. ** .001≤ p < .01. *** p < .001

Moreover, results indicated significant direct effects of VC on CM (B = .17, β = .03, SE = .03, p < .001) and VC on CA (B = .25, β = .20, SE = .06, p < .001). Results of multiple regression indicated both VC (B = .12, β = .10, SE = .06, p =.04) and CM significantly predicted CA (B = .82, β = .38, SE = .10, p < .001), when controlling for the other. The model explained 19% of the variance in CA. Indirect effect was examined Indirect effect was examined using Preacher and Hayes' (2004)

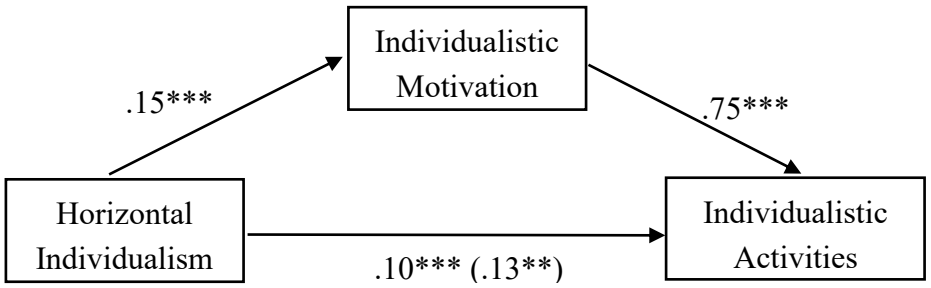
simple mediation procedure (SOBEL). The indirect effect of VC on CA via CM was significant, B = .13, SE = .03, p < .001.

Research Question 4

Results indicated significant direct effects of HI on IM (B = .15, β = .22, SE = .03, p < .001), HI on IA (B = .13, β = .12, SE = .05, p = .008), and IM on IA (B = .75, β = .50, SE = .06, p < .001). Results of multiple regression indicated that when controlling for IM, HI did not significantly predict IA, B = .03, β = .03, SE = .04, p = .67; whereas when controlling for HI, IM significantly predicted IA, B = .74, β = .49, SE = .06, p < .001. The model explained 25% of the variance in IA. Results indicated full mediation. Indirect effect was examined using Preacher and Hayes' (2004) simple mediation procedure (SOBEL). The indirect effect of HI on IA via IM was significant, B = .10, SE = .03, p < .001.

Figure 4

Effects of Horizontal Individualism and Individualistic Motivation on Individualistic Activities (N = 429)



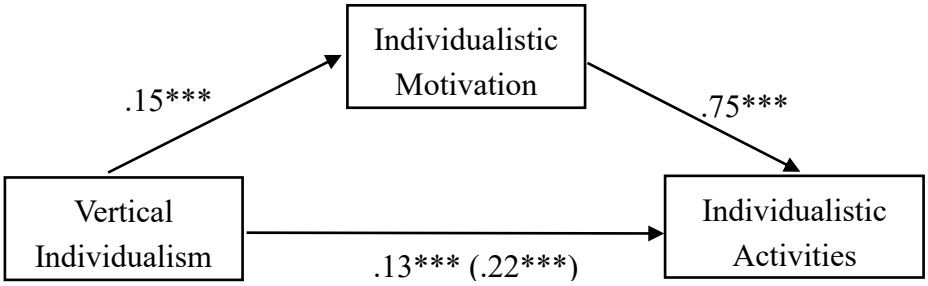
Note. * .01≤ p ≤ .05. ** .001≤ p < .01. *** p < .001

Results of multiple regression indicated both VI (B = .09, β = .05, SE = .09, p =.05) and IM significantly predicted IA (B = .71, β = .48, SE = .07, p < .001), when

controlling for the other. The model explained 26% of the variance in IA. Indirect effect was examined using Preacher and Hayes' (2004) simple mediation procedure (SOBEL). The indirect effect of HI on IA via IM was significant, $B = .13$ $SE = .03$, $p < .001$.

Figure 5

Effects of Vertical Individualism and Individualistic Motivation on Individualistic Activities ($N = 429$)



Note. * $.01 \leq p \leq .05$. ** $.001 \leq p < .01$. *** $p < .001$

Hypotheses 1 & 2

H_1 was supported. Results of t-tests indicated significant difference in individualistic motivation between the post-70 and the post-90 cohorts, t (394.84) = -4.09, $p < .001$. The post-90 cohort (3.51) was more individualistically motivated than the post-70 cohort (3.20).

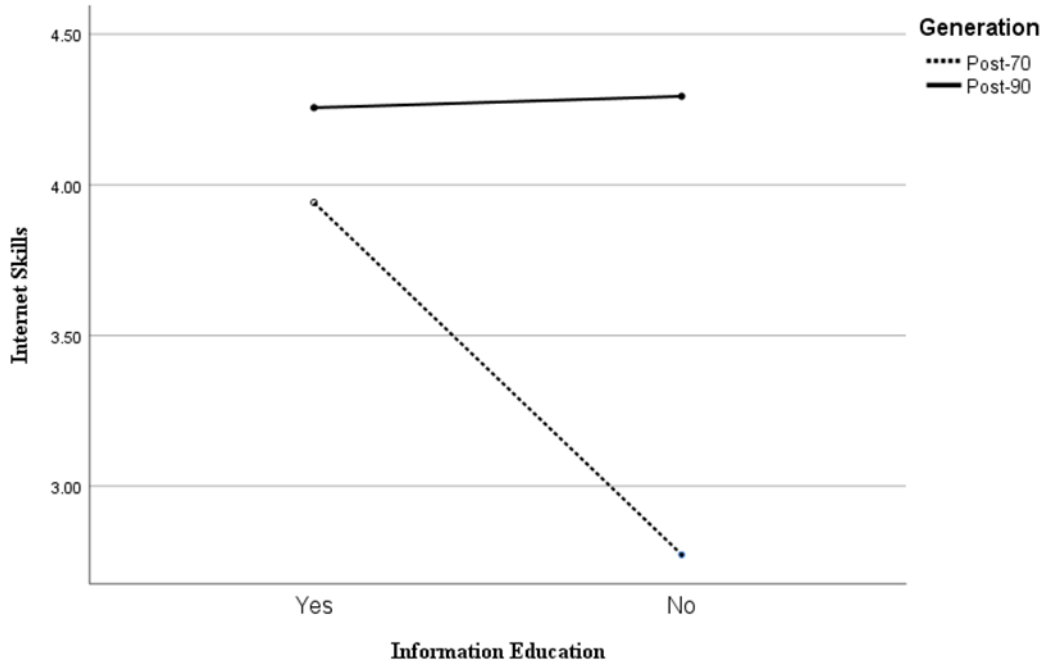
H_2 was supported. There was significant difference in individualistic WeChat activities between the post-70 and the post-90 cohorts, t (382.19) = -3.22, $p = .001$. The post-90 cohort (2.92) more frequently participated in individualistic WeChat activities than the post-70 cohort (2.56).

Research Question 5

Results indicated significant main effects of generation (F (1, 425) = 90.13, p < .001, η^2 = .18) and information education program (F (1, 425) = 34.17, p < .001, η^2 = .08) on the Internet skills. The post-90 cohort (4.06) had higher internet skills than the post-70 (3.01). People who participated in information education programs in school (4.20) tended to have higher Internet skills than those who did not (3.09).

Figure 6

Interaction Effect of Generation and Information Education on Internet Skills (N = 429)



A significant interaction effect of information education program and generation on the Internet skills was observed, F (1, 425) = 38.93, p < .001, η^2 = .08. Participants were recoded into four groups (1 = the post-70 without information education, 2 = the post-70 with information education, 3 = the post-90 without information education, 4

= post-90 with information) and made pairwise comparisons by employing Turkey HSD tests. Post-hoc tests indicated significant difference in Internet skills between the post-70 cohorts who participated in information education program (3.94) and who did not (2.77). Participating in information education program or not did not result in significant differences in Internet skills among the post-90 cohort. The post-70 cohort who received information education in school showed no significant difference in Internet skills when comparing with the post-90 cohort. To sum-up, information education program significantly increased Internet skills of the post-70 cohort, and it helped narrow the gap in Internet skills between the post-70 and the post-90 cohorts.

