Licentiate Thesis in Technology and Health

Older immigrants in need of care in times of digitalization

The case of filial piety in transition among Chinese families in Sweden

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Abstract

Globalization has facilitated international communication and economic activities that motivate more international migration. Different cultures and values from the West and the East are interwoven in the same social context. Meanwhile, aging has become a notable phenomenon in most developed countries due to declining fertility and increased life expectancy. A digital transformation of society is taking place alongside the aging and international migration that will start to question the image of older adults and the patterns of providing elderly care. Chinese elderly care is characterized by familism providing family-based informal care to an older family member. Despite the influence of migration and modern lifestyles, filial piety is expected to continue to guide the care responsibilities and care providing among Chinese families.

This thesis aims to understand the cultural provision of support and care for Chinese older adults living in Sweden and under the influence of the digital transformation of society. It starts by exploring the disparities, barriers, and facilitators for older immigrants in need of home care to utilize digital technology. After constructing knowledge about the influences of the foreign environment and continuous digitalization in home care, the thesis seeks to understand how filial piety continues to be enacted; what part of the tradition is preserved, and what is changed; how the internal and external factors influence the decision of elderly care; and the role of digitalization in this process. The thesis utilizes qualitative in-depth interviews to continue investigations among eight midlife and older Chinese immigrants living in Sweden. Thematic analysis was employed for data analysis. Berry’s acculturation framework and Yeh’s Dual Filial Piety Model provide the theoretical ground for the research.

The results indicated that filial piety is in transition in terms of filial responsibilities, filial behaviors, and intergenerational relationships. Despite the differences in the acculturation level, the authoritarian element of filial piety lacked ground in the Swedish social context. Respondents showed their willingness to strengthen the reciprocity with their adult children by providing additional support, valuing affections rather than hands-on care, respecting adult children’s decisions. The uptake of digital technologies has enabled midlife and older Chinese immigrants to maintain more frequent contact with family members and friends in other countries. It also improves the autonomy and capabilities for respondents to plan more independent later lives. The conclusion is that traditional
values such as filial piety was not as prominent in Sweden as they are in China.

**Keywords:**  Acculturation, Chinese, cultural norms, digitalization, eldercare, filial piety, older immigrants, welfare state
Sammanfattning

Globaliseringen har möjliggjort gränsöverskridande kommunikation och export samt import av varor och tjänster. Även människor rör sig över olika delar i världen och emigrerar till främmande länder. Detta i sin tur innebär att olika kulturer och värderingar från väst och öst behöver vävas samman och samsas i samma sociala kontext. Förutom globaliseringen så har åldrandet; på grund av sjunkande fertilitet ochökad livslängd, blivit en betydande företeelse i de flesta utvecklingsländer. En digital omvandling av samhället pågår parallellt med åldrandet och den internationella migrationen. I det avseendet blir äldre immigranter, deras teknikanvändning och syn på äldreomsorg allt viktigare.

Kinesisk äldreomsorg kännetecknas av familjebaserad informell vård till av äldre familjemedlemmar. Trots samhällets förändring och digitalisering, förväntas barnen ha huvudansvaret för vård och omsorg av sina äldre familjemedlemmar. Fenomenet kallas ”filial piety” och beskriver barnens skyldigheter att sörja för sina föräldrar på ett respektfullt sätt.

Denna licentiatexamen syftar till att öka kunskapen om äldre kinesiska immigranter som bor i Sverige och deras förväntningar på omhändertagandet och äldrelivet i Sverige relaterat till digitaliseringen. Licentiatexamen börjar med att utforska skillnaderna, hindren och möjligheter i att använda digital teknik bland äldre invandrare i behov av hemtjänst. Licentiatexamen använder kvalitativa djupintervjuer för att undersöka hur åtta medelålders och äldre kinesiska invandrare, bosatta i Sverige. Intervjuerna har analyserat med hjälp av tematisk analys. Berrys ramverk för ackulturation och Yehs ”Dual Filial Piety Model” utgör den teoretiska grunden för forskningen.

