

School of Media, Creative Arts and Social Inquiry

Mobile Use, Digital Capital and Third Agers in China

Chen Guo

0000-0003-4291-5412

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Doctor of Philosophy
of
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DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgements has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Human Ethics The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number: HRE2017-0677.

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ABSTRACT

This research explores how people in China of retirement age, called ‘third agers’, use mobile phone and apps. Drawing from the framework of successful ageing, it examines third agers’ daily mobile use and reveals the relationship between mobile use and social engagement, physical health and mental well-being. The development of technologies in China is accelerating social change. This research project comes to the conclusion that accumulated digital literacy among third agers is helping them to adapt to change. This adaptation is critical to their quality of life.

The research project asks how third agers use mobile apps to improve their quality of life in China. By introducing three key approaches—(i) individualisation; (ii) digital capital; and (iii) optimal ageing—this research focuses on third agers’ mobile use in their daily life. Individualisation refers to how the ‘naturally autonomous’ (Y. Yan, 2010) and ‘self-determining individual’ (Thøgersen & Ni, 2010) operates in China, noting people’s increased autonomy as a result of social and economic reforms.

Individualisation in China specifically means that people assume more responsibility and take proactive means to achieve a good life (Y. Yan, 2010). Digital capital is an individual’s digital technology ecosystem; it refers to people’s use behaviour, their preferences in using digital technology, as well as the ability to realise specific goals through using digital technology (Park, 2017). Optimal ageing shows that people are seeking out more individualised lifestyles. At the same time, many are generally optimistic about social changes brought about by technology.

In the last two decades, China is experiencing dramatic urbanisation and, as a result of the one-child policy introduced in 1978, has seen an increasing number of ‘empty nests’ (homes without children). Considering the affordances of digital technologies, that is, the options they provide for greater autonomy, mobile use is accelerating individualisation. To some extent, digital technologies keep third agers independent mentally and physically. With the one-child generation migrating to bigger cities and overseas to work and study, the third age cohort is taking more responsibility and making decisions for themselves. Digital technologies development and use among third agers thus promotes the process of individualisation in an increasingly digitalised China.

In this project, semi-structured interviews and an online survey were targeted at participants in China from a second-tier city Zhengzhou in Henan Province. The research focuses on a second-tier city because these cities have the largest proportion of older Internet users by age, that is, 38 percent of the total older aged Internet users in China (Cui, 2018). Moreover, compared with developed areas, second-tier cities have been relatively less explored by scholars. There is currently insufficient empirical research about how the ageing population in second-tier cities use digital technologies in their daily lives.

The findings indicate that the emergence of the third age in China has begun to change the stereotype of the ageing population, which is normally associated with decline. The third agers use mobile devices and apps regularly in their daily lives and have developed a 'mobile use only' phenomenon, which means they use mobile devices and apps, rather than computers, to deal with most daily activities. Their accumulated digital capital is helping them to adapt to the process of individualisation.

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DEDICATION

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The thesis is dedicated to senior people who have spun their lives into the fabric of our culture, technology and society, and every one of us in the future.

Chapter 1: Introduction

China is facing many challenges. Recently, increasing tensions between China and the United States have been in the news. The COVID-19 crisis has created many problems, not only for China but for people globally, especially those who are over sixty. Domestically, China has many unresolved concerns. The Chinese government is concerned about economic sustainability, air pollution, urbanisation and environmental problems, which are intertwined with its global challenges. The key to many of these challenges is the changing population demographic.

Scholars in demography use the shape of a pyramid to describe a country's demographic structure. A healthy demographic pyramid should have a relatively small ageing population on the top, with the younger generation as the bigger base. However, the demographic pyramid base has shrunk in Mainland China. Compared with most developed countries which took a century to become ageing societies, China has taken 23 years for the ageing rate to increase from 7 to 20 percent (R. Chen et al., 2019). The senior demographic accounted for 14.4 percent of the total population in 2014 and 15.2 percent in 2015, and is predicted to reach 25.3 percent in 2030 and 36.5 percent in 2050 (De Brulin, 2015). J. Powell and Cook (2000) describe the burden of the ageing population for China as 'a tiger behind' and coming up soon.

China's one-child policy, initiated in 1978, has accelerated its imbalanced population structure and contributed to an increasingly ageing society; in other words, it has a higher proportion of older people per capita. The government introduced the policy to reduce population growth and had pursued it vigorously (Mackerras, 2005). Between 1979 and 2010, nearly 150 million single children were born in China. This has dramatically changed the family structure, along with family relationships and lifestyles (X. Feng, Poston & Wang, 2014), as well as disrupted the demographic structure of the nation. At the same time, the younger generations from second and third-tier cities are going to urban areas to pursue urban lifestyles and better quality of life. Rapid urbanisation has led to many 'empty nests' for the one-child generation's parents. Furthermore, the increased longevity of Chinese people is

transforming the country into a ‘super-ageing’ society. China is suffering from a self-inflicted population time bomb. The repercussions of the one-child policy, including the gender imbalance favouring male offspring, are now being felt, although the policy has now changed to a two-child policy.

In the book *A Fresh Map of Life*, Laslett (1991) identified a new stage in the life course emerging after retirement—namely the ‘third age’. Whereas retirement previously was associated with ill health and decline, changing industrial practices and ageing demographics have facilitated the emergence of a period post retirement in which individuals possess the necessary health, vigour and attitude to realise ‘personal achievement and fulfilment’ (Laslett, 1991, p. 153). The ‘third age’ depicts people’s personal achievement and ‘fulfilment after retirement’ (Laslett, 1987). According to Weiss and Bass (2002), the third age is characterised by increased longevity, better health, and increased levels of financial well-being. Laslett (1987) has argued that when 10 percent of a country’s population is over the age of 65, this will contribute to the emergence of the third age on a collective level. In 1987, when Laslett published his seminal work, at least half of the population in Europe were living into their 70s. At that time, China had not reached this comparable situation. Thirty years later, Chinese retirees are now experiencing this process of the third age (C. Guo, Keane & Ellis, 2019). Nevertheless, this third life stage in China has received little academic attention. This research project fills that void.

This thesis focuses on people in their third age in China, and explores how they use digital technologies in daily life to live a creative and active retired life.

1.1 A mediated society

The ageing society is a media saturated one compared with previous generations. The term ‘mediated’ refers to how society is shaped and formed through media. Couldry and Hepp extend this idea to ‘deep mediatization’ (Couldry & Hepp, 2018). They have explained that ‘the ways in which we make sense of the world phenomenologically become necessarily entangled with the constraints, affordances and power-relations that are features of media as infrastructures for communication’ (p. 7). This is certainly the case in China where the mobile phone has become the

dominant communication medium. The mobile phone is pervasive in people's daily lives; in 2018, mobile phone users constituted 97.5 percent of the total Internet users in China (CNNIC, 2018). 'Mobile use only', that is, when people go online by using their mobile phones only, has become a phenomenon. The Internet and mobile communication are being transformed from an elite privilege for the upper classes to basic instruments necessary for human existence (Qiu, 2009, p. 13). The complex social world of interconnection constructed from everyday life's foundations is thus mediated (Couldry & Hepp, 2018).

The ageing population trend, in conjunction with China's focus on digitalisation, has seen increasing numbers of the ageing population connect with mobile devices. People who are around their retirement age have various and often different motivations for using mobile phones. As this thesis will show, the rapid development of mobile Internet and mobile technologies has given people the possibility to live a more creative and active later life. This is in contrast to the ageing stereotype idea mentioned in the Abstract. Although some senior citizens in China still retain their old lifestyle and consumer habits—including, for instance, frugal spending patterns—they now go online to search for information, especially medical information, and keep in touch with their children in other cities or overseas (Qiu, 2009).

1.2 Research questions and research significance

Mobile phone and apps have changed the lifestyle of third agers. The third age group, as a transitional group, live with acquired digital capital in their retired life and many are actively seeking to enhance their lifestyle options. Therefore the primary research question is:

How do third agers use the mobile phone and apps to live a more creative and active retired life?

In order to address the primary research question, the following subsidiary research questions are proposed:

- (1) How do third agers engage in society and maintain mental and physical well-being by using mobile devices and apps?
- (2) How does digital capital influence the third agers' life quality in the increasingly digitalised world?

The research is significant for several reasons. Firstly, although many studies have explored how Internet-based technologies can assist the ageing population in relation to memory, social engagement, dementia and psychological aspects, most studies have been conducted in developed countries. Few studies have explored the topic of third agers and mobile use in China.

Secondly, while several studies have explored China, they have predominantly focused on developed urban areas such as Beijing, Shanghai and Hong Kong. Very few studies have researched second-tier cities; however, such cities are the real locus for China's ageing population according to the Report on Ageing Mobile Internet Users (Cui, 2018). In this report, the Chinese Internet company Tencent has identified that the ageing demographic represents 20 percent of Internet users in China (Cui, 2018). This report focuses on the ageing population's digital behaviour and offers the most comprehensive information about this demographic to date. According to Tencent, the ageing population is 1.6 times more likely to connect to the Internet than other groups; moreover, 85.5 percent of ageing Internet users have more than 20 apps on their phones, and around half of them have more than 30 apps (Cui, 2018).

From these data, it can be seen that the ageing population in China is digitally engaged. Third agers use the mobile phone and apps to deal with most activities online. Many questions are often asked in relation to this context, including the following: What do Chinese third agers do with their mobile phone and apps? What is the effect of mobile use in their daily lives? What kinds of apps do they use regularly? How do they use the mobile phone and apps to engage in social relations? These questions are yet to be answered and consequently triggered my motivation to conduct this research project.

1.3 Key approaches

In addition to comparative data on ageing populations, this research project uses three sets of theoretical approaches: (i) individualisation; (ii) digital capital; and (iii) optimal ageing and successful ageing, as shown in table 1.

Table 1. Key approaches in the thesis

Approach	Fields of enquiry	Chapters
Individualisation	Sociology; sociology of ageing	Chapter 2&4
Digital capital	Communications; digital media	Chapter 3&9
Optimal ageing	Ageing studies and gerontology	Chapter 2&3

Individualisation

The emergence of the third age in China provides a useful perspective to study the ageing population. The third age group are healthy and independent, and they have more freedom to make their own choices. One reason for this new-found freedom is that the Chinese government has withdrawn its role in many aspects of public life. The individual is now being asked to take more responsibility at a time when government services are less generous. In the past twenty years, the ‘iron rice bowl’ of welfare dependency has given way to a model more akin to a capitalist system in which people take personal responsibility for their health.

The sociologists Beck and Beck-Gernsheim (2002) use the term ‘individualization’ of society to refer to the individual within developed societies. Using Beck and Beck-Gernsheim’s perspectives, a book entitled *iChina: The Rise of the Individual in Modern Chinese Society* edited by Hansen and Svarverud (2010) sets out how the new ‘self-determining individual’ operates in China. One chapter in particular focuses on the ageing population in China from the perspective of village life. Thøgersen and Ni’s research (2010, pp. 65-88) shows how the elderly have begun to accept the reality of social individualisation. The authors present two images of the

elderly: the first is a burden to society; the second is a victim of modernisation. Nowadays, many members of the ageing population believe that the best way to reduce the family burden is to keep healthy and independent. One respondent in this study used the words ‘he is he, I am I’ (Thøgersen & Ni, 2010, p. 65) to explain their relationship with their adult child, which is quite different from traditional family values. Many members of the ageing population now realise that their adult children, and they themselves, are independent ‘individuals’.

Digital capital

The term ‘digital capital’ was used by Park in 2017 to discuss a user’s digital technology ecosystem; it includes elements of economic, cultural and social capital (Bourdieu, 1986), which shape and guide how users engage with digital technologies. Park (2017) says that adapting to new technology is critical for an individual’s well-being in the digital world. In the digitalised world, people ‘cannot avoid accepting new technologies as the new technologies are pervasive and heavily marketed’, otherwise ‘non-adoption comes with cost’ (Park, 2017, p. 2). This is especially true for third agers—the transitional group. Third agers are unique because they represent a transitional generation; that is, they were not born digital but have acquired familiarity with technology.

Digital capital leads us to question how people use media. Uses and gratifications theory is a popular approach to understand mass media effects. Klapper (1963) has argued that the mass communication research used to be directed by ‘what the media do to people’, and has now shifted to ‘what people do with media’. In the increasingly digitalised world, uses and gratifications theory focuses on the motivation and consumption of users/customers in various new media platforms (Hossain, 2019; Khan, 2017; O’Brien & Toms, 2008). Although uses and gratifications are often jointly considered by scholars, in this research project the uses of the mobile phone and apps will be my key focus.

Optimal ageing

To understand ageing, it is necessary to consider life stages. According to the literature, there are seven stages: ‘early childhood’, ‘middle childhood’, ‘adolescence’, ‘adult transition’, ‘early adulthood’, ‘middle adulthood’, and ‘late

adulthood' (Rumbaut, 2004, p.1181); these stages will be discussed in the next chapter. Life course theory refers to an individual life transition as part of a cluster of concurrent transitions, or a sequence of transitions that affect each other (Hareven & Adams, 1982). The term 'successful ageing' was introduced by Rowe to mitigate stereotypes of decline associated with ageing. Successful ageing has three aspects, including 'low probability of disease and disease-related disability (physical functioning), high cognitive functioning, and active engagement with life' (Rowe, 1997, p. 433). According to Rowe (1997), successful ageing includes physical health, mental well-being and social engagement. This approach has nonetheless been criticised as ageist, i.e. reinforcing the negative image associated with the elderly and disabled (Minkler & Fadem, 2002, p. 229). Baltes and Carstensen (1996) have argued that successful ageing is only one standard to achieve success.

Although concepts like successful ageing, as well as positive and active ageing, are widely used, in this thesis I will argue for the concept of optimal ageing. Optimal ageing is in turn linked to hope and 'optimism', which are widely used ideas in the Chinese political landscape. In the past, Mao Zedong's revolution was built on the collective hopes of the nation. The reform period in China was founded on optimism, that people's lives would be better. The Chinese Dream, as advocated by Xi Jinping, is fundamentally optimistic. Likewise, the 'Internet+', and 5G technology, depict an optimistic future for people. Life will be even better. This is the promise that is being made, beginning with the promise of a 'moderately well-off society'. The adoption of mobile technologies allows many people to adapt and change behaviours that were associated with social life in China.

In this thesis, I focus largely on positive aspects of digital technology in light of China's wide-scale investment in digital technology as a means to manage its population. I am aware that many studies look at negative aspects including surveillance, privacy, and uneven access, and I will address these concerns in the concluding chapter and in other part of the thesis where I look at scholarship on digital divides, particularly in chapter four, and in chapter seven where I look at the alienation effects of technology. The thesis also adopts an interdisciplinary approach, drawing from communication and ageing studies, as demonstrated in table 1. In this respect, the research makes a valuable contribution to knowledge.

1.4 Methodology

This section briefly describes the data collection methods used in this research project, and outlines how the data has been analysed. In-depth interviews, online survey and document analysis were the main research methods.

The in-depth interviews were conducted in January and February 2018 in Zhengzhou, China. Follow-up interviews were completed from May 2018 to the end of 2019. I initially used personal contacts, and then enlisted more respondents through snowball sampling. Potential participants were approached and invited to do an in-depth interview. All participants were made aware of the research and signed an ethics clearance form. I selected participants in accordance with the third age criteria, that is, people around retirement age. Each interview lasted for around one hour. The interview questions included demographic information and open-ended questions. The open-ended questions primarily related to retirees and their smartphones and mobile apps, and the relationship between retirees and the government, and between early retirees and family.

Twenty four participants were interviewed in Zhengzhou, Henan. The participants were aged between 50 to 70 years old and all live in second-tier cities. A second data source is an online survey conducted in November and December 2018, and January 2019. More than 250 surveys were collected, of which 224 were valid. The valid surveys depict a picture of mobile use among third agers in China, which adds to the qualitative data. The research also collected data about the ageing society globally and in China. Information sources included newspaper articles, blogs, government policies and reports, documents from different State Statistics Bureaus, and reports from various institutions.

Zhengzhou is chosen as the location for the interviews because, as the capital of central Henan province, it is a representative second-tier city in China. It has the highest population density in China and its economic, social and cultural development is in the middle level, compared with other second-tier cities. In addition, with urbanisation, many people from Henan province have migrated to

other places to work, leaving families geographically distant. For these reasons, mobile use by the ageing population in Zhengzhou provides a useful case study.

1.5 Chapter outlines

Chapter one introduces the topic, outlines the research questions and explains the structure of the thesis.

Chapter two explains the ageing society globally and the dramatic ageing trend in China. The differences and similarities between China and other countries are explored in this chapter. The implications of ageing, both globally and in China, are discussed. The concept of the third age is described in detail.

Chapter three illustrates the cultural context of the research project. This chapter looks at the change from collectivism within traditional Confucian China to a modern society with greater levels of individualisation. This gives the reader a sense of the changes that have occurred in China. The cultural foundations of filial piety and Confucianism are discussed. The chapter also discusses the one-child policy and the dramatic urbanisation in China today, as well as the corresponding results, such as the empty nest, and the changed family structure. It introduces the conceptual framework of successful ageing and explains its three components which relate to the fieldwork discussed in chapters six, seven and eight respectively. Optimal ageing and life course are also introduced in chapter three and will be further developed later on in chapter nine.

Chapter four explores the concepts of mobile use and digital capital. It looks at connectivity and increased digital capital among the third age in China. It introduces issues relating to digital divides and notes previous studies related to ageing and technologies. The terms ritualised and instrumental use are introduced.

Chapter five introduces and discusses my methodology. Mixed methodology was adopted in this research project. The in-depth interview, document analysis, and online survey were used for collecting the research data.

Using the framework of successful ageing, this research project correlated three kinds of apps with three components of successful ageing, namely exercise apps with physical health, entertainment apps with mental well-being, and mobile use with social engagement. These three aspects are examined in chapters six, seven and eight respectively. These three chapters also respectively explore the following sub-research questions: How do third agers use exercise apps for daily exercise (and what are the benefits)? How do they use entertainment apps (and what are the effects on their mental well-being)? How do they engage in society by using mobile devices and apps?

Chapter six explores how mobile use increases social engagement among people of retirement age. This chapter focuses on categories of media use by which third agers use mobile apps to maintain relational resources and social engagement, and discusses the effects of emotional attachment to mobile devices for third agers. The research concludes that third agers' mobile use is mainly based on instrumental and ritualised use. Instrumental use increases their social engagement online and offline in obvious ways. However, ritualised use has a deeper influence on their emotions.

Chapter seven explores how the third agers use fitness apps to maintain physical health. The chapter starts with the background of doing exercise with the assistance of mobile apps, and introduces the Chinese cultural concept of *yangsheng* (literally, 'nurturing life'). The chapter considers whether the use of health and fitness apps is directly related to individualisation in China.

Chapter eight focuses on how Chinese third agers are building a new image of themselves through mobile entertainment apps, particularly in short video and karaoke apps. It begins by exploring the new image of the third age population that is being developed in short video apps as well as other entertainment apps. After introducing two examples, 'Naughty Granny Chen' and 'Grandpa, Wait', the chapter shows some other uses of short videos. It finally considers the relationship between the new image of third agers and their personal values and mental well-being.

Chapter nine brings together key findings around the idea of optimal ageing. I return to the question of generational differences. The Chinese Communist Party has always promised its citizens a better future. New generation technology may be the

latest answer. The chapter discusses how third agers optimise their retired life by using their accumulated digital capital and explores the influence of digital capital on social inclusion and life quality. The chapter concludes that accumulated digital capital is accelerating individualisation.

Chapter ten is the conclusion. The main findings are restated, along with reflections on the limitations of the research. Future research directions are outlined.

CHAPTER 2: AGEING SOCIETY GLOBALLY AND WITHIN CHINA

While the ageing society is a global phenomenon, it is playing out in a dramatic fashion in China. Ageing studies in China have largely regarded the ageing population as a homogenous group—for example, by focusing on people in physical decline with age-related diseases. A different way of understanding ageing is required. The ‘third age’ offers a different lens to examine the phenomenon of the ageing society in China.

This concept refers to people who are around retirement age and who still maintain the health and vigour necessary to realise ‘personal achievement and fulfilment’ (Laslett, 1987); it provides a new perspective to understand retired people. In China, increasing numbers of people are in such a transitional period, between active work and retirement. Drawing on published work in ageing studies, this chapter will introduce the ageing society globally and within China, and articulate the reasons for its emergence.

The chapter provides data on the ageing population in several selected countries. After explaining ageing trends in China, it identifies reasons underlying the nation’s ageing society. The chapter then looks at the effects and characteristics of ageing in China. Next, the chapter illustrates the development of ageing studies in western countries and within China. The term ‘positive ageing’ is discussed in the context of current scholarship. Finally, the chapter introduces the theme of a creative and active image of the ageing population in China, a theme that will extend throughout this thesis.

2.1 Re-defining ‘old’

How do we define ‘old’? In the 1960s, the Industrial Relations Research Association and Derber (1966) defined ‘old’ as those who are aged over 65. However, the

lifespan of the senior demographic has increased during the past few decades and the meaning of being a ‘senior citizen’ has shifted accordingly. In many countries, senior citizens have better health compared with twenty years ago. According to one study on longevity, it is predicted that females and males in Europe can reach 89.1 and 84.7 years old respectively (European Commission, 2014; Helbostad & Vereijken, 2016).

Despite this shifting demographic, the ageing population are often subject to age related discrimination. Within gerontology and critical age studies this is referred to as ageism. As Norman (1987) explains, ageism relies on ‘stereotyping, prejudice, discrimination and minority group status’ in the same way as sexism and racism (see also Butler, 1969). As the World Report on Ageing and Health (2015, p.11) explains, ageism takes many forms including ‘prejudicial attitudes, discriminatory practices, or institutional policies and practices that perpetuate stereotypical beliefs’. According to Officer and de la Fuente-Núñez (2018), ageism comes from the perception that a person is too old to do something. Because it is such a pervasive and socially accepted negative stereotype, the ageing population, often internalize ageist beliefs and discriminate against themselves..

While, the study of ageing has been dominated by a biological mode, ageism recognises the impacts of the social response to declined ageing population (Bytheway and Johnson, 1990). Meanwhile, critiques of ageism have received little attention in research and policy-making (Officer and de la Fuente-Núñez, 2018). When the ageing population meets the mobile technologies, the stereotype of ageing population seems to be reinforced by the alienation to digital technologies. The term of ‘digital immigrants’ created by Prensky (2001) illustrates the dilemma faced by ageing population—ageism meeting with digital gap.

In China, ‘elderly people’ are defined in a number of different ways, including retirement age, being grandparents, or according to their appearance and physical condition. The definition of ‘old’ or ‘elderly’ is socially constructed; that is, it is constructed from socio-cultural, institutional, and physical appearance perspectives. In regard to the cultural perspective, when people have grandchildren, they become

grandparents. Grandparents, as an acquired identity, implies 'elderly', at least from the socio-cultural perspective. Meanwhile, social institutions define 'elderly' based on chronological age, as this makes it easier to identify and manage people. Du, Yang and Dong (2007) show that the retirement age in China is different for male and female white collar workers, which is at 60 and 55 years old respectively. Recently, according to the Green Book of Population and Labour (Zhang, 2017), from 2018, the government has begun to raise the retirement age. With regards to physical appearance, people with grey hair, wrinkled faces, or unsteady steps are easily regarded as 'elderly'.

In terms of selecting participants for this research project, people around the retirement age were the target group. They also fit the definition of the third age.

2.2 The ageing society globally

The population of ageing people who are 60 or over is projected to reach 1 billion by 2020 and almost 2 billion by 2050, representing 22 percent of the world's total population (Bloom, Canning & Fink, 2010). Globally, populations are becoming older, and people in most countries are living longer. The ageing population has also increased due to low or declining fertility. In 2017, one in eight persons globally was aged 60 or above, and is projected to be one in five by 2050 (United Nations, 2017).

Before the 1970s, ageing studies focused on 'selected countries in Western and Northern Europe' (Uhlenberg, 2009). Southern Europe was neglected as the aged population was relatively small. However, from 1950 to 2005, Southern Europe had become one of the oldest regions in the world: the proportion of the ageing population increased from 8.3 percent to 19.5 percent in Italy, from 7.3 percent to 16.8 percent in Spain, and from 6.8 percent to 17.8 percent in Greece. Some countries in southern Europe are now home to the 'highest proportion of older people' in Europe. Uhlenberg (2009, p. 69) has argued that compared with southern Europe, some countries recorded a high increase in their ageing populations from 1950 to the beginning of the twenty-first century, including Sweden (10.1 percent to 17.2 percent), France (11.4 percent to 16.4 percent) and the United Kingdom (10.9 percent to 16 percent), and they are expected to experience a steady increase in the

future. The countries with the highest old age dependency ratio are predominantly in Europe at present, but more Asian countries will be included in this group (Department of Economic and Social Affairs Population Division, 2019). In order to minimise the problems relating to ageing, many authorities suggest that people incorporate successful ageing, positive ageing and active ageing lifestyles (Pruchno, 2017).

Furthermore, many developed countries took longer time spans to enter the ageing society. In France the percentage of the population aged 65 or over doubled from 7 percent to 14 percent in 120 years (from 1860 to 1980). In Sweden it took 80 years (from 1890 to 1970) to change the proportion of the population aged 65 or over from 7 to 14 percent. The United States and the United Kingdom followed Sweden, taking about 60 years (from around 1950 to 2010) and approximately 45 years (from 1930 to around 1975) respectively (Uhlenberg, 2009).

According to the report on World Population Ageing (Department of Economic and Social Affairs Population Division, 2019), the percentage of people who are over 65 accounted for 16.2 percent of the population in 2019 and will reach 20.3 percent in 2030. The ageing population of the United States and Canada are projected to have a relatively steady growth; according to the World Health Organization (WHO) (2011), the United States and Canada will 'grow older over the next fifty years'. The percentage of people who are over 65 in Canada stood at 17.6 percent in 2019, and is projected to reach to 22.8 percent in 2030 (Department of Economic and Social Affairs Population Division, 2019).

By 2050, the ageing population is likely to be a truly worldwide phenomenon, except in most of sub-Saharan Africa. Life expectancy in many parts in Africa is falling because of deaths caused by HIV/AIDS (Suzman & Beard, 2011). In sub-Saharan Africa, we can see the 'skipped-generation family household'. This means many families are made up of grandparents with grandchildren, that is, without the middle aged cohort, which has lost numbers because of HIV/AIDS (Suzman & Beard, 2011).

2.3 The ageing society in the Asia-Pacific region

Asia, the heaviest populated continent in the world, is facing rapid demographic changes (Kim & Lee, 2007). Kim (2018) has described the ageing population in the Asia-Pacific region as an 'elephant in the room' which will create serious health crises. The ageing process is imbalanced among Asian countries.

According to Powell and Cook (2009), East Asian economies such as Japan, South Korea and Singapore are expected to move into 'super-ageing societies' by 2050. The percentage of the ageing population had reached 9 percent in Korea and 8.5 percent in Singapore in 2005; and by 2050 will reach 35 percent and 31 percent respectively (Kim & Lee, 2007), which means the ageing speed is faster than in the western countries referred to earlier (Kim, 2018).

Japan is the oldest (i.e. by people's age) nation in the world and the literature in Japanese ageing studies is abundant (Campbell, 2014; Hamasaki et al., 2017; Kim & Lee, 2007). In 1970, over 7.1 percent of the Japanese population was over 65 years old, and in 1995, the proportion of ageing persons reached 14 percent; by 2005, the percentage had increased to 19.7 percent (Kim & Lee, 2007). Japan is becoming a 'super aged society' with 27 percent of the demographic over 65 years old, and aged people will be more than 34 percent of the population in 2030 (Yamada & Park, 2019).

Korea is one of the fastest ageing countries globally. The percentage of South Korea's ageing population rose from 7 percent to 14 percent between 1999 and 2017 (Hyun, Kang & Lee, 2016), which means that within 18 years Korea had become an aged society faster than Japan. According to Kim and Lee (2007), Singapore is expected to turn into a 'super ageing society' by 2025. By 2050, the proportion of people aged 60 years or over will reach 40.1 percent of its population (United Nations, 2017). With the changing demographic structure, Sciubba and Chen (2017) argue that Singapore has already become a 'Confucian welfare state' which emphasises society's responsibility for the ageing population.

India, the world's most populous country, will become an ageing society within the next few decades. It had a 60-million ageing population in 2010, still a young country, but this will increase to 227 million by 2050 (World Health Organization,

2011). The proportion of people who are over 60 years old in India will grow from 8.4 percent to 22.6 percent between 2000 and 2050, almost triple within 50 years (Chatterji et al., 2008). The population of those who are over 80 years old will expand from 1.6 percent to 6.8 percent during the same period (Chatterji et al., 2008). Considering only 11 percent of Indians have pensions (Powell, 2010), India will face an urgent challenge in terms of providing economic support for its ageing population.

Australia, according to the Global AgeWatch Index 2015 report (De Brulin, 2015, p. 25), had 4.9 million people over 60 by 2015, accounting for 20.4 percent of the total population. The proportion of the people over 60 will reach 24.6 percent in 2030 and 28.3 percent by 2050. Australia has entered the ageing society steadily (Borowski, Encel & Ozanne, 1997). In 2015, 20 percent of the Australian population was aged over 60, and by 2050, 29 percent of the population will be aged over 60 (O'Loughlin, Browning & Kendig, 2016). The ageing process in Australia has similarities with other western countries (Kendig & Lucas, 2014). Furthermore, because of successive waves of immigration, Australia has experienced a slower overall ageing process compared with other rapidly ageing societies in the Asia-Pacific, for instance Japan.

The amount of time taken by countries to become ageing societies varies hugely between developed and less developed countries. As discussed above, more developed countries take a longer time to become ageing societies, while the developing countries reach this status in a shorter time (Suzman & Beard, 2011).

2.4 Reasons for the ageing society

Declining fertility during the twentieth century is one of the reasons for growth in the ageing society. In 1970, the fertility rate dropped sharply, which was concurrent with the transformation from agriculturally dominant regions to manufacturing and services-oriented urban economies (Uhlenberg, 2009, pp. 231-232). An increasing number of women found jobs in these emerging sectors. Once the role of women went beyond the family and extended to the workplace, they had less time to look after the family, which led to lower fertility.

People who were born in the 1950s and 1960s, known as the post-war baby boomers, are now entering into retired life. The baby boomers are contributing to the fast ageing trend. Recently, the ageing process has accelerated in Australia as a result of the large baby boomer population who were born in the 1950s and 1960s, together with decades of low fertility rates and increased life expectancy (O'Loughlin et al., 2016). Although Australia will face workforce challenges in the future, it is in a more favourable position than China and Korea in terms of the ageing speed. Similarly, New Zealand will have a considerably older age structure as the baby boomers move into retirement, following a history of slow population growth and some unstable fertility (Department of Economic and Social Affairs Population Division, 2019; Uhlenberg, 2009). Knickman and Snell (2002) argue that the ageing baby boomers will lead to economic burdens by 2030, but the problem should be no greater than the 1960s, when the baby boomers were born, provided that insurance systems develop and improve, and medical treatments and behavioural health keep ageing populations as healthy as possible. However, as we have already seen in 2020, the ageing population is most susceptible to outbreaks of disease.

2.5 The ageing society in China

China has the largest population in the world and it is facing an unprecedented ageing challenge. Du and Tu have concluded that China illustrates four characteristics of the ageing society: 1) 'unprecedented speed'; 2) 'early arrival of an ageing population'; 3) 'fluctuations in the total dependency ratio'; and 4) 'government's fertility policy' (cited in Powell & Cook, 2009, p.393-394).

By 2020, two working age people will support every retiree (Powell, 2010). The senior demographic accounted for 15.2 percent in 2015, and is predicted to reach 25.3 percent in 2030, and eventually 36.5 percent in 2050 (De Brulin, 2015). Meanwhile, China is also experiencing the phenomenon of 'ageing before becoming rich' (Fang & Wang, 2009) which means it is already facing the severe pressure of the rapidly growing ageing population before it has the ability to provide enough infrastructure and money to support the pension system.

With improved healthcare and living conditions, Chinese people have achieved significantly increased longevity. Since 1949, medical developments in China have played an important role in extending people's lives. The average life expectancy for males and females in 2010 was 72.38 and 77.37 respectively (National Bureau of Statistics of the People's Republic of China, 2011). In 2018 the average life expectancy increased to 77 (Gov.cn, 2019). It is predicted that by 2050, there will be 438 million people who are over 65 in China (Zhai, Zhuang & Wang, 2019). Attané and Gu (2014) have argued that China's less developed welfare and health care system has had a negative effect on health and well-being, that is, when comparing China's traditional health care system with some developed countries.

In addition to improved healthcare, population policies have played an important role. The one-child policy, which will be discussed in more detail in chapter three, means that each Chinese family could only have one child. This policy had the strong effect of decelerating the national birth rate. As a result of this policy, China is now facing a critical challenge in the form of its ageing society.

Before 1978, the high rates of mortality and fertility worked together and kept the fertility rate around 5.6 (Uhlenberg, 2009). After the implementation of the one-child policy, China achieved sharply reduced mortality (S. Chen, 2009) with a 70 percent drop in fertility within twenty years (Uhlenberg, 2009). From 2000 to 2010, the proportion of people under 15 decreased from 22.9 percent to 16.6 percent of the population (Attané & Gu, 2014). The one-child policy had been criticised, as well as praised, since the very beginning of its implementation. In 2016, the Chinese government began to implement a two-child policy to adjust the structure of the population. The purpose was to make the population structure more flexible with regards to current and future developments (Chen & Powell, 2012).

Another key reason for the situation facing China is the baby boom of the 1950s and 1960s. After 1949, the foundation of China, there was a dramatic population increase. Similar to the western baby boom after World War II, from the 1950s to the 1960s, there was a population explosion in China. The birth rate was around 6.0 in the 1960s (Uhlenberg, 2009), which means one couple has six children on average. Today, those people who were born in the 1960s are entering into retirement, which is increasing the relative proportion of the ageing population.

China's big population base is another factor to explain the large ageing population. According to the *Chinese Nationwide Population Census 2010* (which is conducted every 10 years), the Chinese population was almost 1.4 billion (National Bureau of Statistics of the People's Republic of China, 2011). Changing attitudes towards giving birth is a new factor for the ageing society in China. The rate of fertility replacement has been lower than 1.5 children per woman since the mid-1990s; even lower fertility rates have been recorded since 2000 (Zhao, 2015). Part of the reason is that parents are paying more attention to their children's education and overall development, and they avoid the older stereotypical attitude that the quantity and gender of children are important. In addition, the policy of 'bear and rear better children' has been accepted by many couples in China. Furthermore, Chinese women's changed social role is influencing the desire not to have children. Women in China are thus becoming more independent.

Another recent factor is migration. Along with urbanisation and mobility, Chinese migration, both globally and within China, is contributing to the uneven ageing population distribution. According to Gavrilov and Heuveline (2003), the migration of young generations to developed countries usually slows down the ageing process in developed countries. However, this in turn will accelerate the ageing process in the original country. Within China, migration from less developed areas to more developed urban areas makes the ageing population imbalance more severe in less developed areas.

All of the aforementioned reasons have contributed to a dramatic ageing population challenge in China. In short, China cannot continue to rely on the demographic dividend to sustain the high speed of development as before. The proportion of the working age population has continuously declined since 2015, while the proportion of the ageing population has increased rapidly (Fang & Wang, 2009). A diminished labour force will decrease the speed of economic development in China.

Secondly, as mentioned earlier in this chapter, while developed countries took almost a hundred years to become ageing societies, China has only taken twenty years thanks mainly to the combination of the one-child policy and the baby boomers. From a geographical perspective, 'Hu's line' (Wang & Wu, 2016) notes the inequality of the ageing population in different regions in China. Hu's line divides

China into two different regions in term of its ageing population—the ageing population of the south-east region is larger than the north-west region. Hu’s line shows that the ageing population experiences different economic conditions and unbalanced resources based on geographical difference. The ageing population rate in less developed regions is faster than developed regions (Wang, 2016), as the young generation has moved in large numbers to developed regions. There are manifest inequalities in the infrastructure, pension system and other resources for the ageing population in these regions and, as such, it is necessary to explore how the less developed regions face these challenges. This is also the reason why I have selected a typical populous city—Zhengzhou, a second-tier city—as the fieldwork location.

Research on ageing in China tends to focus on first-tier cities like Beijing (Chen, Yu, Song & Chui, 2010; Sun, Chen & Han, 2001), Shanghai (Li et al., 2006), Guangzhou and Shenzhen (Chai & Li, 2005) as well as rural areas (Liu & Guo, 2007; Silverstein, Cong & Li, 2006). Few researchers have considered the elderly people in second and third-tier cities. However, it is precisely in second-tier cities where we see large ageing populations, according to the Report on Ageing Mobile Internet Users by Tencent (Cui, 2018).

2.6 The effects of ageing society

Ageing is not only a personal issue, it also hampers economic expansion globally and nationally, and affects public policies, such as pensions, health and long-term care (Muramatsu & Akiyama, 2011), as well as economic development (Zhong, 2011). Feinberg and Spillman (2019) have claimed that there will be a growing care gap as baby boomers in America approach old age. Nam (2019) has explored similar issues in ageing societies in Japan and South Korea, and looked at the ageing problems from a security perspective.

The effects and problems of the dramatic ageing process in China has aroused the interest of scholars. Zhang, Guo and Zheng (2012) have researched China’s imbalanced ageing structure and argued that the high ageing population in China has repercussions for economic growth, social welfare, elderly care and other public policy aspects. Since the opening-up policy initiated in 1978, China has developed

quickly. The high-speed development partly benefits from the demographic dividend and the abundant labour force. However, nowadays, China cannot obtain the same benefits from the large population base as in previous times, as more people enter their retirement age.

Chen and Powell (2012) have edited a book titled *Ageing in China: Implications to Social Policy of a Changing Economic State*. In this book, they explored ageing in China from various aspects, including the bio-medicalisation of ageing; the role of work and changing expectations; the development of pensions and social assistance policies for the elderly; and family care and support. In this collection, Powell suggested that scholars need to move beyond the bio-medicalisation of ageing, and challenged the stereotype of ageing as a social and economic burden (Powell, 2012). McIntosh and Zhang (2012) have argued that it is important to create an ageing-friendly workplace to adapt to the changing expectations about work beyond the traditional retirement age. Xu and Zhang (2012) explored the pension and social assistance policies, and concluded that the absence of interventions for different social insurance schemes has limited effects on reducing poverty among the elderly.

Digital technologies have the potential to benefit the ageing population. Baldassar and Wilding (2019) have argued that policy makers and health practitioners need to pay more attention to ‘digital kinning practices’ to achieve increased social inclusion for older migrants (p. 313). The term ‘digital kinning’ refers to the use of technology to sustain social support, networks and connections, and to maintain cultural identity.

2.7 Gerontology and ageing studies

As I have discussed, the ageing society is a global phenomenon, and has spawned numerous fields and sub-fields of research. The term ‘gerontology’ is specifically applied to ageing studies in English. Élie Metchnikoff, from the Pasteur Institute in Paris, first used the term in 1903 to describe the biological study of senescence (National Institute on Ageing, 1986). According to Achenbaum and Levin (1989), the Greek *ger-* is the etymological root of *gerontology*. In 1878, Liddell and Scott claimed that *gero* not only referred to an old man but also implied a ‘sense of age merged with dignity’ (cited in Achenbaum & Levin, 1989).