Research Question 6

Results indicated significant differences between the post-70 and the post-90 cohorts in all the five aspects: (1) the post-70 cohort was less frequently participated in web 1.0 activities than the post-90, t (360.13) = -4.95, $p < .001$; (2) the post-70 cohort was less frequently participated in web 2.0 activities than the post-70, t (346.65) = -3.55, $p < .001$; (3) the post-70 cohort had fewer knowledge about memes than the post-90, t (280.39) = -24.03, $p < .001$; the post-70 cohort was less frequently participated in creating memes than the post-90, t (401.87)=- 8.45, $p < .001$; (5) the post-70 cohort was less frequently participated in spreading memes than the post-90, t (408.61) = -11.88, $p < .001$.

CHAPTER 5 DISCUSSION

In this chapter, I will discuss major findings of this study in three aspects: WeChat adoption and use, cultural values, and participatory cultural divide. Included in each aspect are interpretations of the data analysis and examination of similarities and differences between the post-70 and the post-90 cohorts. Last, I will discuss academic and practical implications of the study, as well as its limitations and future directions.

WeChat Adoption and Use

WeChat Adoption: When "If" Turns Into "How"

Rogers (1962; 1995) introduced four types of innovation adopters: innovator, early adopter, early major adopter, late major adopter, and laggards, based on the time they adopt the innovation (e.g., innovators are the first 2.5% to accept the innovation). However, this classification has some limitations when applying to study WeChat or other SNSs. First, as Rogers and other scholars (e.g., Zhu & He, 2002) argued, adoption is not simply a "yes/no" question because adopters go back and forth between acceptance and confirmation stages (e.g., those installed Internet may stop using it after a while). Second, WeChat is but one SNS application that co-exists and competes with other SNSs or SNS applications (e.g., Weibo) for the market. Having an account does not mean that the person is using WeChat. Therefore, when studying WeChat or other SNSs, the concept of "adoption" should be based on not just *if* there is access, but more importantly *how* much time people spend on it.

The data analysis results indicated a necessity of using time or frequency of use as one of the criteria to classify adopters of SNSs. In this study, among 448 participants only 18 (4%) did not have WeChat account. Nevertheless, when looking at participants' frequency of use, 92 (20.5%) spent less than 30 minutes on WeChat on a daily basis. According to CNNIC (2017, July 1), on average Chinese spend 1-2 hours every day on SNSs. In the context of this study, therefore, those below-average adopters could be conceptualized as "laggards." As will be discussed later in this chapter, there are more "laggards" in the post-70 population than in the post-90 population. Investigating intergenerational differences would contribute to our knowledge of WeChat adoption and help increase the post-70 cohort's WeChat adoption.

WeChat Use: Variety and Disparities

Variety of WeChat activities. Ellison and Boyd (2007) defined SNSs as online platforms through which one can (1) construct a profile, (2) articulate a list of other users whom they share a connection, and (3) view and traverse their list of connections. As an SNS application, WeChat was developed based on these "conventional" attributes. Users can build their own profiles and search for new "friends" through various ways, such as putting in their telephone number or searching for people that are near them. They can communicate with friends through WeChat messages, and make voice and video calls. Similar to Instagram, WeChat

users can share news and updates through posting and commenting on "moments," which is, in most situations, accessible only to friends.

Moreover, WeChat offers a variety of "extra" functions that make it more than just an SNS application. It is an information center through which users can search for, subscribe, and interact with news and updates from online public accounts, including news corporations, celebrities, merchants, governments, and so on. WeChat is also a financial center, through which users can deposit some money into the application, make purchases, and pay bills. Another function of WeChat is its gaming platform which offers users various online games. Last of not the least, WeChat provides a variety of plug-ins that enable users to book a hotel, buy a train ticket, make a food order, shop clothes online, and so on. As such, it facilitates users' participation in economic, social, commercial, and even political activities.

Our study results indicated that the post-70 and the post-90 users were participating in both "typical" and "extra" SNS activities. To begin with, the post-70 and the post-90 cohorts used WeChat to communicate with their friends and relatives and watch other's updates at least 3-6 times a week, respectively; every week they made at least 1-2 WeChat phone-calls/video chats, sharing information with others, and commenting on or liking other's post; they posted original essays at least 1-2 times a month, and occasionally posted selfies. Moreover, besides treating WeChat as an SNS application, the post-70 and the post-90 cohorts employed it as a multifunctional platform which is tightly integrated into user's everyday lives. For

example, on average WeChat users watched news from public accounts, enjoyed online entertainment, and did online banking or make online payment on WeChat approximately 1-2 times a week. They also occasionally bought tickets or booked hotels through third-party plug-ins on WeChat.

Disparities and their predictors. From digital divide 1.0 to 2.0, scholars have shifted their focus from the difference between those Internet haves and have-nots to disparities in use among those already had access to the Internet (DiMaggio & Hargittai, 2001; Hargittai 2002; Mossberger et al., 2012; Norris, 2001). The term "human capital- enhancing activity" was conceptualized by scholars referring to online activities that may enhance life chances (Hargittai & Hinnant, 2008; Zillien & Hargittai, 2009). According to Hargittai and Hinnant (2008), human capital-enhancing activities include activities that may lead to more informed political participation, help with professional development, or benefit for finance and health.

Our research indicated that users could and did participate in human capital-enhancing activities on WeChat, including promoting products or self-promotion (1-2 times in the past 6 months), using online banking and/or making payments (1-2 times a week), hearing school- and work-related discussions (at least 1-2 times a week), joining school- and work- related group discussion (at least 1-2 times a week), asking support, help, or blessing from friends (1-2 times a month), gaining information that satisfied personal needs and benefit personal development (at least 1-2 times a month). Other than exhausting the human capital- enhancing activities WeChat offers,

a main research question of this study is to explore factors that influence different frequencies of human capital- enhancing activities in order to enhance WeChat users' lives.

Results indicated that intensity, communication, observability, and Internet skills influenced the extent to which users participate in human capital- enhancing activities on WeChat. First, intensity refers to the perceived importance of the technology by users (Jung, 2008). According to Kim et al. (2007) and Jung (2008), high intensity of Internet is associated with frequent Internet activities. In this study, we examined WeChat user's intensity of five functions: moments, individual and group messaging, voice and video call, WeChat wallet and payment, and third-party plug-ins.

On one hand, the results suggested that in order to increase human capital-enhancing activities on WeChat, users need to be informed of the importance of its functions. On the other hand, among these functions, third-party plug-ins, moments, and WeChat wallet and payments were perceived as less important than individual and group messaging and voice and video call (Table 12). Moreover, these functions had the top-3 largest standard deviations, indicating diverse opinion on the perceived importance of them. Therefore, improving the perceived importance of these three functions may be key parts in increasing human capital -enhancing activities.

Table 12

Intensity of WeChat Functions (N = 448)

	Overall	The post-	The	t

		70	post-90	
Moments	4.45	4.28	4.66	-3.32**
	(1.19)	(1.40)	(.90)	
Individual and group messaging	4.76	4.54	5.00	-4.57***
	(1.04)	(1.21)	(.77)	
Voice and video call	4.91	4.82	5.00	-1.95
	(.97)	(1.08)	(.84)	
WeChat wallet and payment	4.92	4.61	5.24	-6.27***
	(1.10)	(1.19)	(.87)	
Third-party plug-ins	3.81	3.41	4.20	-6.00***
	(1.39)	(1.55)	(1.12)	
Overall	4.57	4.33	4.82	-5.87***
	(.88)	(1.02)	(.64)	

Note. * $.01 \leq p \leq .05$. ** $.001 \leq p < .01$. *** $p < .001$

Second, communication about WeChat also influenced human capital- enhancing activities. The more frequent one is exposed to information and participated in communication about a technology, the more likely he/she is going to use it (Rogers, 1995). In this study we examined both interpersonal and mediated communication about WeChat, such as how often participants were involved in the discussion about WeChat, and how often participants heard media talked about WeChat. Results suggested that communication about WeChat significantly predicted human capital-enhancing activities. Therefore, for the government and other relevant organizations (e.g., non-government organizations), increasing communication about WeChat may improve users' lives through using it.