Resultaten indikerade på att synen på ”filial piety” är i förändring när det gäller vårdnadsansvar, beteenden och relationer mellan generationerna. Trots skillnaderna i nivån av ackulturation saknades det auktoritära inslaget av ”filial piety” i den svenska kontexten. Intervjupersonerna betonade sin vilja att stärka samspelet med sina vuxna barn genom att ge stöd och affektion snarare än att de förväntade att barnen skulle ge praktisk vård och omsorg. De intervjuade visade stor respekt för sina vuxna barns beslut och självständighet. Användningen av digital teknik möjliggjorde att de intervjuade kunde hålla tät kontakt med familjemedlemmar och vänner i andra länder. Den digitala kontakten med familjemedlemmar och vänner i sin tur, ansågs stödja deras autonomi och förmåga att planera sina
framtida liv och äldreomsorg. Slutsatsen är att traditionella värderingar så som ”filial piety” påverkades av den svenska kontexten och förväntningarna på de vuxna barnen var inte lika höga och framträdande som de traditionellt sett varit i Kina.

Nyckelord: ackulturation, kina, kulturella normer, digitalisering, äldreomsorg, plikt, filial piety, äldre invandrare, välfärdsstat
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Stockholm, 2021
List of publications

Paper A


Contributions: Chen is the responding author. Chen performed the literature search and conducted data analysis and wrote the manuscript.

Paper B


Contributions: Chen is the responding author. Chen designed and conducted the field study, analyzed the data and wrote the manuscript.

Other publications and abstracts


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1 Introduction

“Although each migratory movement has its own specific historical patterns, it is possible to generalize on the social dynamics of the migratory process...Most economic migrations start with young, economically active people...who want to save enough in a higher-wage economy to improve conditions at...After a period in the destination country, some of these migrants return home, but others prolong their stay...As time goes on, many erstwhile temporary migrants get their spouses to join them, or find partners in the new country. With the birth of children, settlement generally takes on a more permanent character.” (Castles, Haas, and Miller, *The Age of Migration* (5ed), New York: Palgrave Macmillan, 2014, pp56.)

The concept of “globalization” could be dated back to the post-Second World War era when enterprises in industrially developed countries started to seek growth development opportunities through international economic activities. These economic activities created new patterns of development, with a character of interdependence based on international cooperation (Hirst et al., 2009). The continuous growth of international economic activities, communications, and interactions have influenced every aspect of the world we live in. Discussions around “globalization” have become a popular topic that has extended outside international economics to a broader spectrum in social sciences and political sciences.

As the intrinsic part of globalization, “migration” has also become a global phenomenon, along with the internationalization and increased mobility since the 1970s (Castles et al., 2014). The massive migration in human history started after the first industrial revolution, when a huge amount of people emigrated from European countries to North America, Australia, New Zealand, and South Africa (Stalker, 2000). Contemporary migration is significantly different from the migration of the 19th and early 20th centuries. Thus, contemporary migration has created new migratory patterns and characteristics, which attract scholars in different disciplines to migration studies. Migration today is still primarily driven by economic and development opportunities in the more developed countries. However, it is worth noting the growing percentage of older adults in the total migration population; according to the United Nations’ International Organization for Migration (2019), the total international migration population has increased from 173 million in 2000 to 272 million in 2019, of which 12% is over 65 years old. It raises an interesting question about
whether the elderly care systems in the cultural pluralism societies are prepared for the growing needs of the potential culturally diverse care receivers.

The digital transformation of society has fundamentally influenced everyday lives and brings new perspectives to migration studies (Borkert et al., 2018; Khvorostianov, 2016). The uptake of digital technology and the increase of internet use help immigrants reduce isolation and homesickness and maintain and broaden their social networks in the host society and their country of origin (Fischer et al., 2014; Hsu, 2019; Kim, 2016). A significant proportion of studies focus on the uptake and user experiences of children, adolescents, college students, and working adults who are “digital natives” (Fernández-de-Álava et al., 2017; Kang et al., 2017; Prensky, 2001). Less is known about how digitalization has influenced midlife and older immigrants’ acculturation experiences and their planning for their later lives (Hunter, 2015; Wilding & Baldassar, 2018).