Scholars in this field of gerontology have explored the impact of the ageing population in China from different aspects, but mainly focused on negative aspects such as age-related health problems (Fredriksen-Goldsen et al., 2015), the retirement pension system (Chen & Powell, 2012), age-related diseases (Jin et al., 2015), long-term care and family support (Redfoot, Feinberg & Houser, 2013), and effects on economic growth (Maestas, Mullen & Powell, 2016).

Gray (2009) has argued that health and long-term care will account for about half of age-related social expenditure between 2000 and 2050 in China. Other scholars claim that the ageing population will slow down economic development (Bloom et al., 2010; Maestas et al., 2016). Bloom et al. (2010) have explored the implications of the increasing ageing population for economic growth globally and claim that although this population will tend to lower labour-force participation and savings rates, which will lead to a future slowdown in economic growth, the actual decline in the rate of economic growth is likely to be 'modest' but 'not catastrophic'. In terms of specific behavioural change, Bloom et al. (2010) have argued that with better health, individuals can work longer years; and this will provide increased savings over the course of their working life. In addition, as mentioned earlier, the lower fertility rate means more women are entering the labour force.

According to Tibbitts (1968), modern gerontology began with research on the biological processes of ageing, with the objectives of extending the length of life and improving the health and vigour of the additional years. Although the origin of gerontology is not only limited to the medical and clinical aspects, scholars have paid more attention to age-related problems before the 1950s. Ageing was mainly about biological problems (Achenbaum & Levin, 1989). Scholars have focused on bio-gerontology and gero-science, that is, illnesses and diseases related to ageing (Basilevich, 1959; Moskowitz & McCann, 1957; Newman, Dovenmuehle & Busse, 1960). In the early stage of gerontology, a stereotype emerged of the ageing population as frail, a medical and social burden, both in academia and in society.

Achenbaum and Levin (1989) have claimed there was no consensus about the definition, scope and boundaries of gerontology within this field over the past fifty years. The meaning of gerontology goes beyond biology. The term was used by Metchnikoff to represent the study of the biological, behavioural and social sciences

of old age, which means gerontology is not only limited to biology (Mulley, 2012). Bortz (1954) has explained the meaning of gerontology from positive and negative perspectives: the positive perspective concerns growth, development and maturation, while the negative perspective is about atrophy, degeneration and decline.

Biomedical researchers have remained influential in the field beyond their numbers ever since (Achenbaum & Levin, 1989). In the 1940s, several scholars realised that gerontology consists of more than medicine-based aspects. Steiglitz (1942) has distinguished the difference between the biology of ageing, and clinical and socio-economic ageing. He categorised the branches of gerontology from different subject areas, and distinguished the biology of ageing from the clinical and socio-economic problems of ageing humans. S. Chen and Powell (2012) categorised the different sub-topics of gerontology into two fields and argued that bio-medical theories of ageing can be distinguished from the social construction of ageing. Tibbitts (1960) identified four aspects of ageing: biological, psychological, situational and behavioural. Later, he explored the social aspect of gerontology and explained the content of social gerontology, which is mainly concerned with three aspects: 1) the nature and influence of societal attitudes, events and behaviour on older people; 2) the social behaviour of the individual as he or she grows older and of older people as an identifiable element in the population; and 3) societal adaptations to the increasing numbers of ageing and aged adults (Tibbitts, 1968).

Apart from social gerontology, cultural gerontology has emerged to address the nature and experience of people's later years, and has extended and enriched the context and imaginary of old people (Twigg & Martin, 2015); it is closely connected, and sometimes confused, with social gerontology. Cultural gerontology is drawn from changes in the nature of society, the influence of consumer society and the media, as well as from new theorising in relation to epistemology (Twigg & Martin, 2015). This will become more evident when I talk about media consumption and the use of mobile devices.

The emergence of cultural gerontology is changing the stereotype of gerontology, which to date is mainly focused on the physical and mental problems of the ageing population, and the social welfare and public policy framework that regards the ageing population as a burden on society. 'Socio-cultural gerontology', moreover,

aims to build a bridge for older people and the younger mainstream, emphasising continuity rather than division (Twigg & Martin, 2015). Socio-cultural gerontology emphasises social influences and cultural changes as they pertain to the ageing population, which are important in shaping social identity (Gilleard, 1996).

In order to avoid negative stereotypes of the ageing population, several positive approaches have emerged, such as ‘positive ageing’ (Gergen & Gergen, 2001; Helbostad et al., 2017; Katz, 2001), ‘positive gerontology’ (Johnson & Mutchler, 2014), ‘active ageing’ (Lin & Huang, 2016), and ‘successful ageing’ (Q. Feng & Straughan, 2016; Katz & Calasanti, 2014; Li et al., 2006; Rowe & Kahn, 1997, 1998). All these concepts emphasise active and creative ageing and new retirement lifestyles, and seek to help ageing people re-engage into modern society. Successful ageing and third age, as discussed further in chapters two and three, are among the concepts used in this thesis.

In western countries, ‘positive ageing’ was proposed in the 1990s to replace ‘the dark ages’ (Gergen & Gergen, 2001). In 2002, ‘active ageing’ was proposed in the Madrid International Plan of Action on Ageing. They have some overlap in meaning but are also different concepts. While ‘positive’ emphasises attitude; ‘active’ emphasises behaviour (Oxford English Dictionary, 2007). Both ‘positive’ and ‘active’ can be translated as *jiji* in Chinese, both have positive associations in Chinese; however, it is hard to differentiate from the literal translation.

Scholars explain the concept of positive ageing from different viewpoints. According to Gergen and Gergen (2001), positive ageing can be combined with the ‘life span diamond’ to explain life achievement through relational resources, physical well-being, positive mental states and engaging activity. Andrews et al. (2017) have found that positive ageing expectations are associated with physical activity. Some Chinese scholars (Guo & Shi, 2006) have combined these into three aspects, namely the individual, relationships, and community engagement, to explain positive ageing. Mu (2002) has offered a framework of successful ageing which combines the concepts of healthy, productive and active ageing.

The concept of ‘positive ageing’ (*jiji lao ling hua*) in China, to some extent, overlaps in meaning with terms used in western countries as it represents resistance to the

stereotype of the declined and marginalised ageing population; nevertheless, ‘positive ageing’ in China has a stronger political meaning than in western countries. Chen (2010) argues that ‘positive’ is mainly used in political and societal aspects; ‘positive ageing’ therefore can be understood in various ways—it is flexible and blurs boundaries. There are perhaps two reasons for these various terms, one is the fuzzy translation; the other one is that many scholars in China do not make clear the differences among them.

In China, ‘positive ageing’ functions as a kind of government policy. The focus is changed from material support only to include both material and spiritual support. Rudman (2015) has explored positive ageing from the approach of governmentality. Based on 30 informants in Canada, Rudman claimed that positive discourses, such as maintenance of a youthful, functional and fit body, have become a ‘normative expectation and moral obligation’ and, in turn, embodies the ‘neoliberal rationality’ in relation to retirees (Rudman, 2015, p.19). However, Rudman’s study was not about China where it would be problematic to use these normative terms due to the non-existence of the concept of the ‘free individual’ in government and popular discourse, and the excessive intrusion of the government into markets.

Positive ageing has changed the focus from emphasising the social environment of ageing to an individual’s subjectivity in relation to ageing. Attané and Gu (2014) have analysed China’s population changes and claim that the belief in regarding the ageing population as a burden should be changed. Nowadays, it is not only academic researchers and policy makers but also the ageing population themselves who have noticed the changing social attitudes. Socio-cultural, economic and political images of ageing have changed. Yi and Vaupel (1989) have explained that urbanisation in China makes people more independent. Gilteard (1996) has argued that contemporary consumer culture can help older people shape and even refashion their own identity in later life. Pyke (1999) has explored the impact of individualism among the ageing population and argues that ‘individualist elders’ have greater intergenerational power than ‘collectivist elders’. Although Rowe and Kahn (2015) argue that policy makers have focused on potential negative impacts of an ageing population, such as rising life expectancies on health and pension entitlements, the

pension system and a more affluent retirement life are obvious reasons for the emergence of positive ageing attitudes.

2.8 Comparing ageing studies between the west and China

The concepts of successful ageing and the third age have changed the stereotype of the ageing population as being in decline. Despite these positive impacts, successful ageing had been criticised for focusing on healthy and functional ageing groups only, which can be viewed as ‘ageist’ and biased against disabled ageing groups. For example, Baltes and Carstensen (1996) have argued that successful ageing illustrates ageism toward people who have lost, or who are losing, their health. Similarly, the third age concept has been criticised for only focusing on healthy ‘young-old’ groups, and ignoring the ‘old-old’ groups (Carr and Komp, 2011, p.82)

In western contexts, ‘life stage’, ‘life span’, and ‘life cycle’ are approaches for studying an individual’s life journey. These concepts have some similarities, such as dividing the whole life journey into specific periods. Hareven (2003) has argued that in western society, people are accustomed to referring to different life stages in this way, with specific age groups and cultural characteristics. He explains how the childhood, adolescent, middle age and old age life courses have emerged from society. At the same time, however, there are some differences in these concepts. Life cycle and life span speak to the fact that people mature and age over time, which is a natural process. However, the life course approach emphasises the dynamic relationship between the individual and society (Havlikova, 2007), which is arguably more similar to the Chinese understanding of life.

Among these different approaches, life course theory provides a way of ‘examining individual as well as collective development under changing historical conditions’ (Hareven & Adams, 1982). The experience of ageing cannot be divorced from the context in which it happens and a life course perspective takes into account multiple influences on social reality. Green (2017) has explained that it is necessary to understand life course from the perspective of historical and cultural influences, and take into account ‘societal, technological and political changes’ (p. 10). The most cited definition of life course comes from Elder (1985, p.15) who defines it as: ‘a

sequence of age-linked transitions that are embedded in social institutions and history'. Life course theory refers an individual life transition as part of a cluster of concurrent transitions and a sequence of transitions that affect each other (Hareven & Adams, 1982). Mortimer and Shanahan (2007) have defined life course as an 'age-graded, socially-embedded sequence of roles that connect the phases of life' (p. xi). Hareven and Adams (1982) have argued that a cohort belongs to its specific time as well as historical time. Three main ideas are foregrounded—individual experience, linked lives and historical time. From this perspective, older people are not viewed simply as a 'homogeneous group, but rather as an age-cohort moving through history' (Hareven & Adams, 1982), with distinct individual life experiences influenced by the historical and cultural circumstances.

Life course theory has been applied in various fields. Numerous studies of the life course have focused on the inequality of ageing populations. As society is becoming more digitalised, mobile phone use has begun to influence life quality (Park, 2017, p. 4). The different mobile use abilities of the ageing population, and their variable access to this technology, represent a kind of inequality. So, it is worth considering the life course in order to understand mobile use ability among third agers. From the life course perspective, Chinese third agers' mobile use ability and their digital capital is not merely influenced by current situations, but also by early life experiences, linked lives and historical social events. I will elaborate on this idea of the life course in chapter three.

2.9 Conclusion

This chapter has provided extensive data on the ageing society globally and on ageing processes within the Asia-Pacific region. This data clearly indicates that ageing populations are increasing throughout the world. It then considered China in particular. China is experiencing a dramatic ageing process, compared with developed countries. The chapter explored the main reasons that contribute to the ageing society, including improved medical care, the baby boomers, low fertility rates, and migration. Specifically, the one-child policy has led to an unbalanced population structure and accelerated the ageing of China's society. The chapter also

introduced the development of ageing studies, including the concepts of positive ageing and successful ageing. Cultural gerontology was introduced to show that we need to re-examine how we consider ageing, and in particular the group that we call the third age. Ageing studies in the west and within China were then explored finding that researchers in China are trying to change the negative image of ageing population while in the west, academics pay attention to individual's life journey, such as life course, life span.

This chapter provides a brief global map of the ageing population and helps readers to understand the background and significance of the research question in my thesis. By comparing gerontology studies in the west and China, this chapter also identifies a lack of gerontology studies in China. It is this gap in the literature that motivates this research.

The next chapter further explores Chinese society and cultural values. Chinese social, cultural, and political meaning, have shaped and influenced Chinese people's understanding of ageing population. Chapter three will explore how these traditions, culture and last 40 years of societal changes, impact people's understanding of ageing populations.

Chapter 3: The Third Age, the Legacy of Culture and Individualisation

The previous chapter has outlined the global context of the ageing society and briefly introduced the key concepts of third age and digital capital. In this chapter I look more closely at Chinese society and culture—its traditions, values and meaning systems—and how these impact on people’s understanding of ageing.

I first develop the framework of the thesis by exploring the components of successful ageing (Rowe & Kahn, 1997). Related concepts, such as the life span diamond model, and third age, will be illustrated. While the framework of this research is based on the concept of successful ageing, the project also recognises social and cultural influences that optimise a person’s ability to age successfully. I discuss an alternative approach called optimal ageing (Aldwin, Spiro & Park, 2006), a concept that will be applied later in the thesis.

In order to contextualise optimal ageing, the chapter looks at the cultural legacy of China’s third age. It illustrates the life journey of today’s third agers, primarily those in their 60s and early 70s, beginning with their experiences of collectivisation, The Great Leap Forward and their early adulthood in the reform era. The chapter will consider the cultural legacy of Confucianism and filial piety in China. It then elaborates on the changed lifestyle resulting from the one-child policy in China and the traditional concept of *yangsheng*, literally translated as ‘nurturing life’. The chapter looks at how today’s third agers have charted a course through China’s transitions—in other words, it calls attention to their life course. Finally, I explain how the concept of individualisation provides a useful way to understand changes in Chinese society, in particular its present-day digital society.

3.1 Successful ageing

Previous studies have explored the various aspects of technology use among ageing populations. These studies can be largely categorised according to three themes

based on Rowe and Kahn's (1998) definition of successful ageing—low probability of disease and disease-related disability, high cognitive and physical functioning, and active engagement with life, as shown in figure 1.

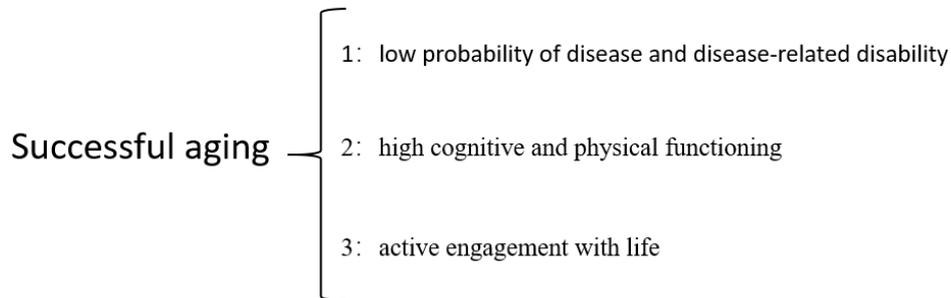


Figure 1: Three components of successful ageing (Rowe & Kahn, 1998)

From the three components of successful ageing, it can be observed that successful ageing emphasizes physical and cognitive health, as well as social engagement among the ageing population. Successful ageing holds to the idea that many health and related problems associated with ‘so-called normal ageing are in fact not normal at all’ but the result of lifestyle and other factors that ‘put people at high risk for disease and disability in later life’ (Minkler & Fadem, 2002, p. 229). From this perspective, the concept implies the meaning that individuals should take most of the responsibility of being successful enough when they are old because successful ageing is a result of ‘lifestyle’. Dillaway and Byrnes (2009) have also commented that the assumption of successful ageing contains the meaning that individuals should have the ability, as well as responsibility, to overcome barriers and have a successful ageing.

As discussed in chapter two, the concept of successful ageing has been criticised as an ageist approach that reinforces the negative image of the elderly and the disabled (Minkler & Fadem, 2002, p. 229). Baltes and Carstensen (1996) have argued that successful ageing is associated with a normative perspective; it is only one way or standard to achieve success. Dillaway and Brynes (2009, p. 706) criticized successful ageing that defines ‘success as an outcome, rather than a process’. They also have criticized the idea that regards ageing as a game which can be ‘won or lost’ based on whether individuals are considered as successful or not. The term itself –successful

ageing – reinforces stereotypes of ageing and focuses on the group of the ageing population who do not ascribe to ageist stereotypes and describe them as ‘successful’. Hence, it is important to think whether it is useful to apply successful ageing into practices and policy making if it cannot be applied to the entire ageing population. Despite these criticisms, successful ageing provides a useful framework to understand ageing life, and has challenged the stereotype of decline and the fragile image of the ageing population. This concept is also helpful in focusing renewed attention on health aspects, as a means of ‘adding life to years and not merely years to life’ (Harold & Emer, 1998, p. 14; also see Drexler, 2013).

Successful ageing is not the only concept that emphasises the healthy, active and positive aspects of ageing. The life span diamond model developed by Gergen and Gergen (2001) has explored positive ageing from a similar perspective. The model emphasises four aspects, including relational resources, physical well-being, positive mental states, and engaging activity (see figure 2). The authors explain how the four aspects mutually reinforce one another with substantial positive consequences for ageing people. Gergen and Gergen regard ‘relational resources’ as different from ‘engaging activity’ in the life span diamond model; however, in fact, the two factors reinforce each other and are hard to distinguish clearly in daily life. As discussed in later chapters, ‘relational resources’ and ‘engaging activity’ can be both categorised as social engagement.

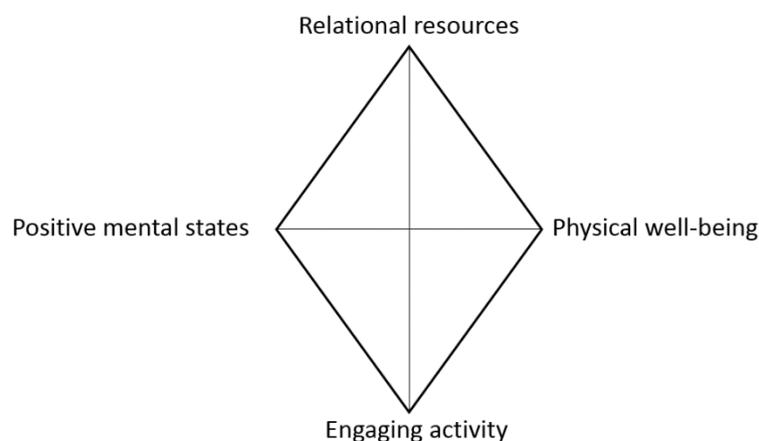


Figure 2: The life span diamond model (Gergen & Gergen, 2001)

3.2 Third age

The concept of the third age has seen a dramatic shift in the way scholars theorise ageing. Laslett (1987) has applied the concept in the context of the whole life course. He argues that there are four ages. The first is an era of ‘dependence, socialisation, immaturity and education’; the second is an era of ‘independence, maturity, responsibility and earning’; the third is about the culmination of ‘personal achievement and fulfilment’; and the fourth is an era of final ‘dependence, decrepitude and finally death’ (Laslett, 1987, p. 134).

Laslett has also explored the origin of the term. The third age is of French origin in the 1970s, and emerged in the Anglo-Saxon vocabulary when the first Universities of the Third Age was founded at Cambridge in the summer of 1981 (Laslett, 1987). After that, the term began to be used by many scholars who were engaged in the study of ageing (Gilleard & Higgs, 2002, 2008; Laslett, 1991; Swindell & Thompson, 1995). While some theorists note that delineating the various stages of life has a long history going back at least to medieval times (Thane 2003), Laslett’s concept of the third age takes into consideration social factors such as demographics and economics in the drive for personal fulfilment. These factors work together on both a collective whole of nation level and also at the level of the individual. As Laslett (1991) explains:

life after the second age has to last long enough for the majority of the population of that nation, and not simply for the lucky, the rich and the privileged, to expect to be able to go on to the Third Age...which means that the third age can only appear at the time when average expectation of life begins to be high enough to allow this to happen, and when there is already a sufficiency of the whole population actually experiencing the addition to the life-course. (p. 78)

Whereas retirement previously more or less coincided with ill health and decline, changing industrial practices and ageing demographics facilitated the emergence of a period post retirement in which individuals possessed the necessary health, vigour

and attitude to realise 'personal achievement and fulfilment' (Laslett, 1991, p. 153) not possible during their working life (or second age). According to Weiss and Bass (2002), the third age is characterised by increased longevity, better health and an increased level of financial well-being. These characteristics in conjunction with an increase in leisure time allow for 'the pursuit of new or long-latent interests, together with desired levels of sociability' (Weiss & Bass, 2002, p.31). Carr and Komp (2011) describe this age as an early stage of later life.

Although Laslett is careful to avoid strict demarcations between these ages, they can nonetheless be broadly summarised following the social stages of the ageing process. For example, the first age refers more or less to childhood or a period of dependence, with the second age being a period of independence and responsibility experienced during working life. The third age typically occurs in the period leading up to or post retirement where the individual has less responsibility but maintains independence through good health and financial stability. The fourth age, however, 'is an era of final dependence, decrepitude and death' (Laslett, 1991, p. 135).

Writing in 1987, Laslett claimed that the third age had not yet emerged in China. Within a decade this view was hard to sustain. Contemporary China entered the ageing society around the turn of the twenty-first century. Moreover, the current third age population in China are the first to have ICT literacy. They embrace digital technologies, such as the smartphone, to prolong personal fulfilment and independence and to ward off the decline associated with the fourth age. The affordances of technology thus can provide more possibilities for early retirees to live an enriched lifestyle.

The term 'third age' avoids the stereotype of the aged population. From this aspect, the third age has some similarities with the concept of successful ageing and the life span diamond model. Chronological age alone does not define the third age; rather, it is defined more by cultural aspects. Nevertheless, in practice, it always begins around retirement (Laslett, 1987). According to Laslett (1987), the third age can be noted by two criteria: the general expectation of people of living from 25 to 70 is 0.5 or over; and when 10 percent or more of the whole population are over the age of 65. Based on an understanding of these two criteria, the third age is a collective circumstance as

well as a personal affair. It is therefore not only relevant from a population demographic perspective, but also has implications for individuals.

3.3 Reasons for the emergence of the third age

The welfare system that helped to shape retired life in the nineteenth and twentieth centuries has begun to fragment in Britain and the United States (Gilleard & Higgs, 2000). Social reformers and government officials have realised that the image of the ageing population has changed. Despite its negative consequences, consumer culture has become a means to explore and rebuild new lifestyles for ageing people. Gilleard (1996) has explored the role of contemporary consumer culture in helping older people build a new identity in later life and claimed that retired people are able to participate in consumer culture and create new possibilities for being 'old'. Featherstone and Hepworth (2003), in a study of *Retirement Choice*, a seniors' magazine, have explored the social construction of ageing in consumer culture. These social constructions of ageing are being felt by the people who are around their retirement age, whereby their social position and social identity are increasingly expressed by their mode of consumption (Lunt & Livingstone, 1992).

Although Gilleard and Higgs (2002) have criticised the consumerism inherent in the concept of third age, they maintain that such social and cultural realities are reshaping later life in the twenty-first century. For instance, while consumer culture is seen as powerful reason for the emergence of the third age, this does not mean the third age belongs exclusively to an elite class. Class is neither an explanation for, nor the structural equivalent of, the third age (Gilleard & Higgs, 2002). Gilleard and Higgs further argue that historical, social and cultural changes are more appropriate for understanding the third age.

Although the concept of the third age has enlarged and enriched the meanings of 'old' and 'ageing', limitations of the concept have been put raised. Gilleard and Higgs point out that although the term 'third age' is seductive, it fails to provide a persuasive analysis of the 'cultural and social transformation of later life that situates it more firmly within post-war consumer culture' (Gilleard & Higgs, 2008, p.14). Gilleard and Higgs believe that the concept of the third age is based on 'grandiose

expectations' and 'unpractical idealism' and they propose a critical generational framework, namely class-determined and baby boomers cohorts (Gilleard & Higgs, 2002, p. 370). The class-determined cohort perspective argues that the third age represents a specific hierarchy, while the baby boomers cohort perspective means that the third age provides a group perspective to study the ageing population. However, the authors concede that the concept of third age does reflect social and cultural realities which are re-shaping later life in the twenty-first century (Gilleard & Higgs, 2002), while noting some limitations.

The terminology of 'optimal ageing' brings into the argument a more utopian sense of a better life in the future. It emphasises environmental conditions that allow individuals to maximise or optimise their life potential (Birren, Schaie, Abeles, Gatz & Salthouse, 2006, pp. 98-99). It is important to point out that optimal ageing recognises socio-cultural factors and considers the interplay between the external environment and 'mental, cognitive and physical health' (Aldwin, 2013, p. 2). Optimal ageing is thus a multi-dimensional construct. It considers factors that decelerate ageing and disease; hence, it favours the maintenance of good physical, cognitive and mental health (Aldwin, Igarashi, Gilmer & Levenson, 2018). The essence of optimal ageing is wisdom accumulated through time. The wisdom accrued in adulthood and by the ageing population allows ageing individuals to help others, especially the younger generation, to 'optimize capacities despite illness and disability, to find meaning and purpose in life, and to face disability and even death with relative equanimity' (Aldwin et al., 2018, p.6). Optimal ageing allows one to optimise whatever health conditions one has by having the good judgement to avoid agents that accelerate the ageing process and promoting those that delay it (Aldwin et al., 2006).

Baltes and Carstensen (1996) have stated that successful ageing is associated with normative and ideal goals or outcomes; it is one way or one standard to achieve success. In comparison, the concept of optimal ageing emphasises the environmental conditions that can optimise the ageing experience for both individuals with disabilities and those without (Minkler & Fadem, 2002, p. 232). From this perspective, optimal ageing addresses the critiques of ageism sometimes applied to successful ageing. As I will discuss later, optimal resonates with the idea of optimism

that is associated with China's rise on the global stage and a better standard of living for its population.

3.4 Chinese traditional culture and understandings of ageing

In the Chinese cultural context, one's life is not defined by different stages or spans, but is often explained as a journey, where relationships are formed with everyone and everything in the world, including nature. People's lives are connected closely with fate. This understanding of life in Chinese culture is socially constructed by three dominant philosophies: Confucianism, Daoism and Buddhism.

Confucianism has proposed the idea of *shengsi youming fugui zaitian* (life or death is determined by fate, poor or rich is determined by heaven). One understanding of *tianming* (fate) is pessimistic: life is what happens to a person. Another understanding of *fugui zaitian* means *houtian* (individual endeavour) which emphasises the fact that individuals can master their own life. Compared with Confucianism, Taoism (or Daoism) divides life into two elements: one is about the physical body; the other is the spiritual world. Many Taoists do not care much about the existence of the physical body and instead emphasise the freedom of the individual's spiritual world. At the same time, however, since Taoists know that the human body cannot last forever, they will try different ways to maintain a healthy life. As I will discuss later, the idea of *yangsheng* (nurturing life) is rooted in Chinese medical beliefs. Laozi, the founder of Taoism, emphasised the idea of 'conquering the unyielding with the yielding' to teach people how to maintain their lives against difficulties. In sum, Taoism does not pay attention to the physical body; on the contrary, it tries to maintain the body for longer.

In Buddhism, all sentient beings are equal and have the ability to achieve enlightenment. The purpose of life in many schools of Buddhism is to seek reincarnation either through enlightenment or by leading a good and positive life. All of these philosophies have together socially constructed an understanding of life as a journey for Chinese people, hence the idea of the 'way' (*dao*) which is somewhat different from the western approach of life stages/spans which divides life into separate stages. In sum, the understanding of life in China is not based just on

chronologic age, but from the relationships with everything, everyone, and the accumulated wisdom of personal experiences.

Chinese society is nonetheless predominantly based on Confucian values. Confucius, the most influential philosopher in Chinese history, lived from 551 to 479 BC. His teachings have become very influential in China as well as in other East Asian societies. New assessments of Confucius have continued to gain popularity in China in the past two decades (Louie, 2005).

Confucius, known as Master Kong, lived to an old age. He might be seen as a role model for the elderly. In fact, older people were regarded as a symbol of wisdom in China. Attitudes toward ageing have been influenced by Confucius' teachings for more than 2000 years. Respecting, caring for and loving the ageing population is a core belief for most Chinese people. This is usually called filial piety, a part of the Confucian value system together with ritual and benevolence. In the past, people respected the ageing population's social and family role because older people, usually within the family structure, were thought to have more valuable life experience than the younger people. There are traditional sayings in China that support this view: 'an aged person is a treasure for a family' (*jiayou yilao, ruyou yibao*); and 'if you don't follow what the aged people say, you will suffer losses' (*buting laorenyan, chikui zai yanqian*). The image and role of ageing through Chinese history has remained relatively constant despite prominent historical events.

Zhang et al. (2012) have claimed that filial piety is deeply rooted in social norms. It was recorded in *The Analects* that whenever Confucius and the local people drank alcohol together, he would wait after the gathering for people using walking sticks to go out first and then he would leave after them. By doing this, Confucian showed respect to aged people (Guo, 2015). One representative of Confucianism advocated in *The Mencius* that we should 'honour old people as we do our own aged parents, and care for other's children as one's own' (Xizhu, 2015), and emphasised that younger people should respect those who are aged.

In modern China, 'respect ageing and loving ageing' (*jinglao ailao*) is a popular slogan found on walls in many buildings and houses. In China, elder care is provided mainly by family members, and this is influenced by Confucianism and traditional

culture. Davis (1991) argues that family is always the location to observe the position of the old. The family is the locus where Confucian ideals of filial piety are fully elaborated. The conflicts of housing, exchange of aid, and central rituals of marriage and burial occur in the family setting. In 2013, an amendment was made to the state's elder rights law requiring that adult children visit their parents regularly and care for their parents' spiritual needs (Hatton, 2013).

Although Davis (1991) has argued that social relationships of the elderly in contemporary China have changed because of the tensions between Confucian culture and communist propaganda, current social attitudes towards the elderly may be attributed more to economic reform and materialism. The Communist Party is trying to educate people to respect and care for ageing people so that the ageing population can be taken care of by their children and family, not the state.

3.5 Changing lifestyles in China: Nurturing life

Nowadays, age care homes are gaining acceptance (Zhang et al., 2012), although some news reports indicate a gap in market demand and the insufficient provision of such homes. The one-child policy and increased urbanisation has changed the structure of social welfare for retirees. The government had formally introduced the policy to reduce population growth and pushed its implementation vigorously (Mackerras, 2005). In the 1980s, 6.1 million couples who pledged not to bear more than one child received 'one child honorary certificates' (Feng et al., 2014). Between 1979 and 2010, nearly 150 million children were born into one-child families in China. The one-child policy has resulted in the shift from parent-centred families to child-centred families, and decreased the base of support for the elderly (X. Feng et al., 2014). While Chinese society has been traditionally characterised by complex networks of kinship, family and extended family, the generation of one-child families has simplified the family structure and family relationships, and at the same time changed the family lifestyle (Feng et al., 2014).

In 1950s China, the demographic structure appeared as a pyramid, that is, the ageing population represented a small part of the whole population while the young generation comprised the large base of the pyramid. Now, the base has shrunk. The

younger generations are going to urban areas to pursue an urban lifestyle and better life quality. As a result, there are many ‘empty nest’ families in China, especially in the countryside. The empty nest refers to families without any child nearby. Gong et al. (2012) have researched the rapid trend in rural to urban migration and concluded that rapid urbanisation has put a burden on public health departments in urban areas.

People who are part of the ageing society today may look back to the past, and realise that things are quite different. Before 1949, although the elderly played a central role for thousands of years and had considerable prestige and power in the community and family (Sher, 2019), they had limited lifestyle choices for themselves. The government provided people with hope. People believed that life would be better, a promise made by China’s leaders to gain their allegiance. Since 1949, Chinese people have experienced a change from an agricultural to an industrial society. In the last two decades, China has entered into a new stage, which we can call a digital society. These dramatic and rapid changes have influenced people’s lifestyles.

Fei (2005) has described the social practices in rural areas during the 1950s as follows: women sitting in front of their gate and chatting with others, looking after grandchildren; males working in farms. As Fei has shown, Chinese people, especially in rural societies, held to the value of interdependent family ties, filial piety, and strong intergenerational cohesiveness. They made choices for the family and family members; however, they did not do specific things for themselves. The family’s interest was more important than the individual.

While everyday life has changed, some things remain the same. Compared with lifestyles in rural China, urbanites prefer to exercise in the early morning light in parks, squares and other public places. As Farquhar and Zhang (2005) have noted, in the late Maoist period of the 1970s, there were ‘group callisthenics accompanied by patriotic music and loud instructions blaring from scratchy loud speaker’; later during the time of reform, ‘taiji and qigong begun to become popular under the trees in parks’, and in the 1990s, groups of ballroom dancers or disco dancers emerged in parks (p. 306). Farquhar and Zhang explain that Beijing urbanites did these activities for the sake of *yangsheng*. *Yangsheng* is an accepted cultural practice in China. *Yang* means cultivate, take care, and maintain. *Sheng* means life, survival and growth. In

China, *yangsheng* has been practiced for thousands of years. It is based on the natural development of life cycles and adopts harmonious techniques for keeping healthy, reducing diseases, increasing health and gaining longevity (Wang, Liu, Yuan, Zhang & Cui, 1991). Chinese people applied *yangsheng* to different aspects of life and developed food *yangsheng*, exercise *yangsheng*, meditation *yangsheng*, and massage and acupuncture *yangsheng*. *Yangsheng* has become popular among the ageing population because it is regarded as a way of protecting against ageing, or alternatively, as an effective way to stay healthy during the ageing process.

Since the withdrawal of the Chinese government from many aspects of daily life, people, especially the ageing population, increasingly need to care for themselves. In the past twenty years, the ‘iron rice bowl’ of welfare dependency has given way to a model more akin to a capitalist system in which people take personal responsibility for their life and well-being. The ‘elevated collective goal of communism has been replaced by mundane, largely individual-oriented goals’ (Ci, 2014, p. 163). People in China are acting as independent agents for the first time and making decisions for themselves, instead of only being recipients of benefits from the state. Moreover, the one-child policy and the fast urbanisation has led to many empty nests. The ageing population can no longer rely on the work unit (*danwei*) as before, nor on their only adult child, who is likewise experiencing greater social pressure. They can only rely on themselves and maintain their lifestyle to be as healthy as possible. In this context, there has been a revival of *yangsheng*.

Among all the techniques for nurturing health, qigong is one of the most popular. China is the birthplace for qigong. Qigong is a kind of health practice as well as philosophy for Chinese people and has developed into diverse forms. The origins can be found in Taoism, Confucianism and Buddhism as well as traditional Chinese medicine. *Huangdi Neijing (Yellow Emperor’s Internal Classic)* is the first classic book of traditional Chinese medicine and laid the foundation for qigong. Laozi, the author of the *Daodejing (Tao Te Ching)*, explained the practice of circulating air in and out of the body in harmony with nature. *Zhuangzi* also emphasised the importance of the ways of breathing in and out, and maintained that humanity is an integral part of nature. Buddhism, which came from India, also focused on deep breathing techniques.

3.6 Collectivism and respect for the elderly

Collectivism is rooted deeply in Chinese culture. Collectivism has been defined as a social pattern consisting of

...closely linked individuals who see themselves as parts of one or more collectives, such as family, co-workers, tribe, nation; are primarily motivated by the norms of, and duties imposed by, those collectives; are willing to give priority to the goals of these collectives over their own personal goal; and emphasized their connectedness to members of these collectives. (Triandis, 2018, pp. 170-171)

During 1950–1978, people’s lives were managed within the planned economic system. The planned economy reflected the collective nature of Chinese society, which is often attributed to Confucianism: that people should sacrifice individual interests to satisfy the group’s interests (Kang, 2007). So, when making choices, people consider the family’s and the group’s interests first. After retirement, some voluntarily sacrificed their time and energy to look after their grandchildren and the whole family.

Using data from the China Health and Nutrition Survey, Chen (2014) has documented patterns of grandparental caregiving in urban and rural China in the 1990s and estimated that the mean number of weekly hours of childcare they provided ranged from 32 to 35 hours; this is high compared with western social conventions, such as United States, grandparents are more likely not providing routine care for grandchildren under their sociocultural context. Chen explained that the amount of the grandparent’s caregiving is often driven by the needs of their adult children, and by the associated social norms and structural contexts. Despite changes in society, Chinese people are still holding on to traditional values—specifically, family ties, intergenerational relationships, and prioritising the group interest.

According to Fei Xiaotong, a leading Chinese sociologist, the social construction of the western world is based on ‘group pattern’ society, which means that the social network must be established before people connect with each other (Fei, 2005, p.

51). This network refers to the spirit of the social contract; everyone has a relationship according to this contract. Compared with western society, Chinese society was very structured in terms of how people lived their lives in the period after the Chinese Revolution and even well into the 1980s. Under the planned economic system, people were connected to benefits by their *danwei* (work unit) from which they received almost all the resources they needed. Almost everything was arranged in advance by structured regulations (Yang, 2013).

Wang (2011) has claimed that traditional Chinese culture emphasised etiquette and this emphasis led to the traditions of order, class, rule and abstinence. In the 1950s, the period examined in Fei's (2005) writing, people who lived in rural areas in China adhered to the system of traditional cultural values. In general, people will ask about each other's age during a daily conversation in China. The younger person will show their respect to the older person by using a specific honorific title, or shake their hands proactively, and would refrain from sitting down if the older person was standing.

Fei showed that Chinese society was structured by 'the pattern of different sequence' (2005, p.23); in other words, Chinese society is structured by specific patterns according to hierarchy and personal networks (*guanxi*). Under the values of traditional Chinese culture, the father has absolute rights in the family (Fei, 2005, p. 107). Every member of the ageing population had an obligation to educate young people. People thus paid respect to people who are older than them. In terms of life in the countryside,

Meanwhile, society is constructed by individual and private relationships (Fei, 2005, p. 51). It is like casting a stone into a lake and creating circles of close and far relationships with others. The networked society had already existed. Fei (2005, p. 74) also argued that people who lived in rural areas in China in the 1950s, no matter young or old, followed almost the same life pattern. The elderly people could predict what problems the young people would have in their lives; and, in turn, the young generation regarded the ageing population's life as a blueprint. The ageing population's wisdom and experience advice enforced the young generation's respect. What the young people venerated was the experience and wisdom of age.

The role of the Chinese ageing population has changed gradually, firstly, because of the fast-changing society which broke the existing life pattern (Fei, 2005) of the previous times. After 1949 China witnessed a structural rearrangement of society based on socialism and collectivism. Most of the older population were under-educated. Younger people could adjust themselves quicker to social changes, so many of the older generation were marginalised further. In addition, the retirement pension system was not well developed at the beginning of the foundation of Republic of China (1949–1965) and during the time of the Great Cultural Revolution (1966–1976); the retirement pension system therefore could not provide enough financial support. Elderly people gradually lost some of their high social position in society.

However, because Chinese culture has upheld filial piety, the elderly are still respected by young people in accordance with cultural tradition. Although the elderly do not represent the only source of wisdom anymore and while older people no longer retain their unquestioned, autocratic role in the family and society, they still have a respected role (Sher, 2019). Young people who do not respect and care for elderly people will be judged harshly and criticised by others. In fact, the situation began to change after the opening-up policy of 1978. According to Li (2009), from 1978 to 2009, most research in the field of gerontology in China focused on how to make use of the potential power of the ageing population and help them to engage fully in society. The ageing population could keep their respected social role only through reengagement in society, and by devoting themselves to national construction.