The third significant predictor was observability (i.e., the degree to which the results of the innovation are visible to others, in Rogers, 1995). As one of the perceived attributes of the technology introduced by Rogers (1995), observability has

not been as often studied as others (e.g., relative advantage, complexity, and compatibility, in Zhu & He, 2002). Why did observability account for more variance than other attributes in this study's context? One explanation may be the pragmatism initiated by former Chinese Chairman Deng Xiaoping in 1970s during economic reform and later popularized in many aspects of Chinese everyday lives (Chang et al., 1994). One of Deng's sayings could represent his pragmatic philosophy: "No matter being white or black, a cat that can catch rats is a good cat!" Applying this quote to WeChat: users will only accept it after observing its benefits. This finding reflected the pragmatic philosophy of Chinese in adopting and using a technology, and highlighted the importance of a demonstration of benefits to increase users' human capital- enhancing activities on WeChat.

Fourth, higher Internet skills associated with more frequent human capital-enhancing activities on WeChat. This finding was consistent with previous research. For example, Mossberger et al. (2012) found connections between Internet user's technical competence and digital literacy and their online social, political, and economic activities. In this study we employed Alexander et al.'s (2015) conception of Internet skills which included five dimensions: operational (i.e., the ability to operate digital media), information navigation (i.e., the ability to search for and deal with online information), social (i.e., the ability to communicate online), creative (i.e., the ability to create online content), and mobile (e.g., the ability to use mobile media). To our knowledge, this is one of the few studies examining the association between

human capital- enhancing activities and the five dimensions of Internet skill. Moreover, the finding suggested that even on SNS applications like WeChat, differences in Internet skills also may lead to disparities in life chances. The results indicated the importance of education about Internet skills.

The Post-70 Cohort: Challenges and Opportunities

Challenges in Adoption. According to Rogers (1995) and other scholars (e.g., Rice & Pearce, 2015; Zhu & He, 2002), adoption of a technology is influenced by various factors such as perceived attributes, communication, technological cluster, and personal characteristics. Results of the data analyses indicated that the post-70 cohort included more continuous non-adopters and less active adopters than the post-90 cohort. These intergenerational differences could be explained by differences in individual-level, WeChat-specific, and social-level factors associated with adoption.

To begin, at the individual-level, the post-70 cohort were less motivated to connect to the Internet and used fewer digital technologies than the post-90 cohort. Although there was no significant difference in years of Internet use between the post-70 and the post-90 cohorts, the younger generation expressed stronger motivations to use the Internet. Results showed that (Table 10) the post-90 cohort rated higher for all motivations except "connect with family members and friends." Since WeChat is an Internet-based SNS application, people’s motivation to use the Internet may influence its adoption. Moreover, the post-70 cohort used fewer digital technologies than the post-90 cohorts. As Rogers (1995) and other scholars (e.g., Rice & Pearce, 2015)

argued, using similar technologies may increase the likelihood of adoption. In this study we examined the post-70 and the post-90 cohorts' technology cluster by asking them to self-report how many digital technologies (i.e., cellphone, laptop, desktop, tablet, and wearable electronic devices) they own. The results indicated that on average the post-70 cohort owned 2 of devices while the post-90 cohort owned 3 devices.

Second, previous research showed that perceived attributes of the technology also influence its adoption (Rogers, 1995; 2003; Lin et al., 2011; Zhu & He, 2002). Rogers (1995) argued that there are five perceived attributes of innovation: relative advantage (the degree to which the innovation is perceived as better than the idea it supersedes), complexity (the degree to which the innovation is difficult to understand and use), compatibility (the degree to which the innovation is perceived as being consistent with existing values, experience, and needs of potential adopters), observability (the degree to which the results of the innovation are visible to others), and trialability (the degree to which the innovation can be experimented on a limited basis). The data analysis results showed that a higher proportion of the post-70 cohort agreed with the statement that "WeChat is difficult to use" than the post-90 cohort, which indicated a necessity to enhance the post-70 cohort's skills to use WeChat.

Third, at the social-level, the post-70 cohort were less frequently participated in communication about WeChat and found WeChat less popular than the post-90 cohort. Literature indicated that communication and perceived popularity are

positively associated with adoption (Rogers, 1995; Zhu & He, 2002). Compared with the post-90 cohort, the post-70 cohort were less frequently exposed to information about WeChat through media, and had fewer friends, relatives, and co-workers using WeChat.

Challenges in Use. In addition to relatively low adoption rate, the post-70 cohort faced distinctive challenges in the use of WeChat. Compared with the post-90 cohort, the post-70 cohort less frequently participated in all WeChat activities except "promoting products/self-promotion" and "making phone/video calls." Moreover, there was a significant difference in the frequency of participating in human capital-enhancing activities between the post-70 and the post-90 cohorts. The post-90 cohort more frequently utilized WeChat to enhance their life chances than the post-70 cohort. It seems WeChat played a role in creating social and economic disparities between the two generation cohorts. Examining factors predicting human capital- enhancing activities, we found that the post-70 and the post-90 cohorts differed in three of the four significant predictors (i.e., intensity, communication about WeChat, and Internet skills), which may help explain the disparities and shed light on working towards closing the generation gap. First, with the exception of voice and video calls, the post-70 cohort did not perceive WeChat functions to be as important as the post-90 cohort did. Second, as argued before, the post-70 cohort less frequently participated in communication about WeChat than the post-90 cohort. Third, the post-70 cohort were less skilled than the post-90 cohort in all five aspects (i.e., operational, information

navigation, social, creative, and mobile) of Internet skills. The results suggested that it is necessary and important to enhance communication about WeChat and Internet skills education for the post-70 cohort.

Opportunities. Compared with the post-90 cohort, the post-70 cohort also faced some challenges in adoption and use of WeChat, such as the lower adoption rate and less frequent WeChat activities. However, these challenges are accompanied by opportunities for the older generation to catch up with the younger generation and for WeChat to develop new markets. The data analysis results yielded two implications: (1) education program about Internet skills for the post-70 cohort may be an effective means to work against intergenerational disparities in WeChat adoption and use; (2) new features should be employed to develop WeChat's market in the post-70 population.

First, the Internet skills education program is one of the keys to enhance the post-70 cohort's WeChat adoption and use. Results indicated that active adopters had higher Internet skills than non-active adopters, and Internet skills were positively correlated with time spent on WeChat and frequencies of WeChat activities. Since the post-70 cohort had significantly lower Internet skills than the post-90 cohort, improving their Internet skills may be an efficient way to increase adoption rate and closing the generation gap for WeChat activities. Interestingly, the interaction effect of information education program and generation on Internet skills (Figure 6) showed that while information education programs did not make significant differences in

Internet skills among the post-90 cohort, it did significantly increase the post-70 cohort's. Moreover, the post-70 cohort who received information education reported no lower Internet skills than the post-90 cohort. Therefore, the results suggested that the government, educational institutions, and relevant organization should promote education programs about Internet skills among the post-70 cohort to efficiently minimize the intergenerational disparities in WeChat adoption and use.

Second, there is a large market in the post-70 cohort that is yet to be developed. The entire the post-70 population is larger than the post-90 population (approx. 215 million vs. 175 million, China Bureau of Statistics, 2010). However, according to CNNIC's (2017, December 31) report, 32.1 % of China's SNS users are between 20-29 years old; whereas there are only 13.7% of SNS users aged 40-49. As the most popular SNS application in China, currently WeChat has about 627 million users (CNNIC, 2017, July 1), which means while almost all the post-90 cohorts are WeChat users, only 39.95% (89.90 million) the post-70 cohort are WeChat users. In the US about 78% of people in the age of 30-49 use SNS (Pew Research Center, 2018, February 5). Compared to the penetration rate in the US, the Chinese SNS market for the post-70 still has enormous potential to be explored. With more social support and increased Internet skills, it is expected that more and more post-70 cohort may adopt and use WeChat. Moreover, results indicated that the post-70 cohort' perception of WeChat's relative advantage, compatibility, observability, and trialability were as high as the post-90 cohort's. In response to more post-70 users with positive perceptions,

WeChat should develop the post-70 friendly features to meet their needs. For example, the use of individual and group messaging could be more simplified and easier because the post-70 cohort had lower Internet skills and "communicating with family members and friends" was the most highly-rated motivation for them to use the Internet. Furthermore, new functions should be developed to focus on the post-70 cohorts. For example, the findings that the post-70 cohort had a higher frequency of selling products or self-promotion on WeChat than the post-90 cohort indicated by the post-70 cohort's preference of employing WeChat for economic gain. Therefore, adding accessible functions about economic activities may increase the post-70 cohort's WeChat activities and bring new the post-70 WeChat users.