According to recently published data from the Swedish Statistics Bureau, the foreign-born population has constituted 19.6% of the Swedish population (Statistics Sweden, 2019). The number of older adults in the foreign-born population also shows significant growth from 2000 to 2019, especially the immigrant groups that have a long history of migrating to Sweden (Statistics Sweden, 2019). Foreign-born seniors have higher risks of encountering challenges to adapt to societal changes as well as to utilize social and health resources (Gustafsson et al., 2019; Zibrik et al., 2015). According to the United Nations (IOM, 2017; UN DESA, 2019), the Chinese-born migrant group was the fourth-largest migrant group, which accounted for over 10 million people outside China. Like other European countries, the early Chinese immigrants are predominantly economic migrants with lower socioeconomic status, while contemporary Chinese immigrants are better educated, employed, independent, and financially stable (Latham & Wu, 2013; Zhou, 2017). In contrast to the individual’s achievement, filial piety in Chinese cultures advocates an individual to be modest and value the family’s and group’s honor. In this manner, the immediate family members need to take full responsibility for elderly family members (Croll, 2006; R. Fan, 2007; Sung, 1998; Yeh et al., 2013; Zhan & Montgomery, 2003). The tradition of family-based care providing continues to have deep roots in immigrant families, which is significantly different from the Swedish approach to providing elderly care (S. Cheung et al., 2020; Kawakami & Son, 2015; Lin et al., 2015; Songur, 2019).
1.1 The aim of this thesis

The thesis aims to understand the provision of support and care for Chinese older adults living in Sweden and under the influence of the digital transformation of society. It focuses on the collision between the traditional family-based elderly care system (filial piety) and the individualistic and independent values that exist in Sweden, where responsibilities of elderly care are taken from the individual and family level to the welfare state. The research explores the practices and planning for support and care in the Chinese family to understand the influence of filial piety on the adult children’s willingness to take filial obligations and their choice of filial practices. It also explores how the external environment, and the uptake of digital technologies impact the older Chinese adults’ expectation of filial piety and their perceptions of later life in Sweden. With these aims, the thesis considers providing meaningful interpretation for support and care behavior among Chinese families that help improve the efficacy and efficiency of providing formal elderly care services and intervention.

1.2 Definition of concepts

Increased life expectancy and deceased fertility rates have resulted in a growing proportion of older adults in the population. In Confucian societies, elderly care is traditionally carried out by the family members, typically by the male adult children. Due to insufficient welfare resources, and social norms and expectations (filial piety), most of the care services and support activities today in China are on the shoulders of the adult children, both sons and daughters. However, migration has disrupted the traditional pattern of family-based care service provision. In addition, the increasing uptake of digital technologies and the Internet could change expectations of elderly care in a foreign context.

There are three categories of older adults whose lives are influenced and shaped by migration, namely "aging migrant," the "migrant elderly," and the "left-behind elderly" (Castles et al., 2014; Hooyman & Kiyak, 2014; Wilding & Baldassar, 2018). "Aging migrants" are people who emigrated from their home country as working adults and are now approaching later life in the host country. The "migrant elderly" are those who migrate to another country at a later stage of work-life or in their later lives. The "left-behind elderly" are older adults who do not have children or close relatives nearby because of their emigration (Adhikari et al., 2011). The left-behind elderly are older adults who are separated from their emigrated children. The left-behind elderly might be encouraged to reunify with their adult
children or become “transnational grandparents” who move across national borders regularly (Chiang-Hanisko, 2010; Da, 2003; Nedelcu, 2017). Given that the majority of immigrants were younger adults, starting in the 1960s, the number of aging migrants in Sweden will maintain a steady pace of increase in the future (Hjern, 2012). Considering the possible trajectory of immigration to Sweden and the demographics of Chinese immigrants, most older Chinese immigrants in Sweden are considered as aging migrants, while the others are the migrant elderly who live in Sweden for a relatively shorter period of time.