3.7 Life courses: The cultural, social and political legacy of China's third age

China's current third age cohort were born in the 1950s or early 1960s. It is therefore worthwhile to look more closely at the kind of lives they led as they became adults as this has implications for how this cohort sees the world. People born in the 1950s witnessed the mass commune movement as young children; during their adolescence many were Red Guards in the Cultural Revolution (1966–76). Technology was undeveloped and the 'four modernisations' would only come in the 1980s. Although the first television broadcast was made in 1958, television did not develop until the

mid-1970s; instead, radio was the medium of mass communication, along with big-character posters. The Internet would come thirty years later and even then it had basic infrastructure with dial-up modems and bad connections.

People born in the 1950s witnessed great changes since the foundation of China in 1949. They were part of the New China. This was the promised dream of a new future. They believed that life would be transformed and they were willing to make personal sacrifices to achieve it. In childhood, they had suffered the famine from 1959 to 1961; later, they experienced the Cultural Revolution (1966–1976), and then they were allowed to have only one child from 1979, while in the 1990s they endured the ‘laid-off wave’ (compulsory retirement earlier than the retirement age). As a result of these earlier life stage experiences, they only acquired limited education when they were young and some were ‘left behind’ when China entered the market economy (Egri & Ralston, 2004).

In this section I look more closely at the socio-cultural context of the third agers. I will trace their journey through a changing media landscape, from old to new media, while considering their experiences of a changing China, or what we can call a ‘life course’ (Elder et al., 2003).

Because of the changes in China over the past sixty years, the third age represents a unique generational cohort; they have experienced similar historical events and these events were life changing. While the third age is a straightforward concept, the life course framework offers an historical longitudinal approach. Generational cohorts are influenced by historical circumstances encountered earlier in life, and these memories may influence their construction of reality in later life, that is, in their third age. Hareven and Adams (1982) have claimed that a cohort belongs to its specific time as well as historical time, and that the life course is an individual life transition that happens concurrently or in sequence. The life course framework thus provides a different perspective on exploring the third age. From this perspective, we can note evidence of how prior experiences in youth and middle age shape current life attitudes and lifestyle. The next section will consider historical events in relation to family, education, the work unit, a changing society, materialism and lifestyle.

I argued earlier in this research project that the third agers in China are a transitional group. The reason for this transitional status is two-fold: they need to adapt to a

digital environment, and they have collectively faced many socio-cultural transitions. The most significant transition is that of the family structure. Families had more than one child when today's third agers were born. Most of these third agers had several siblings. Moreover, during the 1950s, the Chinese government encouraged large families. The extended family structure had existed for thousands of years and this model with all its relationships existed in society during the childhood and teenage periods of the current third agers.

Significantly, despite their upbringing in large extended families, most of today's third agers have one child only and they have had to adapt to the transition to the nuclear family; this has happened because of the one-child policy which took place from the time they were teenagers until recently. The third agers are the first generation to face the dramatic change from extended family to nuclear family or empty nest. The present-day third agers are the first cohort of the one-child generation's parents to enter retirement age. They have to face new circumstances which their predecessors had never considered, such as the need for aged care. Previous generations would have been supported by their children because they had extended families and lived under the same roof or nearby. However, the socio-cultural changes in recent decades have forced parents and adult children to live separately, even within the same city. For the current third age cohort, most can only rely on themselves when they retire. Hence, the process of individualisation is happening in the third age. In *Age of Ambition*, Evan Osnos (2014) argues that since Deng's opening-up policy, Chinese people have become the agents of their own fate.

Another concurrent transition is the changing relationship between family members. By the time this 1950s–1960s generation was of marriage age, the state had passed the one-child policy. Finding the right partner became even more important as a consequence. Previously, most families had more than one child, so people did not overly focus on a single child. Influenced by filial piety, the aged within the family were respected by the younger generation. With the one-child policy and nuclear family, the family relationship suddenly became more child-centred. The (one) child's growth and education became the most important priority. With this new change within family relations, the personality of the one-child generation was more self-centred, known as the so-called little emperor syndrome.

Many members of the third age were sent down to the countryside during the Cultural Revolution (1966–76). They were called *zhiqing* (educated youth) and this experience allowed many to develop self-reliance. Gold (1980) has explained *zhiqing* as ‘city school-leavers who went up to the mountains or down to the countryside to settle’ (p. 763). This was a time of political upheaval. The third age cohort should have received education but they could not get this from schools during that period. Instead, they were sent to remote places and rural villages to learn from peasants who were considered to be more important than city dwellers in the political situation at that time. This levelling of status would decrease the differences between farmers and workers, between villages and cities, and between physical work and brain work. Another purpose for sending *zhiqing* to remote villages was to alleviate the pressure on consumption and having to allocate jobs in urban areas (Gold, 1980). The similarity of these ‘sent-down’ experiences during the earlier life course of the present-day third agers has aroused common memories and helped to build a *zhiqing* identity. Yang (2005) has argued that the similar life experiences have shaped the collective memory for this cohort.

As a form of identity construct, *zhiqing* has developed into a cultural symbol. Many TV series, novels and movies, now targeting middle aged or ageing generations, reflect the *zhiqing* experience. There are also many websites for *zhiqing* groups to connect and communicate with each other, such as hxxq.net, and chinazhiqing.com. G. Yang (2005) has argued that *zhiqing* is forged by common experiences of the past. Davies (2005) has explored old photos of *zhiqing* and emphasised the importance of nostalgia about former *zhiqing* lives in negotiating conflicting memories of the Cultural Revolution, and critiquing economic inequity and social class distinctions. In another article, Yang argued that in the 1990s *zhiqing*’s nostalgia was a form of cultural resistance against the changing conditions of Chinese modernity and this has shifted Chinese political life from ‘macro politics mass political campaigns to a micro politics of social and cultural orientation’ (Yang, 2003, p. 267). One particular group in the Cultural Revolution generation, named *laosanjie* (old three classes), have built a strong generational identity for themselves. Nowadays, they are over 70 years old. *Laosanjie* refers to students who would have graduated from middle school and high school in 1966, 1967 and 1968 (Yang, 2005). Six grades could

graduate in the same year; this was a special phenomenon in China's history. After their graduation, most were 'sent down' (to get further education in rural villages).

Marquis and Qiao (2020) have explored entrepreneurs' life course experiences of the Great Leap Forward famine in 1950-61 and argued that those who experienced this difficult time in their earlier life can cultivate cost reduction and resource repurposing abilities, which can help them in facing later situations. Likewise, the sent-down experience cultivated third agers' aspirations and spirit in a certain way. The difficulties and hardships forged their strong will and helped them develop the creative ability to solve problems individually. They left their family and parents at an early stage. They had to rely on themselves to earn a livelihood, which cultivated their independent life skills and self-reliance. Their earlier life experience of being 'sent down' made them stronger and more independent.

After the Cultural Revolution ended in 1976, there was a need for the educated youth to return to the cities. In 1978, 'The national working conference on educated youth who went up to mountains and down to the countryside' stimulated this mass return. The *gaokao* (college entrance examination) was reinstated in 1977 after being suspended for 10 years during the Cultural Revolution. This generation was able to go to university, which also reopened in 1977. In theory, more than one member of each family were now able to go to university at the same time. However, in reality, only a small number of the *zhiqing* continued their education; most lived in the large cities and the majority had no chance to get an education because of the limited economic resource.

Another transition during the third agers' life course was the changing function of the work unit (*danwei*). The work unit system provided a pathway and allocated living resources for employees. Few decisions needed to be made by individuals. However, there was no real career mobility. Most people worked in state-owned enterprises or for the government. The beginnings of the economic reforms in 1978 saw free enterprise emerging, firstly among farmers, and then later among the general community. The first entrepreneurs were called *getihu*, literally small scale business. The third age cohort experienced these dramatic changes. They were the first generation in modern Chinese history who could make decisions by themselves; previously, everything was governed almost entirely by others, including where to

work, and who to marry (Osnos, 2014, p. 7). In the 1990s, the reform of the state-owned enterprises led to the work unit withdrawing its direct role from people's lives and this led to thousands of 'laid-off workers'. Most of the laid-off workers belonged to today's third age group, particularly those who could not get sufficient education during their younger life course, so they did not have the skills and knowledge to get a new job in the market economy. Some were able to run small-scale businesses as *getihu*. Part of the laid-off workers then began to learn new skills to engage with the new environment. Yet some retired compulsorily from their work unit and became unemployed. For most of the third agers, their experience of being laid off reinforced their independent ability and self-reliance.

In addition to changes in the family, education, and the work unit, the economic reforms changed people's consumer attitudes and lifestyle. Prior to the reforms, people advocated Mao's (1966) saying that 'frugality is one of the fundamental principles of the socialist economy' (pp. 160-161). During the economic reforms, Deng Xiaoping announced that to 'get rich is glorious'. From 1978, China began to implement domestic reforms and open up internationally. The opening-up policy started from the de-collectivisation of agriculture in Xiaogang village in Anhui province. In 1979, Guangdong and Fujian were given substantial autonomy in international trade and investment. In 1992, Deng's 'southern tour' affirmed the opening-up policy. According to a study by Sung (1991), the opening-up policy experienced three cycles of liberalisation and retrenchment in 1979–80, 1983–84, and 1988. Each time, regions were 'given substantial autonomy in international trade and investment', then this was followed by 'retrenchment' because of inflation (Sung, 1991, p. 7). Because Sung published the book in 1991, he did not witness Deng's southern tour in 1992. However, the third agers, who had experienced famine and the planned economy with the restrictions on food coupons, saw the great changes brought about by opening up, with China moving into the 'socialist market economy' during the 1990s.

The opening-up policy of the Deng Xiaoping era changed people's consumption attitude and lifestyle. The benefits are well noted. Chinese people have achieved 'longer, healthier, more educated lives' by improving the average income from \$200 in 1978 to \$6000 in 2014 (Osnos, 2014, p. 4), while the average GDP achieved in 2019 was \$10,276 (The Economic Times, 2020). People developed personal

ambitions, especially the third agers, who experienced the changing political events during their life course. Before the economic reforms, the government had promised equality to the people; this was the belief in communism, that one day there would be a bright future. After 1978, people accepted the socialist market economy and began to aspire towards materialism.

The third agers of today have realised many of the benefits of materialism in their daily lives. Many goods provide a better life quality. Because of China's economic achievement in the past four decades, Chinese people have cultivated ambition and a positive attitude towards the future. At the same time, the Chinese government has promised prosperity, pride and strength to its people (Osnos, 2014), which further reinforces people's positive attitudes about the future, their aspirations and their ambitions. Nowadays, the transitional generation of people born in the 1950s and early 1960s have entered their retirement life. Technological developments, such as mobile apps, AI and virtual reality techniques, play a key role in providing a more creative, active and independent life for today's ageing population.

3.8 Changes in communication media

Changes in communication channels in China to a large extent reflect the development and changes in society and people's lifestyle. They also reflect changes in technology. Before the economic reforms of the 1980s, people mainly communicated face to face. People who lived far away from each other communicated via letters (handwriting). Even now, some of the older members of the population like to recall and cherish the 'slow time' of the past; they think that handwritten messages are more sincere and contain more emotional value. People could feel the physical paper and see the shape of the written characters. A popular poem, entitled *Slower Days in the Past*, written by Mu Xin, expresses these sentiments:

Days were slower in the past, /

Carriage, horse and mail did not reach fast, /

A lifetime was only enough to be in love with who is right.

(X. Mu, 2009, p. 58)

Donald and Keane (2002) have structured the changes and development of China's media into three periods, namely pre-reform, 1980–99, and after 2000. During the pre-reform period, the main types of media were print, posters, radio, loudspeakers, film and terrestrial TV. From 1980–99, online news, chat rooms, DVDs, VCDs and cellular telephones emerged; this trend showed the diversification of choices that came with becoming a consumer society. Since the beginning of the new century, broadband, digital TV, WAPs and various new media technologies have rapidly developed. The third agers in my study experienced all of these media reforms and they went from analogue to digital devices by the time they were in their forties. According to Donald and Keane's (2002) study, the media's function changed from propaganda during the pre-reform period, to pedagogic guidance of attitudes, consumption and conduct during 1980–99, and in the process began to provide informational and cultural choices (p. 6). Today, the media's function is more about personalised services.

In the 1950s and 1960s, when the third agers were just young children, China's leaders used radio broadcasts through loudspeakers to announce important information to the public in villages and also in the work units (*danwei*) in cities. People could read newspapers but there were limited choices available. All newspapers at the time were state-owned, circulating propaganda, and not much else. At the same time, however, newspapers were not consumed on an individual basis. Instead they were circulated among groups; often the *danwei* would have a subscription. Even today the practice of shared newspapers can be seen in cities, displayed on public notice boards in the streets. Newspapers, magazines, TV and radio began to support themselves by selling advertisements in the marketplace (Shirk, 2011, p. 9).

Magazines and books become popular in the 1980s as China took the first steps in opening its media to commercial investment through advertising. The third agers were now in their teens. Magazines emerged gradually, evolving from military magazines to fashion and, much later on, 'self-help'. During the 1980s, popular books and magazines on health were a rarity. Books on medicine were meant for education, not to be read as popular culture. Farquhar (2001) has written about the

emergence of self-help information in Beijing in the 1990s. The rise of the media also led to a flowering of popular culture magazines. An example of a media-related magazine is *Popular Cinema (dazhong dianying)*. It achieved the world record of the highest sales of a single volume in 1982—almost 10 million (Liu, 2011).

Considering that every copy of this magazine would have been circulated among a group of people, its actual audience would have been many times more than 10 million. Today, the same sharing practice happens with social media, although at a much faster rate.

While television came to China in 1958, it was a limited form of media because people could not afford to buy TV sets until the mid-1980s. In the beginning, there were only black and white TV sets. People could select from few choices for content: mostly state news and TV dramas. The price of a black and white TV equalled a worker's annual salary in the 1980s. In the 1990s, the colour TV entered people's lives but it came with an even higher price. Because TVs were expensive, television watching became a family affair in the cities, and a whole village affair in villages. People did not have personal portable devices as they do today so everyone shared the same screen. People watched the same things on their limited media choices. As Donald and Keane (2002, p. 9) note, before the commercialisation of China's media, 'leading cadres' (*lingdao ganbu*), the minority elite group in China, set the agenda for TV content and decided what was appropriate for the majority. Later, with increasing social stratification and the opening up of society, the control of culture was decided by market forces, not only by the leading cadres (He, 1994).

In the new era of openness, many new cultural 'fevers' emerged (Osnos, 2014, p. 3)— for example, people chased after new ideas, such as the western business suit fever of the 1980s, private telephone fever, and the beeper machine fever in the 1990s. In the late 1980s, the first electronic message system emerged; this was called the *dageda*. People could now send messages to each other, although the device was mostly used by business people. It was, according to Osnos (2014), the 'age of ambition' and people were finding new ways to seek out information. Although telephones were rare in the 1990s, personal beeper machines became popular. Fax machines provided the fastest means of communication for businesses. After the 2000s, the price of TV sets decreased dramatically. Due to the cheaper prices, many families had more than one TV and watching TV was no longer a whole family

activity. For families who had more than one TV, people watched TV in different rooms. The remote control was the next step. This was the beginning of media personalisation.

In 1994, China connected with the world through the Internet. Computers began to become a key part of people's daily lives, although it would be a while before the personal laptop was available. Connections were made online through crackly modems and most computers were found in universities or work units. Many of the third agers would have seen the early computers in China but few would have known how to use one. In the late 1990s, Internet cafés emerged in the street corners in urban areas and attracted many young people. From 2000 onwards, computer courses became compulsory for primary school students. By then, the grown-up third agers would be looking to purchase a computer for their one child. The computer replaced the TV as the most expensive device in the family. Several years later, people began to purchase laptops.

In the past decade, smart phone and mobile apps have become essential consumer items in people's daily lives. The pervasive consumer culture has caused people to buy more technological devices. Hence, the rapid development of Internet-based devices has changed people's communication practices and their lifestyles. People do not share the same screen any more, even if they are under same roof, or sharing the same table. If people need to use another person's device, they can just log in to their own account to access the same app or platform. Communication tools and media are increasingly personalised and individualised. The present-day third ager is more likely to watch TV on his or her phone, while the family's 'one child' plays games. The pervasiveness of smartphones and mobile apps in the past 10 years has made media more portable and personalised. In *Alone Together*, Turkle (2017) has argued that we now expect more from technology and less from each other.

However, in academia, few studies have paid attention to the relationship of changing lifestyles and changing media use. In comparison, many published works have explored Internet development and censorship in China (Liang & Lu, 2010; Zittrain & Edelman, 2003), the challenges of the Internet for governance (Taubman, 1998), and the relationship between the Internet and democratic processes (Taubman, 1998; G. Yang, 2009). Damm (2007) has examined the use of the Internet in China

and argued that urban and consumerist lifestyles have changed Chinese society and that scholars should therefore pay attention to the emergence of a consumerist postmodernity in China. Damm (2007) found that Chinese policy discourse regards the Internet as a tool that can prompt economic development, especially by using information and communication technologies to achieve ‘technological leap frogging’ (*jishu kuayue*) (p. 279). Nowadays, Chinese people are part of the digitalised world and living in an information society. The role of information is as important as money and time. People have begun to rely on technologies to seek information and opportunities. Osnos (2014) has depicted China’s society in the twenty-first century and argued that technologies have changed its political culture. People now know more than they did before, hence there is now a collision of aspiration and authoritarianism in China.

Exploring the development of communication and media tools in China, we can observe that the increasingly personalised nature of communication/media tools has converged with the process of individualisation. People have used media channels to seek out information, make connections and build businesses. Families use new media to stay in touch from afar. Since the opening-up policy of the 1980s, communication has changed from a public mass propaganda tool to more personalised services. These products can be found in shopping malls and their brands compete for people’s attention, offering new lifestyles. The current third agers were the first cohort to experience this personalisation of the media. Although mass media and public information still exists, it is individual’s choice and decision to accept or skip, or record and watch them later. Donald and Keane (2002) have argued that ‘cultural consumption is largely a matter of choice’ (p. 9) whereas previously there was little choice. The remote control allowed people to change channels; now, the mobile phone allows people to change their lives. However, personalised communication makes people rely on technologies more than on each other. People may change their friends but they are afraid to lose their phones.

3.9 Individualisation, industrialisation and urbanisation

People’s lives changed dramatically in China because of the socialist market economy. Deng Xiaoping’s economic reforms have had a significant effect on the

way life is organised in China. For many years, the government tried to provide all people with food and jobs. Since the early 1980s, the government began to encourage people to make money on their own (Kalman, 2008). Material civilisation became an important theme as it signified socialist development. The economic reforms allowed farmers to go to urban areas to make money: these were called ‘free markets’ (*ziyou shichang*) (Kalman, 2008) People began to seek out material goods to make their lives different from others. Commodities included houses, cars, TVs, fashion items, and so on. At the same time, the power of the work unit (*danwei*) began to decrease in people’s lives. As previously noted, before the 1980s, Chinese urban society was organised by the *danwei*. The *danwei* controlled the resources and social rights, and were responsible for people’s lives from birth to death (Kang, 2007). The structure of the *danwei* was responsible for everything for workers, from the cradle to the grave.

Today, people have more opportunity to make decisions for themselves. In western contexts, the concept of governmentality (Dean, 2017; Foucault, 1991; J. Powell & Cook, 2000) describes how the state has moved away from people’s lives and allows them to make their own decisions, although in practice the state maintains its control over people by a new kind of instrumental rationality. In western societies this rationality is very evident, a form of self-control that allows society to be productive (Rose, 1990). In China, the state has similarly moved further away from people’s lives and allows them to make choices for themselves, but it is not completely distanced from people’s lives. The state is intent on maintaining order in China, which requires that it be visible. It is difficult, therefore, to use the term ‘governmentality’ in the same way that it has been used in the west where it is embedded in the idea of freedom and rights. Another way to show the extent of people shouldering their responsibility is the concept of individualisation (Beck & Beck-Gernsheim, 2002; Y. Yan, 2010). For the Chinese government, the question becomes one of managing the resources allocated to society in the interest of stability and economic prosperity.

Beck and Beck-Gernsheim (2002) uses the term ‘individualization’ to refer to developed societies. In an essay titled ‘He is He and I am I: Individual and Collective among China’s Elderly’, Thøgersen and Ni (2010) set out how the new ‘self-determining individual’ operates in China. This essay is published in an edited book

titled *iChina: The Rise of the Individual in Modern Chinese Society*. According to Beck, who provides the foreword to this book, individualisation means that people have more autonomy to make decisions that relate to their own life course. However, this does not imply individualism. It means that, as relatively autonomous individuals, people start to plan for themselves, and they can now make decisions about their lifestyle. In the past, the term ‘iron rice bowl’ indicated that the state would look after all workers’ needs. In those times, options to make decisions did not really exist. Individualisation describes the process whereby people are freer to make decisions about what they do with their money, time and life. Nowadays, keeping healthy and independent to reduce the family burden has become a common belief for many members of the ageing population. Findings from Thøgersen and Ni’s (2010) research on the rural elderly indicate they have begun to accept individual responsibility, whether by force or voluntarily.

Urbanisation, the Internet and digitalisation have influenced people’s lifestyle, too. When the reforms were starting, people did not have mobile phones and computers. People communicated face to face. Now, ‘face time’ is conducted via Skype and WeChat. While many third agers have retained their old lifestyle and consumer habits including, for instance, frugal spending patterns, they also go online to search for information, especially medical information, and keep in touch with their children in other cities or overseas.

Internet and mobile devices have penetrated more broadly into society because of less expensive prices. Even the lower socioeconomic groups can keep pace with the ‘wireless market’ (Qiu, 2009, p. 129). Nowadays, people can do many things online during their spare time. However, while life in China has been influenced by western styles, Chinese people have still retained their traditional values and understanding of life, relationships, family and culture. Early in the morning, the elderly head to various parks and squares in groups to do their morning exercises, including tai chi, martial arts and dancing. However, with the assistance of technology, they have more options. They can use WeChat as an instant messaging tool to notify each other of the time and location of their gatherings; they can use cameras to record their activities and post the photos on social media; they can learn how to dance from apps and by dancing together in the square.

Individualisation and collectivism thus mutually influence the practices of the third age group. Third agers in China make decisions for themselves. At the same time, some of them still choose to sacrifice their own interests for their family, such as devoting time and energy to look after family and grandchildren, and doing exercise to maintain their health in order to decrease the family's burden. They had previously adapted themselves to collectivism, but now they are experiencing the effects of individualisation. Their behaviour is more individualised but the purpose of their behaviour is still for the group's or the family's interests.

What has changed markedly in the past two decades in China has been people's access to technology—as well as a spike in the number of third agers, as the Chinese baby boomers leave work. Chinese third agers did not adapt to using the Internet until the early 2000s. Many mature people, in fact, learned to use the Internet from their children. The young generation and people with higher education were the first groups to use the Internet. Subsequently, many people began to use the Internet in their workplace. They became familiar with how email works, how QQ works, and how Baidu works. It is therefore commonplace to use terms associated with technological progress to signify how people are being liberated from manual labour and time-consuming repetitive tasks. Instant messaging allows us to stay in touch, social media builds relationships, and apps deliver multiple productivity and social benefits to users.

These affordances have changed people's lives in China, allowing them to be more individualised; this is not to say they have embraced western-style individualism but rather they have more opportunities for individual self-realisation. China's ageing society now has a digital context and the third age is where we see this trend play out, such as online businesses selling products which are related to that stage of life. With the development of digital technology, more studies have begun to explore how this technology can be used to help the ageing population with ageing-related problems (Czaja & Lee, 2006; Drew & Waters, 1986; Sadana, Blas, Budhwani, Koller & Paraje, 2016) and build a new lifestyle. Y. Li and Perkins (2007) have argued that, according to their research in the United States, the majority of senior citizens view technology in a positive view and believe it will produce a better quality of life for themselves and society.

Changes in society in China following the opening-up policy, along with changes in the retirement pension system, forced policy makers to consider how to engage technically skilled retired people in contributing to the national cause. Policies were put forward, such as ‘support retired professional and technicians in continuing to play their roles’ (*zhichi lituixiu zhuanye jishi renyuan jixu fahui zuoyong*) in 1986 (General Office of the CPC Central Committee, 1986). In 1990, Jiang Zemin expressed the view that it is important for China to ‘unite the vast number of retired scientists and technology workers’ and encourage them to work for national rejuvenation after their retirement (Ren, 2020). In 1994, another government document, named ‘China’s seven-year development program on ageing’ (*Zhongguo laoling gongzuo qinian fazhan gangyao*), emphasised the role of the retired ageing population in social development (State Development planning Commission, 1994). From these policies, however, it appears only educated retired people received attention.

3.10 Conclusion

This chapter began with an illustration of the cultural context of this research project. It has provided the cultural and social background, emphasising the importance of family networks and relationships. The chapter described changes in Chinese people’s daily lives in the past several decades and showed how the government has withdrawn gradually from people’s lives. The third age group has acquired digital literacy, unlike people who are 10 years older. The image of ageing has also undergone some significant changes in China. Much of this has to do with the fact that people are expected to look after themselves; that is, the state no longer ‘takes care’ of people through all the life stages. As part of the global ageing society, China has realised the problem of dramatic ageing, in which the one-child policy has played an important role. The more developed retirement pension system and the annually increased retirement pension are providing better life quality for the ageing population. The image/role of ageing population is having a significant change. In recent years, the government has re-emphasised traditional values including filial piety, returning the ageing population to its respected position in society.

The emergence of third agers and the dramatic development of digital technology in China have exacerbated the process of individualisation. In particular, the ‘mobile

use only' phenomenon is changing people's media use. As I will discuss in the next chapter, various apps supply different content for people to learn, engage with and consume. With digitalisation, the individual's digital capital and mobile use ability have begun to influence their daily life. Given that the third agers are a transitional group in using technologies and mobile technologies in particular, how they use mobile devices and apps to engage in society, and for entertainment and exercise in their daily life, is a worthy topic of study. This research project will explore these considerations in detail in the following chapters.

Chapter 4: The Internet Revolution and the Uses of Media among Third Agers

China was once isolated; however, it is now globally connected, as a modernising country. While the Internet has been dominated by young people, especially those in cities, in the last 10 years, the online world has further expanded to include all kinds of people. The price of mobile phones has dropped and because most people are online, more services are provided online, even government services. Digital technology allows third agers to engage in a wider range of activities and provide many people with a sense of fulfilment.

The connection between media use and ageing is central to this thesis. The uses of media (mobile phone and apps) and various media practices will be explained in the context of the Internet revolution. The development of connectivity during the past two decades in China has changed people's lifestyle. Moreover, the growth of China's mobile industry has enabled users to access online content. The affordance of social media, such as WeChat, is helping users to build their digital capital. This chapter therefore considers 'digital capital', a concept used by Park (2017) that describes both digital literacy and access to technologies. Considering that the third agers in China are transitional group who now live in a world of digital experiences, their accumulation of digital capital influences their quality of life.

This chapter provides a brief history of the Internet revolution and digital development history in China. It then examines the uses of media. When we consider the rise of the ageing society globally, and especially the critical development of the ageing society in China, it is evident that it is now important to study how the ageing population uses media. Although previous studies considered applied use in different media platforms and in different groups, few studies have focused on ritualised use and instrumental use, and equally few studies have addressed the ageing population. Following Rubin's theory, this chapter will discuss both ritualised and instrumental uses of mobile phones and consider how these can help the third agers to engage in online and offline society. This theoretical approach will be applied to my research findings and elaborated on in later chapters. Finally, the chapter will connect the ageing population and uses of digital technologies, and illustrate the importance of digital capital and digital literacy for the individual's life quality.

In the context of digital China, the rapidly emerging digital environment, with its key market demographic being young consumers, might not appear to represent a friendly environment for many members of the ageing population. However, when we come to consider third agers, who belong to the transitional group in using digital technologies, we see that their high level of mobile use shows that they are an under-researched cohort.

4.1 The development of digital technologies in China

The Internet has developed significantly in China in the past 23 years, since its introduction in 1994. Due to a 64K international dedicated circuit opened by the NCFC (National Computing and Networking Facility of China) project, China became the 77th country in the world accessible to the Internet. According to the Statistical Report on Internet Development in China (CNNIC, 2016), which is updated twice per year, changes have been rapid. Comparing the 1st (CNNIC, 1997) and 38th Statistical Report on the Internet Development in China (2016), we can see that there were only 299,000 connected computers and 620,000 users in 1997. By 2018, there were 829 million users in China (CNNIC, 2018) and the popularising rate of the Internet had already reached 55.8 percent (surpassing 4.1 percent of the globally average rate and 9.1 percent higher than the average level in Asia). By 2017, 209 million Internet users were in rural areas (CNNIC, 2018). This data is evidence that computers and Internet-based technologies have already become an indispensable part of daily life of the Chinese people.

Some Chinese scholars have divided the development history of the Internet in China into three phases—commercial, institutional and cultural. According to Fang et al. (2014), the first phase (1994–2001) was commercial, including technological development, starting a business online, new applications and investment. In the first phase, much of the focus was on how to start a business on the Internet. In the second phase (2001–2008), attention focused on the social functions of the Internet and the regulatory policies formulated by government. The second phase included governance, institutions, policies, security and laws. Cultural and democratic aspects increased in the third phase, which is the most important phase in China as it

represents greater cultural and democratic development in the country. Emphasis in the third phase turned to instant online communication and issues of national security. In many respects, these developments parallel technological developments internationally.

From what is discussed above, we can see that the Internet plays a different role in China compared to many other countries, especially when considering liberal democracies. For developed countries, the Internet is a natural outcome of technological development and social progress. However, it does not only aid in the promotion of economic development in China but also has an important role in the process of democratisation.

The second issue to consider is the mobile Internet in China. There is a high penetration rate of smart mobile phones in China. By 2019, there were 854 million Internet users in China—and of these, 847 million users are mobile phone users, or 99.1 percent of the total Internet users (CNNIC, 2019b). The male and female user ratio is 53 to 47 which closely parallels the gender ratio (51.2 to 48.8). In terms of age, those from 10–39 years old represented 65.1 percent of the demographic, while people aged from 20–29 represented 24.6 percent. Significantly, the number of people who were over 50 at the end of 2018 was 13.6 percent (CNNIC, 2019b). Compared with data from previous years, Internet use has continued to increase among people over 50. The average number of apps installed on mobile phones by people over 60 is about 33 (CNNIC, 2019a). The high penetration of smart mobile phones illustrates that China has accelerated into a mobile age.

All of this shows a totally different picture from previous decades. In the 1990s in China, there were no smartphones and wireless connections. The phone in that time was immobile and cumbersome. Figure 3 shows the development of the cellular phone. The first mobile phone was developed in 1973 in America by Martin Cooper (Molina, 2013). After 14 years, in 1987, the mobile phone came to the Chinese market (DailyView, 2016).



Figure 3: The development of the mobile phone (DailyView, 2016)

In the last two decades, China's mobile industry has developed rapidly. Local brands, such as Huawei, Vivo, Oppo and Xiaomi, have made the price of the mobile phone more economical and acceptable. Moreover, wireless Internet connection has become increasingly accessible to people. China has undoubtedly been the beneficiary of catch-up technology; that is, many technologies developed globally have been introduced into China at cheaper costs (Keane, 2007).

With the development of digital technology globally, studies have begun to explore how digital technologies are being used to help the ageing population. One branch of these studies is focused on the use of digital technology to solve age-related problems, such as physical decline including age-related disability and diseases (Helbostad & Vereijken, 2016), and mental decline, including memory loss and decline in cognition (Czaja & Lee, 2006; Drew & Waters, 1986; Pollack, 2005). Several decades ago, Drew and Waters (1986) studied the potential benefits of digital games, pointing out how they can improve manual dexterity, eye-hand coordination, reaction time, and other perceptual-motor skills. Experts have designed assistive technology and ageing-friendly environments in Japan (Muramatsu & Akiyama, 2011). Mobile apps can solve problems and improve the quality of the daily life for

the ageing population, such as using gaming apps for improving the cognitive condition, and activity apps for exercise.

The other branch of research is mainly about social and cultural participation based on social media (Hargittai & Walejko, 2008), cultural representation (Craciun & Flick, 2016), new identity (Rodan, Ellis & Lebeck, 2014), and social reconstruction of the ageing population through social media and smartphones (Baars, 1991; Buse, 2010). In addition, people use mobile apps with their significant others (e.g. family members, close friends) and develop engagement with online communities.

Ijsselsteijn, Nap, de Kort & Poels (2007) have argued that digital games hold significant positive potential for elderly users, including the therapeutic value of gaming. Olphert and Damodaran (2013) conclude that older people can maintain their independence, social connectedness and sense of worth in the face of declining health or limited capabilities with the help with being digital.

Comparative studies of national territories and regions have shown that people over 60 seek out health information and emotional support online in China (Cai & Zang, 2013), develop social relationships online in the EU (Ijsselsteijn et al., 2007), find greater independence in China and the EU (Du, Yang & Dong, 2007; Ijsselsteijn et al., 2007), develop self-esteem in the United Kingdom (Olphert & Damodaran, 2013), or challenge social representations of senior demographics by coding and decoding media messages (Rodan et al., 2014, p. 52). These studies affirm that senior citizens can get benefits once connected with digital technologies.

From the perspective of governance and policy, digital technologies, especially mobile apps, are a cost-effective way to help people to engage in society and support them in living a more creative and active retired.

4.2 'Mobile use only' among third agers in China

Nowadays, in China, the mobile phone is a pervasive tool in people's daily life; in 2019. Chinese people have been quick to adapt to 'mobile use only'. This is especially true for retired people who do not need to work with computers or laptops anymore. Miller (2018) posted on his Twitter that the ageing population in China use

smartphones for a longer time than the younger generation. Chinese third agers have experienced the emergence of the ‘mobile use only’ phenomenon in their daily life. ‘Mobile use only’ will be explained further in the case studies in chapters six and nine.

The development of smart mobile phones and mobile apps in China has been rapid. China has many very successful technology companies and mobile phones have become ever cheaper. As mentioned earlier, the average Internet speed in China surpasses the global average connection speed at 7.2 Mbps (Thompson, Sun, Möller, Sintorn & Huston, 2017); this represents a great achievement in a country that is so large. Connected devices, especially mobile phones, are an indispensable part of daily life.

Although the dominant Internet users are aged between 10–39 years old, the rate of Internet use by people over 50 increased from 10.4 percent in 2018 to 13.6 percent in 2019 (CNNIC, 2019b) and more people over 60 have accepted the Internet and mobile apps in their daily life. The second-tier cities, which are the gathering places for third agers in China, show the same trend. ‘Mobile use only’ has become a particular defining phenomenon among Chinese people and is more obvious for early retirees. As I have discussed earlier, the first reason is they do not use computers to deal with work tasks anymore; second, the smartphone has become more accessible; third, they have accumulated significant digital capital during their working life.

People now use the new media in many different ways. They do not use media as their grandparents did. The boundary between online and offline worlds is harder to distinguish nowadays. QR codes are popular and widely used in China; it is convenient to simply scan them to ride a bicycle, shop, and add friends offline. For example, during the Chinese New Year, people watch the televised gala and scan the QR code shown on the TV, and shake their mobile phones to get lucky pocket money for fun. Their playful use of the mobile phone is far beyond simply using it as a machine. To some extent, the third agers are using the mobile phone to create new rituals in their daily life as well as deconstruct traditional rituals. Because mobile media is always on and is always with you, society is increasingly mediated by mobile technologies. As this research project focuses on how third agers use mobile

phones and apps in their daily life, the categories of media use will be explained here and applied in chapter six.

As previously discussed, people over 60 use 33 apps on average in their daily life (CNNIC, 2019a). These apps includes social media, exercise apps, entertainment apps and online shopping apps. According to my fieldwork, the social media apps include WeChat, Sina blog and QQ; exercises apps include fitness-related apps, including apps for square dancing, running and heart rate monitoring. In addition, exercise functions are embedded in different apps, such as step counting in WeChat. Entertainment apps are increasing, such as video platforms (iQiyi, Douyin, Xigua and Meipai), while games apps include Fighting Landlord, Counter Strike, and Happy Farm. These apps afford people new possibilities to engage socially.

As people have become used to phones, their lives have changed. New apps enable third agers in China to engage in a vast domain of practices. Search engine apps, such as UC and Baidu, enable the ability to search for information. Couldry (2012, p. 47) has called this ‘searching and search-enabling’ and argued that ‘the vaster the Internet becomes, the more salient will be the differences between people’s search strategies and skills’. This will be explained in my case studies in chapter nine. If knowing how to search for information is about knowing the mediated society, then ‘showing and being shown’ illustrate how social and public space is being ‘rekeyed via media-related practices’ (Couldry, 2012, p. 49). Chinese third agers share information in WeChat groups and they post photos on social media. Understanding this media practice from the age cohort perspective, the kind of photos shared illustrate strong cultural characteristics. Couldry (2012) says ‘once private life is being projected beyond its normal boundaries’ (p. 49). The third agers thus project their new image. To some extent, they use mobile apps to build a new image for themselves. This will be explained in chapter eight.

Together with showing and being shown, Couldry (2012) explained other media practices such as ‘presencing’ and ‘archiving’ (p. 50). Presencing refers to acts of managing one’s image through social media to others across space. Alternatively, presencing may simply be self-promotion. Some third agers use the tracing function app to trace their walking routine, to count steps, to compete with friends; they use cameras to take photos and shoot videos while travelling, and upload photos and

videos on social media or share these with friends; they play digital games online with their family members and friends—all these mobile phone and apps practice reflect presencing, as well as showing. If presencing refers to the effort to maintain an individual's presence on social media, archiving is the individual's practice of managing the information and image over time. According to my participants, sharing, posting and collecting information on their social media, such as WeChat, are the ways of archiving.

4.3 Uses of media: Ritualised and instrumental use

Uses and gratifications theory is a popular scholarly approach to understand mass media effect from the user perspective. This theory is an audience-centred approach used to study why people choose to consume forms of media to fulfil their gratification (E. Katz, Blumler & Gurevitch, 1974). This theory was proposed to challenge the mechanistic perspective of mass media effects which regard the audience as passive and reactive. Lometti et al. (1977) have explained that audiences do not passively wait for the media to exert influence, instead the recipients are 'active and knowingly selecting the communication channels and messages most likely to fulfil their needs' (p. 321).

Klapper (1963) has argued that mass communication research used to be directed by 'what the media do to people.' It has now shifted to 'what people do with media'. Rubin (2009) has claimed that uses and gratifications theory focuses on an individual's needs and gratification, and emphasised how communication influence is affected by individual differences and choices. In the increasingly digitalised world, uses and gratifications theory focuses on the motivation and consumption practices of users/customers in various new media platforms (Hossain, 2019; Khan, 2017; O'Brien & Toms, 2008). Uses and gratifications theory has been applied in many studies. These studies were explored from multi-dimensions, including functional and psychological dimensions, as well as gratifications or effects of access media (Rubin, 2009; Ruggiero, 2000).