Cultural Values

Culture Interacts with WeChat Use

One of the interesting findings from this study was that cultural value orientations influence people's motivations to connect to the Internet and their WeChat activities. We employed Triandis and Gelfand's (1998) conception of the vertical and horizontal dimensions of collectivism/individualism (COL/IND) to examine the cultural uses of WeChat. Individualism refers to a focus on the self as being independent of groups or organizations, while collectivism emphasizes on one's membership in society (Triandis et al., 1988). Later Triandis and Gelfand (1998) introduced the vertical/horizontal (group members are equal vs. group members are different) dimension to distinguish between different types of

collectivism/individualism. In this study we argued that some motivations and activities are more collectivistic/individualistic than others and thus categorized them based on concepts and findings from relevant scholarly works (e.g., Lee & Choi, 2005; Kim, Sohn, & Choi; 2011; Triandis & Gelfand, 1998). Our purpose was not to exhaust all COL/IND motivations and activities, but to respond to the lack of studies on the interaction between cultural values and SNS activities. The data analysis results showed that participant's collectivistic orientations significantly predicted collectivistic motivations and collectivistic WeChat activities, and participants individualistic orientations significantly predicted individualistic motivations and individualistic WeChat activities.

The Post-70 vs the Post-90: Discontinuity and Continuity

The data analysis results showed that: (1) the post-90 cohort embraced significantly higher horizontal individualism and vertical individualism than the post-70 cohort; (2) the post-70 cohort possessed significantly higher vertical collectivism than the post-90 cohort; (3) there was no significant difference in horizontal collectivism between the post-70 and the post-90 cohorts. These findings were consistent with literature about the increase of individualism among younger Chinese (Ralston et al., 1999). As literature (e.g., Wang, et al., 1998) indicated, one-child policy and economic reform may contribute to this change. The results may support this argument that children with siblings had higher IND than children with no siblings, and increased wealth positively associated with IND. Nationalism education

may contribute to the promoting and preserving horizontal collectivism. Horizontal collectivism gave importance to the importance of relationship, group goal over personal goal, and equality among group members (Triandis & Gelfand, 1998). Nationalism incorporated Chinese collectivistic and socialistic values about unitedness, team spirit, harmony, and personal sacrifice, which reflected horizontal collectivism. Consequently, nationalism education consolidated horizontal collectivism among younger Chinese. As results showed, there was no significant difference in horizontal collectivism between the post-70 and the post-90 cohorts.

A legacy of Collectivism. Influenced by differences and similarities in cultural value orientations between two generation cohorts, the post-70 and the post-90 cohorts' patterns of WeChat usage reflected both continuity and discontinuity of Chinese culture. To begin with, scholars (e.g., Gudykunst et al., 1996; Hui & Triandis, 1986; Kashima et al., 1995; Oyserman et al., 2002) argued that Chinese culture is collectivistic. There are primarily two philosophical roots for Chinese's collectivistic values: Confucianism and Taoism, and socialism thoughts from political leaders (Mo, 2007; Zhang et al., 2005). Both emphasized the importance of collective value on individual value, and individual's relationship to and within groups.

Table 13

Ranking of COL/IND WeChat Activities by Frequency

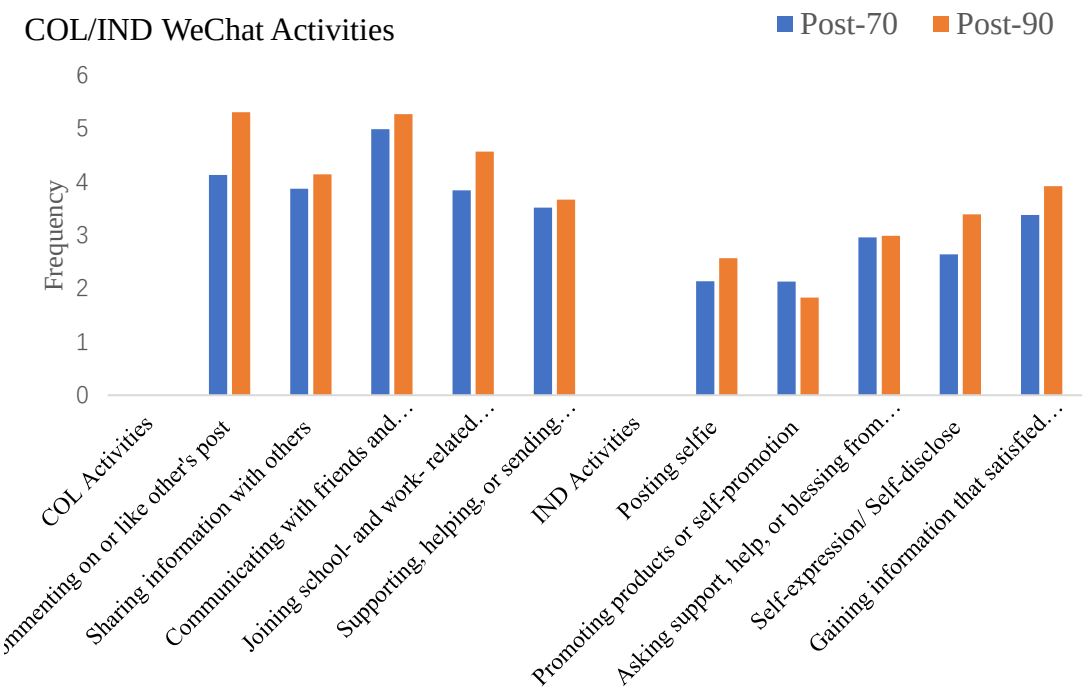
WeChat Activities	Overall	Post-70	Post-90
COL Activities			

Commenting on or like other's post	2 (4.74)	2 (4.13)	1 (5.31)
Sharing information with others	4 (4.00)	3 (3.87)	4 (4.14)
Communicating with friends and relatives	1 (5.12)	1 (4.99)	2 (5.27)
Joining school- and work- related group discussion	3 (4.23)	4 (3.84)	3 (4.57)
Supporting, helping, or sending blessing to friends and relatives or others online	6 (3.58)	5 (3.52)	6 (3.67)
IND Activities			
Posting selfie	9 (2.35)	9 (2.14)	9 (2.57)
Promoting products or self-promotion	10 (1.96)	10 (2.13)	10 (1.83)
Asking support, help, or blessing from friends	8 (2.95)	7 (2.96)	8 (2.99)
Self-expression/ Self-disclose	7 (3.00)	8 (2.64)	7 (3.39)
Gaining information that satisfied personal needs and benefited personal development	5 (3.66)	6 (3.38)	5 (3.92)

Chinese post-70 and the post-90 cohorts' WeChat activities revealed a "collectivistic preference," and the high frequencies of collectivistic activities by the post-90 cohort indicated the continuity of the legacy of collectivism. Different cultures have different patterns of SNS usage (Lin & Sackey, 2015; Hong & Na, 2017). This study selected five activities to represent the collectivistic activities, such as commenting on or liking other's post, sharing information with others, and communicating with friends. The major criteria were that these activities should contribute to the collective well-being or/and the development and maintenance of

relationships. Both generations were significantly more frequently participated in collectivistic activities than individualistic activities.