This thesis hopes to add new knowledge to the interdisciplinary field of elderly care in immigrant groups and the digital transformation of society. The “elderly care” in the study refers to the care services that happen at home, which include both informal and formal home care services. Home care service refers to the care service performed by professional caregivers outside families to support older adults at home, covering such functions as personal care, domestic aids, home care technology use, and complex nursing care. “Filial piety” and the “acculturation” are two important concepts that suggest and explain older Chinese immigrants’ choice of elderly care, and its influences on themselves and on family members. “Filial piety” describes a cultural value that defines what and how adult children should provide care activities. “Acculturation” describes the process of negotiating one’s cultural heritage with the external foreign environment through long-term close interaction. “Digitalization” is another important factor that could potentially change the dynamics. Digitalization in this thesis refers to the continuous development of connectivity, the digitization of social institutions and welfare services, and the increased rate of uptake and use.

1.3 Research questions

Filial piety is the most dominant culture in Chinese families for establishing relations between family members, and guiding responsibility for elderly care. With the growth of urbanization and modernization, many aspects of filial piety have been modified or diminished, especially outside the Chinese cultural environment. Meanwhile, prior literature has also documented the deep-rooted compliance to filial obligations in adult children and the growing independence among older Chinese adults. In addition, although the use of digital technology has not reached its potential, technology could significantly improve older adults’ potential to live independently more than ever. Therefore, a new balance of providing and receiving support and care has been established, which could change
the shape of filial piety. This thesis focuses on the following research questions:

- What are the differences between older immigrants and native older adults when utilizing social and health resources?

- In the Swedish context, what are the older Chinese adults’ filial expectations of their adult children? Is there a gap between the expected and received filial practices? What behaviors are considered un-filial, and what is considered appropriate?

- Does the use of digital technology facilitate the changes of filial piety in the foreign environment? If so, where do the changes occur?
2 Background

2.1 Digital transformation of society and digital uptake among older adults/migrants

2.1.1 Digital divide, and the digital divide among older adults
Both online and offline resources can constrain people’s use of the Internet, leading to the inequality of Internet use (Helsper, 2012). Along with the fast development of the Internet in the 1990s, scholars noticed the disparities between the “haves” and the “have-nots”, arising from an individual’s capability to have physical access to computers and the Internet (Gunkel, 2003; van Dijk, 2005, 2006). Norris (2001) examined Internet usage across 179 nations, and concluded that the digital divide, seen as the divergence of access to the Internet, was caused by disparities between developed and less developed countries, between the information-rich and information-poor in society, and between “those who do and do not, use the panoply of digital resources” (Norris, 2001; van Deursen & van Dijk, 2019). Early scholars use this definition for their research, with the focus on the comparison of Internet access and use between countries, ethnic groups, genders, and socioeconomic status, such as household income, marital status, educational level. With more interest invested in the topic, scholars categorized the disparity of “presence and absence” as the “first-level digital divide” question (Campos-Castillo, 2015; Mason & Hacker, 2003; van Deursen & van Dijk, 2019).

The optimistic scholars involved in the early discussions advocated that the digital divide would be mitigated and finally bridged with technology diffusion and saturation of Internet-connectable devices (Norris, 2001; Rogers, 1995). However, many recent empirical studies have pointed out that the “first-level digital divide” still remains among the socially disadvantaged groups in developing countries and in the most developed countries (Campos-Castillo, 2015; Lissitsa & Chachashvili-Bolotin, 2015; Strover, 2019). It is necessary to note the distinct roles of government and policymakers in bridging the first-level divide, considering their abilities to invest in the public Internet infrastructure (Srinuan & Bohlin, 2011).