Some scholars focused on the motives for using the different media. Papacharissi and Mendelson (2007) have revealed that habitual passing time and reality entertainment

were the most salient motives for watching reality TV among students. Khan (2017) has analysed the motives for the use of YouTube among universities students. Khan concluded that active participation and passive participation on YouTube gives us a different understanding of engagement in various ways.

The concepts of ritualised and instrumental use were proposed by Rubin (1984), based on an analysis of motives for television viewing. Papacharissi and Rubin (2000) have explored five motives of Internet use and used them to distinguish between instrumental and ritualised Internet use. Based on 864 telephone surveys, Leung (2001) has examined the connection of chronic loneliness and gratification to Internet use, and distinguished instrumental use (surveillance, affection and social interaction) and ritualised use (entertainment, escape and arousal) among people who are over 16 years old in Hong Kong. However, Papacharissi and Mendelson (2007) found that the strongest motives for watching reality TV were habitual, that is, for passing time and entertainment.

4.4 Digital literacy, digital capital

Gilster (1997) defined digital literacy as the ability to understand and use information in multiple ways, from a wide range of sources, when it is presented via the computer. However, digital literacy actually goes beyond knowing how to use software or digital devices, it also includes a large variety of complex cognitive, motor, sociological and emotional skills (Eshet-Alkalai, 2004). Coldwell-Neilson (2019) says that digital literacy is the ability to identify and use technology confidently, creatively and critically to meet the demands and challenges of life, learning and work in a digital society.

Most studies of digital literacy have been primarily preoccupied with information and skills, and ignore some aspects of the Internet which are influenced by broader cultural and social factors. Recently, scholars have begun to realise that digital literacy is not simply to do with information search and retrieval, but also in negotiating broader choices, such as entertainment, play, intimacy, communication, and even fantasy (Buckingham, 2015).

The digital literacy of third agers is illustrated in their considerable diversity when using technologies. Many have distinct life course experiences. As Chinese third agers are a transitional group in using digital technologies, they are in some respects different from people older than them who can live a meaningful life without digital technologies, or people younger who live in a more immersive digital world.

According to a report by the China Internet Network Information Center (CNNIC) (2018), more than 53 percent of the respondents expressed that the shortage of Internet skills and the limited digital literacy level are major factors in preventing non-netizens from accessing the Internet in China, although the report did not mention the scale of the survey.

My research argues that digital literacy, or alternatively, the ability to use mobile technologies, influences life quality. Third agers in China were not born digital but they have accumulated digital capacities and acquired familiarity with technology; in other words, digital capital. Different life course experiences can contribute to different levels of digital capital amongst Chinese third agers. Digital capital, in turn, influences the quality of life in retirement. Sora Park (2017) has defined digital capital as an individual user's digital technology ecosystem: it includes elements of economic, cultural and social capital. Digital capital is a predetermined disposition that determines people's use behaviour and preferences in using digital technology, as well as shaping and guiding how the user engages with digital technologies (Park, 2017). Alternatively, digital capital refers to one's ability to use digital technologies to realise specific goals.

The term derives from sociology rather than communications. Bourdieu (1986) has proposed different forms of capital—economic capital, cultural capital and social capital. Digital capital is more comprehensive and includes composites of economic, cultural and social capital (see Park, 2017, pp. 6-7), and it can help us to understand the impact and consequences of digital technologies in our lives. In the digitalised world, people 'cannot avoid accepting new technologies as the new technologies are pervasive and heavily marketed', otherwise 'non-adoption comes with cost' (Park, 2017, p.2). The term 'digital capital' relates to forms of access, sometimes called 'digital divides', as I will discuss below.

Park refers to people’s digital literacy, plus their access to networks, and their ability to use networks to communicate and to build business. Digital capital in China can be used to build economic, social and cultural capital (see table 2). It can be accumulated and shared.

Table 2: Social capital, economic capital, cultural capital and digital capital

<p>Social capital (Bourdieu, 1986, p. 21)</p>	<p>The sum of resources, actual or virtual, that accrue to an individual or a group by virtue of possessing ‘a durable network of more or less institutionalised relationships of mutual acquaintance and recognition’.</p>
<p>Economic capital (Bourdieu, 1986, p. 16)</p>	<p>Material assets that are ‘immediately and directly convertible into money and may be institutionalised in the form of property rights’.</p>
<p>Cultural capital (Bourdieu, 1986, p. 21)</p>	<p>The ways in which people would use cultural knowledge to undergird their place in the hierarchy.</p>
<p>Digital capital (Park, 2017, p. 8)</p>	<p>An individual user’s digital technology ecosystem. It is an individual’s pre-existing condition, a predetermined disposition that decides people’s use behaviour and their preference in using digital technology, and the ability to use digital technologies to realise specific goals.</p>

The concept of digital capital is applicable to my research because it describes the rapid transition of China from material society to digital society, in which so many services, including payment services, are now conducted on mobile phones. The world people live in today is a digitalised world. To some extent, the world is now more online than offline. Digital capital reflects the transition of Chinese society. According to Keane and Su (2019), this can even be called a ‘digital civilization’.

The digital civilisation enables a new way of changing culture and society, and allows people to build more relationships, maintain contact with each other, and exchange gifts in digitalised way, including reinventing traditional rituals of exchange. From this perspective, the new digital civilisation is positive.

The idea of digital capital explains the transition of China into a digital age. People increasingly access online apps services, including digital government services. Concepts such as digital natives (who were born after the digital age and became familiar with digital devices early in their life course) and digital immigrants (who were born before the digital age and acquired digital skills later during their life course) inform the concept of digital capital. Digital natives was a concept proposed by Prensky (2001). According to him, people born today are digital natives; they are born into a digital world. In the same source, he argued that adapting to new technologies is challenging for ageing populations. He contends that elderly people are ‘digital immigrants’.

These two terms, ‘digital natives’ and ‘digital immigrants’, have received many critiques. Jenkins (2007) has argued that not all of the younger generation are digital natives, although we frame the latter as a generation who are born digital. Moreover, digital natives share a common global culture not because of age, but by certain attributes and experiences related to how they interact with information technologies and information itself (Jenkins, 2007). McKenzie (2007) has a harsher opinion of digital natives and digital immigrants as terms and argued that they are inadequate for differentiating or understanding age and exposure. In China, digital natives can refer to the 80s and 90s generations who are born within the digital environment. Compared to them, people who belong to the third age or older generations are digital immigrants.

The third age population—‘digital immigrants’, according to Prensky (2001)—has relatively lower digital literacy and many experience barriers to digital inclusion compared with ‘digital natives’. However, many among the third age group are ‘already’ familiar with technologies; they have accumulated skills in using technologies during their working lives. So, in effect, mobile phones provide promising tools to improve the life quality of the elderly (Plaza, L. Martín, S. Martín & Medrano, 2011).

As economic, social and cultural aspects of society have become increasingly digitalised, the ability to adapt to the new technological environment influences an individual's well-being. Nowadays, China's population of the over 60s, who number approximately 249 million, constitute 17.9 percent of its total population (Council, 2019). They increasingly engage in the digitalised world and their ability to adapt to a mobile environment has become critical to their life quality.

4.5 Digital divides

The digital divide is a very important issue to address. The constantly evolving technology and related factors including digital infrastructure, education, digital skills, digital literacy, and even age and gender, have made the digital divide a hot topic in academia. Since the 1980s, heated debates have ensued about the term 'digital divide'. Some scholars categorise the digital divide as 'first' and 'second' digital divides according to 'access' and 'computer use' (Attewell, 2001). Van Dijk and Hacker (2003) have categorised the digital divide from the perspectives of mental access, material access, skills access and usage access. Others have explored digital divides from the aspect of online health information (M. Brodie et al., 2000), content creation and sharing (Hargittai & Walejko, 2008), and age differences in online social networking (Pfeil et al., 2009); still others have described a 'fourth digital divide' (Olphert & Damodaran, 2013) based on the change from digital engagement to digital disengagement among the ageing population.

The third age group in China, however, is experiencing more specific kinds of digital divides. In this research project, I will categorise different kinds of digital divides which are happening among the ageing population, both globally and in China, in line with prior research.

Access divide

Personal and family income used to play a major role in buying digital devices and connecting to the Internet. Attewell (2001) has argued that in the United States in the 1980s the poor were less likely to have connected computers than wealthy people. O'Hara and Stevens (2006) agreed with this idea and claimed there is a gap between

the haves and have-nots. Brodie et al. (2000) have found that children from lower income households are much less likely to use a computer at home than children from higher income families. According to a news article in *The New York Times*, former U.S. President Bill Clinton even tried to narrow this kind of digital gap by asking corporations to donate computers to poor schools and communities (Lacey, 2000). Although research has focused on the younger generation, the access divide also impacts on the ageing population. As mentioned earlier, not all of the ageing population have a smart mobile phone and can access mobile apps. Despite this, the smart mobile phone has become a popular device for Chinese third agers' daily life. As van Dijk and Hacker (2003) have noted that technology has involved into the society, is binding old and new social differences.

Usage divide

The digital divide is not merely determined by access. There is another kind of divide that is emerging and even increasing: van Dijk and Hacker (2003) call it the 'usage gap'; Hargittai & Walejko (2008) call it the 'participation divide'; and Pfeil et al. (2009) use the term 'social capital divide'. These terms show how the digital divide embodies complicated social and cultural factors. Among these factors, education, including digital literacy, plays an important factor in the digital divide; some scholars have called it the 'second digital divide' (Attewell, 2001). Education in this context does not only refer to school-based education (by teachers), but also family-based education as well as self-education in the digital age.

In this research project, it was found that mobile device literacy of the ageing population may be developed through family assistance; that is, 'technology feedback' provided by younger family members. Van Dijk and Hacker (2003) have argued that we should not only focus on the abilities to operate computers and network connections but also capabilities for searching, selecting and processing data. Digital literacy is not just about how to use software or digital devices; it includes a large variety of complex cognitive, motor, sociological and emotional skills (Eshet-Alkalai, 2004). Digital literacy and ability vary greatly among third agers, which is understandable considering their different life experiences.

With respect to Internet practice or participation, the ‘fourth digital divide’ is a kind of new digital divide, according to Olphert and Damodaran (2013). This means some older people have moved from digital engagement to digital disengagement. Based on previous studies, age is not the decisive factor. In the survey by Brodie et al. (2000), the respondents who answered ‘yes’ to the question ‘have you ever used a computer?’ varied from 98 percent in the 18–29 age demographic, 93 percent in the 30–44 demographic, 85 percent in the 45–59 demographic, to 46 percent in the aged 60 and above group, among 1506 participants (Brodie et al., 2000). However, according to Olphert and Damodaran (2013), age is an important, but not decisive factor, with respect to digital divides. In regard to gender divides, Hargittai and Walejko (2008) have stated that there is no noticeable difference in posting content online when participants have the same online practice.

The discussion of digital divides has trended from general to specific aspects. During the phase of first and second digital divides, scholars paid attention to general problems (access or education) (Attewell, 2001; van Dijk & Hacker, 2003). Later, scholars began to research specific digital divides, such as the age divide (Niehaves & Becker, 2008), gender divide (Novo-Corti, Varela-Candamio & García-Álvarez, 2014), race divide (Hargittai & Walejko, 2008) and participation divide (Hargittai & Walejko, 2008). Taking this into consideration, along with what other scholars have researched on digital divides and the ageing population, it can be concluded that the digital divide is a developing, complicated and dynamic phenomenon in which many factors influence each other, and which shows more diverse embodiment among the third age group.

4.6 Scholarship on digital technologies and third ager’s daily life

In the academy globally, scholarship on the relationship between digital technology and ageing is mostly concerned with issues of health although there is more research emerging on the use of media. Research on using digital technology to solve age-related problems has already been previously addressed. In recent years, Hughes, Warren-Norton, Spadafora and Tsotsos (2017) have explored the use of virtual reality (VR) and augmented reality, and argued that such technologies can be applied

to help improve wellness in ageing and decrease social isolation and loneliness. They further argued that designers should consider the abilities and attitudes of the ageing population towards VR narratives and platforms, while researchers need to explore the relationship between technologies and the ageing population from more comprehensive perspectives, such as economic, geographic and digital literacy perspectives.

Furthermore, studies show that people over 60 in China seek out health information and emotional support online (Cai & Zang, 2013). Other studies have looked at online social relationships (Ijsselsteijn et al., 2007), independence (Du et al., 2007; Ijsselsteijn et al., 2007), self-esteem online (Olphert & Damodaran, 2013), and have challenged the negative image of the senior demographic through decoding media messages (Rodan et al., 2014, p. 52). Digital technologies, especially mobile apps, can be a cost-effective way to help people engage in society and support them to live a more creative and active retired life. Largely published international studies have explored the potential affordance of digital technologies to help the ageing population with various ageing-related problems (Baars, 1991; Buse, 2010; Cai & Zang, 2013; Olphert & Damodaran, 2013).

4. 7 The Internet revolution and the sociology of ageing in China

In Chinese academia there has been an increasing interest in studies of the ageing population. Liu (2002; 2004) has explored the ageing demographic in Nanjing and found there were four main recreational activities: watching TV, reading newspapers, doing exercise and cultural activities. In terms of entertainment activities among the ageing population, Yan (2010) has explored the phenomenon of ‘villages in city’ in Henan province and argued that insufficient basic infrastructure for leisure activities, limited entertainment content and negative attitudes towards entertainment meant limited recreational choices for middle aged and ageing populations. Yan explained that while people who live in the ‘villages in city’ (villages that are located in cities) can live a fulfilled life and have plenty of free time, their leisure activities are quite limited, such as playing poker, chatting, watching TV, listening to the radio or occasionally attending temple fairs. Moreover, he found that the people who enjoy

entertainment will sometimes be criticised by relatives, friends or neighbours. From a cultural and social perspective, entertainment is still regarded as a distraction that makes it hard for people to focus on their work and shoulder their responsibilities in society. This negative attitude towards leisure was first observed in the 1950s, according to Davis (1991). At the same time, however, some other related activities are considered positive. Liu and Wu (2018) explored the role of square dancing among the female ageing population and argue that it is a form of identity building.

The development of technology has nudged the ageing population to change their lifestyle to a more digitally based one. Through the use of technologies, especially smartphones and apps, the ageing population have the potential to undertake more fulfilling activities. Sun and Zhao (2018) have shown how mobile phone photography can be a way for female third agers in Yunnan province to construct their identity online. Moreover, they claimed that the female third agers can engage in society through mobile phone photography, uploading content to social media, and having conversations and interactions with others online.

However, Huang and Pan (2018) have noted discrimination against the ageing population in cyberspace because the emoji that older people use are different from the younger generation. Differences in the emoji used by middle aged and elderly people, and the younger generation in China are regarded as a distinction of identity between ageing and young people in cyberspace.

Wu and Ding (2011) based their study on 410 surveys conducted in Shanghai, and took an optimistic attitude towards new media. They explored the potential of new media to optimise the ageing population's lifestyle, and came to the conclusion that intelligent technology can provide a new kind of lifestyle. In 2006, Chen (2006) had argued that a positive image of the ageing population in mass media will help them develop a new and positive identity about themselves. This conclusion is similar to Featherstone and Wernick's argument (2003)—whereby the image of the ageing population has changed from fragile to a more positive and healthy image, based on a study of *Choice Magazine* (see chapter three). These studies show different images of ageing and challenge the stereotype of the ageing population as being in decline and fragile.

4.8 Digital society

Globally, people live in a connected information society. Global mobile data traffic is projected to increase nearly sevenfold from 2017 to 2022 (Clement, 2019). Mobile Internet traffic in Asia and Africa occupied 61.7 percent and 59.8 percent of total web traffic in these regions respectively (*Mobile Internet traffic as percentage of total web traffic in January 2020, by region*, 2020). Mobile apps are being increasingly integrated into people's everyday activities. Google Play and Apple's App Store had a total number of 2.1 and 1.8 million available apps respectively in 2019 (Clement, 2019). The mobile Internet market worldwide is projected to grow by 2.3 billion subscribers, driven by a growth of 7.4 percent (*Global mobile Internet industry*, 2019). Internet technologies and the mobile industry have developed fast globally and offer people the potential to live a different kind of life than their parents and grandparents.

This is especially true for China. Digital technologies have developed significantly during the past two decades. China is digitalised in almost every aspect of society. Nowadays, according to Akamai's State of the Internet Report, the average Internet speed of China is 7.6 Mbps, which surpasses the global average connection speed of 7.2 Mbps (Thompson et al., 2017). The rapid development of mobile devices and accessing services on the Internet have led to some 'digital divides' among third agers in China. At the same time, mobile technology has the potential to enhance well-being and social engagement. The individual's digital capital has begun to influence life quality, especially for the third age population.

In the context of a connected society, mobile phone users use media in many different ways. It is therefore commonplace to use terms associated with technological progress to signify how people have been liberated from manual labour and time-consuming repetitive tasks. Instant messaging allows us to stay in touch, social media builds relationships, and apps deliver multiple productivity and social benefits to users. These affordances have changed people's lives in China, allowing them to be more individualised. They have more opportunities for individual self-realisation, at the same time being the target of online businesses selling products that are related to their stage of life. China's ageing society now has a digital context

and the third age is where we see this trend playing out, although it is a kind of western-style individualism.

4.9 Conclusion

This chapter has described the background of the development of the Internet age in China. Globally, we live in a connected information society and ageing society. Specific to China, the dramatic Internet revolution has afforded Chinese people the opportunity to practise various digital use. This chapter has identified the particular phenomenon of ‘mobile use only’ by Chinese third agers and categorised their digital media practice into ritualised use and instrumental use. Then this chapter has identified the ritualised use and instrumental use of mobile phones are beneficial for third agers to engage with the society. The chapter has also investigated digital capital, digital literacy and digital divides. Digital capital can influence third agers’ life quality deeply in the digital era. Moreover, third agers in China are facing more complicated digital divides.

By illustrating these concepts, it has shown the importance of this research on mobile use among the third ager group in China. Technology can optimise third agers’ lives and contribute to more optimal *use* of acquired digital capital. This partially answers the research question of this thesis: How do digital technologies and mobile apps allow people to live a more active and creative retired life?

The next chapter is about methodology. In the next chapter, I will introduce the specific methods adopted in this study. By comparing the previous studies and their methods, I will explain the reasons why I selected these methods to conduct this project and how these methods support each other to collect data and answer the research question.

CHAPTER 5: METHODOLOGY

5.1 Introduction

Investigating the third age's use of media in second-tier cities in China provides a number of methodological challenges for researchers. Limited research has been conducted with regard to media in comparison to the longer tradition of research on ageing populations (mostly in the fields of health and gerontology). The chapter begins by discussing some of the approaches employed in previous studies of media use and introduces the key approach adopted in this project, which is derived from social constructionism. Following that, the chapter will describe mixed research methods and the specific methods that were utilised in conducting this research. The chapter will also discuss the reasons for using these methods, and elaborate on the data collection locations and participants. Finally, I will explain the benefits and shortcomings of the methods for this research project.

5.2 Some previous approaches

Scholars have used a number of approaches to explore how ageing populations adapt to technologies. Chen and Chan (2014) have conducted a questionnaire-based study to explore how the older population in Hong Kong engages in social participation by using smartphones, and divided this cohort into two groups—that is, young-old (aged 50–69) and old-old (aged 70 and above) groups, according to their chronological age. They concluded that the young-old and old-old groups exhibited the same patterns in terms of the types and frequency of the mobile apps used. However, compared with the young-old group, a smaller percentage of the old-old group used mobile apps to communicate (Chan & Chan., 2014). The authors did not explain the deeper reasons for these differences.

Blit-Cohen and Litwin (2004) have conducted a study comparing ten elderly participants who use computers and ten non-computer user participants by using open-ended interview method among Israeli retirees. Three themes were found, including different understanding between cyber-participants and nonparticipants, changing meaning of old age, and effects to their social network through

involvement in the virtual world. H. Wu (2016, p. 431) conducted qualitative interviews among users of a website based in Shanghai called OldKids and found that participation helps members to maintain social capital and see themselves as having a specific shared identity. Among these interview-based studies, however, the samples are relatively small. Khosravi, Rezvani and Wiewiora (2016) applied a systematic literature review of empirical studies to explore the effectiveness of technology-based interventions for ageing populations' social isolation and loneliness. Similarly, Peek et al. (2014) used a systematic literature review to study the factors that influence the acceptance of electronic technologies that support older adults and distinguished the technology acceptance between pre- and post-implementation stages. According to their findings, most published studies found that technology use can enhance safety or social interaction, and that most of these studies are based on qualitative research. Burr and Morley (2020) likewise used a qualitative approach by exploring various concepts to study the empowerment and engagement of digital health technologies for mental healthcare.

5.3 The social construction of the third age

People post-retirement have long been regarded as a group in decline; that is, they have been imagined or 'constructed' this way in the media. Various images of wisdom, senility, failing health, and so on, have also been reinforced in cultural traditions, as I have discussed in the previous chapter. The heuristic approach adopted in this research project is therefore derived from social constructionism, following Berger and Luckman's *The Social Construction of Reality* and its updating to accommodate digital methodologies by Couldry and Hepp (2018, p. 6). Couldry and Hepp (2018) state, 'Because communication is the set of practices through which we "make sense" of our world, and build arrangements (simple or complex) for coordinating our behaviour, the communicative dimension of our practices is critical to how the social world becomes constructed' (p. 16). The term 'mediated society' thus refers to new data-driven infrastructures and communications (Couldry & Hepp, 2018). Couldry and Hepp further argue that 'deep mediatization', the ubiquity of digital media in society, now provides the building-blocks from which a sense of society and our world is 'constructed'.

Elsewhere, Jupp (2006) has argued that the value of constructionism lies in its recognition of the way in which ‘objects enter into social life through description’ (p. 40). When we consider the image of the ageing population, the stereotypical image is constructed by ‘description’ from various media. Nowadays, in the digital age, every aspect of the society is mediated by mobile technologies, a new image of the ageing population is being mediated by mobile media and apps. Retirees have often been viewed as an economic drain on resources, for example, health care. This view also applies in China although there are cultural variations. Retirees were ‘constructed’ in certain ways that developed the stereotype of the ageing population. Baran (2016) has argued that under constructionism, researchers focus on understanding people’s experience and generalising this to a larger group.

Furthermore, constructionism is well suited for qualitative research and seeks to uncover questions of ‘how’ and ‘why’ (Mukherjee & Kamarulzaman, 2016, p. 44). This project is asking the research question of ‘how’. Constructionism emphasises the constructed nature of reality and focuses on ‘recording, analysis, and attempts to uncover the deeper meaning and significance of human behaviour and experience’ (Mukherjee & Kamarulzaman, 2016, p. 46). In *Foundations of Social Research*, Crotty (1998) has argued that ‘meanings are constructed by human beings as they engage with the world they are interpreting’ (p. 43) and believed that the individual’s unique perspective and experience reflect multiple truths (Mukherjee & Kamarulzaman, 2016, p. 44). Although constructionism is dominated by qualitative methods, quantitative methods may also be utilised, according to Baran (2016, p. 48).

5.4 Research methods

The mixed methods approach, sometimes referred to as triangulation, is now widely used in the social sciences (Mukherjee & Kamarulzaman, 2016, p. 39). Mixed methods is a methodology involving collecting, analysing and integrating quantitative and qualitative research, and it means using more than one method to do the research; mixed mode studies involves qualitative and quantitative research methods being used in more than one stage of the study (Tashakkori & Teddlie, 2003).

Mixed methods combine ‘quantitative and qualitative methodologies within the same study in order to address a single research question’ (Jupp, 2006, p. 179). Mixed methods have been used in variety of fields, including education, evaluation, nursing, public health, and so on (Tashakkori & Teddlie, 1998, p. ix). According to Creswell, Plano Clark, Gutmann and Hanson (2003), conducting semi-structured interviews first and then developing a survey is sequential mixed-methods research. In this research project, semi-structured interviews were used first, followed by a quantitative approach—the online survey. The mixed methods of this research project can therefore be called sequential mixed-methods research.

Qualitative and quantitative methods can illustrate a research problem from different aspects which makes the findings more reliable. While the quantitative method aims at collecting data which is factual and presumably objective, the qualitative approach aims to find richer, more detailed and often subjective data (Steckler, McLeroy, Goodman, Bird & McCormick, 1992). In this research project, mixed methods are chosen to ensure reliable results and allow a more complete understanding of how the third agers in China use mobile devices in their daily life. The advantage of mixed methods is to gain a fuller, richer and more complete understanding of the research question (Jupp, 2006, p. 179). Moreover, mixed methods can build on the strengths and reduce the drawbacks of each research method (Mukherjee & Kamarulzaman, 2016, p. 39). Semi-structured interviews and an online survey were utilised in order to achieve fuller, deeper, more valid and reliable understanding of how mobile use can help the third age group to live a more creative and active retired life. Document analysis was applied to provide background information and socio-cultural context for the research question.

According to Tashakkori and Teddlie (1998, p. 18), methodological triangulation involves using qualitative and quantitative methods and data to study the same research. As this research project predominantly uses semi-structured interviews, supplemented by an online survey and document analysis; it is, therefore, based on a triangulation technique.

5.4.1 Qualitative approach: Semi-structured Interview

The semi-structured interview is the most commonly used qualitative method. It is a verbal interchange in which questions are asked based on a list of predetermined topics (Valentine & Clifford, 2003, p. 117). Although semi-structured interviews have prepared and structured questions, it can also ensure flexibility in the process of collecting information. The researcher is able to ask for clarifications based on the given responses. When conducted well, semi-structured interviews are non-judgmental and open to hearing what participants are saying. As Jupp (2006) argues, qualitative research emphasises the meanings and interpretation of social phenomena and social processes in the particular contexts by a range of methods. I incorporated the semi-structured interview approach to understand the effects of mobile use among third agers from the physical and mental aspect, as well as their engagement with social activities, and their differing levels of digital capital.

The semi-structured interviews were conducted in Zhengzhou from January to February 2018. People were interviewed in order to get a fuller understanding of the effects of mobile use for third agers, including those around their retired age, adult children, government officials and academic scholars. Different sets of semi-structured questions were designed for the participants. All of the semi-structured interviews had fewer than 10 predetermined questions. More detailed questions were asked according to the participants' responses. An audio recorder was used during the interviews which allowed me to pay more attention to the responses of participants.

As semi-structured interviews are an open way to hear individual experience, I took a flexible attitude towards the self-reported experiences of mobile use. Using the predetermined questions for guidance, I asked for more details according to the responses. The time taken in the interviews varied among participants depending on their respective experiences.

5.4.2 Quantitative approach: Online questionnaire survey

Questionnaire surveys are mainly used to collect large-scale quantitative data, which can reduce the limitations of the qualitative approach, such as 'small samples' and 'soft data' (Jupp, 2006, p. 249). Questionnaire survey research is used to gather information about the characteristics, behaviours or attitudes of the specific

population by administering a standardised set of questions (Valentine & Clifford, 2003, p. 87). Questionnaire surveys may have both closed or open-answered questions. A set of carefully designed questions are delivered to all participants in the same form (Jupp, 2006, p. 252).

In this research project, an online survey was developed following the first round of interviews and used to collect extensive data about some points of interest which were identified during the interviews. Moreover, with deeper understanding of the reasons, motivations and different experience of the third agers' mobile use from participants, the online survey allowed me to collect extensive objective data of mobile use among third agers in China.

The questionnaire surveys were delivered online via the popular social media app WeChat. I designed the questionnaire using the online survey program Qualtrics, and distributed the web link of the questionnaire to my interview participants via WeChat. These participants could then forward the link to their network, allowing more respondents to join and answer the online questionnaires. After the initial screening, 224 responses were found to be valid and subsequently analysed. The benefit of the questionnaire survey is to get more precise answers from respondents. As Valentine and Clifford (2003) argue, the questionnaire survey is helpful to find out about complex behaviour and social interaction. Quantitative research aims to get 'facts' about the world and behaviour (Jupp, 2006, p. 250). Therefore, for the online survey, the questions were designed mainly in relation to the third agers' experience of, and attitude toward, mobile use. The 'facts', in this regard, are based on the participants' self-reported experience and attitude toward their mobile use. Furthermore, I designed my survey as closed questions, including single selection, multiple selections and ranking.

Only 16 questions were included in the online survey. The questions are linked to specific chapters of my research project; for instance, question 13 is about the effects of mobile use for social engagement which relates to chapter six; question 8 and 12 relate to chapter seven; question 8 also connects with entertainment apps in chapter eight; question 14 is about the role of mobile devices in the third ager's daily life and will be explained further in chapter nine. The online survey questions include

participants' basic demographic information, the influence of mobile use on physical and mental well-being, social engagement, and attitudes toward mobile use.

5.4.3 Document analysis

Document analysis is often used in combination with other research methods as a means of triangulation for the same research purpose (Bowen, 2009, p.27). It is a 'systematic procedure for reviewing or evaluating documents' (Bowen, 2009) and is particularly applicable to a single phenomenon, event, organisation or program (Stake, 1995). This method provides important contextual data in this research project in order to gain understanding of the ageing society globally and develop empirical knowledge of previous ageing studies. Most of these data comes from institutional and organisational documents. Document analysis is used to provide data on the situation of the ageing society globally, as mentioned in chapter four, and the cultural context in China, as discussed in chapter three.

Bowen (2009) has explored the advantages and limitations of document analysis. Efficiency, cost effectiveness and availability are the three main advantages of this method. Document analysis is the process of data selection from the public domain, rather than data collection (Bowen, 2009). However, this approach has limitations. One limitation is that documents have been produced for specific purposes, which may be different from my research question. In this regard, it is important to provide context when using documents.

In summary, semi-structured interviews, online survey and document analysis have been triangulated in this research project to provide background, socio-cultural context and explore new findings in relation to the mobile use phenomenon among third agers in China.

5.5 Participants and location

5.5.1 Ethics

This research study received human research ethics approval from the Curtin University Human Research Ethics Committee, Approval Number: HRE2017-0677. The research presented and reported in this thesis was conducted in accordance with

the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007).

All the participants are anonymised. In order to maintain the confidentiality of participants, different upper case letters are used to represent them in this research project.

5.5.2 Approaching participants

My interviews were mainly conducted from January to February 2018 in Zhengzhou, the largest city in Henan province, China. Follow-up interviews were conducted after my initial data analysis. I asked follow-up questions by online interview in 2018 and 2019 if I did not get enough valid data or clear answers from the participants during the first round interview.

The potential participants were approached using the snowballing method. Snowball sampling is a non-probability way to approach participants (Jupp, 2006, p. 281). The researcher begins with a participant who, in turn, approaches other potential participants. In this research project, there were three stages for approaching participants. Before I went to Zhengzhou, I contacted some participants based on my personal networks and screened them according to the criteria of this research project, such as their age and location. I, then, selected 3 participants and made appointments to interview them. After that, I asked the selected participants to extend the invitation to more potential participants who are around their retired age and belong to their mobile user group. The process was repeated until I collected enough data, which also means that some of the data was repeated. More than 40 participants were interviewed including some people living in villages outside the city; however, for the purposes of this research project, which specified a second-tier city, 24 participants from the city of Zhengzhou were selected for analysis.

Participants were categorised in two different groups, including people around the retirement age, and adult children. Among the two groups, the people around their retirement age are the main focus. I screened people to include those around their retirement age—that is, from 50 to 70 years old—in Zhengzhou; those who are still working but plan to retire in the near future; and those who had just retired in the last few years.

I also chose some participants who belong to one child generation. Their parents are close to retirement age and use mobile apps. As the ageing population has to live in a world with digital technologies, I hoped to gain a fuller understanding of the effects of mobile use from the perspective of these adult children. In order to get some ideas from government and industry, one governmental official and a worker from the technology industry were interviewed.

5.5.3 Demographic information

In this section, the demographic information of the participants is listed (see tables 3 and 4). These participants include ageing participants, adult children participants, people who work in the technologies industry, the government official and scholars from the university.

Table 3: Third age participants' information

Ageing Participants	Age	Gender
1 CZ	50	M
2 HSL	60	F
3 FFM	57	F
4 FFB	56	M
5 WZJ	55	M
6 WSM	54	F
7 WSB		M
8 JLW	56	M
9 LHXB	65	M
10 WLLS	61	M
11 ZJK	60	M
12 AZ	76	F
13 CXM	51	F
14 CMX		M
15 ZTM	58	F
16 GGJ	55	M
17 GJY	56	F

18 ZCY	65	F
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Table 4: Adult children participants' information

Adult children participants	Age	Gender
19 ZT	30	F
20 LHX	29	F
21 DXY	33	F
22 WJW	29	F
23 WS	32	F
24 ZP	31	M

5.5.4 Location selection

Interview location: Zhengzhou in Henan province

I conducted the face-to-face interviews in Zhengzhou. Although several studies have investigated the mobile use phenomenon in China, they mainly focused on first-tier cities, such as Beijing, Shanghai, Shenzhen and Hong Kong. As noted earlier in the introduction of the thesis, second-tier cities in China have proportionally larger ageing populations than first-tier cities. According to the report on *Ageing Mobile Internet Users* (Cui, 2018), second-tier cities have the highest relative proportion of ageing Internet users, representing 38 percent of all ageing Internet users in China (Cui, 2018). It seems the ageing Internet users in first-tier cities are pioneers in using new technologies. Yet, in considering mobile phone usage among the ageing population in second-tier cities, it is evident the ageing population in these cities have developed distinctive uses of mobile media.

Furthermore, I chose Zhengzhou as the fieldwork location because as the capital of Henan province, it has the largest population in China. Considering the high penetration of mobile phone use among its ageing population, Zhengzhou can be a representative study for second-tier cities in China.

5.5.5 Online anonymous survey

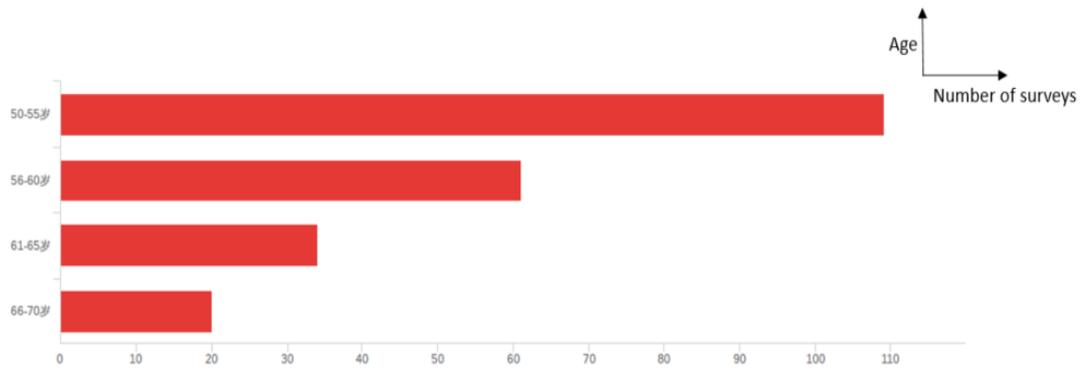


Figure 4: Age distribution of participants

The online survey was conducted in November 2018. By February 2019, 284 anonymous responses from respondents were collected. I initially screened the responses according to the age criteria; if the respondent's age was not between 50 and 70 years old, they were excluded (see figure 4). After the initial screening, 224 surveys were adjudged to be valid. Among these valid surveys, 95 respondents were male, 129 were female. The respective gender ratio is shown in figure 5.

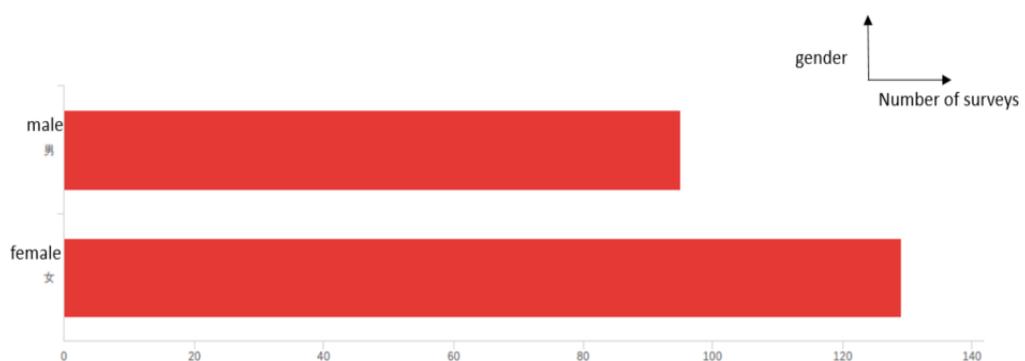


Figure 5: Gender ratio of online survey participants

As I conducted the semi-structured interviews prior to the online survey, I subsequently delivered the online survey link to the participants who attended the interviews in the first stage. Then, I asked these participants to forward the link of the online survey to their friends who were around the retired age. In this way, I recruited participants around the retirement age, including some who were close to retirement and others who had just retired (see figure 6).

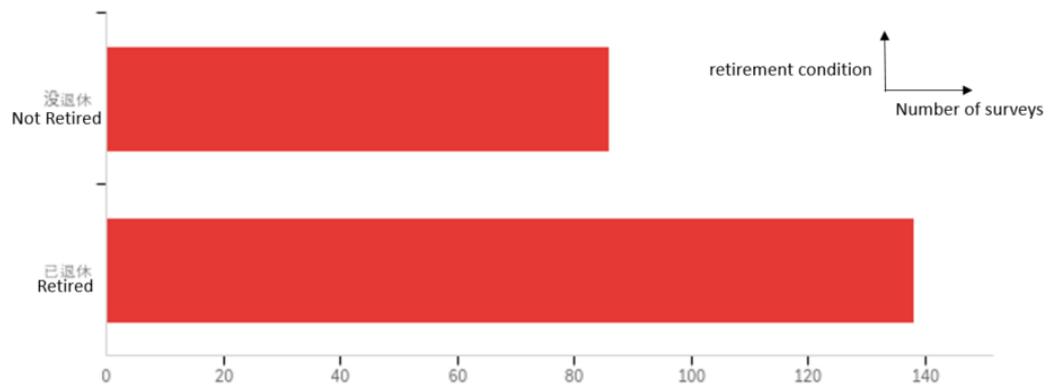


Figure 6: Gender ratio of online survey participants

Since the online survey was designed for WeChat on mobile phone, the link to the survey was promoted using the Moments function and by link sharing in the WeChat group. The online survey was mainly based on second-tier cities, and not limited to Zhengzhou. As respondents can freely forward the link of surveys by WeChat sharing functionality. The education background is shown in figure 7.