Figure 7



This result indicated two generations' preference in employing WeChat to do collectivistic activities. Although this "collectivistic preference" may result from the socializing nature of SNSs (Mcandrew & Jeong, 2012), the sharp contrast in frequencies between collectivistic and individualistic activities may lead to the point that the Chinese collectivistic culture is associated with a more distinct collectivistic use pattern. Interestingly, the results showed that the post-90 cohort more frequently participated in collectivistic WeChat activities than the post-70 cohort. This may due to the fact that the post-90 cohort have higher Internet skills, which was significantly

associated with frequencies of WeChat activities. Nevertheless, the high frequencies of the post-90 cohort still indicated the effectiveness of nationalism education on younger Chinese, and consequently, the continuity of Chinese collectivistic culture across generations and its impact on user's WeChat activities.

A rise of Individualism. Besides continuing the collectivistic legacy from the post-70 to the post-90 cohorts, there was also a tendency of increased of individualistic activities. As what we hypothesized, the post-90 cohort embraced more individualism than the post-70 cohorts, which led to more individualistic motivation to use the Internet and more frequent participation in individualistic WeChat activities. Scholars (e.g., Cameron et al., 2013; Ralston et al., 1999) argued that the increased individualism may be associated with one-child policy and economic reform that introduced in the late 1970s. One child policy reshaped the concept of Chinese family and family relationships, which are the foundations of Chinese collectivistic culture; whereas economic reform helped advocate and popularize individualistic values such as entrepreneurship, efficiency first, and personal success (Bond & Hwang, 1986; Ralston et al., 1999). Our data analysis supported these arguments, showing that children with siblings had higher individualism than children with no siblings, and economic wealth positively associated with individualism.

With higher individualism, the post-90 cohort tended to more frequently participate in individualistic activities than the post-70 cohort. In this study five activities were included referring to individualistic activities: posting a selfie,

promoting products or self-promotion, asking support, help, or blessing from friends, self-expression/ self-disclose, gaining information that satisfied personal needs and benefited personal development. The primary criterion was that these activities were more self-centered and self-beneficial (Jackson & Wang, 2013; Lee & Sung, 2016; Ong, et al., 2011; Wang et al., 2012). As the results indicated, the post-90 cohort had higher frequencies of participating in individualistic activities, except promoting products or self-promotion, than the post-70 cohorts.

One explanation for the unexpected result was that this item conflated two activities: promoting products and promoting self. Literature indicated that self-promotion is positively associated with individualism (e.g., Utz, et al., 2012). Promoting products, however, may be more related to the need for improving economic status than individualistic purposes. Since the post-90 cohort were primarily college students receiving financial support from their families, they may not as concern as the post-70 cohorts about economic well-being. Therefore the younger generation cohort did not participate in products-promoting activities as frequently as the older generation. Nevertheless, avoid from this item, participating in more individualistic activities by the post-90 cohort reflected a rise of individualism in China, which is acknowledged with drastic social changes that have been taking place since the late 1970s.

Participatory Cultural Divide

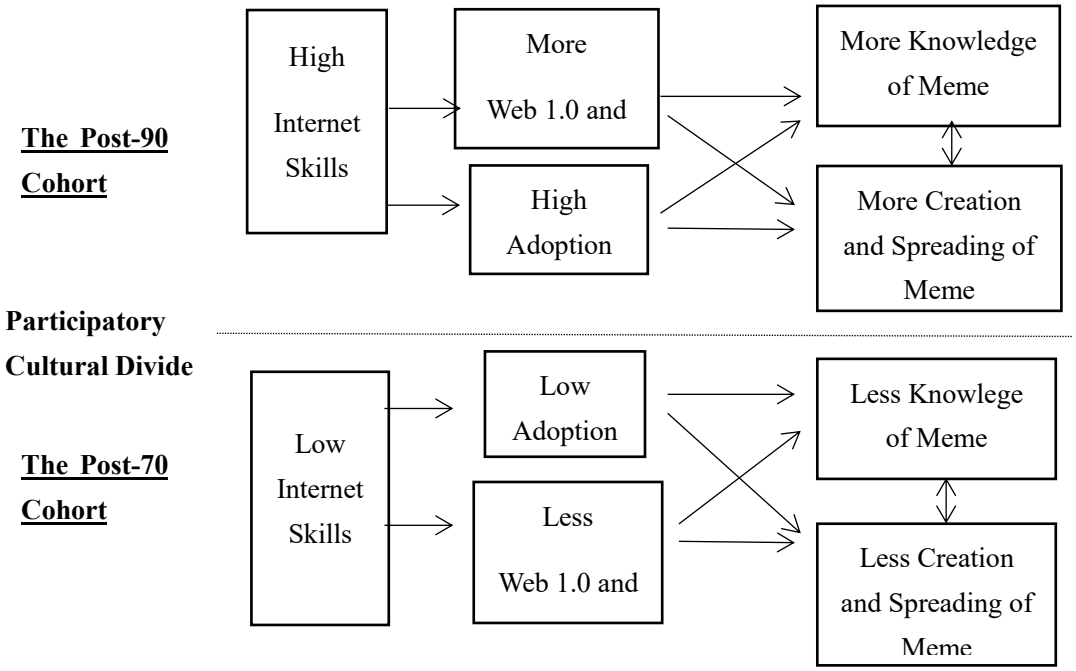
Scholars argued that digital culture is a participatory culture (Blank & Reisdorf, 2012; Bruns, 2012). There are two characteristics of the participatory digital culture. First, every user is a prod-user, and their online participation is productive (Bruns, 2012). Second, online culture is created and spread through network effect——that is, the more people participate, the more valuable and dominant the online culture is (Blank & Reisdorf, 2012). Different activities have different productivity to the digital culture. Blank and Reisdorf (2012) made distinctions between two types of online activities: web 1.0 (i.e., primarily focus on receiving information) and 2.0 activities (i.e., primarily focus on participating in the transmission of messages and contributing to more information). In order to explore differences in how much contributive online activities the post-70 and the post-90 cohorts participate in, we included 4 web 1.0 activities and 9 web 2.0 activities in this study. Results indicated that the post-70 cohort less frequently participated in web 1.0 and web 2.0 activities than the post-90 cohort. This could be explained by the relatively lower Internet skills of the post-70 cohort. To conclude, the post-70 less frequently participated in contributive online activities than the post-90 cohort.

Furthermore, we employed the concept of meme as a lens through which two generation cohort's contribution to digital culture could be closely examined. Meme refers to small cultural units that seek replication for their survival (Dawkins 1976; 2006). Digital culture could be viewed as consisting of memes. We examined the

post-70 and the post-90 cohorts' knowledge about popular online memes, and their participation in spreading and creating online memes. As the results showed, the post-70 cohort had less knowledge about popular online memes and less frequently participated in spreading and creating online memes (Table 6).

Figure 8

Illustration of Participatory Cultural Divide between the Post-70 and the Post-90 Cohorts



Integrating the above findings, there appeared to be a tendency of a participatory cultural divide between the post-70 and the post-90 cohorts. Compared to the post-90 cohort, the post-70 had (1) lower internet skills, which led to less frequent participation in contributive online activities, and (2) less knowledge about popular online memes and participation in spreading and creating of online memes, which

were associated with less frequent web 1.0 and 2.0 activities. So, for the two generation cohorts, with more and more online activities, their gap in knowledge about memes and participation in creating and spreading online cultural units may become larger.

Implications

There are several academic and practical implications of this study. First, the data analysis results indicated a necessity of using time or frequency of use as one of the criteria to classify adopters of SNSs. As discussed earlier, the old adopter category (i.e., innovator, early adopter, early major adopter, late major adopter, and laggards, in Rogers, 1995) should not be applied to studying SNSs adoption because: (1) adopters go back and forth between acceptance and confirmation stages; (2) there are similar SNSs comparing with each other that adoption does not necessarily lead to daily uses. Therefore, we suggest that when studying WeChat or other SNSs, the concept of "adoption" should be based on not just if there is access (e.g., having an account), but more importantly how much time people spend on it.