With years of Internet connectivity improvement, especially from developed countries, widespread broadband connections have reduced the digital divide caused by the lack of access to the Internet. As a result, the discourse of the digital divide problem has moved forward to the “second-level” digital divide, which is caused by insufficient digital skills or
experience of Internet use to find relevant information and complete online tasks (Attewell, 2001; Hargittai, 2002; Scheerder et al., 2017). Research has moved the investigation forward with a more comprehensive approach to reducing the digital divide in recent years. The discourse has shifted beyond the physical access of the Internet (first-level digital divide) and Internet skills and Internet use (second-level digital divide), to disparities of achieving beneficial outcomes from Internet use, which is viewed as the third-level digital divide (Scheerder et al., 2017; van Deursen & Helsper, 2015b; Wei et al., 2011).

From the perspectives of older adults (Millward, 2003), the “grey digital divide” leads to greater inequalities when it comes to distributing information and resources that not only influence social participation and social networking (Kuoppamäki, 2018) but also relate to health and wellbeing (Friemel, 2016). Recent studies on digital inclusion started investigating disadvantaged groups throughout the population and suggested the need for more knowledge about older adults’ experiences of the digital divide (Friemel, 2016; Mihelj et al., 2019; Millward, 2003; Van Regenmortel et al., 2019). Only a few studies addressed digital exclusion as a component of social exclusion among older adults (Arcury et al., 2018; Holttum, 2016; Kania-Lundholm, 2019).

2.1.2 Digital literacy and available online resources

Digital literacy is one of the most important factors for older adults being included in society when many aspects of society become digitalized. Digital literacy refers to one’s ability to properly seek, select, and evaluate information from multiple platforms (Eshet-Alkalai, 2004). Prior studies have pointed out that the disparities of digital literacy between foreign-born seniors and native older adults should be considered for the future development of digitalization (Zibrik et al., 2015). It creates a higher risk for foreign-born seniors to be excluded from the digital transformation of society and other rapid social changes. For example, the older immigrant showed an inadequate ability to use health management tools (Mitchell et al., 2019). Thus, although digital literacy is not the sole factor determining whether one could be included in the digitizing society, it is necessary and meaningful to measure the digital literacy of foreign-born seniors to bridge the digital divide.
2.2 The Swedish model and the welfare state

2.2.1 Egalitarianism and Universalism

From 1870 to 1979, Sweden had achieved rapid economic development that brought it from one of the poorest countries in Europe to one of the richest. It is particularly interesting for the sociologist and comparative sociologist to investigate the drives to maintain the long-term prosperity economically, and overcome several global economic struggles, while achieving the equal distribution of wealth and comprehensive social welfare to its citizens (Bergh, 2014; Ryner, 2007). Labor market policy, economic policy, and welfare policy are considered the three pillars that support the successful operation of the Swedish model, which is considered a typical example of the Scandinavian model (Blix, 2017; Trägårdh, 2007; Trydegård & Thorslund, 2010).

According to Ryner (2007), the Swedish model has six parts that established the solid ground of prosperity with regard to “Swedish Exceptionalism”:

- Relatively “de-commodified” wage relations
- A high degree of employment promotion policies
- Welfare State Universalism
- A large social service sector
- Women-friendly welfare state
- A particular class compromise between capital, labor, and agrarian.