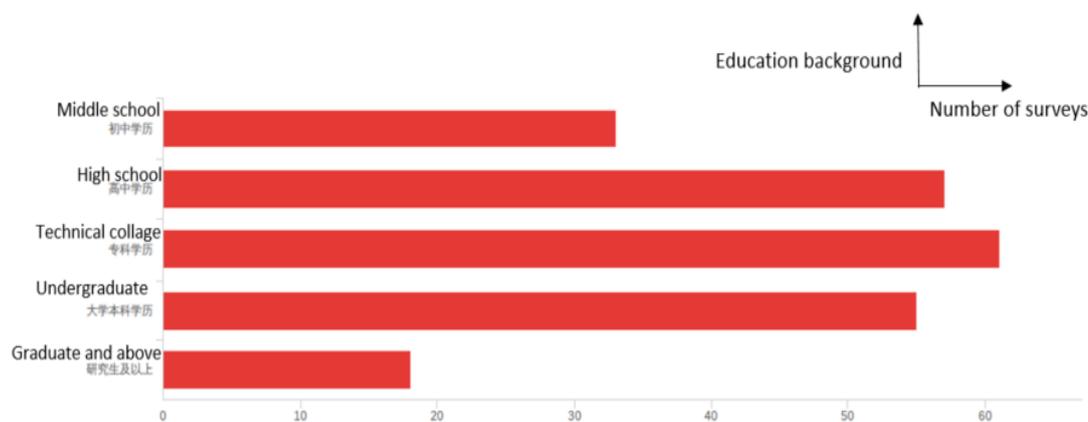


Figure 7: Participants' education background

5.6 Interview and survey design and data analysis

5.6.1 Interview and survey design

As noted above, I conducted the interviews first, and then the online survey. I designed the interview questions based on the research questions. I designed the online survey according to findings from the interviews. This research project is therefore mainly based on interviews, and supplemented by the online survey and document analysis. The interview questions were designed to explore the participants' personal experiences of using the mobile phone, the barriers and benefits of mobile use, the motivation and effects of mobile use, and the potential of mobile technologies for the ageing population.

In terms of the online survey questions, the survey questions are designed to collect data on effects of physical health, mental health, and social engagement by mobile devices among ageing population. The survey questions were designed with 'if' logic, which means participants can skip some questions according to their answers. So, responses to some questions were fewer than the total of 224; some questions could be skipped if participants were not satisfied with the criteria.

5.6.2 Data analysis

NVivo, a qualitative data analysis software, was used to code and analyse the qualitative data from the interviews. There are several reasons for using NVivo in

this research project. First, qualitative researchers may bring perceptual, cognitive and memory limitations to their research (Hai-Jew, 2015). Using NVivo can combat such problems. In this project, NVivo helped to organise the participants' responses by theme, which means using codes to categorise interview data. Furthermore, the research tools in NVivo can improve the rigour of the analysis by allowing the researcher to interrogate their data at a particular level (Welsh, 2002). Beyond this, NVivo is a convenient means of rechecking the data when revising the thesis.

SPSS was used to analyse the quantitative data of the online survey.

5.7 Limitations

5.7.1 Limitations of the methods

Although this research project used a mixed methods approach, there are some disadvantages. Jupp (2006, p. 180) argues that this approach can lead to high demands on both time and resources. In this research project, the data analysis phases required considerable time. The transcription and coding of interviews in NVivo, and the dissemination of the online surveys and subsequent data collation took over twelve months.

5.7.2 Limitations of the research

Researchers cannot avoid subjectivity and bias when conducting research. The way interview questions are framed, the structure of the interview question design, the formation of the online survey, and the interpretation of the data can be influenced by the researcher's education background, personality, worldview and other factors. As Creswell (2009) argues, when the researcher is the primary data collector, the data may be influenced by the researcher's bias, personal values and assumptions (p. 196). Thus, in this research project, I tried to avoid subjective and emotional words when asking questions during the interviews in order to decrease my personal influence.

5.7.3 Limitations of the participants

When I conducted interviews, I observed that the answers might be different if someone else was nearby. For example, regarding the question of 'how much money

have you spent on your apps', if their adult children were nearby, participants would often answer 'none'. However, in my follow-up questions, they would tell me another story, such as which app they have paid to access the content, and how much they have spent on the paid content.

Moreover, I observed that some interviewees would say what they thought I wanted to know. This is especially obvious at the beginning of the interview. However, as the interview lasted a while, they might respond differently if I asked the questions from different perspectives. This is an example of what Silverman (2006) describes as 'self-representation'—or the distortion of responses from participants (p. 134) .

Although the high popularity of mobile phone use is an observable trend among the ageing population, a small proportion of respondents did not use smartphones. This small proportion of the ageing population could not be reached by the WeChat survey. This problem presents a limitation of this research project.

5.8 Conclusion

In conclusion, this chapter has briefly discussed the social constructionist approach, its applicability to digital media research, and provided the rationale for using mixed research methodology. Some advantages and disadvantages of this approach were discussed, including implications for and on the methods, researchers and participants. The structure of the interview questions and online survey was analysed.

This chapter also explained the process of selecting participants and provided a brief description of the participants. It explained why I selected Zhengzhou as the location, noting that compared with developed areas, second-tier cities are relatively less explored by scholars; in addition, these cities are gathering places for the ageing population. Finally, the chapter reflected on the limitations of the methodology and some of the problems encountered during the fieldwork.

Based on the data collected using mixed methodology, the following four chapters will explore the core research question—how third agers use mobile devices and apps to live a more creative and active retired life in China.

CHAPTER 6: MOBILE USE AND SOCIAL ENGAGEMENT AMONG THIRD AGERS

6.1 Introduction

In China, digital technology contributes to a widespread sense that life is getting better. The rapid development of technology sustains the government's propaganda that China is being rejuvenated, that it is becoming an innovative nation. The 'four great new inventions' in contemporary China (high-speed trains, e-commerce, mobile payment services, and bike sharing) have replaced the 'four great inventions' (papermaking, printing, gunpowder and the compass) in ancient China. Three of the 'four great new inventions' relate to digital technologies and mobile devices.

As shown in earlier chapters, third agers in China have adapted well to the mobile phone society. They have accumulated digital literacy during their working lives, despite being digital immigrants. While society is rapidly advancing on the technological front, we nonetheless need to ask how this advance is affecting people's social relationships. The question of how third agers in China use digital technology to increase their social engagement is therefore important for understanding China's unfolding new digital civilisation.

Because of the increasingly individualised nature of modern society, the concept of social engagement is now understood across several academic disciplines, including communications, critical ageing studies and public health. In communication studies, scholars have studied the relationship of social media use and social engagement among ageing populations (Chiu, 2019; Dolan, Conduit, Fahy & Goodman, 2016; Y. Kim, Wang & Oh, 2016). Many believe that social media use improves social engagement for the ageing population (Khosravi et al., 2016).

Based on the uses of media approach, this chapter focuses on the categories of media use; in other words, how third agers use mobile apps to maintain relational resources and social engagement. It discusses the effects of emotional attachment to mobile devices among third agers. The concepts of social engagement (offline) and social media engagement (online) are considered. In the increasingly digitalised world, the boundary between online and offline world has converged.

The chapter considers the project's findings from two perspectives—instrumental use and ritualised use; it discusses how ritualised and instrumental uses of mobile phones help third agers to engage in society, both online and offline. It begins by exploring the concepts of engagement and social engagement, and why these are important for the third agers. The chapter then considers previous studies about social media and social engagement. Following this, it further expands on the digital and mobile environment in which the third agers use digital technology to maintain their social engagement. Then it briefly considers the history of research into media uses. This is followed with the project's key findings based on instrumental and ritualised uses. The last section focuses on the effects of mobile use and third agers' emotional attachment to mobile devices.

6.2 Social engagement studies

Engagement

The concept of engagement has been used in psychology, sociology, political science, organisational behaviour and customer engagement (Brodie, Hollebeek, Jurić & Ilić, 2011), and in relation to civic engagement in China (Wei, 2014; Wei & Lo, 2015). Furthermore, scholars have explored engagement from unidimensional or multidimensional views, including behavioural, cognitive and emotional aspects (Khan, 2017). The physical, cognitive, and affective components of user experience were proposed by O'Brien and Toms (2008). Brodie et al. (2011) have argued that engagement has multidimensional perspectives, namely physical, cognitive and emotional engagement.

Social engagement

Social engagement is defined by the frequency and quality of an individual's connection to those activities in his or her social environment (Sabbath, Lubben, Goldberg, Zins & Berkman, 2015). Zhang, Jiang and Carroll (2011) have noted that social engagement is 'the commitment of a member to stay in the group and interact with other members'. Social engagement has two components: activity and social context (Prohaska, Anderson & Binstock, 2012). According to Y. Kim, Wang and

Oh (2016, p. 265), social engagement is defined as the ‘individuals’ participation in formal and informal collective activities of social groups’. Elsewhere, Utomo, McDonald, I. Utomo, Cahyadi and Sparrow (2019) have explored social engagement of the elderly in Indonesia from three aspects, including participation in income-generation activities, communal activities, and care work. Glass, De Leon, Bassuk and Berkman (2006) have defined social engagement as the ‘performance of meaningful social roles for either leisure or productive activity’ which might decrease depression (p. 606).

Overall, some common characteristics can be found among these definitions, such as activities, interaction and groups. An individual needs to engage in activities; he or she interacts with others, and develops a feeling of group belonging. These common characteristics cover the three perspectives mentioned previously: behavioural (i.e. activities), cognitive (i.e. interaction with others/sharing information with others), and emotional (i.e. group belonging). These characteristics are also key to social media engagement.

Social media engagement

Scholars from media studies have explored media engagement from several perspectives. Taking YouTube as an example, Khan (2017) views engagement in terms of participatory activities, comprising behavioural aspects or click-based interactions, as well as consumption activities, including simple content viewing and reading. Khan’s definition illustrates that engagement can be viewed as an individual’s interaction with media, both in terms of active participation and passive consumption. Using games, educational apps, online shopping and web searching, O’Brien and Toms (2008) have explored four distinct stages of engagement: points of engagement, period of sustained engagement, disengagement and reengagement. Furthermore, they argued that engagement is a ‘category of user experience characterized by attributes of challenge, positive affect, durability, aesthetic and sensory appeal, attention, feedback, variety/novelty, interactivity and perceived user control’ (O’Brien & Toms, 2008, p. 939).

Similarly, Olphert and Damodaran (2013) explored elderly people’s digital engagement from the opposite perspective—digital disengagement. In their view,

disengagement refers to people choosing to stop an activity or the external environment causing them to cease being engaged, although they did not give a definition of engagement. This definition, however, reflects engagement/disengagement from an emotional or external environment standpoint.

The concept of engagement has been popular in business studies. Scholars in business fields have developed the concept of customer engagement to explore customers' loyalty to a brand, product or service. Hollebeek (2011) has stated that engagement refers to 'individual-specific, motivational, and context-depend variable emerging from two-way interactions between relevant engagement subjects and object' (p. 787). When Hollebeek (2011) explored engagement from the perspective of marketing, he argued that customer brand engagement is 'the level of an individual customer's emotional, brand-related and context-dependent state of mind characterised by specific levels of cognitive, emotional and behavioural activity in direct brand interactions' (p. 790). In light of such customer engagement, Dolan et al. (2016) have claimed that social media engagement should 'go beyond transactions, and may be specifically defined as a customer's behavioural manifestations that have a social media focus, beyond purchase, resulting from motivational drives' (p. 265). They further argued this definition reflects the relation between engagement behaviour and motivational influence. However, they did not clearly distinguish among behavioural, cognitive and emotional engagement.

With regard to successful ageing, active social engagement represents the concept most fully (Rowe & Kahn, 1997). It is important therefore to explore what we mean by social engagement and why it is important for the ageing population, especially for third agers and specifically how it applies to social media. Previous studies have concluded that social media usage can promote social interaction and engagement. Papacharissi and Rubin (2000) have claimed that digital technologies have extended informational and interactive capabilities among college students in the United States; Ellison, Steinfield and Lampe (2007) have based on their study on Facebook usage among college students, and argued that social media provide greater benefits for users' social capital, especially for users with low self-esteem. Gan (2018) has examined the different categories of mobile use between Sina blog and WeChat, based on the assumption that social media can increase social engagement. Hossain

(2019) has argued that social media offers users opportunities to connect with current and new social network users.

Few studies have attempted to distinguish between engagement and participation. Khan (2017) uses engagement and participation interchangeably, and explored university students' motives to engage on YouTube from the perspectives of active and passive participation. Similarly, Prohaska et al. (2012) have distinguished social engagement from social network, social support and social capital, but they use social engagement and social participation interchangeably. Alternatively, scholars such as R. Brodie et al. (2011) have claimed that the concept of engagement goes beyond 'participation' and 'involvement', because the latter does not contain the meaning of interactive, co-creative experiences as comprehensively as does engagement.

6.3 Social engagement and the ageing population

When individuals reach their retired age, many face a crucial social role change. The change from active workers to (passive) retired people will, generally speaking, decrease an individual's social engagement. They are at greater risk of becoming marginalised and disengaged. Previous studies have found that disengagement or isolation has a negative impact on the ageing population (Johnson & Mutchler, 2014; Olphert & Damodaran, 2013).

Social engagement is important for the ageing population in various ways. This has been explored by many scholars. Social engagement in old age may potentially protect against cognitive decline (Park, Kwon & Lee, 2017). Social engagement has been positively associated with increased longevity (Lennartsson & Silverstein, 2001; Bennett, 2002; Ramsay et al., 2008). Newall, McArthur and Menec (2015) have examined whether social participation and loneliness determined health care service use and concluded that greater social participation was associated with lower odds of being in hospital for extended durations. Sabbath et al. (2015) have explored the factors that influence social engagement, and argued that compared with socioeconomic status and health, retirement timing was a weaker predictor of change in engagement. Social engagement has been related to mental health and life

satisfaction as well (Prohaska et al., 2012). From these studies, it can be concluded that social engagement largely plays a positive role in the ageing population's comprehensive health.

In the digital world, online and offline engagement are important not only for the ageing group. Accessibility to social media has been emphasised by many scholars (Ellis, 2010; Harper & Yesilada, 2008). The social construction of the ageing population as isolated from technologies should therefore be revised. In other words, the ageing population are active participants in our increasingly digitalised world.

6.4 Uses of media

Uses and gratifications theory, as illustrated in chapter three, was proposed to challenge the mechanistic perspective of mass media effects which regards the audience as passive and reactive. The study by Lometti, Reeves and Bybee (1977) concluded that the recipients are active in selecting the communication channels and messages they need. As discussed in chapter three, uses and gratifications theory shifts the focus from producer to receivers. Katz et al. (1974) have further argued that the motivation for using mass media can be categorised into cognitive, affective, integrative and escapist needs. Scholars have begun to explore the motivation and consumption practices of users/customers in various new media platforms (Hossain, 2019; Khan, 2017; O'Brien & Toms, 2008).

After analysing the motives of people's television viewing, Rubin (1984) proposed the concepts of ritualised and instrumental use. Rubin argues that ritualised use refers to using a medium more habitually to consume time and for 'diversion' (Rubin, 2009, p.172), and entails greater exposure to and 'affinity with medium' (Rubin, 1984, p. 69; Papacharissi & Rubin, 2000, p.181). Ritualised and instrumental uses are based on individual amount and types of media use, as well as attitudes and expectation from media content (Rubin, 1984). Instrumental use is 'seeking certain message content for informational reasons', it suggests 'utility, intention, selectivity, and involvement'. Instrumental use increases social engagement online and offline. However, ritualised use has deeper influence on emotions. Beyond instrumental and ritualised uses, some interviewees expressed emotional attachments to their mobile

phone. According to my participants, the mobile phone played the role of a companion in their life; it is part of the brain, and even acts as a digital partner or child.

Table 5 below lists definitions and differences between instrumental and ritualised use. Instrumental and ritualised uses reflect the complexity and variety of audience activity (Rubin, 2009). Rubin has explained that instrumental use is about seeking certain information for specific needs, for instance seeking to news and perceiving content to be realistic. Instrumental use shows active and rational audiences. Blumler (1979) has used ‘utility, intentionality, selectivity, and imperviousness’ to represent instrumental use (p. 13). Instrumental use is, by definition, purposeful and seeks information to satisfy specific needs; it may lead to practical behaviour.

Table 5: Definition of instrumental and ritualised use (Rubin, 2009)

Categories	Content	Difference
Instrumental use	Instrumental use refers to ‘seeking certain message content for informational reasons. It entails greater exposure to news and informational content and perceiving that content to be realistic’ (Rubin, 2009, p. 172).	Instrumental use is active and purposive. It suggests ‘utility, intention, selectivity, and involvement’ (Rubin, 2009, p. 172)
Ritualised use	Ritualised use refers to using a medium ‘more habitually to consume time and for diversion’ (Rubin, 2009, p. 172), and ‘entails greater exposure to and affinity with medium’ (Rubin, 2009, p. 172)	Ritualised use suggests utility but is ‘less active or goal-directed’ (Rubin, 2009, p. 172).

6.5 Research findings

The findings are organised into two parts, taking account both instrumental and ritualised uses. It should be clarified that there is no clear-cut line between instrumental and ritualised uses. Although previous studies applied ritualised use in different media platforms and different groups, and have obtained valuable results, few studies focus on ritualised use and the ageing population. No studies, to date, have taken this approach to China.

My findings show that third agers' mobile use is primarily based on instrumental and ritualised uses. According to my in-depth interviews, differences exist between participants. Third agers use mobile apps in various ways and for different purposes.

The following section shows how third agers in China use mobile apps instrumentally to satisfy their information needs, and looks at the effects of instrumental use among third agers.

6.5.1 Instrumental use

As discussed in chapter three, Chinese third agers have developed the 'mobile use only' phenomenon. Their use of mobile phones is therefore instrumental. They have a strong need for information, including daily news, health information, commercial brochures, information exchange and product reviews on mobile apps. With the pervasiveness of the mobile phone and mobile Internet in China, third agers seek and access almost all information by using their mobile phones. They spend considerable time on their mobile phones. Miller (2019) has observed that older people in Shanghai have embraced the mobile phone and are more engrossed with their phones in restaurants than younger people who chat directly with each other. Similar findings have been reported by Ingraham (2019). The ageing population in America is spending more time on screen, while on-screen time for those under 40 has held steady or fallen on average.

Mobile phones are increasingly designed with multi-functions. Even in the case of apps that are labelled as games, music or meditation, people are still able to use them to make contact with friends, shop, develop relationships, and receive information. Meanwhile, mobile apps are also increasingly integrating everyday functions. Payment, booking, ordering, reviewing, most of the daily activities need to be done

on mobile apps. Even the quite ritualised activity, such as praying and worship, are provided online. For example, people can click online to do chanting or pray or worship. People can donate money to a temple by scanning QR code when they do chanting in a real temple. During the 2019-20 coronavirus outbreak, Chinese people were required to show the health QR code on their mobile phones to prove that they were healthy in order to enter their community and go to the food stores (Baidu, 2020; Xinhuanet, 2020). Their mobile phone use is far beyond that of a machine.

My participants showed strong informational needs. Daily news is the biggest information resource. Some of the participants access news apps more frequently and use them for a longer time than other apps. For example, FFM told me that, compared with other apps, she uses news apps for the longest time, even longer than WeChat. She felt that she needs to keep pace with social development, so she likes to access the news. She said that she only uses the mobile phone to get this kind of information nowadays as it is convenient. Similarly, CZ told me he uses headline news (news app) most frequently, and also uses it for a longer time than WeChat. He appreciates the big data algorithm embedded in the app which can push news notifications according to his reading habits and interests. This functionality causes him to read headline news more often.

Some of my participants claimed they select and access information selectively and actively. JLW previously served as a soldier in the national army and he is still interested now in news that is related to the military. He reads news from online sites including *People's Daily* and *Liberation Army Daily*. He only selects news that he thinks is helpful and valuable for him. Similarly, LHXB uses the mobile phone to access information he believes is valuable for him, including local social news, new policies about retirement pensions, and so on. He also selects information and news relating to local property as he invests some money in the property market.

My participants use various apps to get information based on their needs. Like JLW, WSB uses various mobile apps to access information. He uses WeChat to get the morning news. A public account on WeChat provides audio news in the morning. This is convenient for him to do his morning exercise and listen to the news at the same time. WSB also uses short video platforms to get video news and information during the day. At night, before going to sleep, he selects Qingting FM (radio app) to

listen to interviews or live broadcasts. If the content is attractive, he would give a monetary reward (*dashang*) to the program host. He told me he learnt about giving monetary rewards to the hosts from younger people. He is familiar with various apps and chooses different apps to get different information. HSL uses the mobile phone to access international information platforms, including Twitter, Instagram and YouTube through VPN. She complained that because of the increasingly tight network regulation policy in China, she cannot log in to these apps recently. She accesses so many overseas websites and apps because she has a son who is studying abroad. She desires to know more about the western world through these apps.

As my participants are elderly, they focus a lot on information related to *yangsheng* and maintaining good health. (I will discuss the Chinese concept of *yangsheng* in more detail in the following chapter.) However, some of them have a critical attitude toward such health information. For example, WSB and JLW have a similar view and said that they sometimes read contradictory accounts of the same health information, which puzzled them a lot. WLLS pays a lot of attention to health information and takes a critical attitude towards it. This is because his job is related to the medical health industry. He does not believe the health information from sources with eye-catching titles or absurd content. In contrast, CZ told me he does not believe the information of *yangsheng* at all. The fake expert Zhang Wuben¹ destroyed his belief in *yangsheng*. He never uses vitamins and insists that the daily food intake can supply enough nutrition for people (Song, 2010; Wang, 2010). Compared with CZ and WLLS LHXB expressed that he believes the health information about food found on the apps. He claimed he would follow suggestions about healthy food and the function of food learnt from health apps.

¹ Zhang Wuben, a once-popular Chinese diet therapist, who claimed that the combination of mung beans and eggplant could cure almost all diseases, has been found to have faked his medical qualifications. Before his medical qualifications was found to be fake, he cashed in on a false but expensive health consultancy and a best-selling diet book (Song, 2010).

6.5.2 Convergence of online and offline worlds

As discussed earlier, the boundary between the online and offline worlds is increasingly blurring. Third agers' mobile use takes into account the convergence of these worlds. For example, WLLS, HSL, ZTM use the mobile phone instrumentally to book their train and flight tickets and hotel accommodation. WLLS uses a group purchase app to book tickets for going to the swimming pool and enjoying discounts for restaurants. According to his experience, these discounts are only available in apps and these apps help him save money. He shared some of his experience:

Sometime I want to eat in this restaurant. Before I enter the restaurant, I open my group purchase app to check if there any discount for it. If yes, then I save money. Otherwise I need to pay the original price.

According to FFM, 'If you need a DiDi taxi in reality, there is no choice, you must use DiDi app'. HSL expressed the same view. When she wants to ride a shared bicycle, she needs to scan the QR code using her phone, so that she can unlock the bicycle. CXM, ZCY and ZJK reported that they feel it is more convenient to pay for groceries in a vegetable market by using an app, rather than using cash. These activities and tasks can be done using a combination of online and offline behaviour. This instrumental mobile use behaviour, therefore, is a result of the convergence of online and offline worlds.

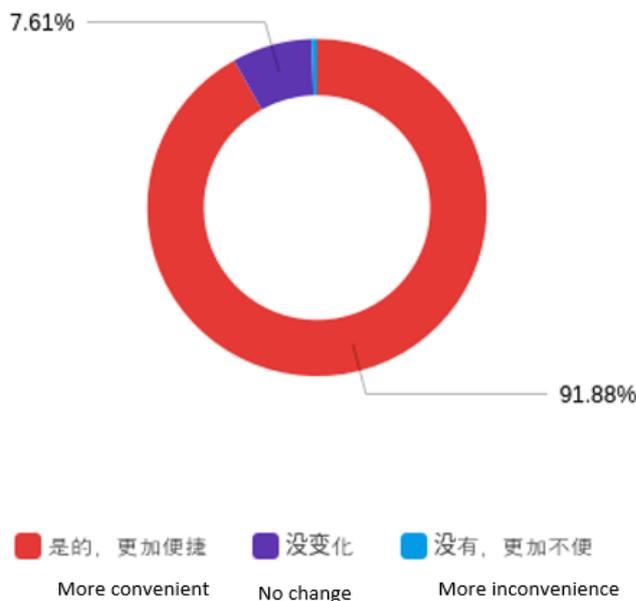


Figure 8: Does the mobile phone make daily life more convenient?

More than 90 percent of my online survey respondents self-reported that they have benefited in terms of the convenience afforded by mobile phone and apps (see figure 8). Meanwhile, only around 20 percent of the respondents thought they have more free time because of mobile phone and apps use (see figure 9). Combined with the interview data, this illustrates that mobile phones and apps are more convenient for users; on the other hand, mobile phones and apps provide my participants with more choices, which occupied more of their time in the form of entertainment, socialising, doing exercise, as well as accessing news and information.

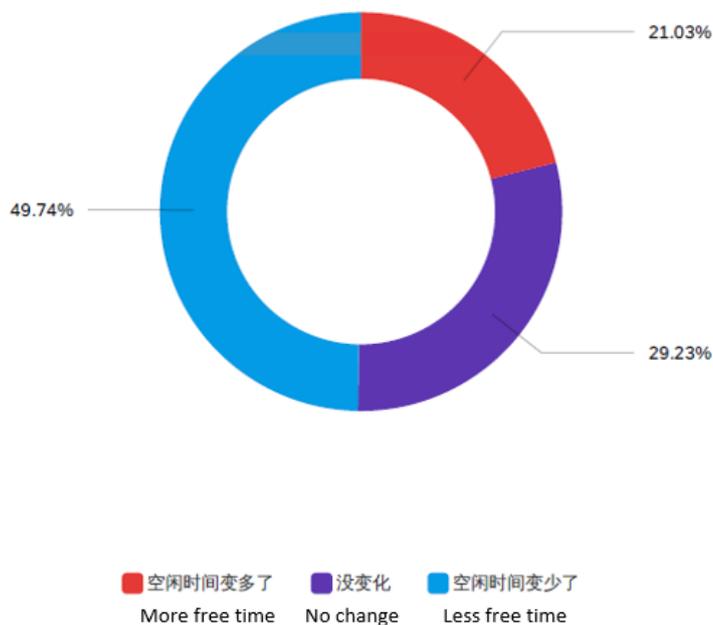


Figure 9: Do you have more free time by using mobile phone and apps?

Mobile use can lead to better decision making, according to my respondents. For example, participants ZCY and ZJK, who are a couple, live in Henan province, which is located in central China. However, they bought a house in southern China several years ago and have left it empty since then. They claimed during the interview that they were influenced by online information about the property market. Moreover, they came across information about the mild natural environment in southern China on social media and the online news. This information persuaded

them to buy a house there as an investment and they plan to live there to enjoy the environment when they become older. The instrumental use of apps (getting information) thus influences their behaviour.

Using a medium instrumentally or ritualistically leads to different outcomes and has different influences. Instrumental orientations may produce stronger attitudinal and behavioural effects. Instrumental use is embedded with greater motivation to get involved with the message.

6.5.3 Ritualised use

Compared with instrumental use, the ritualised use is less goal directed. Ritualised use was proposed in the time of mass media. Nowadays, the various mobile apps emphasise the interactive function between user and user, or user and producer. Mobile apps 'cultivate' users to use mobile apps more habitually than the mass media. In China, Alipay collaborated with several provinces to release digital marriage certificates starting in 2019 (Xinhuanet, 2019). Marriage certification, one of the most ritualised activities in China, can now be achieved online.

According to the findings from my interviews and survey, most participants use their mobile phone for 2–6 hours per day (see figure 10). In particular, their ritualised use is well developed, habitual and arguably excessive. Most scroll down and click their mobile phones without any specific purpose. ZJK told me that he uses his mobile phone habitually when the family get together to watch TV after dinner. His preferred companions, in order of priority, are the mobile phone, the TV and a family member.

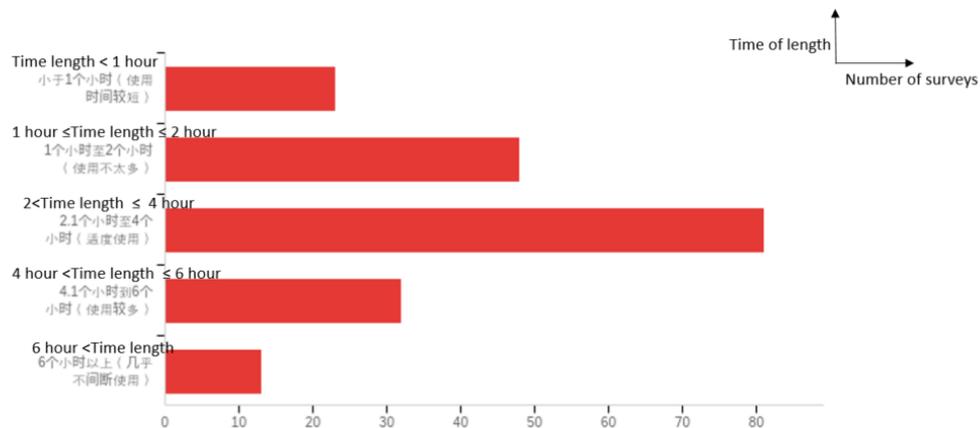


Figure 10: The time length of daily mobile use

Maintaining socialisation

Generally speaking, socialising on WeChat is the most time-consuming ritualised use for my participants. All participants reported that they use WeChat daily to make contact with family members or friends. CXM makes a daily video call to either family or friends and the calls can sometimes last for more than an hour. She feels closer to her family and friends as a result. WSM also expressed the same ritualised use of contacting family members. When I interviewed her, she was overseas. She could not speak English and was unable to communicate with the locals there. For the first time she realised the importance of keeping in contact with friends and family in China via WeChat. Otherwise, she felt isolated because she knew only one person overseas and could not communicate with the local people because of the language barrier. She told me she took mobile use and online socialisation for granted before she went overseas.

As well as chatting with people directly, my participants also click ‘like’ on social media to maintain their socialisation with others. As CXM stated, clicking ‘like’ on WeChat is a necessary daily ‘work’ routine, otherwise she would not receive many ‘likes’ from other people in return. FFM also told me that clicking ‘like’ is a new way to socialise. This behaviour of clicking ‘like’ is quite popular among third agers and contributes to their ritualised use of mobile apps.

GJY told me when she first learnt how to use WeChat several years ago, she tried to make contact with everyone she knew. According to her son's memory, this made her an 'annoying person'. Similarly, whenever ZCY posts something on WeChat, she would keep asking why other people did not 'like' her post. At times, she would even make a call to ask her friends to check and comment on her post.

Entertainment

Entertainment apps increase third agers' affinity with using mobile phones. Casual games, such as *Pop*, *Linking*, and *Maze*, are popular. Card games and *majiang* (mah-jong) are popular. However, in the Chinese cultural context, the stigma of games has existed for a long time (Guo & Ellis, in press). There is a common belief that people who play games are losers in real life. Participant GGJ plays a game called *Fighting Landlord* for 3 hours or longer per day, prompting family conflicts. CXM plays *Zuma* and claims this is an anti-dementia game. WSM can only play *Fighting Landlord* after her grandson falls asleep, as she is afraid to be a bad role model for him. CZ shared his story with me: Ten years ago when the game *Happy Farm* was popular, his high school daughter asked him to play the game for her and get high scores. However, even though his daughter gave up playing this game after a while, he was still addicted to it.

Apart from mobile games (see chapter eight), short video apps play quite an important entertainment role for third agers in China. Participant CMX is addicted to watching short videos and shared 'hilarious' videos with his WeChat groups. When his friends respond, he spends even more time looking for these humorous videos to share with the groups. The content includes jokes, life philosophy, safety tips, and related aspects of his own life.

'Snatching' the red envelope online has become a popular entertainment activity since 2014 when the virtual red envelope was first rolled out on WeChat by Tencent (Yuen, 2016). The red envelope has been a ritual in Chinese traditional culture. During the Lunar New Year, the older generation will give red envelopes containing money to the younger generation to convey good luck and happiness. Nowadays, a virtual red envelope culture has formed, with users creating new social habits. As well as the virtual red envelope developed by WeChat, other technology companies

have developed similar apps, including Alipay, QQ, and so on. Alipay allows users to shake their mobile phones as fast as they can within a certain time in order to get the virtual red envelope. Alipay collaborated with the annual Spring New Year gala and launched the function of scanning QR code shown on TV screen during gala and shaking the mobile phone to obtain a virtual red envelope. Shaking the mobile phone has become a phenomenon for Chinese families when they get together to watch the spring gala on TV. The amount of money in the virtual red envelope depends on how many times one can shake the mobile phone. Generally speaking, the amount is small, but people regard it as representing good luck and do this for entertainment. So, the phenomenon of shaking mobile phone to get a virtual red envelope shows how people are using the mobile phone in new ways.

Interests

Ritualised use implies ‘diversion’ and ‘affinity’. Third agers frequently use mobile apps to develop their hobby or interests. In other words, mobile apps empower third agers to fulfil their interests which they cannot achieve in reality. For example, participant JLW writes poems as a hobby. He could not do this during his work time because he had to earn money to support his family. After retirement, he developed his hobby using the mobile phone and now posts his poems on social media to collect ‘likes’ and comments. He told me during the interview:

If it is a snowy day, I would take my phone with me to feel the falling snow, to feel the cold wind, to see the white flower falling in the world. Not only me, but my phone would feel the snow too. I would write poems in the snow. Sometimes, I can finish a poem in one hour. Sometime, I need a longer time. I write poems on my phone directly.

WSB’s interest is in photography and filming. He enjoys spending time to post his efforts on apps and learns new knowledge from these apps. He has shared lots of short videos which he made himself. He told me he likes to spend his time on his interests. Compared with JLW and WSB, WLLS uses the qigong app more like a habitual behaviour. He is a fan of qigong and practises it every morning. He has practised qigong for more than 30 years and is quite familiar with every movement,

but he needs the app to guide him. He told me that he can practise qigong without his mobile phone; however, using the app to guide him has become a habit.

Escape and escapism

Escapism is another reason for using mobile apps, according to my participants. Although Rubin did not list it in his discussion of ritualised use, it should nonetheless be included. My participants said they often use the mobile phone to ‘escape’ from reality, and to relax. Escapist behaviour also relates to interests or entertainment, although I explain it more from the long time spent online, including watching TV dramas, reading long novels or listening to radio dramas. For instance, WSM watches TV dramas on her mobile phone. She lives a grandchild-centred life and needs to take care of the whole family every day. Watching TV dramas is an escape from the exhausting daily life. GGJ also escapes from reality by reading long online novels. He would use the mobile phone to read for several minutes, even at night whenever he needs to go to the bathroom.

Third agers in China have many excuses to escape from their real life. Most participants told me they need a short break to breathe (escape). Most choose their escapist behaviour via mobile phone use; perhaps this is just the most economical and easiest way to escape, which does not otherwise impact on their life.

6.5.4 Mobile use and social engagement

Based on what I have discussed above, it can be concluded that instrumental and ritualised uses of mobile apps increase Chinese third agers’ engagement online and offline, including their behavioural engagement, cognitive engagement and emotional engagement. There is actually no clear-cut distinction between instrumental and ritualised uses. Seeking for information can lead to ritualised use. Ritualised use can also include collecting information. Park (2017) argues that almost every aspect of our society is digitalised. Mobile use can increase online and offline engagement. The boundary between online and offline is unclear. For third agers in China, engagement in society comprises both online and offline engagement. Online and offline engagement interact and promote each other.

One important finding of this chapter is that online engagement for third agers means interacting with others and with society. CXM was a blue-collar worker before the

laid-off wave (compulsory retirement earlier than the retirement age) in China in the 1990s. According to her, the feeling of being laid off is akin to ‘abandonment by society’. She then started her family business. Even though she is now the owner of a family-run business, she is still worried about being abandoned again. So, she has begun to learn how to use Photoshop software, install a camera in the shop, use the family computer, connect with customers, use QR codes to receive money, and transfer money by using different apps. Overall, she engages in life actively with her accumulated mobile use ability and digital capital.

WLLS also experienced the laid-off wave in the 1990s. He sought work opportunities in the medical facilities field as a salesman. His work requires him to keep up with digital technologies. As he needs to travel a lot for business, the smartphone is his ‘companion’. No matter if he is on the train or long-distance bus, or staying in a hotel by himself, he can use his phone to kill time. He has mastered a lot of practical smartphone skills, including the use of group purchase apps, delivery apps, and ticket booking apps. His accumulated digital capital enables him to better engage with society.

FFB works for the government. He is cautious of uploading content or pictures on social media. He worries that some people may think he is showing off, or that ‘bad’ persons would report him for inspection and supervision. Moreover, as a government officer, he thinks that if he updates his social media regularly, then his image and social identity will not be consistent with that of the government and Communist Party. His secretary can help him to deal with online tasks, which is convenient for him at the moment, but will hinder his mobile use and digital capital in the long run. He states: ‘relying on my secretary in the office, and relying on my daughter at home, I don’t need to learn how to use mobile devices’. As he has become used to this ‘passive help’ and not ‘learning actively’ how to operate his device, his digital literacy and mobile use ability are not good. It can be predicted that his personal inability to use mobile apps will eventually hinder his social inclusion and engagement.

For most of my participants, mobile use is empowering and provides them with more choices for living a more creative and active retired life. ZJK and ZCY invested in a house in southern China after reading about it and related information on property

and other apps; LHXB changed his diet after reading health information on his mobile phone; ZTM, WLLS and HSL book travel tickets, hotels and pay for meals by using group purchase apps. Instrumental use help my participants to engage in society positively with behavioural results. Compared with instrumental use, ritualised use is less goal directed. Ritualised use help the third agers engage in relationships, interests and brings emotional support. JLW writes poems; WSM uses mobile apps to reduce the feeling of isolation; CXM sends virtual red envelopes in his WeChat group. Ritualised use improves the third agers' engagement in society in terms of affective and emotional aspects, including happiness, self-esteem and engagement in relationships.

At the same time, however, this research project has also found that engagement can have some negative effects. As discussed earlier, GGJ played *Fight Landlord* for long periods and this activity led to family conflicts; ZCY called everyone she knew when she first learnt how to use WeChat, making her an 'annoying person'; some parents tried to add their children as friends but this led to more pressure on their relations. These are some of the negative effects of engagement in online society. Some social news also describes the same phenomenon. For instance, taking photos of the food before a meal has become a ritual in China. One must take photos first, otherwise you are not fully appreciating the food and hospitality. According to one news report, a father felt disappointed when his son and his son's fiancé did not take a photo before the meal (X. Wang, 2019). These kinds of banal ritualised uses leads to some negative effects.

6.6 Beyond engagement: Emotional attachment

A key finding in this research project is that third agers in China are emotionally attached to their mobile phones. This attachment is far beyond behavioural and cognitive engagement, and perhaps even beyond emotional engagement. My participants not only show their affinity for content on mobile apps, but have developed an emotional reliance on their mobile phone. 'Smartphones represent a more profound and advanced anthropomorphic machine that proceeds through increasing intimacy' (Miller, 2019). For example, WLLS described his mobile phone

as part of his brain and as a private secretary. He stated that his mobile phone is a digital companion, especially when he travels to another city for business. He claims that the mobile phone decreases his loneliness. He shared his experience of travelling when he forgot to take his phone:

One time I travelled to another city without taking my phone. I was thinking what a bloody day. I cannot book DiDi at the train station. I cannot find my bus without the map app. Finally, I took a bus but I did not know where to get off. Finally, I got to the hotel, but I cannot get the verification code. I felt I was a blind person, and had lost my common sense. I found that the mobile phone has played the part of my brain.