Second, studies on WeChat or other SNSs should be extended beyond the boundary of "communication tool". Our study indicated that WeChat users that the post-70 and the post-90 users were participating in both "typical" (e.g., interacting with friends) and "extra" activities (e.g., online banking) SNS activities. The versatility is not WeChat's unique characteristics but could be observed on other SNSs such as QQ. It is worldwide trend that SNSs are becoming more and more

multifunctional. Previous research on SNSs primarily focused on how they are employed as communication tools through which relationships could be developed and maintained (e.g., relationship maintenance on Facebook, in Ellison et al., 2014), or how people could be informed and motivated for social and political purposes (e.g., how SNS helped flow of information during the Arab Spring, in Lotan et al., 2011). Given the variety of activities that WeChat and other SNSs offer, they should no longer be viewed just as a communication tool, but a miniature Internet on which a variety of issues could be discussed.

Third, WeChat could be used to improve user's lives. Incorporating the concept of "human capital- enhancing activities", we found that users could and did participate in online activities that were beneficial for their profession, finance, and health, though with different frequencies. As suggested by our regression model, to help more users get benefits from using WeChat, government should work on informing users (and nonusers) the importance of WeChat functions, increasing communication about WeChat, demonstrating its benefits, and promote Internet skill education programs.

Fourth, compared to the post-90 cohort, the post-70 cohort have lower WeChat adoption rate and, mostly, lower frequency of WeChat activities. One of the effective means to improve the post-70 cohort's WeChat adoption and use is to promote Internet skill education programs. Because our data analysis results showed that: (1) internet skills positively associated with WeChat adoption and frequencies of online

activities; (2) the Internet skill education program was effective in reducing the difference in Internet skills between the post-70 and the post-90 cohort. Another indication was that WeChat has not yet fully developed the potential of the post-70 market. While almost all the post-90 cohorts are WeChat users, only 39.95% (89.90 million) the post-70 cohort are WeChat users (CNNIC, 2017, July 1). Therefore, new the post-70 friendly features and functions should be developed based on their characteristics (e.g., lower Internet skills) and needs (e.g., more collective-oriented activities).

Fifth, we found that cultural value orientations influenced people's motivations to connect to the Internet and their WeChat activities. Indications of the results included but were not limited to the following. To begin with, people's online behaviors could be understood from the inter-cultural perspective. People's online behaviors are shaped by the culture of the society (Kling, 2000). Shuter and his colleagues (2010; 2012) argued that different cultures have different social uses of new media. Cheong, Martin, and Macfadyen (2012) clarified the importance of integrating intercultural communication and information and communication technology (ICT) studies because culture shapes the design, implementation, and use of ICTs. This study served as an attempt to examine the interaction between cultural values and online behaviors. The results supported scholars' views that culture shaped why people want to use the Internet and what activities they participate in online. Moreover, we suggest that the concept of COL/IND and the causal relationship

among cultural value orientations, motivations for Internet connection, and online activities could be employed to study different ICT usage patterns between different cultures. For example, COL/IND could be used as a lens through which difference in SNS activities between US and Chines ICT users could be examined.

Moreover, culture should be taken into consideration in studies of the digital divide. There is sporadic research on how culture may influence disparities in ICT use among different cultural groups. For example, Chen and Wellman (2004) studied the global digital divide within and between countries and found that knowing English increased the likelihood of Internet adoption and use because about three-quarters of all websites are in English. Mossberger et al. (2012) studied 3,453 Chicago residents to explore differences in home access by neighborhood characteristics and indicated disparities between black and white neighborhoods. This study offered one of the first few attempts to look into the fundamental part of culture, cultural values, and its interaction with the digital divide. The finding that cultural value orientations significantly associated with online activities indicated a necessity to take into consideration the influence of culture on creating or closing the digital divide. For example, users with low individualism may receive less benefit from individualistic online activities than people with high individualism and therefore increase the disparities between them. We suggest that there should be more studies investigating the interaction between culture and the digital divide.

Sixth, from the post-70 to the post-90 cohorts, there are both continuity and

discontinuity of Chinese cultural value orientations and, therefore, cultural uses of WeChat. Similar to the post-70 cohort, the post-90 cohort frequently participated in collectivistic activities. At the same time, comparing with the older generation, they were more individualistic and more frequently participate in individualistic online activities on WeChat. We found that socioeconomic status was positively associated with individualism, and children with no siblings were more individualistic than children with siblings. As literature (e.g., Wang, et al., 1998) indicated, one-child policy and economic reform may contribute to this change. Scholars (e.g., Shuai et al, 2015) argued that the nationalism education may help the preservation and popularization of collective values among the younger generation. However, our data could not help explain if there is a causal relationship between them because we used only one "yes/no" question to ask participants about their nationalism education history, and only 4 of our participants did not receive the nationalism education (which made the group size too small). We are not sure to what extent did the one-child policy, economic reform, and nationalism education program influence the continuity and discontinuity of Chinese culture. Nevertheless, our study indicated that we should not consider Chinese as simple as being collectivistically orientated.

Seventh, the negative effects of participatory cultural divide should be addressed. To begin with, it may lead to differences in digital culture between two generations. As Kitayama and Uskul (2011) argued, culture is gradually formed by repeatedly engaged in tasks related to that culture. Without active participation in creating and

spreading digital culture, the post-70 cohort might be forced to be silenced or marginalized from the participatory digital culture. Moreover, it is likely that the post-70 cohort may be more disadvantaged in the online world because the culture of the designer influences the design of the Internet or Internet-based technologies. For example, in Tencent, the company that developed WeChat, the average age of programmers is 28.9 (Ifeng.com, 2017, July 9). Thus the design and implementation of WeChat functions may be a reflection of those programmers' digital culture and values includes online activities and functions.

What's more, since the boundaries between online and offline world are increasingly blurred, differences in roles played by the post-70 and the post-90 cohorts in the online world might result in inequalities or conflicts in the offline world. The post-90 cohort are active contributors to the digital culture whereas the post-70 cohort are passive receivers, and sometimes ignorers of it. We are connected individuals of the networked society in which the influence of online world is becoming more and more ubiquitous and pervasive (Castells, 2004; Boyd & Ellison, 2007; Halavais, 2014; Rainie & Wellman 2012; Wellman et al., 2003). Differences in roles in the online world may result in disparities in identity in the offline world, which may negatively influence the communication between people with different cultural backgrounds (Cheong et al., 2012). For example, the post-70 cohort may be labeled as being old-fashioned and silent because they did not contribute as much as post-90 cohort in creating and spreading online culture. Therefore in real world

interactions, post-90 cohort may not choose to discuss topics related to digital culture, which is an important part of their lives, with post-70 cohort. Consequently it may become more difficult for post-70 and post-70 cohorts to gain more mutual understanding and develop closer relationship. To sum-up, participatory cultural divide could lead to not only disparities in the online world, but also negative influences on communication in the offline world. Therefore, policy making and technology development on improving the identity and power of the post-70 cohort in the digital world are not only necessary but also urgent.

Limitations and Future Directions

The study is not without limitations. First, the sample could not fully represent the post-70 and the post-90 cohort population. We employed some methods to prevent our sample from being too biased. We recruited whole classes of students and their parents, other than those who were interested because they used WeChat frequently, or those who were attracted mainly by the compensation (which may lead to a larger proportion of people with low socioeconomic status). There are also some shortcomings of the recruitment methods. For the post-90 cohort, most of our sample are college students studying at a public university in southwest China. Literature indicated huge differences among people living in different parts of China, as well as among people with different professions, in adoption and use of digital technologies (Fong, 2009). For the post-70 cohort, most of the sample are college students' parents. Report by CNNIC (2017, July 1) showed that only about half of the post-70 cohort

have access to the Internet. However, as the data analysis results indicated, more than 90% of our the post-70 participants had WeChat accounts.

There may be two possible explanations for this inconsistency. One is that some the post-70 cohort did not have access to the Internet through their own cell-phones but they may use WeChat on other's (e.g., spouse's). Another is that the post-70 parents living in rural areas, where the Internet penetration rate was low (CNNIC, 2017, July), adopted and used WeChat because they wanted to communicate with their children studying far away. Nevertheless, the study looked at only part of the post-70 and the post-90 cohort population and, thus, future research should recruit participants with more diversity and better representability.