In order to make the system work sustainably, it is essential to have a strong and trustworthy administrative power that allocates the resources to ensure economic growth and redistribution of income to achieve more equality and universal entitlement of welfare services (Bergh, 2014; K. Yang & Ortmann, 2018). From another point of view, the welfare state could cause problems to the Swedish model if the other pillars failed to work correctly with the influences of the internal economy and external environments (see Lindbeck’s “The Swedish Experiment”, 1997). It is worth keeping a close observation on the balance of welfare expenditures and societal changes to see whether the system is sustainable (Bergh, 2014;
2.2.2 The Swedish elderly care system
In Sweden, the elderly care system ensures that children are not obligated to provide care to their own parents (NBHW, 2021). As a part of the welfare system funded by the taxation of all residents, Swedish elderly care is a universal entitlement for adults aged 65 and older (Sipilä, 2019). It is a needs-based system in which municipalities assess the individual’s needs and arrange care services according to those needs (Szebehely & Trydegård, 2012). The most commonly used care service includes home aide services that handle domestic tasks and minor healthcare needs (Östlund, 2017). Elderly people in Sweden also have access to special housing options if it is unsafe for them to continue living in their homes, with options that include senior apartments, service apartments, and nursing homes, depending on the level of support needed (NBHW, 2021). Compared with other privatized or marketized care regimes, older adults in Sweden only pay a small monthly fee to the municipality to receive care services (NBHW, 2021). The system aims to provide good quality care services to every older adult based on their needs (Songur, 2019). However, as a consequence of the continuous growth of the aging population, and diversification, scholars and the public have started to have more discussions about the development and reforms of the system, which faces significant challenges in providing services to the growing population of elderly persons, and in serving diverse groups of older immigrants (Dahlstedt & Neergaard, 2019; Johansson, 2015).

2.3 Chinese elderly care system and recent development
The population in China is aging rapidly, even compared with other East Asian societies. Unlike the patterns of developed countries that have gradually become aging societies, China is experiencing an “unprecedented” speed of aging as a developing country that has “gotten old before getting rich” (Shea, 2018). Although China has achieved continuous economic growth since the Reform and Opening-up, insufficient resource distribution to the pension system and inadequate service provision have caused increasing dissatisfaction of the older adults, leading to several reforms in recent years. Based on national policies, there are two major improvements for the aging population in this reform era (T. Liu & Sun, 2016). First, the system increased the coverage of social pension insurance, which covered 100% of the urban population and 80% of the rural population (Shea, 2018). However, the benefit is still very low, and the disparity between rich and poor regions, between urban retirees and the
rural-unemployed-agricultural population, are significant (Shea, 2018). Second, the government has strengthened the medical insurance coverage by providing a combination of different healthcare insurance schemes for different groups of people. The reform has generally achieved universal entitlements to basic healthcare services, although the benefit level is still low, and the out-of-pocket payments for many severe diseases could be very burdensome for the majority of families (Yu, 2015). The national goal for elderly care planning is to achieve “90:6:4” which suggests 90% of the aged population is cared at home, 6% is cared for in community welfare centers, and 4% by institutions. Despite the ambitions to develop a comprehensive elderly care system combining public, public-subsidized private services, and private services, the capacity of elderly care and the relevant cost to use the services has become the current major barrier for the majority of older adults (X. Fan et al., 2017). Adult children are taking the main responsibilities as care providers as their parents chose to age in situ. Meanwhile, recent studies have suggested that many older adults take care of themselves and become senior volunteers to help other older adults in the communities (Chen et al., 2020; Q. Li, 2010; Shea, 2017).

2.4 The Chinese diaspora in Europe and in Sweden

The Chinese diaspora is the third-largest foreign-born population in the world (McAuliffe & Khadria, 2019). China has centuries of history of emigrating to Asia and other continents (Castles et al., 2014). Compared with the migration in the 19th and early 20th centuries, the “new” migration activities, starting in the late 1970s (Reform and Opening-up), constructed most of the current overseas Chinese population (Castles et al., 2014). As one of the most economically and industrially developed areas, Europe has become the most popular migration destination, where the number of Chinese in diaspora reached about 3-3.5 million in 2013. The distribution of the population in Europe varies significantly from more than 800,000 in France, more than 650,000 in the UK, to less than 1,000 in other “smaller” European countries (Sluka et al., 2018; Song, 2013). Based on the number and percentage of new migrants, the old and traditional destinations, such as the UK, France, Italy, and the Netherlands, are more attractive to the new Chinese immigrants who have connections with the “old” Chinese immigrants in these countries. A significant proportion of the “old” Chinese immigrants are working as laborers and in small businesses such as restaurants and grocery stores. Along with the economic development in China, the “new” Chinese migrants from the 1990s have added more heterogeneity, including higher socioeconomic status, education levels, and occupational choices (Zhou, 2017). However,
the new migration does not change the general conditions in the Chinese diaspora in Europe, especially in the traditional destinations. Fu (2009) estimated that over 80% of the Chinese diaspora still had limited occupational skills and language abilities to work outside Chinese restaurants or laboring.