Some of my participants reported feeling anxious when they did not have their mobile phones with them. WSB told me he begins to feel flustered when the mobile phone battery is low. JLW said ‘the mobile phone is my soul, without mobile phone, I lost my soul’. LHXB and GGJ go to the toilet with their mobile phones and claim they cannot leave the phone far away. Miller (2019) has written about the anxiety that comes from being without a phone; it may not just be the absence of a machine, but a temporary loss of part of ourselves. Turkle (2016) has warned that people who use technology a lot can have a decreased empathy for others. In her earlier book, Turkle (2005) argued that computer is not a tool, but a ‘part of our self, a mirror of the mind’ (p. 20) and ‘our everyday life’ (p. 21). Now, as society is mediated by mobile technologies, the mobile phone is not just a tool for communication, but an extension of the body and part of our identity.

6.7 Conclusion

This chapter contributes to knowledge of how third agers are using mobile apps to socially engage. Mobile apps can reflect cultural values and sharpen our everyday practices (Light, Burgess & Duguay, 2018). In light of the uses of media theory and the concept of engagement, this chapter has found that third agers in China can increase their social engagement. Based on instrumental and ritualised use, third agers in China use mobile phones to engage in the online and offline worlds in various ways, including through behavioural engagement, cognitive engagement and

emotional engagement. The findings show that third agers who engage in society via mobile phone use can have both positive and negative engagement. Third agers who are socially engaged can have a more creative and active retired life. However, for some third agers, mobile apps can produce tension and negative effects.

Furthermore, this chapter also revealed an emotional attachment between Chinese third agers and their mobile phones beyond the three aspects of engagement. The mobile phone is not just a tool for third agers; it is part of their being. With an increasing number of the ageing population using smartphones, the effects of the emerging emotional attachment between third agers and the mobile phone need to be further explored. Is Zuboff's (2019) argument coming true, that the development of technology is at the cost of humanity?

Next chapter will focus on how the third agers use fitness apps to maintain their health in a digital way and explore the impact of fitness apps for third agers' life nurturing practise. The mobile fitness apps enable third agers in China to practise *yangsheng* in a digital and more personalised way, and this will accelerate the process of individualisation in China.

CHAPTER 7: HEALTH AND FITNESS APPS AMONG THIRD AGERS IN CHINA

7.1 Introduction

The previous chapter explored how third agers use mobile apps to improve their social engagement. Based on instrumental and ritualised uses, I showed how third agers in China use mobile phones to engage in online and offline worlds in various ways, including through behavioural engagement, cognitive engagement and emotional engagement. This chapter explores the use of physical health and fitness apps among people of retirement age in China.

In July 2018, the Apple Store contained more than 3 million applications globally; among these, 90,000 were categorised as exercise, health and fitness apps (Statista, 2018). In China, the Apple store contains around 6000 apps labelled as ‘health and bodybuilding’; more than 4800 apps are titled as ‘health food’; more than 2000 are categorised as ‘exercise and fitness’, and more than 1900 are ‘medical and health’ (CQASO, 2019). Although the data on what percentage of these apps are used daily by third agers is unclear, it is evident that people believe exercise apps afford users various ways to maintain health.

Physical health is a basic condition of successful ageing and its management is a major social problem in China. Research has explored the benefits of exercising, such as how exercise can alleviate depression (Craft & Perna, 2004). Exercise training is beneficial for muscle strength, aerobic capacity, walking performance, and quality of life (Motl & Pilutti, 2012). However, the lack of physical exercise is a pervasive phenomenon globally. According to the WHO (2018), insufficient physical exercise is one of the leading risk factors for death worldwide. In recent years, exercise-related mobile apps and wearable devices have become popular tools for promoting an active lifestyle (Hui, Kwok & Tam, 2017). When we consider that China is experiencing a dramatic ageing process while moving into the digital era, it is therefore worthwhile to understand the potential of mobile health and fitness apps. Another point to consider is the number of online options that are now available to assist people with managing their health.

The chapter begins with a discussion of health in China and its relationship to individualisation. The chapter then focuses on the physical limitations on exercise in China. It provides background on exercising with the assistance of mobile apps and introduces the Chinese cultural concept of *yangsheng* (literally ‘nurturing life’) before showing how it can be linked to the process of individualisation in China. It illustrates how retired people rely on exercise apps to maintain their health and *yangsheng* lifestyle, hence the description *digital yangsheng*. Based on the interview data, the chapter argues that fitness apps stimulate the process of individualisation in China by providing more options for the self-management of people’s health, rather than relying on the state medical services and the care of family members. This is consistent with Sun’s argument that Chinese government and media are now promoting Chinese population’s health literacy and expecting individuals to take responsibility for their health and lifestyle (Sun, 2014).

7.2 Previous studies

According to the WHO (1995), ‘Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity’. L. Huang and Xu (2014) have argued that this definition only distinguishes health and the absence of illness, but it does not provide different connotations of health or offer operational guidance for people who are seeking a healthy lifestyle. To some extent, the definition provided by the WHO correlates with two components of successful ageing—physical health and mental well-being, as I have shown in chapter three.

A number of international studies on exercise apps have explored specific health problems. Danbjørg, Villadsen, Gill, Rothmann and Clemensen (2018) have researched the mental and physical barriers and motivational aspects of training in order to develop better exercise apps, and found that long-term continuation of exercising for patients with osteoarthritis could be improved by tailored, motivational content as well as competition and training together. Pinheiro and Machado (2018) have analysed a ‘lower back pain app’ and found that it improves exercise adherence at a low cost among lower back pain patients. Gerlitz, Helmond, Vlist and Weltevrede (2016) have reviewed published research on app studies and claimed that

current methodological approaches only focused on end-user interfaces, user interpretations of app affordance, qualitative analyses of their political economies or affective capacities, and so on. Hui et al. (2017) have explored the factors that contribute to better exercise adherence in a mobile app-based exercise promotion program called the Virtual Trainer project and concluded that intervention strategies of stimulus control, know-how and feedback system of mobile technology are more effective in promoting exercise adherence among various behaviour modification theories.

Scholars have explored how exercise apps or webs can provide information for users, including modelling how to do exercises, realistic goal-setting, social support and realistic goal areas (Conroy, Yang & Maher, 2014), as well as general information, and social support (Doshi, Patrick, Sallis & Calfas, 2003). Conroy, Yang and Maher (2014) identified 167 top-ranked apps in 2013 with respect to their behavior change techniques. Middelweerd, Mollee, van der Wal, Brug and te Velde (2014) argued that such apps provide tailored feedback which may bring about behaviour change. Many studies have focused on the intervention and behaviour change enabled by apps. Cowan et al. (2013) have used content analysis to explore 127 health and fitness apps from the Apple Store and concluded behaviour is determined by a number of beliefs about the individual's well-being. Doshi, Patrick, Sallis and Calfas (2003) have developed an evaluation template for assessing 24 physical activity websites using behaviour change theories. These studies aim to change behaviour or lifestyle via the intervention of digital technologies.

Thorup et al. (2015; 2016) have argued that pedometers made daily steps visible and could support cardiac patients' motivation for doing physical activity, especially the tailored activity supporting patient autonomy and independency for exercise. Vinciguerra and Vinciguerra (2017) have based their study on the current smart devices and technology market and concluded that smart wearable devices have potential in clinical utility and can develop a high quality of life at the individual level. This is especially useful for Chinese third agers who are experiencing the individualisation process.

Previous studies of fitness apps have been conducted mostly in medical fields. The terms 'patients', 'disease' or 'clinical' are regularly used in these studies. However,

the third age refers to relatively active and healthy ageing populations. Very few studies have explored how the ageing population in China maintain a *yangsheng* lifestyle with the use of digital technologies. Some studies have focused on fitness apps themselves, such as how to improve user experience, and how to increase user adherence. Previous studies are also mainly quantitative. These quantitative studies are good at finding out the frequency and extent of the effectiveness in the use of apps, however they cannot adequately explain how and why third agers use mobile apps.

Increasingly, people around the world are using new technologies to keep healthy and fit, and the market is responding with new technologies that can monitor and record health. Rowe and Kahn (1987) have emphasised the importance of physical health as well as the absence of disease and disability, which make it easier to maintain mental well-being and social engagement. Carroll et al. (2017) have found that people use fitness apps in association with intentions to change their diet and physical activity and meet physical activity recommendations. As technologies and the adoption of healthy lifestyles are rapidly proliferating, the concept of digital health is correspondingly emerging. Digital health can be defined as ‘the cultural transformation of how disruptive technologies that provide digital and objective data accessible to both caregivers and patients leads to an equal level doctor-patient relationship with shared decision-making and the democratization of care’ (Meskó, Drobni, Bényei, Gergely & Györffy, 2017, p. 1). Hsu et al. (2016) have explored China’s mobile apps health market and concluded that China is becoming a global leader in the health apps industry because of the high demand in medical care. Lu et al. (2018) have argued that health and fitness apps improve patients’ experience of accessing health information, assist with patient-doctor communication, and ensure transparency in medical charges. Health apps are therefore a good way for people to be independent and nurture their health.

There is a high demand for fitness and health apps among third agers because they are experiencing increasing individualisation. As discussed in chapter four, Beck and Beck-Gernsheim (2002) uses the term ‘individualization’ of society to refer to how people take more personal responsibility in developed societies. People in China are also taking more personal responsibility (Thøgersen & Ni, 2010), as well as experiencing the pursuit of a ‘life of one’s own’ and seeking genuine individuality

(Y. Yan, 2010). As I have introduced in chapter four, Thøgersen and Ni (2010) have explained the phenomenon of the ‘self-determining individual’ in China. Hagestad (1986) has also illustrated the new form of interdependence operating in China—where needs and wishes are guided by individuals, rather than by the family.

Meanwhile, mobile apps deliver multiple productivity and social benefits to users in China. Specifically, the affordances of health and fitness apps have changed people’s lifestyle, allowing them to be more autonomous; this is not to say they have embraced a kind of western-style individualism but rather they have more opportunities for individual self-realisation. Arguably, then, the individualisation of society in China is changing the relationship between individuals and the party-state, although not shifting to the kind of individual-society relationship seen in Western Europe (Y. Yan, 2010).

7.3 Limitations on exercise in China

It is a common belief that doing daily exercise is good for health. In 2012, more than 83.8 percent of the population in China who are over 18 years old do not exercise on a regular basis (Z. Chen, 2013). According to *The Report of the Survey of National Fitness Activity in 2014* (2015), the percentage of people who undertake regular physical exercise increases sharply with age. Among the different age groups, 18 percent and 18.2 percent of people between 50–59 years old and 60–69 years old, respectively, exercise daily; this is a much higher percentage of exercisers than those in the 20–29 years old (13.7 percent), 30–39 years old (12.4 percent) and 40–49 years old (14.9 percent) groups. This confirms that retired people pay more attention to health and do more exercise with age. The changing social roles are allowing retired people more time to exercise.

In comparison with other countries, people around retirement age have limited choices to do exercises in China; simple choices may include walking in the park or along streets. The exercise facilities are inadequate and inconvenient. Some people do *taiji* (tai chi) and square dancing, some do not know how to do *taiji* or dance, as they have not acquired basic skills. Moreover, the responsibilities of the retired population in China limits possibilities for doing various exercises. As discussed in

chapter four, under the influence of traditional culture, people sacrifice their energy and time to voluntarily look after their family and grandchildren. Retired people live a largely grandchild-centred life; they think that they should sacrifice their time and energy to the family. For this reason many have limited choice in terms of doing regular physical exercise.

7.4 Social changes and health maintainance

As discussed in chapter two, China is suffering from a self-inflicted population time bomb, the one-child policy. The current difficulty of counteracting the effects of this policy can be seen in the parents of the one-child generation who have now reached retirement age. It is unrealistic for them to get traditional family aged care from their only adult child.

Third agers often have a negative attitude toward receiving care from their only adult child. The changed family structure from a big family to a nuclear family means that the third agers are now taking more responsibility for themselves. During my interviews, one middle-aged person CZ said that although it is reasonable for his parents to live together with him, it would nonetheless be impossible for him to live with his daughter in the future, as the changing family structure from extended family to nuclear family. Moreover, he told me that when his parents get sick, he and his siblings could take turns to go to the hospital without impacting on their employment. However, the one-child generation must make a choice—either look after their parents or go to work to earn money to pay the medical fees for their parents. CZ expressed the view that once his daughter gets married, she will potentially have four retired people (excluding grandparents), plus one or two kids, to look after. FFM holds the same opinion: ‘I never and ever want to rely on them [one-child generation] to support aged care’. It is not only because this would be a huge burden on his daughter, but it is also influenced by changes in social development and life attitude. Hence, more of the ageing population take negative attitude toward relying on their children to care for them and are beginning to accept aged care centres. JLW, who has two adult children, agreed with the FFB’s position and expressed that ‘the point is not about we can or we cannot rely on the one-child

generation; the key point is we do not plan to rely on them, we want to live independently’.

Participants had a mixed feeling about the government in terms of aged care provision. Some of them do not trust the government to support aged care properly. CZ told me that ‘relying on the government is unrealistic’. The previous one-child policy propaganda was ‘one couple one child, and rely on government to get aged care’. But now, with the one-child generation’s parents stepping into retirement age, they can only get limited subsidies (around RMB 1000) annually from the government (J. Wang, 2018). WSM claimed that the subsidies are far from enough to live a normal life. She does not expect more, but supports the idea that the one-child generation’s parents should have priority in receiving care from aged care centres, as proposed by members of the Guangzhou Provincial National People’s Congress in 2017 (Guangzhou Daily, 2017).

Some participants believe that the aged care homes should be provided by the government. FFM and FFB said that if the aged care centres are not provided by government, it will be hard to guarantee the standard of care, considering the news of abuse in private centres that emerges from time to time. FFB’s answer seems to be self-contradictory—he had previously expressed that he expected nothing from government, but still hoped that the government can support a higher pension, so that they can afford better commercial insurance. From these changes, we can conclude that the ageing population in China is experiencing greater social individualisation; my participants embody this trend and are trying to extend their independent lifestyles and have healthy and longer life spans.

The strongest motivation for using health and fitness apps by third agers in China is therefore to maintain physical health under the context of social change. Maintaining physical health and independence is important for third agers in China, considering the dramatic ageing society, weaker filial piety, fast urbanisation, the one-child generation and the empty nest phenomenon. Nowadays, the third agers have begun to call themselves the ‘selfish’ third agers. Here, ‘selfish’ can be understood more in terms of ‘spending more time and energy for themselves to keep independent and healthy and look after themselves well.’ In fact, my participants thought ‘being selfish’ is one effective way to reduce the burden for their only adult child.

CXM, FFM and GGJ expressed the opinion that it is impossible for them to rely on their only adult child to look after them, so it is important to keep healthy and independent. During my follow-up interview, GGJ, who lives in Henan province, had begun to use an online doctor service. Most of my participants are concerned about the uncertain future. They expressed the view that they do not need care from their family at this moment, but they worry that they would become a burden on their family in the future when they experience disease or decline with age. This is particularly true for these nuclear families who have only one adult child and do not live with their adult children.

CZ and FFM are in the 60 years old group but are still physically healthy and sufficiently independent. CZ believed that people in their 70s may begin to enter their 'aged' life. FFM claimed that they will become a burden to a family when 'one day you cannot live independently'. WSM told me that she is reducing the burden on her adult daughter by looking after the grandchild. She claimed: 'If I don't look after grandchild for my daughter, they must go to find a babysitter which is more expensive than what they earn. I don't want to watch my daughter living a rough life'.

Many participants think they are independent and healthy now and can still help to reduce the family burden, but they also feel worried about the future when they become 'old-old'. Based on their interview answers, they are afraid that they may fall ill and can no longer live independently in the future. The future is uncertain in this dramatically changing society with an unprecedented and unbalanced age structure. FFM made a good point that 'money or retired pension is meaningless' [when you cannot live independently], as aged care in China still mainly relies on the family. So, staying healthy enough to live independently gives them the feeling that they are not a burden on both family and society, and gives them some sense of security. This is where digital technology is assisting and providing some optimism.

7.5 Nurturing life

In the context of a fast-moving digital environment in China, mobile health and fitness apps provide new ways for individuals to exercise and keep healthy. The

word *yangsheng* represents self-healing, health cultivation and a positive state of mind (L. Huang & Xu, 2014), ultimately leading to the maintenance of one's health in holistic terms. Rogaski (2014) has argued that *yangsheng* traditionally refers to limiting sexual practices, proper dietetic regimens, adequate movements, and medicines designed to nurture the 'vital forces and ensure the proper flow of *qi* within the body' (p. 25). Sun explains *yangsheng* is 'everything one can do to improve one's health, including what tonic to take, what to eat and drink, how to take care of one's body, how to relate to time and space and how to relate to other people and the environment' (2014, p.286). She further argues that, with the shift from state-run socialism to a market economy in China, increased public domains have been privatized, the 'increased need for people to make their own decisions and regulate their own lives' (p. 287) has developed together with the neoliberal ethics of the responsible self. Here, Sun's argument echoes with the concept of individualisation (Beck & Beck-Gernsheim, 2002; Y. Yan, 2010), that is, individuals need to make choices for themselves and take more responsibility by themselves.

Fitness apps can now digitally embody *yangsheng* and this way of 'nurturing life' has become quite popular among the third age group. Health and fitness apps are providing health-related information for users and an abundance of ways to nurture health, that is, *yangsheng*. The incentives built into mobile health and fitness apps, such as daily goal setting and personalised feedback, are habit forming; that is, by using such devices, people cultivate the positive habit of doing more exercise.

In China, the healthcare system comprises both western medicine and traditional medicine, which supplement each other (Hesketh & Zhu, 1997). Chinese traditional medicine emphasises healthy lifestyle, exercise and diet, which have remarkable benefits for the prevention of chronic disease (Hesketh & Zhu, 1997). Health and wellness have a much longer history in China and have cultural elements that are embedded in lifestyles for most Chinese people, especially for the ageing population who want to stay independent and healthy. *Yangsheng* was proposed by Zhuangzi who is the representative figure of Daoism. *Yangsheng* is part of traditional Chinese medicine (TCM), which originates from *Huangdi Neijing* (Inner Classic of Yellow Emperor) written between 300 B.C. to 100 B.C. *Yangsheng*, in contrast to the western medicine system, was recognised as an individual category of practice in

traditional medicine, a set of techniques that was applied to people's daily life, specifically to prevent disease, increase the immune system, harmonise the body's vitalities, and prolong life. *Yangsheng* is concerned not only with the material body but also with its intangible spirit or energy (*jingshen*) (Xutian, 2015).

From the perspective of homeostasis, *yangsheng* refers to the ability to balance the body, internal environment and external environment (Ren, Xing & Fu, 2007). L. Huang and Xu have argued that *yangsheng* promotes 'self-healing, health cultivation and a positive state of mind, ultimately leading to preservation of one's health' (2014, p. 496). They further argue that *yangsheng* is a holistic approach to health.

'How many steps have you walked today?' or 'I have reached the calorie target today' have become daily casual conversation topics among many Chinese people. During my fieldwork, some participants set a goal on their apps for doing daily exercise. They are proud to tell me they use various fitness apps to maintain their health. Some exercise at home to reach their target; some meditate to reduce anxiety; some use health monitor apps to record their blood pressure and heart rates.

Nowadays, *yangsheng* has become a kind of daily culture embedded in people's daily life. The ageing population, as discussed in chapters two and three, pay attention to 'nurturing life' or *yangsheng*, from daily exercise, diet and nutrition, to inner harmonious spirituality. Sun (2014) has argued that in China, *yangsheng* is what media cultivates people to do, well-being and *yangsheng* related TV programmes are more welcomed than cooking and travelling programme. Increasingly, third agers in China have begun to rely on digital technologies to achieve their *yangsheng* lifestyle, including monitoring their heart rate, sleep time and quality, meditation, daily steps counting, and exercise goals. Fitness apps, therefore, provide an optimal way for third agers to maintain and nurture a healthy lifestyle.

7.6 Fitness apps and achieving a digital *yangsheng* lifestyle

According to my fieldwork, participants who use mobile health and fitness apps regularly exercise more than people who do not use these apps. More than 50 percent

of my participants believed that exercise apps have a positive influence on their health (as shown in figure 11).

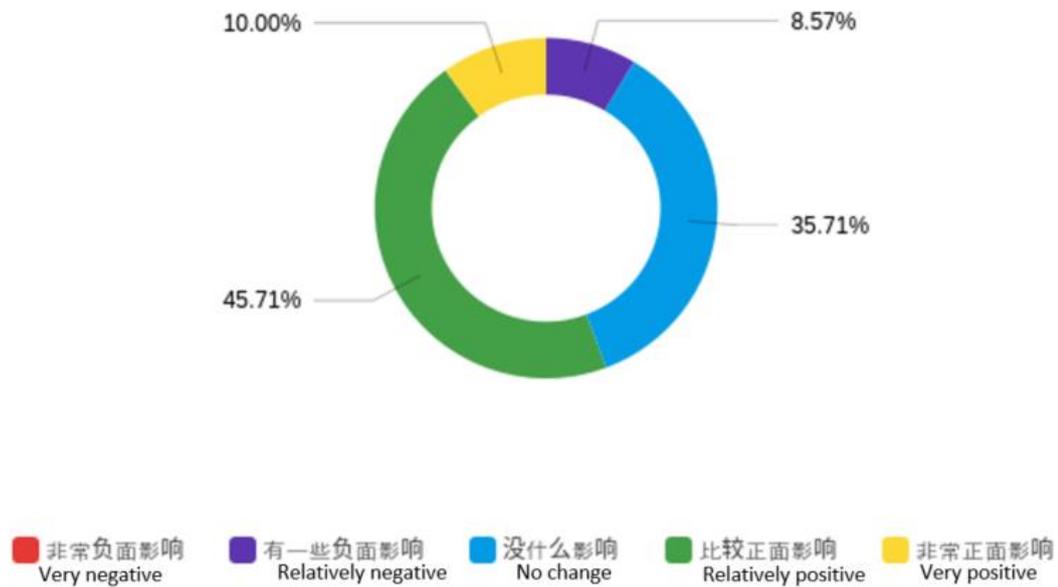


Figure 11: Influence of exercise apps on the maintenance of health

My participants select health and fitness apps according to their individual interests and needs. Some of them use fitness and health apps to record their exercise routine, time and calories burnt when they do jogging or walking. Others use meditation apps to reduce anxiety and stress. Others use heartbeat apps and sleep apps to monitor their individual health. The most popular app among my participants is the step-counting function on WeChat and QQ. This popularity may be linked to the fact that WeChat and QQ are necessary apps for most people. Some of the participants set a goal for the number of daily steps and self-monitor to reach that goal. Others did not set a specific goal but used the app to check how many steps they walked each day.

In this research project, after coding the data in NVivo from the interviews, I found that participants use mobile apps to achieve the *yangsheng* lifestyle. In the next section I will explain their responses to the use of mobile exercise apps.

Some of my participants expressed that they use mobile apps to proactively obtain health information. JLW was glad to receive information about how to keep healthy and actively searched for health information. CZ's hobby is cycling and he uses exercise apps to get information about it. Several years ago, he used a cycling app named Xingzhe to record his cycling trip to Tibet. He remains proud of this journey which involved cycling over 14 mountains at over 4000 meters elevation, with the assistance of and guidance from this cycling app. He named this journey as 'one bicycle, one rider, and two thousand kilometres' and shared it on Xingzhe, as well as other social media. He thought this trip was very challenging, even for young people.

However, some of the health information on fitness apps is not screened by professionals. My participants expressed distrust towards fake health information. WLLS liked reading the health information but he could not tell which information is true or false. Some information is obviously exaggerated to catch people's attention. CZ explained that he did not like *yangsheng* health information as there was too much fake information.

Most of my participants said that fitness apps afford them various ways to do exercise. Although JLW does not have a daily exercise plan and goal, he insists on walking and using the step-counting function on WeChat as this is good for his health. For WLLS, wearable Fitbit and exercise apps are necessary for his life and health. He uses the Xiaomi Fitbit and relies on WeChat and QQ to record his walking steps. He is also a devotee of qigong and shared the story of his qigong practice: 'I had learnt qigong since 1986. At that time, I had a weak immune system, my health was poor. I benefited a lot from qigong. Now, my daily life involves exercising qigong in the early morning in a park'. WLLS therefore practices qigong and combines this with other mobile apps.

My participant also expressed that some activities on mobile apps cannot replace the real teacher. When I asked if qigong apps can replace a qigong teacher, WLLS answered that he had never used qigong apps before. He thought the apps will be helpful for those who want to know qigong, but cannot replace the role of a real teacher, as qigong is not only about movement, but also about regulating one's breathing and finding harmony with nature and oneself. FFM likewise reported that she practised meditation whenever she felt anxious and stressed.

As more and more fitness apps provide tailored plans for their users, some participants have been able to set personalised goals for exercising and self-monitoring. WSM was a ping-pong coach before she retired. She sets a realistic goal of daily exercise and jogging. She said if the weather is not good for outdoor activity, she would run or jump indoors to reach her exercise goal. Likewise, WLLS sets a goal of 10,000 steps daily. He sometimes goes swimming but still uses fitness apps to calculate the calories burned and tries to reach 400 calories daily to maintain his health and prevent diseases, including diabetes and atherosclerosis. WLLS told me one of his friends is over 50 years old but looks around 30. She loves swimming. As WLLS explained, 'I admire her health and energy, so I swim too.'

7.7 Conclusion

Based on the interview data, the chapter has shown that fitness apps are assisting people to take personal responsibility for their health in China. For Chinese third agers, maintaining and 'nurturing' physical health means greater independence and this, in turn, entails taking responsibility for their own lives.

Physical health is a basic condition for successful ageing. Good health makes it easier to maintain mental well-being and social engagement for individuals. The chapter discussed limitations on physical exercise in China. It has shown that fitness apps provide new ways to maintain a positive level of health. The examples showed how fitness apps provide various positive *yangsheng* functions, including recording exercise routines, monitoring the heart rate and sleeping quality, reducing stress, giving personalised feedback, and providing health information. By using fitness and health apps, participants do more exercise to keep healthy and independent, thus providing new opportunities for health maintenance and fostering participation in order to enhance the quality of life as people age (World Health Organization, 2002, p. 12). With the many affordances provided by mobile fitness apps, third agers in China can now have a digital *yangsheng* lifestyle.

The next chapter will explore the research question of how the third agers in China use entertainment apps to build a new image of themselves. The focus is on short

video apps and karaoke apps, and the ways this format challenges the stereotype of the ageing population as being decline and fragile.

CHAPTER 8: ENTERTAINMENT APPS AND THE NEW IMAGE OF THE THIRD AGE IN CHINA

8.1 Introduction

The previous chapter found that third agers in China use fitness and exercise apps to develop a digital *yangsheng* lifestyle. Fitness apps, for example, provide opportunities for third agers to maintain their health and independence. In the digital world, scholars have begun to focus on technologies marketed towards the ageing population. Some studies (Hou, Yin & Chen, 2005; Hubers & Lyons, 2013; Kakulla, 2019; QuestMobile, 2018) argue that the ‘grey hair technologies industry’ is a new emerging market. Hubers and Lyons (2013) have examined how elderly people use technology assistants, such as tracking devices and community alarms, to increase their independent living in the United Kingdom.

While digital health is evidently increasing, at least in regard to the access to digital services, entertainment options are also changing. This chapter focuses on how Chinese third agers are building a new image of themselves through mobile entertainment apps, particularly in short video and karaoke apps. This image is in contrast to the stereotype of decline and fragile ageing and, as I will show, it can also be a weapon against ageism. Stereotypical images of ageing are harmful for the mental well-being of third agers. The new image can assist in reconstructing personal value and worth among Chinese third agers, as well as contributing to their mental well-being.

The concern of this chapter is therefore to show how third agers in China use mobile entertainment apps to build a new image and maintain their mental well-being, including their happiness, interests and satisfaction. In this research project, mental health is understood in terms of mental well-being, happiness or enjoyment. The chapter will explore how the third agers use entertainment apps, such as short video apps. I introduce short video celebrities from the TikTok and Meipai platforms. I show how news and reports have drawn attention to the dramatic increase of short video users among third agers (Sina, 2018; Zhou, 2018). Some ‘pioneers’ among third agers are creating and uploading short videos to multiple apps and platforms. By analysing short video content uploaded by two celebrities, it is observed that a

new and more creative image of the ageing population is being constructed by third agers in China. Combined with the interview data, I have found that this new image can help the ageing population to improve their mental well-being. These short videos reveal a new image of ageing life in China. The findings of the chapter are mainly based on the short videos uploaded to these platforms and the associated online comments, as well as interviews with my participants.

In this chapter, my participants do not deny natural ageing processes but emphasise that their mobile use is contributing to a new image of ageing. Retired people can enrich their third age lifestyle, have fun and entertainment, and have more choices through mobile phone use. Mobile entertainment apps can increase their overall mental well-being. The chapter begins by considering the mediated image of the third age population, globally and in China. The next section examines two examples of short video productions by ‘Naughty Granny Chen’ and ‘Grandpa, Wait’. This is followed by a section that shows how the ageing users of mobile phones are using short videos. Finally, the chapter turns to the relationship between the new image of third agers and their personal value and mental well-being.

8.2 Images of ageing

Stereotypes of the ageing population have existed for a long time in China. Generally speaking, many people have the impression that retired people are stuck in their houses, cut off from physical social networks. They perhaps watch old-fashioned TV dramas as their daily routine to kill time. They want to do some outdoor activities but find that arthritis limits their mobility. People who are old are often seen as grumpy people, who are always overly cautious about their health. But are retired people really living such a life today?

As I have discussed in chapters two and three, the ageing society is a global phenomenon. Yet, stereotypes of fragility and decline persist. In the previous chapter, I showed how research related to the ageing population tends to take an ageist approach when studying this demographic (Hall & Marston, 2014; Holliday, 1997; Smith, Strauss & Zhao, 2014; S. Wang et al., 2016). The main focus, particularly in the medical fields, is on physical health. Holliday (1997) has argued

that failure of health maintenance leads to pathological changes. Smith, Strauss and Zhao (2014) have listed the positive and negative forces that influence the ageing population's physical health in China.

As discussed earlier, concepts such as successful ageing (Rowe, 1998), positive ageing (S. Chen, 2010), optimal ageing (Aldwin et al., 2018), and third age (Laslett, 1987) are all used to refute the stereotype of the ageing population, although some scholars have criticised that these 'positive concepts' are ageist because they focus on the healthy and the young-old group (chapters two and three). At the same time, however, Chinese people have observed filial piety for over two thousand years. As discussed in chapter four, in modern China, 'respect ageing and care ageing' (*jinglao ailao*) is a popular slogan found on the wall in many homes and public sites. In China, elder care is provided mainly by family members, and this is influenced by Confucianism and traditional culture. Davis (1991) has argued that the family is always the location to observe the respectful positioning of the elderly because the family is the place where the Confucius ideals of filial piety are fully elaborated.

The image of ageing people in the media is nonetheless changing. In previous times, older people could provide wisdom for young people and represent the authority of a family. Nowadays, the ageing population is still respected by young people. Filial piety is embedded in cultural tradition. Although ageing people no longer retain an unquestioned or autocratic role in family and society, they still have a respected role in the 'new China' (Sher, 2019). Young people who do not respect and care for elderly people are judged and criticised by others.

In 2003, Featherstone and Wernick identified a new image of the ageing population originating from consumer culture. They argued that this image might break down the stereotype of the ageing population. They proposed the emergence of new image of the ageing population through a case study of the British *Retirement Choice* magazine. They explained the role of consumer culture in reconstructing a new image of the ageing population. This argument challenged the idea that the image of the ageing population can only be constructed by chronological age or in terms of bio-medicalisation.

The new emerging image of China's third age is partly driven by the widespread use of entertainment apps. Short video apps in particular provide third agers with new platforms to show their lifestyle and interests, their understandings of society, and their love for and relationships with partners. These new images of their life were previously hidden or invisible under the stereotype of the ageing population for a long time. The development of new images of the ageing population has the potential to break down stereotypes about ageing; at the same time, it may encourage the ageing population to achieve various new lifestyles, and correct discrimination in the societal model of ageism. Featherstone and Wernick (2003, p. 29) claim that while the biological processes of ageing cannot be avoided, the meanings which we give to these ageing processes are social constructions. Featherstone and Wernick have argued that ageism is not only the source of widespread discrimination against older people but also a crucial factor in undermining their personal value and self-worth. They argue that the dominant images of ageing have shortcomings, in that the third age is seen as an extended plateau of active middle age, which is typified by the imagery of positive ageing as a period of youthfulness and an active consumer lifestyle (Featherstone & Wernick, 2003, p. 44).

As discussed in chapter four, reality is socially constructed. The sociology of knowledge must therefore analyse the processes by which this occurs (Berger & Luckmann, 1966, p. 13). According to Featherstone and Wernick (2003, p. 29), images can act as representations of the general ideas which shape the 'appraisal' of everyday social practice. The meanings of images in the media are flexible and open to (re)interpretation according to the socio-historical context. Franchina and Coco (2018) have explored the influence of social media use on body image issues among adolescents, and found that images on social media have a strong influence in shaping body perceptions among adolescents—thin models for girls and muscular-ideal models for boys. Similarly, Fardouly and Vartanian (2016) have argued that social media usage is associated with image of young faces and bodies, and further argued that this association may strengthen over time. Wykes and Gunter (2005) have argued that the media representation of body image provides monotonously narrow, limited and rather conservative models of femininity and gender (p. 219).

Society is increasingly media saturated and the image of ageing is also heavily mediated. As discussed in chapters one and four, the mediated society refers to how society is shaped and formed through media (Couldry & Hepp, 2018). Couldry and Hepp use the descriptive term ‘deep mediatization’ (2018, p. 34). In today’s mobile society, media platforms provide spaces for people to perform social rituals through communication acts. In a recent book Couldry (2020) devotes more attention to the concept of ‘sharing’ and ‘imagining’, showing how the media industry’s ability to accumulate data tracks our image, leading to an ‘algorithmic imaginary.’ With the ageing population increasingly engaged with digital technologies, the digital technologies industry in China is building an algorithmic imaginary of ageing group with the accumulated data. The ageing group, just like every one of us shares in the digital age, and become more connected and this can lead to a confusion of mediated representations. Generally speaking in China, the government is concerned with monitoring representations that are ‘bad’, and promoting positive representations that are in line with social harmony. When we consider the image of the ageing population, the *bad* stereotype has largely been constructed from various traditional media representations. Nowadays, in the digital age, when many aspects of society are mediated by mobile technologies, a new image of the ageing population is emerging.

Images of the ageing population in research projects have two functions: first, images are cultural resources that influence the meanings of ageing; second, images provide important evidence that different societies have different understandings about later life. The dominant image of ageing in China is a constructed one, a respected social and authoritative role under traditional Confucianism. However, in modern China, this image is remediated as something less positive by social and cultural change, such as urbanisation and the one-child policy. Urbanisation brings people closer together and young people can, if they wish, get guidance from older people. Meanwhile, the one-child policy has contributed to a large number of one-child families, which has in turn raised the profile of the child within the family structure, and in many cases decreased the guiding role of the older generation. But, nowadays, with mobile use, mobile apps can provide opportunities to mediate the new image of the creative and active ageing population.

Mobile apps can provide third agers with various ways to show their new image and lifestyle. By using different entertainment apps, third agers can create their own image. Entertainment apps that reflect the third agers' life activities are colourful and have diverse content. According to the report by QuestMobile, people over 50 years old in China use 15 apps on average every month (QuestMobile, 2019). However, according to the *Report on the Ageing Mobile Internet Users* by Tencent, the average number of apps is 20 for the majority of the ageing population in China (Cui, 2018). Although there is significant difference in the two reports, it is hard to deny that mobile apps have emerged in the daily lives of third agers in China. By using mobile apps, the third agers can watch online videos, produce short videos, enjoy music and songs, read online, perform karaoke online, edit photos using beauty apps, listen to audio books, shop online, and so on. In the digital era, the third agers can do something that elderly people could not do before—they can develop a new image for themselves.

Images on social media are often related to physical appearance and the physical body. Chinese third agers are individually and collectively building their new image through mobile phone use. Bodies can be reshaped, remade, fused with machines, and empowered through technological devices and extensions (Featherstone & Wernick, 2003, p. 4). In the next section, ageing celebrities and the short videos produced by third agers will be examined. The new image they are building will be discussed. Moreover, I will explore the relationship between the new images created and mental health.

8.3 Short video producers, celebrities and pioneers

Among entertainment apps, short video apps provide the most immediate means for third agers to build a new image and increase their social visibility. The average time spent using short video apps among third agers has increased rapidly; for example, the monthly average for people over 50 years old has increased from around 500 minutes in June 2017 to 1497 minutes in June 2018 (QuestMobile, 2018). Entertainment apps, such as short video apps, karaoke apps and mobile games apps, are popular among my interviewees.

For the purposes of my study, I selected two third age celebrities from the short video platforms Meipai and Tik Tok respectively (see table 6). The Meipai celebrity is female, 68 years old, and names herself ‘Taoqi Chennainai’ or ‘Naughty Granny Chen’. Her short videos largely reflect the ageing population’s emotions and their relationships. Some of the content uses irony to express opinions on social topics, while others are related to hilarious moments in life.

Table 6: Information on selected third age celebrities

Name (Up to 13.3.2019)	App	Age	Content	Followers
淘气陈奶奶 (Naughty Granny Chen)	Meipai	68	Emotion and relationship of third agers; Ironic way to express their ideas on social topics; Humorous moments in life	35.5K
爷爷等一等 (Grandpa, Wait)	TikTok (Chinese version)	NA	Creative content reflects various aspects of life	3662K

Yeye, Wait, from the Chinese version TikTok called Douyin, is another celebrity who has a popular and commercial account, see figure 12. The meaning of the account name is ‘Grandpa, Wait’. The short videos on Grandpa, Wait’s channel cover different themes, including relationships and love among third agers, life wisdom, life experience for the younger generation, opinions on social issues, and so on. Grandpa, Wait had 366.2K followers as of March 2019. From a total of 323 short videos, 72 received more than 100,000 ‘likes’ (Haozi, 2018). This account is run by a commercial company, Yangcong group company (*The information of grandpa wait*, 2019).



Figure 12: The screenshot of grandpa, wait’s account page

Naughty Granny Chen is one of most popular third agers celebrities on short video apps. The images of her in the short videos are usually quite positive and optimistic. Most of the images on her account page show her smiling face (see figure 13). Her short videos have an ironic and sometimes satirical attitude towards hotly debated social topics. For instance, one of her videos addresses IT workers experiencing great work pressure in China, suggesting that they became old and weary more quickly than in other jobs. Naughty Granny Chen has a penchant for dealing with hot button topics in a hilarious and creative way—for instance, she, with her grey hair and winkled face, mimics an IT worker and tells other people she is only 20 years old.

This short video has attracted thousands of ‘likes’ and comments (see link 1 in table 7).