Second, the research design has some limitations. To begin with, although it is not the main purpose of this study, there should have been a prior study aiming at constructing scales for COL/IND motivations and online activities. As one of the few studies trying to measure and classify motivations and online activities from the intercultural communication perspective (i.e., COL/IND), there may be different opinions on the criteria of item selectin. For example, posting selfie has been viewed as a self-centric activity by some scholars (Charoensukmongkol, 2016), whereas some others (Guo, et al., 2018) argue that a selfie with friends could be worked on relationship management. Therefore, a prior study on scale construction would help respond to those disagreements and increase the validity of the items.

In addition, some of the items needs to be revised. For example, in the study we

found that the post-70 cohort had higher frequency of selling products or self-promotion on WeChat than the post-90 cohort. Literature indicated that self-promotion is associated with individualism (Rosen, et al., 2010, January). So this result contradicted all other findings showing that the post-90 frequently participated in individualistic online activities. The reason may be that this item measured two activities: (1) self-promotion, and (2) promote products, which may be more related to the need for improving economic status than COL/IND orientations. Therefore this item should be divided into two items in future research.

Third, new methods should be added to extend current study. We compared two generation cohorts to examine how social changes have influenced Chinese cultural values. Another way to explore these changes is to collect longitudinal data and track the dynamics of culture within a generation cohort. Longitudinal data could help locate historical events that affect culture as well as confirm if the cultural value differences is due to generation or age differences. Moreover, with longitudinal and qualitative data we could explore more about the attitudinal, behavioral, psychological, and cognitive effects of participatory cultural divide on the post-70 and the post-90 cohort. Since we have limited knowledge about this topic, these data would contribute to our understanding and improvement of the interaction between online culture and people's everyday lives.

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APPENDIX A

ARIZONA STATE UNIVERSITY INSTRUCTIONAL REVIEW BORAD (IRB) APPROVAL

ASU Knowledge Enterprise Development

EXEMPTION GRANTED

Pauline Cheong
Human Communication, Hugh Downs School of
480/965-8730
Pauline.Cheong@asu.edu

Dear Pauline Cheong:

On 1/4/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Cultural Values, Connection, and Participatory Cultural Divide
Investigator:	Pauline Cheong
IRB ID:	STUDY00007398
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Cultural Values, Connection, and Participatory Cultural Divide, Category: IRB Protocol; • Consent Form, Category: Consent Form; • Recruitment Letter, Category: Recruitment Materials; • Questionnaire English.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 1/4/2018.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

APPENDIX B

CONSENT FORM

Cultural Values, Connection, and Participatory Cultural Divide

Consent Form

Dear Participant:

I am a PHD candidate working with Dr. Pauline Cheong, Professor of the Hugh Downs School of Human Communication, Arizona State University, and am conducting a research study to gain information about culture and technology adoption and use.

Normally it would take a participant approximately 30-45 minutes to complete the questionnaire. The questionnaire will ask you to answer questions on your cultural values and WeChat adoption and use. The questionnaire will end with general demographic questions. We expect about 400-600 people will participate in this research study.

Your participation in this study is voluntary. You are free to decide whether you wish to participate in this study. You can leave the research at any time and it will not be held against you. Your participation will have no effect on your grade. Your responses are anonymous and will not be linked directly to you in any way. To participate you need to be born between 1970 and 1979, or between 1990 and 1999. You must be aged no less than 18 in order to participate. Due to the nature of the study you do not have to sign the consent form. You will be compensated for 20 RMB ($3) for successful participation.

If you have any questions concerning the research study, please contact the researcher at hu.qingqing@asu.edu or the investigator, Dr. Pauline Cheong, at Pauline.cheong@asu.edu.

This research has been reviewed and approved by the Social Behavioral IRB. You may talk to them at (480) 965-6788 or by email at research.integrity@asu.edu if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

APPENDIX C

RECRUITMENT LETTER

Participant Recruitment Letter

Dear Participant,

I am inviting your participation in taking a survey questionnaire, which should take you approximately 30-45 minutes to complete. I am a PHD candidate working with Dr. Pauline Cheong, Professor of the Hugh Downs School of Human Communication, Arizona State University, and am conducting a research study to gain information about culture and technology adoption and use. The questionnaire will ask you to answer questions on your cultural values and WeChat adoption and use. The questionnaire will end with general demographic questions.

Your participation in this study is voluntary. You can skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. To participate you need to be born between 1970 and 1979, or between 1990 and 1999. You must be no less than the age of 18 to participate. There will be a compensation of 20 RMB for successful participation.

Your participation in this study is greatly appreciated. There are no foreseeable risks or discomforts to your participation.

Your responses will be completely anonymous. The results of this study may be used in publications or presentations, but your name will not be known. Results will be shared in the aggregate form.

If you have any questions concerning the research study, please contact us at Hu.Qingqing@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Thank you.

APPENDIX D

SAMPLE QUESTIONNAIR

Section 1 Motivation of Internet Use

Direction: Rate the following statements. Choose one response for each statement.

The motivation for my Internet connection includes:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Gain information and knowledge	❑	❑	❑	❑	❑
2. Have fun (entertainment)	❑	❑	❑	❑	❑
3. Buy things online	❑	❑	❑	❑	❑
4. Doing school or work-related things (e.g,, pay bills, do assignments)	❑	❑	❑	❑	❑
5. Find a place where I can express my feelings and attitudes	❑	❑	❑	❑	❑
6. Gain support or help from others	❑	❑	❑	❑	❑
7. Promoting myself or products	❑	❑	❑	❑	❑
8. Connect with family members and friends	❑	❑	❑	❑	❑
9. Share what I see and know with others	❑	❑	❑	❑	❑
10. Developing and maintaining new relationships online	❑	❑	❑	❑	❑

Section 2 WeChat Adoption

1. Do you have WeChat account? ❑Yes ❑No

2. How much time do you spend on WeChat (Skip this question if you do not have WeChat account)?

❑ Not using, or rarely ❑ less than 1 hour a week; ❑ 2-3 hours a week ❑ 30minutes -1 hour a day ❑ 2-3 hours a day

❑ 4-5 hours a day ❑ More than 5 hours a day

3. Are you planning to start using WeChat in the next 6 months (Skip this question if you already have WeChat account)?

❑Yes ❑No

4. I have received help from friends, parents/children, and relatives when learning to use WeChat

❑ Never ❑ a few times (1-2) ❑ several times (3-6) ❑ many times (7-10) ❑ too many to remember

5. I heard people discuss development of WeChat/news posted on WeChat

❑ Never ❑ 1-2 times a month ❑ every week ❑ everyday ❑ several times a day

6. I heard media mentioned about WeChat (e.g., scaning the QR code to subscribe on WeChat)

❑ Never ❑ 1-2 times a month ❑ every week ❑ everyday ❑ several times a day

7. I have been in situations where people ask if I have WeChat account

❑ Never ❑ 1-2 times a month ❑ every week ❑ everyday ❑ several times a day

8. A lot of my friends and relatives are using WeChat

❑ Rare ❑ A few ❑ There are some ❑Many ❑ Almost everyone

9. A lot of people related to my school or/and profession are using WeChat

❑ Rare ❑ A few ❑ There are some ❑Many ❑ Almost everyone

10. Check the following device and application you have (you can check more than one):

❑Cellphone ❑Laptop ❑PC ❑Tablet ❑Wearable electronic device ❑Other (Please specify)_____

11. On average how much time you spend on the following website/application per week.

WeChat_____hours_____minutes

QQ_____hours_____minutes

Weibo_____hours_____minutes

Douban_____hours_____minutes

Zhihu_____hours_____minutes

Twitter_____hours_____minutes

Facebook_____hours_____minutes

12. Check the places in where you often use WeChat:

❑Classroom ❑Workplace ❑Home ❑Public transportation ❑Other public places ❑Other private places.

13. Which year did you start to use the Internet?

_____

Direction: Rate the following statements.