Figure 13: The screenshot of Naughty Granny Chen's account page

In another example, Naughty Granny Chen challenges the practice of borrowing money from ‘huabei’, the loan function of Alipay. In China, 11 November (Double 11) was originally named as a singles’ festival and then it became a mega shopping festival with the development of e-commerce. 12.12 (Double 12) gradually evolved to become another shopping festival. These festivals were created by the e-commerce industry, especially by Alibaba e-commerce Company. The short video of spending all the money to shop during double 12 festival (see link 3 table 7) shows people basically losing their minds in the face of rampant consumer culture and completely losing their self-discipline during the 11.11 and 12.12 shopping festivals. In one of her videos, Naughty Granny Chen wears a children’s toy gun to fight against the

effects of these festivals. Many people buy products online that they do not need. In order to satisfy their desire for buying products, many people are forced to seek loans using apps, including using the loan function of Alipay. Another short video by Naughty Granny Chen shows the popular loan function of Alipay and its related problems. She acts as one of the Alipay users who cannot repay the loan on time, and uses *gongfu* to beat up Jack Ma (founder of Alibaba) through mixed editing (see link 2 in table 7). This is a satirical way to express the dangers of consumer culture and online loans.

Table 7: Information on *Naughty Granny Chen*

Title 1:	I am only 20 years old young lady
Short description	Granny Chen, with grey hair and winkled face, is called grandma on the street, but she replied she is a young female programmer with only 20 years old.
Duration of video	18 seconds
platform	MeiPai
URL	http://www.meipai.com/media/1069584879?uid=1551916893&client_id=1089857299&utm_source=meipai_share&utm_term=meipai_ios&utm_content=test&viewCount=1&shareCount=1
Title 2:	We are broke, can you help me pay for my loan?
Short description	Mayun, the founder of Alipay, asks Granny Chen to pay for the loan. Granny Chen has no money to pay back. Then through mixed editing, Granny Chen fight with Mayun with kongfu.
Duration of video	36 seconds
platform	Meipai
URL	http://www.meipai.com/media/1080496008?uid=1551916893&client_id=1089857299&utm_source=meipai_share&utm_term=meipai_ios&utm_content=test&viewCount=1&shareCount=1
Title 3	The result of double 12 shopping festival
Short description	The video depicts the comparison before and after the shopping festival.
Duration of video	23 seconds
platform	Meipai
URL	http://www.meipai.com/media/1068621139?uid=1551916893&client_id=1089857299&utm_source=meipai_share&utm_term=meipai_ios&utm_content=test&viewCount=1&shareCount=1

Title 4	Bossy grandpa fall in love with unsophisticated grandma
Short description	How does grandpa meet grandma on the street, and fall in love
Duration of video	21 seconds
platform	Meipai
URL	http://www.meipai.com/media/1065667337?uid=1551916893&client_id=1089857299&utm_source=meipai_share&utm_term=meipai_ios&utm_content=test&viewCount=1&shareCount=1
Title 5	The bossy grandma has been transformed into a warm grandma.
Short description	The senior couple give some gesture with happy background music.
Duration of video	14 seconds
platform	Meipai
URL	http://www.meipai.com/media/1066116590?uid=1551916893&client_id=1089857299&utm_source=meipai_share&utm_term=meipai_ios&utm_content=test&viewCount=1&shareCount=1

Two of the selected short videos concern Naughty Granny Chen's partner and demonstrate the ageing population's love and emotional attachment. These videos have helped to change the stereotype of the ageing population, who were previously shy and unwilling to show love for their partner, following the norms of Chinese traditional culture (see link 4 and 5 in table 7). These short videos therefore illustrate the desire to break down the stereotype of the ageing population.

Naughty Granny Chen uses the medium of the Internet to reveal a new way for understanding third agers' lives. By using short video apps, she is 'constructing' an active, positive and happy image. This new image is different from gloomy, dependent and depressed stereotypes. Naughty Granny Chen also uses short videos to represent her views in later life and provide an understanding of society in a new way, filtered through the wisdom of the elderly. In addition to the short videos produced by Naughty Granny Chen, there are now other third age celebrities who perform eyebrow dancing (NanjingLaoyu, 2019) and finger dancing (Nymph, 2019), in a sense mimicking the banal things that younger people are doing online. While such short video content goes out of fashion quickly with the rapidly changing societal trends, the use of this medium by Chinese third agers is an innovative way to

represent their life and interests in the digital era, become more visible, and construct a different self-image.

Douyin is the most popular short video app among the younger generation in China. However, with mobile apps being so pervasive, the Chinese third agers have begun to use this platform to create content and represent themselves in a new way. Recently, many third age celebrities are emerging on Douyin, producing popular content to show aspects of their retired life, such as the catwalks show, or sharing life wisdom, and cooking skills. Among these celebrities, Grandpa, Wait is one of the most typical who demonstrates a new representation of third agers in China.

The selected short videos by Grandpa, Wait, feature and demonstrate the following: cosplay among the ageing population (see link 1 table 8); helping grandma to do makeup (see link 2 in table 8); encouraging a shy grandson to talk to a young girl (see link 3 in table 8); dancing with partners to show love, or recall memories of their youth (see links 4 and 5 in table 8).

Table 8: Information on Grandpa, Wait

Title 1	Senior version of Pipaxing (name of a poem and dance)
Short description	Senior couple wear traditional costume to cosplay traditional characters and dance traditional style
Duration of video	16 seconds
Platform	Douyin
URL	http://v.douyin.com/25RofG
Title 2	Funny makeup by grandpa
Short description	The grandpa helps grandma to makeup
Duration of video	59
Platform	Douyin
URL	https://tw.iqiyi.com/v_19rr1zpkcs.html
Title 3	Grandpa encourages shy grandson to talk to a girl
Short description	Grandpa mimics as a lost man and creates a humorous and funny opportunity for the shy grandson to talk to a girl

Duration of video	57 seconds
Platform	Douyin
URL	https://tw.iqiyi.com/v_19rr1zphps.html
Title 4	Sweet fingers dancing by grandparents
Short description	Mimic younger generation to do finger dancing
Duration of video	16 seconds
Platform	Douyin
URL	https://tw.iqiyi.com/v_19rr1ydgdk.html
Title 5	Grandparents returned to university
Short description	Grandparents recalling old memories
Duration of video	1minute and 49 seconds
Platform	Douyin
URL	http://v.douyin.com/252YVT

The Grandpa, Wait account reconstructs previous images of the ageing population in various ways. Elderly people are stereotypically constructed as nonsexual. However, Grandpa, Wait explicitly shows romantic love between third age partners. The traditional image of the ageing population may be far away from cosplay, but the third agers present a short video performance to show themselves enjoying their hobby. While the ageing population is often seen as doing slow activities, such as *taiji* and qigong in parks in the early morning, Grandpa, Wait engages in a dance battle with young people. This short video content challenges the traditional image of the ageing population and constructs a more creative and active image.

This new image is orientated by digital capital. As Park has argued, the ability to adapt to new technological environments is critical to well-being. How well a person embraces digital technologies can affect their quality of life. Non-adoption of digital technologies thus comes at a cost (Park, 2017, pp. 3-4). Based on the mobile images in my research, it can be concluded the new image is more optimistic, positive and happy, which in turn improves mental well-being and life quality.

8.4 Entertainment apps and third age users

Most of my participants use entertainment apps, including Chinese karaoke apps, such as WeSing; games apps, such as *Xiaoxiaole*; and other short video apps, such as *Xigua* and *Xiaohuoshan*. Most said that their purpose for using entertainment apps is to kill time through having fun and enjoying some entertainment. My participants told me that the entertainment apps increase their daily laughter.

Aside from the previously mentioned celebrities who create and upload short videos, most third agers are simply users of entertainment apps. Participants watched various kinds of short videos for different purposes, such as getting news and information, learning skills, and for fun and entertainment. Some of my participants spend less than one hour daily on short video apps. Others told me they spend more than two hours watching short videos. While most thought that the purpose of watching short videos is for entertainment, one of my participants, HSL, reported that the content of most short videos is shallow and vulgar.

Karaoke is a popular entertainment pursuit among third agers in China. Participant CXM uses the WeSing app to record herself singing classic songs. She was initially alerted to this app by her friend. When she recorded herself singing on WeSing and shared her first song on Moments in WeChat, many of her friends clicked ‘like’ or wrote comments, including some people she had never contacted on WeChat before. She says she felt happy and relaxed using this karaoke app. She uses WeSing in her daily life to record herself singing as a form of relaxation and enjoyment, as well as a way to have more social engagement.

Some participants said that they like to play online games, including mahjong, Candy Crash, *Happy Garden*, CrossFire and poker. Although the participants expressed their enjoyment in playing online games, their family members and friends thought they were wasting time, and said that playing such games is unhealthy. This view is influenced by the stigma of digital games in Chinese culture

8.4.1 WeChat as short video platform

Interestingly, most of the short videos accessed by my participants were not from the short video apps, but came from WeChat groups. The third agers I interviewed spend longer times watching short videos on WeChat rather than on dedicated short video

apps. They shared short videos from one WeChat group to another, but most could not tell me the original source. WeChat is the main platform for third agers to access short videos.

JLW accesses short videos mainly on WeChat, and sometimes also creates and uploads short videos on WeChat. Similarly, WSB is a shutterbug and watches short videos to learn photography, and he sometimes uploads aerial photos or videos on WeChat. ZTM has tried cosplay with her friends and shares short videos in the group or with her friends only on WeChat. The Chinese third agers I interviewed access, watch and create short videos on WeChat rather than specific short video apps. Their way of accessing short videos is different from the young generation who generally access short videos from dedicated short video apps. In short, third agers in China have developed their own image by accessing short videos on WeChat.

8.4.2 Shared behaviour among third agers

However, there are some similar patterns emerging among Chinese third agers in short videos and photo editing apps and these are more obvious among females. A very bright colourful scarf around their shoulders or over their head is a necessity in travel photos or videos; they use similar hand gestures beside their faces when they pose for photos. The young generation have begun to copy their posts and gestures in short videos for poking fun at their third life stage (Yangguoer, 2018). Among them, one foreigner (Tencentvideo, 2018) shot a short video to show the characteristics among third agers. The mobile app creates more contour in discussions on connections, relations and inclusions which now seem blurred through the instant use of ubiquitous lexicons of mobile app marketing tools and functions such as the words 'to connect,' 'to share,' 'to bring people together' (Molz, 2012, p. 6).

Moreover, in terms of karaoke apps, WeSing and Changba were developed almost at the same time with similar functions. However, WeSing became the singing app used mainly by the ageing population, whereas Changba attracts a younger audience. The two apps subsequently began to show more and more differences according to the different user groups, including differences in the interface design, function, content and advertising. There is homogenisation in the songs selected by third agers on WeSing, whereas the younger generation consumes more varied content on Changba.

Perhaps this is because when third agers were young, they could only select from and learn a limited number of songs.

Some scholars have explained third agers from the perspective of a cohort (Gilleard & Higgs, 2002; Laslett, 1987). The cohort perspective helps to explain their similarity of practice under the particular historical and social context. Third agers have experienced the same historical events and created to their similiar memory. Recently, they are experiencing the digital trend and belong to the transitional group. These similarities also represent part of their image.

According to the online survey conducted for this research project, respondents with higher educational background use the mobile phone and apps more frequently and for a longer time. After coding and analysing the survey data in SPSS, figure 14 was produced. The increasing number on the horizontal line of education represents higher education degrees.

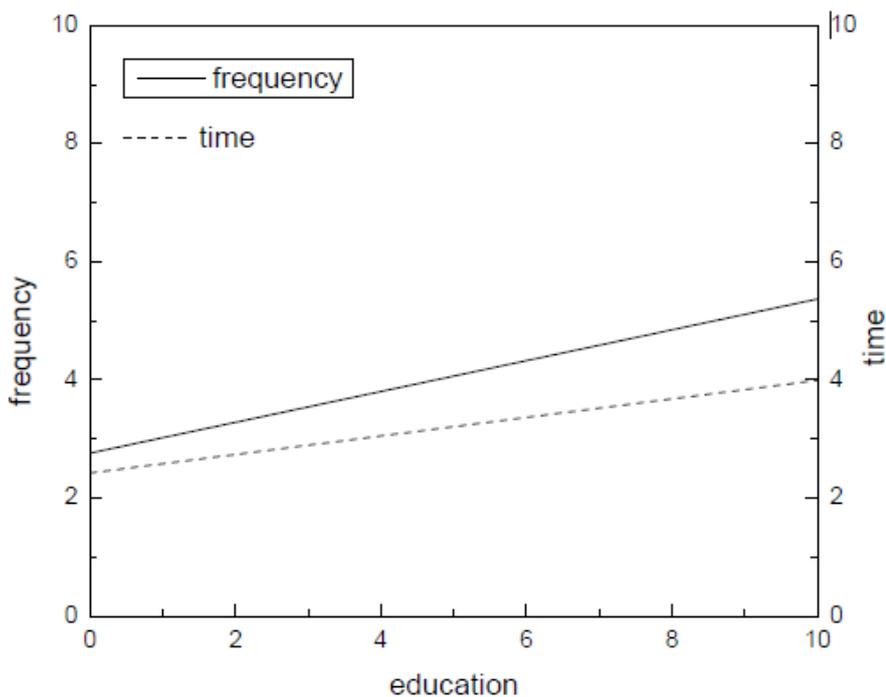


Figure 14: Relation between education and use frequency, and relation between education and use time length

Using a mobile phone more frequently and for longer does not mean one has more digital capital. Digital capital is a more comprehensive concept which is not only about an individual's education and literacy; it addresses socio-cultural capital and personal networks. Secondly, some of my participants expressed the view that once they found something difficult, they would skip it and seek alternatives. It means that even while they have high frequency of use and spend a longer time on mobile phones, this does not represent high digital capital. Thirdly, from my interview data, some participants with lower education degrees have acquired high digital literacy and accumulated higher digital capital. Among my participants, CXM (female) and WLLS (male) only finished middle high school and high school, respectively, during their youth. Nevertheless, they can use technology, such as computers, mobile phone and apps, better than FFB who has a bachelor's degree. In this case, more frequent use and the amount of time spent on this use does not represent higher digital capital. CXM, had to learn how to use it by herself or from her friends. Participants who learn actively from the younger generation can more easily accumulate digital literacy.

8.4.3 Improper image of shared videos

Another characteristic of the short videos shared in WeChat groups is that the short videos are often shared with a provocative sexualised image, even though the actual content does not contain any pornography. The content of these short videos can be varied, including social news, life tips, self-help content, philosophies of life, health-related information, and so on. I discovered this when I organised a WeChat group for my participants (I have also belonged to WeChat family groups with some of these participants for more than six years). I spoke with some of them and asked, 'Why did you share a short video with such a provocative image in the WeChat group?' As this kind of question is quite intimate in Chinese culture, only a few of the participants agreed to be interviewed. Some did not respond and were silent or they pretended they did not hear my question clearly and turned their face away. One of my relatives answered, 'I did not notice that, but you can focus on content, not the cover'.

Although they avoided answering my question, it is quite a common phenomenon for elderly people to share the short videos with provocative images in WeChat groups.

This characteristic is one factor to distinguish the third age group from younger users. The young generation, as ‘digital natives’, pay more attention to preserving their digital image. The young generation is more used to the kinds of images they present on digital platforms and mobile social apps. The reactivity and interactivity between technologies and individuals has been termed a ‘second self’ by Turkle (2005). The content younger generation upload online represents part of themselves; alternatively, we can say they are presenting their second self. The ageing population, as ‘digital immigrants’, while benefitting from the convenience of digital technologies, has less accumulated digital literacy and digital capital than the younger generation.

8.4.4 Digital games and entertainment

Some of my participants play digital games. Allaire et al. (2013) have argued that playing digital games may serve as a positive activity associated with successful ageing. Health-focused games, such as those related to improving memory and cognitive functioning, are often presented to this population as a way of retaining cognitive ability into their later years. A huge industry exists around this phenomenon with games based on patterns, enigmas, finding differences, word puzzles, as well as maze and sequence games that are marketed as improving cognitive abilities (Chesham et al., 2017; Cota & Ishitani, 2015). Digital games may be regarded as an economical way to combat diseases, both in treatment and in prevention (Cota & Ishitani, 2015). Similar arguments that games can help treat chronic disease such as diabetes and disease related to heart problems are equally common (Cota & Ishitani, 2015; Hall & Marston, 2014; Lim et al., 2012). Zhang and Kaufman (2016) have taken the same view and argued that playing digital games can improve the physical and mental balance of older adults living in the community as well as in nursing homes.

Fun and amusement are still important characteristics of playing digital games. De Schutter and Abeele (2015) have argued that games should not be marketed solely as having the purpose of mitigating age-related decline, and emphasised that age related adjustment should not interfere with the actual gameplay of the games. They recommend emphasising playfulness over usefulness.

My participants who play digital games do so for fun and entertainment, as well as learning. Some participants use the rationale of playing digital games for mental well-being as an excuse to play digital games, although they are not sure of the real effect. Some of my participants play digital games because they want to build connection with their children who work far away from home. Digital games provide an option for the ageing population to enjoy entertainment and gain a stronger connection with their children. This, too, is good for mental well-being.

8.5 Mental well-being and new image

Research on mobile apps and the ageing population largely tends to focus on physical health. However, a comprehensive definition of health needs to include a person's mental and emotional health (Danna & Griffin, 1999). A great deal of research has studied elderly people's mental health and technologies, but it seems most research explores how to use technology to monitor mental health and try to decrease mental problems from a medical or clinical aspect, or relate it to various mental diseases (Donker et al., 2013; Wang, Varma & Prosperi, 2018). According to the definition provided by the Australian government, mental illness is a clinically diagnosable disorder (Definitions of mental health and mental illness, n.d.). These studies focus on mental illness. Negative words, such as 'patients', 'mental disorder' or the specific name of diseases, are used to describe problems with mental health among the ageing population.

Definitions of mental health are also influenced by cultural and societal development. The meaning of mental health has only become more comprehensive recently. Among various definitions of mental health, the most popular one is defined by the WHO. According to the WHO (2014), mental health is defined as 'a state of well-being in which every individual realizes his or her potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community'. Although this definition was criticised by Galderisi et al. (2015) for identifying positive feeling and positive functioning as key factors for mental health, it moves away from the conceptualisation of mental health as a series of mental illnesses.

Jahoda (1958) subdivided mental health into six domains: attitude toward the self; growth, development, and self-actualisation; integration; autonomy; perception of reality; and environment. Galderisi, Heinz, Kastrup, Beezhold and Sartorius (2015) have argued that mental health is ‘a dynamic state of internal equilibrium which enables individuals to use their abilities in harmony with universal values of society’ (p. 232). Similar to the idea of Galderisi et al., the Australia National Mental Health Plan 2003-2008 declares that ‘mental health is state of emotional and social well-being in which the individual can cope with the normal stresses of life and achieve his or her potential’ (Definitions of mental health and mental illness, n.d.). However, these definitions are too complicated or too abstract.

Nordqvist (2017) has explained that mental health represents feeling good and functioning well, while mental health conditions represented symptoms. Keyes (2006) has argued that mental health has three components, including emotional well-being, physiological well-being and social well-being. Among the three components, emotional well-being means the individual’s happiness, interest in life, and satisfaction.

Third agers can now engage in activities online and offline. In doing so, they are developing a new image which seems to afford more positivity than previous stereotypes. These third agers are able to develop their interests online, show their understanding of societal development, express their voice on hot button social topics and follow what they are interested in by using the mobile entertainment apps. They enjoy entertainment such as watching short videos, singing karaoke or playing games on mobile apps.

During my interviews, I found that participants who exhibit a positive attitude toward using entertainment apps accumulate digital literacy better than those with a negative attitude. For instance, WSB has a positive attitude towards various apps. He leads an active life and has various hobbies that include roller skating, aerial photography, playing violin, and *taiji*. He has joined several aerial photography groups in WeChat, and learned how to play a violin from mobile apps and adjust the tone using a mobile tuning app. He uses his photo and video editing skills to record happy family times, and edits and mixes his own roller skating and aerial photography videos featuring his violin music.

Like WSB, ZTM has a positive attitude towards using entertainment apps too. She has done lots of creative activities online and offline. She recites poems and records her poetry readings on mobile apps. She commented specifically on her love of travelling: ‘I spent longer time travelling than staying at home after retirement’. Hence, she is familiar with several travel apps. In 2018, she used tourism apps to book her overseas travel. She has also participated in cosplay for fun after retirement (figure 15). She has used the mobile phone and mobile apps to record her competitions, her travels and her cosplay activities. She has produced hundreds of photos and dozens of short videos about her activities and uploaded them to online groups to communicate with her friends and her only adult daughter who is studying abroad. Her positive attitude towards new technologies has allowed her to share these stories with her friends and family.



Figure 15: Participant’s cosplay photo

Although ageing is avoidable and death is inevitable, the image of ageing is open to reconstruction, or at least positive re-imagining, in the digital era. Mobile phones are particularly suited to ensuring mental well-being, as mobile phones and apps are not restricted by socio-economic or demographic status.

8.6 Conclusion

This chapter has explored how third agers in China use entertainment apps to construct a new image that is beneficial for mental well-being. Stereotypical images of ageing and ageism are harmful for the mental well-being of third agers. The new image of the ageing population which is being developed by third agers in China breaks down old stereotypes. This chapter has identified the changing image of the ageing population in China and differentiated the image of ageing population in China and west. Then this chapter found that the new image that is being orientated by mobile use can increase the happiness and mental well-being of the third agers.

This chapter also has argued that entertainment apps, especially the short video apps and karaoke apps, provide a way for them to express themselves, cultivate their interests and share a new lifestyle. They can do many things that elderly people previously could not imagine. Entertainment apps have provided more creative options for third agers to do entertainment activities and enrich their daily life activities. The affordance by entertainment apps can assist in reconstructing personal fulfilment and mental well-being.

Moreover, this chapter also found that digital divides still play as a barrier to the ageing population. Some in the ageing population feel pressure and face various problems when they access to entertainment apps. This digital inequality hinder them to enjoy the fully accessibility of mobile apps.

In the next chapter, I will explore digital capital among third agers in China. This chapter will take into consideration the optimal ageing perspective and emphasise individual differences among third agers, instead of only viewing them as a cohort. From this perspective, distinct life course experiences can accumulate different kinds of digital capital.

CHAPTER 9: DIGITAL CAPITAL, OPTIMISM, AND OPTIMAL AGEING IN CHINA

9.1 Introduction

Previous chapters have explored various uses of social media apps, the popularity of fitness apps and the proliferation of entertainment apps. The primary finding of the fieldwork is that mobile technologies allow third agers to engage more in modern society, maintain their physical and mental well-being, and build new images of retired life. All this appears to be positive, yet there are many challenges to be faced in the digital society. The challenges need to be met by both government and industry.

This final chapter reconsiders how third agers are optimising their retired life with accumulated digital capital. I return to some of the themes mentioned earlier and show how they play out together. As discussed in chapter three, digital capital refers to an individual user's digital technology ecosystem (Park, 2017). Digital literacy and online networking are critical for enhancing life quality in the digital era. The accumulation of digital capital in China is enhanced by the accumulation of data by tech companies, which now know many things about people's lives and their purchasing habits. Couldry (2020) refers to this as the 'algorithmic imaginary'. However, despite the promises of the information society, the advent of the Fourth Industrial Revolution and the rise of China as an AI Superpower, digital capital can also have negative consequences. There are also downsides.

From this perspective, China is considered as a 'pessoptimist nation' (Callahan, 2009, p. 2); that is, people are optimistic about the future although, at the same time, there is an underlying pessimism. There have been tough times in the past. Before considering the present-day challenges, however, I want to look at the idea of optimism. In comparison to western capitalism which sees mankind as essentially self-interested, Chinese culture is based on an optimistic view of humanity. The Chinese government has used the idea of a utopian future to manage its population in times of tumultuous change. Now, China's leaders are proposing the idea of a Chinese Dream, a future in which China will be a great nation. The date for the Chinese dream to come to fruition is 2049. People who were born in the years from

1949 to the 1960s are already of a retirement age. This cohort is linked to the historical era of great change in China; they are the original dreamers. In this chapter, I connect ideas about a developing nation with the concepts of a better life for all, at least from the perspective of government rhetoric about technology.

This chapter begins by returning to the theme of the changing lifestyle among different generations: the post millennium generation (born since 2000); the millennial generation (born in the late 1970s to 2000), and the revolutionary generation (1949 to 1978). This is sometimes referred to as the life course (Elder, 1985; Mortimer & Shanahan, 2007). This review of the lives of generations shines a light on the transformation of China and the sense of optimism that comes with China's modernisation and its emergence as a world power. All these generations were told that the future will be better than the past. I will provide some comments from my third age participants to show how they have navigated these great social, economic and political changes.

The chapter then reconsiders how digital capital and digital literacy are correlated. It outlines how the accumulation of digital capital can influence the third agers' social inclusion and shows how different generations 'under one roof' can help each other learn about technology. Such assistance afforded by technology became very evident when the COVID-19 pandemic broke out in 2020. The following section discusses some of the challenges facing the third age. Finally, the chapter makes some recommendations for improving the digital capital of the third agers.

9.2 Changing lifestyle for different generations

It is evident that the ageing population is not simply a homogeneous group, but rather age cohorts that move through history, influenced by the historical circumstances encountered earlier in life. Hareven and Adams (1982) argue that a cohort belongs to its specific time as well as historical time. Studies about the third age group thus should place them into longitudinal historical circumstance. An historical perspective of social events thus sheds some light on long-term developments affecting individual experience. Laslett (1987) argues that the third age can be defined from a

cohort perspective. In the diagram below (figure 16), we can see the significant social movements that have shaped these people's lives.



Figure 16: Common social historical events experienced by third age

9.2.1 Post-millennial generation

People born in the past two decades are often called the post-millennial generation. This generation learns much about the world through smart devices. As digital natives, they have grown up with digital technology, which is constantly improving and making lives easier. They have a close affinity with the Internet and think something is wrong when things do not happen quickly; some reports suggest they prioritise the speed of finding information rather than the accuracy of information (Kapusy & Lógó, 2017). It is hard for them to imagine the idea of a world without smartphones, without emoji. They use technologies to seek immediate gratification; they multitask; many have short attention spans (Vito, 2011). For many of this generation, China's age of apps, robotics and digital technology provides a sense of hope. They are the direct beneficiaries of the Chinese Dream. By 2049 they will be mid-career. However, this generation also lives in a world of great uncertainty and insecurity. It will be 2060 before they enter their third age. Will there be meaningful work in the future? Will there be a sustainable future?

The post-millennial generation will face greater pressure from China's imbalanced population structure. The fertility rate is low, as discussed in chapter two. With increasing numbers entering into retirement, and less labour available for economic development (because machines will take away most jobs), this generation's future is unclear. They will also need to pay high taxes to support the large ageing population.

In the meantime, though, this generation is living in a consumer society where products and services can be accessed online. While there are few studies to compare in China, other international studies show that people are likely to become more

socially alienated in the machine age. Writing about virtual reality shopping experience, Kapusy and Lógó (2017) conclude that the post-millennium generation are 'realist, self-aware, self-reliant and persistent'. Unlike the preceding generation who are loyal to specific brands and products, the post-millennial generation expect products and brands to be loyal to them—'if they do not feel appreciated, they move on' (Kapusy & Lógó, 2017). Many in this generation prefer to make friends and maintain friendships online. Turkle has found that computers offered companionship to people who are afraid of intimacy (2005, p. 296). This has ramifications for social capital in the future; if all connections are online, what kind of world will this be? The post-millennial's digital capital is provided from birth; everything they do is online or via a touchscreen.

9.2.2 Millennial generation

The millennial generation in China refers to people who were born from late 1970s/early 1980s to around 2000 (Murray, 2011; Sweeney, 2006). The exact birth year may differ slightly according to different demographers. In China, people use *80 hou* and *90 hou* (people born in 1980s and 1990s) to refer to millennials. This generation is likely to enter their third age in 2040. By this time, China's digitalisation will be more seamlessly integrated into society. The millennial generation has already become used to a world where information is readily available at the click of a mouse (Vito, 2011). Similar to post-millennials, millennials are comfortable with technologies and multitasking. Millennials focus on 'connectedness' (McMahon & Pospisil, 2005). This generation was born in the reform era: it was a time of change after the turmoil of the Cultural Revolution and it signalled a new future. People had begun to realise what was happening outside of China and adapted themselves to the market economy.

The millennial generation began to pay more attention to education, as the one-child policy changed the focus of the family. Gender discrimination has also decreased. This generation has received university education and witnessed gradual improvements in the social infrastructure. As the product of the one-child policy, this generation has had to learn to do things by themselves; they had no siblings. They were called 'little emperors' (Fong, 2004) in the family. This generation is now approaching middle age or are mid-career. They represent China's next wave of the

third age: they will be third agers when the country hits its China Dream target in 2049.

9.2.3 Revolutionary and reform era generations (1949–1978)

As discussed in detail in chapter three, the revolutionary generation is now aged in their 60s and 70s; this generation includes people born after 1949 and before 1978. This cohort can also be called the reform era generation because as adults they experienced the first wave of business and urbanisation under the reform and opening-up policy by Deng Xiaoping. They also experienced the industrial era. They were the main force to reform China. This generation experienced the legacy of Maoist/Marxist-Leninist ideology but shifted quickly to ‘material civilisation’ after 1978 (Egri & Ralston, 2004).

Since 1949, Chinese people have experienced a change from an agricultural to an industrial society. In the last two decades, China has entered into a new stage, which we can call a digital society, or even a digital civilisation (Keane & Su, 2019). Egri and Ralston (2004) have explored the changing lifestyles of different generations in China and argue that the change amongst different generations displays an evolution from Confucianism as the root of cultural value through increasingly Maoist/Marxist-Leninist ideologies to the entrepreneurial spirit and materialism of today. In *The Dialectic of the Chinese Revolution*, Ci (1994) argues that the socialist ideology of the past, and the belief in utopia, has been replaced by materialism. He also shows that people’s values have changed under the consumer society.

People have now begun to take more responsibility for their futures while, at the same time, the Chinese government has started to decrease its role in taking care of individuals. The changes in technology have been felt by my participants. ZTM had worked as senior manager for a private company, and felt that she must keep pace with social development, even after her retirement, in order to catch up with developments in digital technology. CXM and WLLS started their individual business after the laid-off wave in the 1990s. They experienced a sense of social abandonment during this time; however, the special historical events of the times reinforced their awareness of keeping pace with social development and the importance of engagement in digital world.

The one-child policy influenced most Chinese families living in urban areas. In the interviews, LHXB and WLLS said that it was not easy to have more than one child at the time of this policy, even though they actually had two children. Living with children does have an advantage in terms of acquiring digital literacy. WLLS, FFB and LHXB said that they can get help from their children. ZTM and CXM cannot get much help from their adult children as they live separately. ZTM said that her daughter will either click 'like' or comment on her social media, and then they will interact with each other. WSB claimed he can get help how to use mobile phone from his child; at the same time, however, he is capable of learning proactively without their help. Qiu (2009) has asserted that

with the increasing uncertainty in China, when the safety net is yet to be woven, when their adult children are moving to towns or the other side of the ever-expanding city or even the world, it is understandable that seniors would turn to technologies, here probably mobile devices and apps, to preserve their cherished social bonds (p. 129).

9.3 Digital capital and digital literacy

The generations mentioned above all have life experiences that are different, as well as many that are similar. By the 1980s, people had adapted to a new kind of society where more lifestyle choices could be made. However, we can say with some certainty that in today's modern society people are able to communicate more easily than in the past. Communication is instantaneous and people have acquired new literacy skills. In her research, Park (2017) has connected digital capital with digital literacy. Digital literacy is necessary for digital capital, and vice versa. Third agers with digital literacy can access networks online and use these networks to communicate effectively, which can help them to live a more creative and active retired life.

The COVID-19 pandemic in 2020 accelerated the process of digitalisation globally, encompassing online meetings, online lectures, and telehealth appointments with online doctors, as well as online dating. COVID-19 has pushed the world into deeper and more extensive digitalisation. During the pandemic, all Chinese families were

quarantined in their houses and so they had plenty of time to use the mobile phone. According to one report, the total Internet use hours by the Chinese population increased from five billion hours to more than 61 billion hours per day during COVID-19 (QuestMobile, 2020).

During the outbreak in China, third agers and the younger generation had several information debates online in regard to rumours and true information. An example was the popular search topic #how to persuade parents to wear mask (Ruhe quanshuo fumu dai kouzhaos [How to persuade parents to wear masks], 2020). The ageing population initially did not pay attention to this virus and were unwilling to wear masks. The younger generation launched the topic online and forwarded the information to their parents' mobile phones to make them pay attention to wearing masks. Some other online information debates, which involved fake news and rumours about the 'rush to purchase herbal medicine and disinfectant' (People's Daily, 2020), engaged more elderly people in the online world. This situation shows that the younger generation are demonstrating the importance of online communication and literacy to the older generation. Owing to COVID-19, senior netizens have begun to realise that digital literacy plays an important role in their life quality. Lower digital literacy and digital capital means they cannot fully participate in society and cannot fully fulfil their social inclusion.

Digital literacy is the ability to identify and use technologies confidently, creatively and critically to meet the demands and challenges of life, learning and working in a digital society (Coldwell-Neilson, 2019). Three decades ago, when computers were beginning to become popular in people's daily lives, Gilster (1997) defined digital literacy as 'the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers' (p. 1). Scholars from linguistics and education have explained digital literacy as an individual's ability to find, evaluate, and compose clear information through writing and other mediums, on various digital platforms (Ajnas, 2019, p. 168). They further claim that digital literacy is evaluated by an individual's grammar, composition, typing skills and ability to produce writings, images, audio and designs using technology (Ajnas, 2019, p. 168). Nowadays, with the increasing popularity of various mobile technologies, scholars have argued that mobile literacy is the ability to 'navigate and

interpret information from, contribute information to, and communicate through the mobile Internet, including an ability to orient oneself in the spaces of the Internet of things and augmented reality' (Dudeney, Hockly & Pegrum, 2013, p.14).

In China, digital literacy is mainly discussed with regard to digital divides. As discussed in chapter three, digital divides have different aspects, including infrastructure divides, skill divides, economic divides and literacy divides. With digitalisation happening in almost every sphere of society, online and offline worlds have converged into a deeper mediated world. With the affordances of mobile phone and apps, third agers can do many things that they could not dream of before. Technological affordances thus provide more potential for third agers to live a creative and active retired life.

9.4 Optimal ageing and digitalisation

So, is life now much better as a result of digitalisation? As I have shown in chapter three, successful ageing emphasised three components—physical health, mental well-being and social engagement. The concept of successful ageing has shifted the image of the ageing population from a negative stereotype to a successful new image. However, successful ageing only emphasises the 'successful' part of the ageing population issue, and does not pay adequate attention to groups with disease and disabilities, hence it has been critiqued by some scholars. Baltes and Carstensen (1996) have argued that successful ageing is only one way, or one standard to achieve success. While successful ageing celebrates low probability of disease/disability, high cognitive and physical functioning, and active engagement in life, the concept does not adequately consider the social and cultural factors that influence these three criteria; in other words, its consideration of the social/cultural factors is strictly in the domain of the individual.

Optimal ageing is 'the ability to recognize, utilize, and develop or modify resources at the individual, community, and sociocultural levels in the service of three goal-related processes: maintenance of optimal functioning, given current limitations; development of a comfortable life structure; and development of a sense of purpose

in life' (Aldwin et al., 2018, p. 379). From this perspective, optimal ageing is not just a matter of individual characteristics or individual efforts, but is embedded in broader socio-cultural contexts. While optimal ageing implies maximising whatever conditions one has to live a retired life, to some extent, it can be understood as optimising the social environment. Optimal ageing recognises the impact of social and cultural factors on attaining low probability of disease/disability, high cognitive and physical functioning, and active engagement in life. This is different from the concept of successful ageing which focuses on the 'successful' group only. Optimal ageing therefore takes into account institutional, political, economic and cultural factors, as well as the rising tide of technology. Does this rising tide, then, lift the prospects for all people equally?

As discussed throughout this thesis, China is experiencing widespread digitalisation. One of the purposes of digitalisation is to create a cohesive and inclusive society. By 2020, as this thesis was being completed, the Internet and mobile devices had penetrated broadly into society; many devices are now cheaper than a decade earlier. Artificial intelligence has become a hot topic. Many believe that the machine age will lead to a new utopia, or even a new form of communism, whereby people are liberated from labour. Even the lower socioeconomic groups are keeping pace with the digitalisation process (Qiu, 2009, p. 129). People's spare time is now mostly spent online. Digitalisation gives them more scope to choose to do things they could not do before. From an optimal ageing point of view, being able to use mobile apps and devices effectively has a significant impact on whether the third agers can participate in 'digital China' (Keane and Su, 2019). Digital China is thus a collective dream, of a bright future, where many essential services will be provided by technology. To be part of the 'dream', all one needs to have is a level of digital literacy.

Since third agers have accumulated a certain amount of digital literacy during their working life, they are relatively comfortable 'being digital'. Compared with those over the age of 70, they are more 'included' as part of the technological society. It can also be argued that better digital literacy and digital capital slows down the ageing process. As discussed in previous chapters, third agers use mobile phones and apps to maintain social engagement, to develop a digital *yangsheng* lifestyle to

maintain their health, and to create a new image for themselves to improve their mental well-being. Mobile phones can be tools to improve the life quality of the ageing population (Plaza et al., 2011). Scholars have begun to focus on the use of technology to ensure good health, full social participation, and independent living throughout the entire life span (Charness & Jastrzembski, 2009; Plaza et al., 2011). Hence, with the assistance of technologies, third agers have more opportunities to maintain independence and live a more creative and active retirement life.

At the same time, however, there are also considerable problems in regard to the use of technology among the ageing population. Although digital technology is now integrated into daily lives of third agers, digital divides can hinder full access. The use of, and access to, digital technologies varies among the 'haves' and 'have nots', among genders and age groups. Ellis (2010) emphasised the importance of accessibility for disabled individuals. In disabilities studies, Goggin and Newell (2003, p. 148) have proposed the concept of digital disability, which covers research findings from different discourses, including institutions, politics, cultures and histories. They have further argued that digital disability is created in the time of the information superhighway. This argument is relevant for critical ageing studies too. While the ageing population are included in the increasingly digitalised world, digital divides still persist. A similar argument has been made by Park in her work on digital capital. Some older people just do not want to be part of the digital world and rely on others, which leads to digital disengagement.

Problems with using digital technology can hamper engagement. For example, some members of the ageing population with relatively low digital literacy have problems in accessing and reading online, which restricts their ability to engage in society fully. Even for those who have access, there is the serious problem of online fraud. As previously mentioned, some members of the ageing population rushed to purchase herbal medicine during the COVID-19 pandemic before checking the authenticity of the information they had found online. Some scholars have argued that there are not enough tailored services for older people in the digital industry (Lindsay, Jackson, Schofield & Olivier, 2012; Sokoler & Svensson, 2007).

Moreover, less attention from the digital industry towards this demographic may contribute to social exclusion. The digital industry to date has largely focused on the

younger generations who are the heavy Internet users and digital products consumers.

Many people among the third age are unwilling to accept they are old. Some of my participants argued that ‘I am not old and I won’t use apps and phones designed for the ageing population’. However, despite this denial, there is evidently a need to recognize the potential of this market and to develop products that are more seamlessly integrated with mature life stages.

#	Field	Frequently met 经常遇到	sometimes 有时候	Never met 没有遇到
1	手机性能问题 Problems of mobile phone hardware	13.75% 22	71.25% 114	15.00% 24
2	网络连接速度问题 Problems of mobile internet connectivity	30.00% 48	61.88% 99	8.13% 13
3	手机操作能力问题 Problems of mobile phone operation	20.00% 32	63.75% 102	16.25% 26
4	内容理解能力问题 Understanding problems of content	8.13% 13	58.13% 93	33.75% 54
5	自己身体健康问题 Problems of physical health	8.75% 14	50.00% 80	41.25% 66
6	他人舆论压力问题 Problems of pressure from others	3.75% 6	40.00% 64	56.25% 90
7	经济压力问题, 如付费软件 Financial problems, e.g., Paid content	5.00% 8	37.50% 60	57.50% 92

Figure 17: Main reported problems of mobile use among participants

According to my research, some participants have encountered problems when they use mobile phones and apps (see figure 17). WSB, WLLS and ZTM do not live with their children. When they encounter problems with using their mobile device, they ask for help from their children online. WSB, CXM and ZTM said that they must learn how to use mobile devices in order to keep in contact with their adult children who work in another city, and in case of an emergency or accident. ZTM’s daughter said that she was asked by her mother to show her how to use the devices slowly, so that ZTM could write down the steps in her notebook in case she forgot. Mobile devices can bridge geographical and generational boundaries if people are willing to help each other. Living with or without children has different implications for digital literacy and digital capital.

In comparison, LHXB and FFB interact directly with their adult children. They totally rely on their adult children and were unwilling to learn to do things for themselves. LHXB, who has high blood pressure, asked his daughter to do most online activities for him, including entering his online bank account password. As he expressed: ‘my daughters and son-in-law don’t want me to do online shopping; they will help me shop online once I am interested in something...they set the passwords of the bank app for me and do the transfer for me.’ LHXB needs to rely on others to help him engage with the digital world. FFB is a government officer and relies on his daughter at home, and on his secretary in the office, as mentioned earlier.

The two different kinds of interaction with their adult children among my participants account for their differing accumulation of digital capital. Overall, these results indicate that the interaction between generations has an influence on an individual’s mobile use ability in two different ways—passive interaction or active interaction. The two different kinds of interaction have different results for an individual’s digital capital and mobile literacy. However, ‘living with adult children or not’ is not necessary for my participants to accumulate mobile use ability and digital capital.

The sharing networks that exists beyond the family have a powerful enabling influence on my participants’ mobile use ability. WSB said that once he noticed his friends using some new apps, he would try to find them immediately. CXM heard from her friends that playing Zuma can decrease the risk of getting dementia, so she began to play that digital game as well. ZTM’s hobby is reading poems and attending poetry competitions. She noticed that her friends were using an app that can record the voice and match it with the music, and so she downloaded it without hesitation. The relationship with friends helped my participants to accumulate digital capital.

Participants’ positive attitude towards technologies help them to accumulate digital capital. WSB worked in the publicity department of a state-owned enterprise for decades before retiring in 2014. He is positive about technology and has acquired some technological skills from his prior work experience, such as taking photographs or shooting videos. He liked taking photos and videos, and even worked part-time as a professional photographer in China and Australia after he retired. His positive attitude towards technology helps him to accumulate advantages for his mobile use

ability and digital capital. ZTM worked as a senior manager in a private enterprise and retired in 2015. She takes a positive attitude towards using technologies too. She was among the first to change their phone to a mobile phone. Her positive attitude helps her to try new mobile apps, thereby accumulating individual digital capital and digital use ability, which enables her to do lots of activities that she could not do before.

9.5 Digital capital and social inclusion

As discussed earlier, the COVID-19 pandemic in 2020 accelerated the process of digitalisation globally. During the outbreak in China (which was during the Spring Festival time), third agers had to obey the lockdown rules and stay at home for around two months. During that time, third agers used mobile apps and devices to maintain contact with others. But more importantly, third agers were required to use mobile apps to understand the restrictions placed on movement.

One important finding of this research is that people who experienced the laid-off wave in the 1990s, at least among my participants, have easily learned how to engage with new technology. As shown in chapter six, CXM and WLLS experienced being laid-off in the 1990s. CXM, who now runs a family business, uses Photoshop software to design artworks for customers and QR code to collect money from customers; moreover, she can buy things online by herself, and can play Zuma, a digital game. Similarly, WLLS actively engaged in society and became to a salesman after the laid-off wave. Now, he uses mobile apps to book train and flight tickets, and uses group purchasing apps to purchase goods at a lower price, book taxis and hotels, and pay for audio books. Compared with these two participants who experienced the laid-off wave, FFB, who works for government, is still proud that he requires assistance from somebody to do everything online.

Among my participants, several have experienced chronic disease for years, including high blood pressure, trembling hands, and presbyopia. These chronic diseases affect their social inclusion; however, they can optimise their retirement life with the assistance of digital technologies. LHXB is male and has a bachelor's degree. He worked in the army for more than 10 years and then worked for the

government until he retired in 2013. He has a positive attitude towards technology and mobile use. He suffered high blood pressure for several years and could not control his trembling hands. He could not write properly and carry heavy things. He could not buy goods online or conduct bank transactions without going to the bank. He preferred to ask his daughter to help him to shop online and even transfer money by app bank. He would give his password to his daughters. Although LHXB's digital capital has been affected by his health, he is hoping to improve his retirement lifestyle with new digital technologies. Participants who think that the mobile is useful and helpful for their lives usually can use technology and mobile apps better in their daily lives. It all comes down to a positive attitude towards technology.

Another related finding is that chronological age does not appear to affect my participants' ability to use digital technology. Based on my interviews, FFB (58) has relatively lower ability and digital capital than WSB (64) and WLLS (61). This result correlates with the arguments made by other scholars (M. M. Baltes & Carstensen, 1996; Bowling, 1993), specifically that age is not a decisive factor in influencing the use of technology.

Finally, the economic status of people does not play such an important role any more, although some research (Attewell, 2001; Barzilai-Nahon, 2006; O'Hara & Stevens, 2006) has explored digital divides. Firstly, the price of mobile phones has become acceptable and reasonable for most Chinese, hence it is pervasive in cities, and even in villages, in China; secondly, the mobile phone has become a necessary tool for people's daily life with the rapid advancements in mobile connection and Wi-Fi. This finding is consistent with Qiu's (2009) argument about the use of low cost technologies by the working classes. Senior citizens, especially those from lower socioeconomic groups, are catching up much faster in the ICT markets, as they receive the technological convenience as gifts that they can use to stay in touch with their adult children or keep up with social activities and networks. The development of technologies in China, together with accumulated digital capital amongst third agers has accelerated the process of individualisation among third agers (see figure 18).

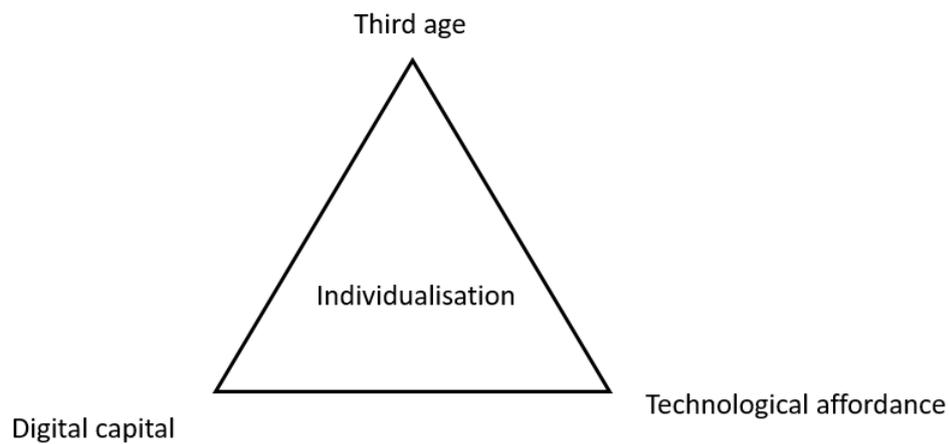


Figure 18: Triangular relation for individualisation

9.6 Challenges for third agers to engage in a digital world

This research project has mainly focused on the positive side of mobile use for third agers, and the third age demographic, a transitional generation in relation to using digital technologies, has met many challenges related to engaging in the digital world. Globally, scholars have explored various challenges facing older populations, such as digital divides (Friemel, 2016), privacy issues (Ayalon & Toch, 2017), and accessibility (Alsnih & Hensher, 2003) and interface design (Ijsselsteijn et al., 2007). In this research project, based on my interview findings and survey data, some of these challenges were also observed and have already been mentioned. However, there are a number of other challenges, which are arguably specific to China; these are mainly about fraud, socio-cultural stigma and privacy.

9.6.1 Fraud

One of the biggest challenges facing older populations is online fraud. Fraud has been a widespread problem in China and it affects all ages. The government has worked hard to combat hackers and fraudsters and have even instituted a Social Credit system that will 'regulate improper behaviour' (Keane and Su, 2020).

Incidents of online fraud are very prevalent among the third age group and even among older populations (e.g. post 70 years), but these incidents are under reported.

Elderly people have less recourse to the processes to report fraud and may have to rely on younger family members. Fraudulent information exploits the ageing population's emotional needs—many they live in an empty nest and are lonely. The National Council on Ageing listed the top 10 scams targeting seniors and urged seniors to recognise the various ways that criminals promote fake information and scams (National Council on Ageing, n.d.). Fraudsters usually cultivate the trust of senior users before exploiting them economically or emotionally.

Scholars have explored several factors that make the ageing population more susceptible to fraudulent information. Alves and Wilson (2008) find that lower educational background can increase the risk of being deceived by fraudulent information. Shao, Zhang, Ren, Li and Lin (2019) explored risk factors such as cognitive decline, emotional regulation and motivational changes, the ageing population's overly trusting nature, psychological vulnerability, social isolation, risk-taking, and limited knowledge of fraud prevention. Xing et al. (2020) examined 321 older participants in the northern city of Tianjin and found that an 'agreeable personality' (p. 46) can decrease the risks of vulnerability to fraud, while social loneliness can increase the risk. In other words, older people are more susceptible. Similarly, according to Shao et al. (2019), older adults with depression and low social capital seek fulfilment and can be easily targeted by fraudulent information or scams. In contrast, Alves and Wilson (2008) conclude that no significant results were discovered between loneliness and vulnerability to telemarketing, according to a survey of 28 older adult telemarketing fraud victims. However, this study was conducted in 2008 and the sample size was too small to make generalisations.

The popularity of digital technologies over the past decade has meant that more fraudulent information is being targeted at ageing populations, and this has become an important factor that hinders senior people from engaging in the online world. The risks of fraudulent information and scams can make the ageing population more anxious and over-cautious when they use their smartphones and apps. The physical and mental health consequences are serious, and include depression, anxiety disorder, anger and shame (Shao et al., 2019).

Fraudulent information, fake news and scams, not only hinder people's engagement with the digital world, but also have other negative outcomes—people experience a

lack of trust toward technologies and this can hinder the potential of digital technologies to provide necessary information, a serious issue when we consider that services that were once face-to-face are now all online. The findings from this project have shown that personal attitudes toward technology plays an important role in accumulating digital capital among third agers. Digital capital can thus be associated with literacy, and literacy includes the ability to recognise online frauds. A willingness to engage with digital technology can lead to more instances of fraud but it also can lead to more awareness. Participants who held a negative or sceptical attitude to mobile use have less digital capital. Fischer, David, Crotty, Dierks and Safran (2014) explored the acceptance of health information technology among the ageing population, and argued that the use of Internet-based tools is not only influenced by accessibility, but also depends on people's trust towards the Internet.

The government also has a role to play in this area. As noted, there are many online regulations in China but the speed of the development requires policy makers to be vigilant. The government should endeavour make practical and effective rules to better regulate fraud and scams. The system of reporting by users, for instance on WeChat, should be promoted widely in the mass media. A healthier online environment would protect not only the vulnerable in the third age group and ageing population, but also all other Internet users.

9.6.2 Socio-cultural stigmas

Media reports of Internet addiction are usually directed towards the younger generations. The reality, however, is that people of all ages in China are avid users of screens, TV screens, tablets and mobile phones. As a result of this obsession, screen time has become socially stigmatised in China, both for the young generation and for the third agers. Culturally, people who spend time on their mobiles are often regarded as doing nothing serious. Participant CXM complained about her partner who 'stares at the small screen and does meaningless things every day'. With the popularity of smartphones amongst the ageing population, some senior users have become habituated to shopping online, digital games, chatting online, and short videos. This dependent mobile use often leads to negative effects for many third agers, both mentally and physically. News reports often concern the negative effects

of mobile use for the ageing population, which has led to even more stigmatisation of screen time.

However, some adult participants in my study spoke of the importance of physical health for their parents but ignored their social engagement and mental well-being. According to a report by Tencent (Cui, 2018), adult children object to their retired parents spending too much time on screen, especially playing digital games, because they hope their retired parents will look after their children properly. This is a significant socially imposed restriction on people in their third age in China. Participant DXY, as an adult participant, told me she will limit the Internet speed (she sometimes turn off the modem) to avoid her parents spending too much time online. Participant LHX suggested that her father should spend less time on the mobile phone and do more outdoor activities. Evidently, many think too much screen time will harm their parents' physical health, or maybe they are worried about what they will do online. As discussed in earlier chapters, traditional family values and responsibilities predispose people to consider the welfare of the family; even as society changes under the forces of individualisation, this sense of responsibility remains intact.

From the perspective of third agers themselves, some of my participants cherish their only adult child, and voluntarily sacrifice their own retired life to take care of the whole family and reduce the burden on their adult children. For them, family responsibility comes first before improving individual digital practice and digital capital. The socio-cultural stigma attached to excessive screen time therefore is a challenge for third agers.

9.6.3 Privacy

In contrast to western countries where concerns about social media privacy have caused Internet companies to modify their operations (Zuboff, 2019), privacy, or lack of it, remains a primary challenge in China. This is also a problem of a lack of education or literacy. The impact of the fast-moving digital world and consumer society on the ageing population is significant (Mohamed & Chiasson, 2018; Peek et al., 2014). In short, the ageing population in China has not been made fully aware of privacy issues, and even if they are aware many will take chances. They are willing to scan QR codes to get a small gifts from different stores and shops; they are also

willing to access online content by giving up part of their personal data to different digital platforms and companies. The small perceived benefits are the main reason that people give up some of their privacy and personal data. Some participants share their fitness data on different social media, such as WeChat and Sinablog. This seems fairly innocuous to most of my participants. By doing this, they want to show off their daily achievements; however, this is also a way for them to socialise with their friends. Most of my participants did not think their ‘small data’ made big sense and they could not imagine the consequences of giving up part of their personal data to different apps.

In the next few years, privacy concerns and the protection of personal data will become primary challenges for people who use and access digital technologies in China. More people have begun to be concerned about their privacy. Among the younger generation in China, some have begun to turn off functions in their apps including location sharing, voice recording and gallery sharing and, as a result, cannot fully access the content. Among third agers, the reality is more playful and naïve; many have not fully realised the importance of privacy. Vollmer Dahlke and Ory (2017) have said that virtual personal assistants have the potential to help senior people, but they have also proposed the following question: ‘how much of the price is privacy?’ (p. 71).

9.6.4 Digital divide

Finally, it is worth reminding ourselves that the term ‘digital divides’ has significant aspects beyond access to technologies. Awareness of just how the digital society is unfolding is important. The Chinese government has attempted to make the future a bright and glorious one and the technological revolution is inscribed as part of the Chinese Dream. The evening news is full of reports about the technological revolution. People’s lives will be better and machines will be benevolent. However, fraudulent information and cultural stigma are part of today’s digital China. And the digital divide still exists. It will always exist to some extent. Although this research project has found that the ‘haves’ and ‘have-nots’ divide (i.e. access) is no longer the main problem facing third agers in Zhengzhou, it still manifests to some extent between cities and villages. People in cities are more likely to understand the warnings associated with the information society and this is also a result of their

greater take up of digital services. Governments—central, provincial and local—will need to be vigilant to ensure that education reaches the more vulnerable; meanwhile, digital companies need to be motivated to produce more socially useful products for the ‘grey’ market, particularly products that can ensure access, ease of use, and transparency. This may include better interfaces and user experiences in order to ensure that people understand what they are using, how their data is used, and who is monitoring them, as well as more non-technical information about products and services.

9.7 Recommendations

With more of the population living longer and engaging online, it is critical to develop policies to encourage people to improve their quality of life by using digital technologies, and to encourage industry to address the emerging ‘grey’ market. If China can respond to this challenge, individuals will not only live longer but more actively, creatively and independently. In return, China can reap social dividends.

9.7.1 Social isolation and building a positive environment

Despite the ability of people to transition to retirement, many find themselves isolated. Governments are already considering policies to build age-friendly environments; one such proposal comes from the Global Strategy and Action on Ageing and Health (World Health Organization, 2017), although the policies are mostly in regard to physical access and physical spaces. Elsewhere, in 2019, a number of digital apps that improve care for the ageing population were launched by the WHO. The intention is to prevent people from suffering ‘social isolation and care dependency’ (Chaib, 2019).

However, there is also an intangible aspect to an age-friendly environment where China may have an advantage. Culturally speaking, filial piety is part of the philosophical DNA of society for every Chinese individual, family and even across society. Moreover, the government has woven the idea of filial piety into the modern concept of the ‘Chinese Dream’; it propagandises the slogan of filial piety on the walls in cities and villages. While this is a way to remind Chinese people of core values, the government should extend filial piety into policies to advocate age-

friendly digital environments and use this to combat ageism. For example, policy makers could consider some policies to reduce the tax for companies engaged in ageing services and technologies. This will help to build a more age-friendly environment both online and offline.

9.7.2 Adoption, autonomy and social inclusion

With regard to social inclusion, more policies could be targeted at encouraging third agers to adopt technologies. A study of use of digital technology by elderly people in East York, Toronto, conducted by Quan-Haase, Zhang, Wellman and Wang (2019) has observed that ‘when older adults, like other segments of the population, are presented with technologies that are beneficial to their way of life, they tend to adopt them more readily than might have been expected’ (p. 106). Although people’s life expectancy has increased, independence and engagement, both online and offline, rely on good health. Technologies can empower older persons to participate and this can enhance social inclusion (Chaib, 2019).

9.7.3 Changing attitudes

This research project has found that personal attitudes towards technology plays a critical role. This finding is consistent with Li and Perkins’ (2007) study on how positive attitudes improve the willingness of the ageing population to accept new technologies. While many third agers are already familiar with present-day mobiles and apps, technology nonetheless changes rapidly. The government could encourage third agers to learn more about mobile use, and provide assistance for improving their digital literacy. This kind of strategy was adopted in South Korea in the early 2000s in order to get older people to increase their digital literacy and this has subsequently led to social dividends (S. Kim, 2019). Community-based organisations could provide more activities for improving the third agers’ digital capital and offer courses on digital literacy for retired people. For example, volunteer organisations from universities could cooperate with local communities and organise classes to help retired people acquire the latest digital knowledge and use technologies to solve problems. In addition, family members could be more patient if the third agers are willing to learn and this would decrease feelings of anxiety and frustration.

9.7.4 Improvements in design

As digital technology industries expand and as more people go online, the senior population's needs will become more important in the design of digital products and services. Senior people's needs have been neglected by the digital industries. China is building an international image as a technological giant, and it should include the ageing population in the digital world. In China the term 'Internet +' aims to 'integrate mobile internet, cloud computing, big data, and internet of things with modern manufacturing' (Li, 2015, p. 20). Internet+ will increasingly apply to the ageing population as well. The Thirteenth Five-Year Plan for the 'Development of National Aged Care and Elder Care System Construction' proposes to increase the supply of products for the elderly, such as communication services and e-commerce, and to relatedly increase the technological content of such products (State Council, 2017). The Internet company Alibaba (2018) has begun to focus on the needs of senior citizens by recruiting many of them as senior product experiencers with RMB 400,000 annual salary. The recruits have to engage with *Family Version Taobao* and are asked to provide feedback according to their user experience. This is a sign that Chinese digital industries have begun to realise the grey-hair market and their needs.

9.7.5 Future investment

More funding will be required in a number of public service areas to assist China's ageing population in the future. Jiang, Yang and Sánchez-Barricarte (2016) have claimed that the ageing population in China will suffer from low security and income levels. In the meantime, the Chinese government has to confront a significant shortage of aged care service resources and the prospect of suffering heavy medical burdens (Jiang et al., 2016). In 2017, the WHO launched a report entitled *Global Strategy on Ageing and Health* and appealed for countries globally to invest in issues relating to the ageing population. Countries mentioned in the report included Brazil, Japan, Thailand and France. China was not mentioned (World Health Organization, 2017). More funds are needed to improve people's capacity in China to make use of mobile technologies.

9.8 Conclusion

This chapter has considered optimal ageing among third agers. It began by reconsidering the generations of the past seventy years, looking at both digital natives and digital immigrants. The findings show that many third agers have received the benefits and conveniences of new technologies; many are able to improve their retirement life and well-being with the assistance of technologies. The chapter has identified challenges that are still facing third agers, and offered recommendations for policy makers and industry.

As China becomes a ‘digital nation’, third agers are increasingly participating in the Chinese Dream of technological progress. People are mostly optimistic; their lives have improved since the times of their parents and grandparents. Moreover, with the decreasing role of the Chinese government in the life of individuals, the affordances of technology are accelerating social change, and with this the process of individualisation.

CHAPTER 10 CONCLUSION

When I began my study in 2016, China was experiencing 6.7 percent GDP growth as the world's second largest economy (McCurry, 2016). By the time I completed, COVID-19 was changing the communication environment, making digital technology even more relevant to the lives of people. It is in the context of this uncertainty that this final chapter draws its conclusions; in other words, things may change greatly but the reality is that digital lifestyles will become the norm, not just the luxury of young people.

In this research project, I have sought to explore how the third agers in China use mobile apps to live a more creative and active retired life. In order to answer this question, I divided it into sub-questions according to the interview data and online survey data. The sub-questions were:

- (1) How do third agers engage in society and maintain mental and physical well-being by using mobile devices and apps?
- (2) How does digital capital influence the third ager's life quality in the increasingly digitalised world?

In order to find out how Chinese third agers use mobile apps and devices in their daily life, I have applied the framework of successful ageing. Successful ageing includes three main components: low probability of disease, high cognitive functional capacity, and active engagement with life (Rowe & Kahn, 1998). The concept of successful ageing has been applied in critical ageing studies broadly. Although this concept has some critics, it nonetheless provided an effective framework to structure my thesis.

10.1 Chapters and key findings

Chapter one proposed the research question and provided the basic background and outlined the significance of this research project. Given the increasingly mediated

society, three main approaches were introduced—individualisation; digital capital; and optimal ageing/successful ageing.

In order to elaborate on the main research question, chapter two introduced the background of the ageing society globally, in the Asia-Pacific region, and within China. The chapter emphasised the dramatic ageing trend in China and explored the reasons for the emergence of the ageing society in China. The implications of the ageing demographic for the state were discussed. The chapter looked at important concepts in ageing studies, such as positive ageing, diamond life span theory, and optimal ageing, and compared ageing studies between the west and China.

Chapter three elaborated on the components of successful ageing (Rowe & Kahn, 1997) and the concept of the third age. The concept of individualisation was discussed along with its relationship with urbanisation, digitalisation and changing demographics. The chapter looked at elements of Chinese traditional culture that impact on present-day lives and provided the cultural and social background, emphasising the importance of family networks and relationships. As a Confucian-based society, Confucian values still impact on Chinese individuals, despite their western influences. Until now, aged care has been mainly provided by the family, rather than by aged care centres. However, the changing demographic and rapid urbanisation are making it impossible to provide family aged care.

Chapter four described the Internet revolution in China and the implications of digitisation for the daily lives of third agers. By introducing digital media use theories and related concepts, including digital capital, media uses and digital divides, this chapter illustrated the changes aroused by technological development during the past two decades in China. It argued that the affordances of digital technologies are not only beneficial for younger generations, but also for the ageing population. Technological development allows third agers the opportunity to live a more independent life.

Chapter five introduced the project's methodology. Using mixed research methods, this research project focused on qualitative data as well as quantitative data in order to present an in-depth analysis of how third agers use mobile devices to live a more creative and active life. I used in-depth interviews and an online survey in the

research project, which incorporated the contents of social change, technology development and cultural context in China, in order to not only focus on the phenomenon of mobile use among Chinese third agers, but also on the effects of mobile use for their retired life. The self-reported interview data was, in turn, informed by the survey data.

Following the framework of successful ageing, chapters six, seven and eight correspond with the three main components of successful ageing, respectively. During the fieldwork, I found that my participants spend most of their time engaging with exercise apps, entertainment apps and social media apps, so it is valuable to study the topic from these three aspects by including exercise apps and physical health, entertainment apps and mental well-being, and social media apps and social engagement.

Chapter six focused on categories of media use, specifically in relation to how third agers use mobile apps to maintain relational resources and social engagement. My findings show that the boundary between online and offline is blurring. Based on instrumental use and ritualised use, third agers in China use mobile phones to engage in both the online and offline world in diverse ways, including behavioural engagement, cognitive engagement and emotional engagement. This chapter identified the effects of emotional attachment for third agers.

Chapter seven focused on fitness and exercise apps and healthy lifestyle among third agers in China. This chapter discusses the Chinese cultural concept of *yangsheng* (literally, ‘nurturing life’) in the context of digitalisation in China, and illustrates how retired people rely on the mobile exercise apps to maintain their health and *yangsheng* lifestyle, hence the description *digital yangsheng*. With the affordance of digital technologies, people have more opportunities for individual self-realisation. My third age participants try to keep fit by using exercise and fitness apps to decrease the family burden. In sum, the chapter argued that fitness apps stimulate the process of individualisation in China.

Chapter eight focused on Chinese third agers who are using entertainment apps to construct a new image of the ageing population and maintain their mental well-being in daily life. According to Featherstone and Wernick (2003), ageism is not only seen

as the source of widespread discrimination against older people but also as a crucial factor in undermining their personal value and worth. In this chapter, two short video celebrities were selected as cases to illustrate the new image of the ageing population in China. The Chinese third agers build themselves a new image by using mobile entertainment apps, including short video apps, karaoke and similar other apps. By elaborating on two short video celebrities, from TikTok and Meipai, the research has found that a new, active and creative image of the ageing population is being constructed by the third agers, which in turn influence their self-esteem and mental well-being positively. The entertainment apps provide them with new platforms to express themselves, to cultivate their interests or to afford them new lifestyle potential. The new image can assist in reconstructing personal value and worth among Chinese third agers, as well as contributing to their mental well-being.

Chapter nine explored how third agers are optimising their retired life. It looked at the challenges facing different generations, including millennials and those born in the reform era, who will one day be third agers. The theme of optimism was correlated with social and economic reform in modern China. The chapter considered the high expectations of technology in the second decade of the twenty-first century and the belief that China will be an AI superpower within the context of the Chinese Dream. The chapter also drew attention to barriers, noting Zuboff's (2019) argument that the development of technology is at the cost of humanity. While there are many advantages to be gained, there are also many problems to be overcome. The chapter identified some of the problems and provided several recommendations for policy makers.

10.2 Contribution to the field

This project has made a contribution in the areas of digital Internet studies and critical ageing studies. China is a large populous country, with a dramatically ageing society and it is experiencing rapid digitalisation. Few studies have focused on the changing lifestyles and uses of technology in second-tier cities. The following are the main contributions the project has made:

First, this research project identified the emergence of a third age ethos in China, which is disrupting the stereotype of the ageing population in China. The analysis has drawn heavily on Laslett's (1987) concept of the third age. Although the concept of third age has received criticism for emphasising healthy and vigorous groups only, it has changed the view that regards the ageing population as marginalised and in decline, towards a more creative and active image.

Typically, research on digital technologies focuses on younger demographics or western contexts. This research project adds to a growing body of research focusing on the third age and mobile use in China. The ageing population are not isolated from new technologies. On the contrary, third agers in China are engaged in mobile use in their daily lives.

This research project thus contributes to discussions on a new image for the ageing population. It identifies a more creative and active image of the ageing population in China. The new, active image can help people be independent, vigorous, active and engaged in society. It shows how the third agers need to take more responsibility and make decisions for themselves, and this promotes individualisation in China.

Second, the research project utilised and developed the concept of digital capital in the Chinese context. An individual's digital ecosystem can shape and guide how he or she engages with digital technologies (Park, 2017). The primary findings have shown that the Chinese third age group can live a more creative and active life than before. The findings are consistent with previous studies which have shown that technologies afford the ageing population a better life. Fostering the positive aspects—or minimising the negative aspects—of current and future technologies will have an overall positive impact in terms of enhancing the older people's quality of life, and help them to adapt to the new life situation (Frid, García, Laskibar, Etxaniz & Gonzalez, 2013; Zainal, Razak & Ahmad, 2013).

Third, this research project opens the gate to exploring the changing lifestyles among third agers in China. Most Chinese academic studies still regard the ageing population as a 'grey hair market' only and do not pay attention to their use of the Internet and technology. People live in an increasingly mediated society. Technology affords convenience as well as new lifestyles in a highly mediatised world.

Fourth, instead of regarding the third age as a homogenised group, this research project has emphasised individual differences in people's mobile use. It takes historical events into consideration to explore the third agers' digital capital from the perspective of the cohort. By applying the approach of the life course, this research project has found that the individual's digital capital is influenced by historical events.

Finally, this research project extends the concept of successful ageing to optimal ageing; it focuses not only on the role of mobile use for physical health, mental well-being, and social engagement, but also emphasises the external environmental—digitalisation in China. To some extent, optimal ageing addresses the criticism of ageism associated with the concept of successful ageing.

10.3 Limitations and further research

The project has limitations that were largely due to my fieldwork opportunities. Participants were interviewed in second-tier cities only during the fieldwork. The small sample size of participants is one of the limitations of this research project.

Moreover, because this research project focuses on mobile use and third agers, participants were selected from those who already use mobile devices in their daily lives. This research did not investigate people who do not use mobile devices. This is a vital area for future research.

Another limitation is this research project only focuses on several kinds of apps, namely exercise apps, entertainment apps and socialisation apps, which is not the full picture of the third agers' mobile apps use. Considering the limited time for this research project, only the most popular and meaningful apps were selected. Future studies can focus on other apps, such as games apps, news apps, audio apps and even stock market apps.

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APPENDIX | : ONLINE SURVEY FOR MOBILE USE IN CHINA

Thank you for linking to my survey about mobile use by people of retirement age in China. This survey is part of my PhD project on the same topic. Your participation in this research is greatly appreciated. The survey will take less than ten minutes of your time.

The survey asks for information about how you use your mobile phone.

As outlined in the invitation email or social media post, the survey is completely anonymous. Linking to the survey will not identify participants in the software. Responses will be treated as confidential and used only for the purposes of this project, which will be written up for publication and conference presentations.

Q2 Which choice can represent your current age?

- 50-55 (1)
- 56-60 (2)
- 61-65 (3)
- 66-70 (4)
- other (5)

Q3 What is your gender?

- Male (1)
- Female (2)
- I don't want to tell you (3)

Q4 What is your highest education level?

- Middle school graduate (1)
- High school graduate (2)
- Junior college degree (3)
- Bachelor's degree in college (4-year) (4)
- Master's degree and above (5)

Q5 Are you employed (full time/part time) currently?

- Yes (1)
- No (2)

Skip To: Q7 If Are you employed (full time/part time) currently? = No

Q6 How would you describe your occupation? (single choice)

- work for government, e.g. public institution (1)
- state-owned enterprise (2)
- private enterprise (3)
- self-employed business (4)
- casual works related to labor (5)
- other (6)

Q7 In your opinion, how regularly do you use your smart mobile phone everyday? (single choice)

- Only when someone calls me (1)
- Less than 5 times a day (I rarely use) (2)
- More than 5 times but less than 10 (I am not a big user) (3)
- More than 10 times but not more than 50 I am a moderate user (4)
- More than 50 times (I use the phone constantly) (5)

Q8 What do you do on you mobile phone? (choose 1-5 functions apply and rank them based on their level of importance by numbering from 1)

- _____ social activities (1)
 - _____ recreation, like watching videos, playing games (2)
 - _____ getting news and information (3)
 - _____ learning and developing hobby (4)
 - _____ online shopping (5)
 - _____ do business (6)
 - _____ photography (7)
 - _____ health monitoring (8)
-

Q9 What other functions are important?

- Scan and pay (1)
- call a taxi (2)
- bank transfer (3)
- meditation (4)
- snatch red envelope (5)
- searching for reviews of specific goods or services (6)
- storage (7)

Q10 Have you ever used exercise app or exercise function of an app?

- Yes (1)
- No (2)

Skip To: Q12 If Have you ever used exercise app or exercise function of an app? = No

Q11 In your opinion, what is the overall effects of mobile exercise apps for you physical health?

- no effects (1)
- some minor effects (2)
- overall positive effects (3)
- extremely positive effects (4)

Q12 In your opinion, what is the effects of mobile apps use in following aspects?

	decreased (1)	probably decreased (2)	no change (3)	probably increased (4)	increased (5)
physical health (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
mental health (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
social engagement (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
convenient daily life (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13 What is the order of motivation of using smart mobile phone? for you? (rank them based on their level of importance by numbering from 1)

- _____ fun and entertainment (1)
- _____ convenience (2)
- _____ socialization (3)
- _____ save or earn money (4)
- _____ keep pace with social development (5)

Q14 What is your priority order of smart mobile phone use? (rank them based on their level of importance by numbering from 1)

- _____ communication tool (1)
- _____ private secretary (2)
- _____ companion (3)
- _____ entertainment tool (4)
- _____ information collector (5)
- _____ storage/memory (6)
- _____ a place can let us ran way from reality (7)

Q15 what are the barriers of using mobile apps?

	Definitely not (1)	Probably not (2)	not sure (3)	Probably yes (4)	Definitely yes (5)
quality of mobile devices (1)	<input type="radio"/>				
quality of internet connectivity (2)	<input type="radio"/>				
operation ability (3)	<input type="radio"/>				
content understanding (4)	<input type="radio"/>				
personal physical health (5)	<input type="radio"/>				
pressure from other people (6)	<input type="radio"/>				
economical limitation to purchase paid apps/ content (7)	<input type="radio"/>				

Q16 Do you think the mobile apps industry develop enough apps for retired people?

Yes (1)

No (2)

Q17 When you connected with others on mobile apps, do you still feel lonely?

Definitely not (1)

Probably not (2)

Might or might not (3)

Probably yes (4)

Definitely yes (5)

End of Block: Default Block

APPENDIX II : SAMPLE OF SEMI-INTERVIEW QUESTIONS FOR AGEING PARTICIPANTS (TRANSLATED VERSION)

Demographic information

Age:	Gender:	Job:
Education:	Location:	Retirement year:
Income:	How many children:	
Adult child 1		
Gender:		Age:
Education:		Job:
Adult child 2		
Gender:		Age:
Education:		Job:
Live alone or with adult children		

Smart phone using information

What kind of smart phone are you currently using?	
When did you get your first smart phone?	
How many hours per day using smart phone and apps?	
What was the first app you used?	
Who taught you to download the first app?	
Which app is used most frequently? (Except WeChat)	
Why do you use this app frequently?	
Which app is used longest time? (Except WeChat) why?	
What is main motivation of using mobile phone and apps?	
Do you know where to download apps safely?	
Do you know some apps designed for retirement people?	

Interview questions

1. How do you understand positive ageing? What is the difference of ageing process between nowadays and before? Is your current life positive ageing or not?

2. Is it possible to rely on government retirement policy to live a more creative and active retirement life?

3. Is it possible to rely on your adult children to live a more creative and active retirement life?

4. Have you ever planned your retirement life? What is it? When? Why?
5. What is the benefit for you to use mobile apps? Why and how?
6. Have you ever use some apps to develop your hobby? What is that? How you discover it? Have you ever share with other people? (audio, exercise, navigation, socialization, learning, games, mediation, reminder)?
7. Have you ever experience unpleasant things when you use mobile apps? Why? How did you solve it? Fake news? Could you share some memorable stories about mobile phone and apps?
8. How do you see the people who cannot use smart phone and apps very well or not very well? Why?
9. Do your family support you to use smart phone and apps? Have your children ever taught you how to use it? Do you have some problems because of mobile technology and apps?
10. Do you have some suggestion for the mobile phone and apps designer of ageing population apps? What special function of mobile apps should be designed for ageing population? Is mobile technology a new way for ageing population to rely on?

APPENDIX III : SAMPLE OF SEMI-INTERVIEW QUESTIONS FOR ADULT CHILDREN (TRANSLATED VERSION)

Demographic and smart phone using information

Age:	Gender:	Job:
Education:	Location:	Retirement year:
Income:	live with parents or not:	
Parent 1		
Age:	Job:	
Education:	Retirement year:	
Location:	Income:	
Parent 2		
Age:	Job:	
Education:	Retirement year:	
Location:	Income:	

Smart phone using and information

What kind of phone are your parents currently using?	
When did your parents get the first smart phone?	
How many hours per day using smart phone and apps?	
What was the first app they used?	
Who teach them to download the first app?	
Which app is used most frequently by them? (Except WeChat) why?	
Which app is used longest time by them? (Except WeChat) why?	
What is main motivation of using mobile phone and apps for them?	
Do they know where to download apps safely?	
Do you know some apps designed for retirement people? Do they know?	

Interview questions

1. What is the difference of ageing process between nowadays and before? Is your parents' life a creative and active ageing or not?

2. Is it possible to rely on government retirement policy to live a more creative and active retirement life? Is ageing population a burden for society?

3. Is it possible to rely on you for your parents to live a more creative and active retirement life? Is ageing population a burden for family?

4. Have your parents ever planned their retirement life? What is it? When? Why? Is it possible to live together with your parents in the future? How about your own retirement life in the future?
5. *What is the new way for people to live a more creative and active life than before? How do you understand "creative and active"? Is technology a possible way?*
6. What is the benefit and motivation for your parents to use mobile apps? Why and how?
7. Have your parents ever use some apps to develop their hobby? What is that? How did they discover it? Have they ever share with other people? (audio, exercise, navigation, socialization, learning, games, mediation, reminder)?
8. Have they ever experience unpleasant things when they use mobile apps? Why? How did they solve it? What is the main barrier for your parents to use mobile phone? Fake news?
9. Family support and technology feedback and intergenerational relationship when we consider about mobile technology.
10. Could you share some memorable experience of your parents' using mobile phone and app?
11. Do you have some suggestion for the mobile phone and apps designer of ageing population apps??
12. Except the current function, what is the else aspect the mobile apps can help the people to live a more creative and active life?

APPENDIX IV: PUBLICATIONS DURING DOCTORAL CANDIDATURE

Parts of this thesis have been previously published as listed below.

Book chapters:

- Guo, C., Keane, M., & Ellis, K. (2019). Impacts of mobile use on third agers in China. In X. Xu (Ed.), *Impacts of mobile use and experience on contemporary society* (pp. 20-36). IGI Global.
- Guo, C., & Ellis, K. (in press). Stigma versus socio-cultural accessibility: From the perspective of third age digital game players in China. In K. Ellis, M. Kent & Leaver, T (Eds.), *Gaming Disabilities*. Routledge.

Published conference proceedings:

- Guo, C. (in press). Digital literacy and third agers in China—from the life course perspective. *The Proceedings of the International Communication Association (ICA) Regional Conference 2019, 'Searching for the Next Level of Human Communication: Human, Social, and Neuro (Society 5.0)', Bali*.