14-23 **Respond to following statements**:	**Not at all true of me**	**Not very true of me**	**Neither true or untrue of me**	**Mostly true of me**	**Very true of me**
14. I know how to download and open files (e.g., photos, documents) on computer	❑	❑	❑	❑	❑
15. I know how to connect to a WiFi network	❑	❑	❑	❑	❑
16. I know how to edit photos/videos	❑	❑	❑	❑	❑
17. I am very efficient in using key words to search for information online	❑	❑	❑	❑	❑
18. I find it hard to find a website I visited before	❑	❑	❑	❑	❑
19. I know how to make and edit online post	❑	❑	❑	❑	❑
20. I am comfortable with creating something new	❑	❑	❑	❑	❑

from integrating existing online images, music or video					
21. I know how to search, rename, and categorize friends on SNSs	❑	❑	❑	❑	❑
22. I know how to comment, like, and message friends on SNSs	❑	❑	❑	❑	❑
23.I know how to download and install app on cellphone	❑	❑	❑	❑	❑
24.I know how to managing (update, delete) app on cellphone	❑	❑	❑	❑	❑

25. Whether you have taken or are taking mandatory computer class in high-school and university?

❑Yes ❑No

26-30: Rate the following statements.	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
26. WeChat are better than any other SNSs in China	❑	❑	❑	❑	❑
27. WeChat is hard to use	❑	❑	❑	❑	❑
28. WeChat are well imbedded in my life and work	❑	❑	❑	❑	❑
29. The benefits of WeChat are immediately obvious	❑	❑	❑	❑	❑
30. Use of WeChat become a symbol of social status	❑	❑	❑	❑	❑

Section 3 WeChat Use

Rate the following statements.

1-5: How important is the following WeChat functions to you	**Totally don't care**	**unimportant**	**Can live without it**	**Important**	**Very Important**
1. Moments	❑	❑	❑	❑	❑
2. Individual and group messaging	❑	❑	❑	❑	❑
3. Voice and video call	❑	❑	❑	❑	❑
4. WeChat wallet and payment	❑	❑	❑	❑	❑
5. Third-party plug-ins	❑	❑	❑	❑	❑

6. I will miss WeChat very much if one day it disappears

❑Strongly Disagree ❑Disagree ❑Neutral ❑Agree ❑Strongly Agree

Direction: Check **only one** for each statement.

7-19 How frequently do you participate in following WeChat activities?	**Never**	**Rarely, or 1-2 times in the past 6 months**	**1-2 times a month**	**1-2 times a week**	**3-6 times a week**	**1-2 times a day**	**More than 3 times a day**
7. Post Original essay	❑	❑	❑	❑	❑	❑	❑
8. Post selfie	❑	❑	❑	❑	❑	❑	❑
9. Watch news or articles from public accounts	❑	❑	❑	❑	❑	❑	❑
10. Promoting Products or Self-promotion	❑	❑	❑	❑	❑	❑	❑
11.Using online banking and/or making payments	❑	❑	❑	❑	❑	❑	❑

12. Using third-party plug-ins (e.g., *Yilong*, *Maoyan*, *Mobaidanche*)	❑	❑	❑	❑	❑	❑	❑
13. Comment on or like other's post	❑	❑	❑	❑	❑	❑	❑
14.Watch other's updates	❑	❑	❑	❑	❑	❑	❑
15.Share information with others	❑	❑	❑	❑	❑	❑	❑
16.Communicate with friends and relatives	❑	❑	❑	❑	❑	❑	❑
17. Online Entertainment (Playing online games, Listening to music, Watching Videos);	❑	❑	❑	❑	❑	❑	❑
18. Receiving or sending red packet	❑	❑	❑	❑	❑	❑	❑
19.Hear what others discuss in groups	❑	❑	❑	❑	❑	❑	❑
20. Join Group Discussion	❑	❑	❑	❑	❑	❑	❑
21. Asking support, help, or blessing from friends	❑	❑	❑	❑	❑	❑	❑
22. Self-expression/ Self-Disclose	❑	❑	❑	❑	❑	❑	❑
23. Supporting, Helping, or Sending Blessing to Friends or Relatives or others online	❑	❑	❑	❑	❑	❑	❑
24.Gain information that satisfied personal needs and benefit personal development	❑	❑	❑	❑	❑	❑	❑
25. Make phone call/video chat	❑	❑	❑	❑	❑	❑	❑

26-30: To what extent do you know the following	**Never heard**	**Heard but don't**	**Know a**	**Know some**	**Know well**

Memes		**know the meaning**	**little**		**and can use well**
26. *"Lanshou, Xianggu"*	❑	❑	❑	❑	❑
27. *"Pipixia, let's go"*	❑	❑	❑	❑	❑
28. *"Make a call for you"*	❑	❑	❑	❑	❑
29. *"Zhaxinle, Laotie"*	❑	❑	❑	❑	❑
30. *"Boat of Friendship"*	❑	❑	❑	❑	❑

31. How often do you make an attempt to search for and learn information about memes online?

❑ Never ❑ Rarely (1-3 times a month) ❑ Every week ❑ Several times a week ❑ Every day

32-35: How often do you do the following things on WeChat	**Never**	**Rarely (1-3 times a month)**	**Every week**	**Several times a week**	**Every day**
32. Downloading and using pictures of memes	❑	❑	❑	❑	❑
33. Using memes in your Wechat post or communication	❑	❑	❑	❑	❑
34. *Meme duel on WeChat*	❑	❑	❑	❑	❑
35. Developing new content to make your own memes	❑	❑	❑	❑	❑

Section 4 Cultural Values

Direction: Check **only one** for each statement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1. I'd rather depend on myself than others.	❑	❑	❑	❑	❑	❑	❑
2. I rely on myself most of the time; I rarely rely on others.	❑	❑	❑	❑	❑	❑	❑
3. I often do "my own thing."	❑	❑	❑	❑	❑	❑	❑
4. My personal identity, independent of others, is very important to me.	❑	❑	❑	❑	❑	❑	❑
5. It is important that I do my job/study better than others.	❑	❑	❑	❑	❑	❑	❑
6. Winning is everything.	❑	❑	❑	❑	❑	❑	❑
7. Competition is the law of nature.	❑	❑	❑	❑	❑	❑	❑
8. When another person does better than I do, I get tense and aroused.	❑	❑	❑	❑	❑	❑	❑
9. If a coworker/classmate gets a prize, I would feel proud.	❑	❑	❑	❑	❑	❑	❑
10. The well-being of my coworkers/classmate is important to me.	❑	❑	❑	❑	❑	❑	❑
11. To me, pleasure is spending time with others.	❑	❑	❑	❑	❑	❑	❑
12. I feel good when I cooperate with others.	❑	❑	❑	❑	❑	❑	❑
13. Parents and children must stay together as much as possible.	❑	❑	❑	❑	❑	❑	❑
14. It is my duty to take care of my family, even when 1 have to sacrifice what I want	❑	❑	❑	❑	❑	❑	❑
15. Family members should stick together, no matter what sacrifices are required.	❑	❑	❑	❑	❑	❑	❑
16. It is important to me that I respect the decisions made by my groups.	❑	❑	❑	❑	❑	❑	❑

Section 5 Demographics

1. What is your gender? ❑ Male ❑ Female

2. Year you were born? _____

3. Area You live in? ❑Urban ❑Suburb ❑Rural

4. Where did spend most of your childhood in?
❑Beijing, Tianjin, Shanghai, Shandong, Zhejiang, Jiangsu ❑Guangdong, Guangxi, Fujian
❑Hubei, Hunan, Shanxi, Hebei, Henan, Anhui, Jiangxi ❑Liaoning, Jiling. Heikongjiang
❑Chongqing, Sichuan, Yunnan, Sichuan ❑Shanxi, Ningxia, Gansu
❑Tibet, Xinjiang, Qinghai, Inner Mongolia, Hainan ❑Hong Kong, Macau, Taiwan, and abroad.

5. What is your Occupation? (Please put in "student" if you are a student) _____

6. What is your annual household income?
❑¥1,000 ❑¥1,001~¥10,000 ❑¥10,000~¥50,000 ❑¥50,001~¥100,000
❑¥100,001~¥200,000 ❑¥200,001~¥1,000,000 ❑than ¥1,000,000

7. What is your highest education level (including what you are working towards)?
❑ Primary school ❑ Junior high school ❑ Senior high School ❑ Undergraduate ❑ Graduate

8. How many siblings do you have? _____

9. Have you ever received nationalism education in school? ❑Yes ❑No