Residents in the Schengen areas have a high degree of mobility to resettle themselves to another country after the initial settlement. Sweden and other Nordic countries are among the most attractive destinations for new Chinese migrants, considering the increase in the migrant population and the willingness to become long-term residents (Latham & Wu, 2013; Sluka et al., 2018). Swedish migration policies suggest a relatively simple and flexible process to acquire permanent residence and citizenship (Bech et al., 2017). Additionally, welfare state policies and labor market policies are attractive to both European and non-European migrants (Hammarstedt & Shukur, 2006; Harrysson et al., 2016). According to SCB, over 85% of the Chinese-born population in Sweden is considered to be new migrants, since Sweden and other Nordic countries only opened for Chinese migrants in the 1990s (Sluka et al., 2018; Statistics Sweden, 2019). The percentage of “elite” migrants, who have better socioeconomic status, occupational skills, and educational backgrounds, is higher than in the traditional European destinations (Song, 2013). Compared to the “older” destinations with a longer history of Chinese migration and a clear pattern of settlement, Chinese migrants in Sweden are more isolated from each other and lack organizations and media for effective communications (Baldassar et al., 2015; Johansson, 2015; Song, 2013). Therefore, despite the emergence of migratory studies in Europe, the unique characteristics of the “new” Chinese migration activities in “new” European migration destinations are worthy of more research investigation because of the potential influence from fast growing numbers in the Nordic countries, Germany, and East European countries (Pisarevskaya et al., 2021; Sluka et al., 2018).
3 Theory

3.1 Migration and Acculturation Theory

Migration is one of the most substantial societal changes to post-war modern societies. According to Castles et al. (2014), the world has begun an “age of migration”, which is characterized not only by the expanded scales and frequency but also the complexity of motivation, pathways, and destinations. With increased mobility across countries, people can move to another country with fewer economic and political barriers (i.e., compared with mass migration from Europe to America in the 19th century). Compared with early international population movements, migration today is becoming a more complex phenomenon that involves more countries of origin, more host countries (migratory destinations), and a variety of motivations. The scale of international migrants increases diversity, which is generally considered a good development of society.

On the other hand, migration challenges the existing rules in domestic and international politics from the macro-level, and also influences demographic, economic, social, and cultural aspects to the host from the meso- and micro-level (Borjas, 2016; Levitt & Nadya Jaworsky, 2007; Warnes et al., 2004). The field of migration study, which focuses on the trend of international migration and post-migratory life, has aroused much interest in academia. The research interest in international migration has also shifted away from studying the migrants in major “traditional migration destiny countries” to involving a transnationalism aspect that considers both “sending countries” and “receiving countries” (Castles et al., 2014; Levitt & Nadya Jaworsky, 2007). The development occurs along with the transition in the constitution of international migration, as well as the advancement of communication technology and aerial transportation, which shorten the distance between the home countries and the host countries (Baldassar et al., 2016; Castles et al., 2014; Levitt & Nadya Jaworsky, 2007).

Acculturation has gradually become a topic of interest when the interactions and communications between the dominant group culture and the immigrant group culture become more frequent. The phenomenon of acculturation describes the process whereby an individual, who holds a different cultural heritage, continuously adjusts their values and behaviors in accordance with the dominant culture of the society (surrounding environment) through long-term close interaction (Redfield et al., 1936). Following this vein, acculturation is a wide consensus concept that is an
essential component in migration studies, focusing on cross-cultural psychology and national and international policy making (Berry, 2004). The process of acculturation is subtle and unconscious, and varies from individual perspectives that are subjected to personal experiences and ethnic and cultural backgrounds (Liebkind & Jasinskaja-Lahti, 2000). In addition, the acculturation of the ethnic minority can also have a profound influence on the host society, depending on the different policy regimes on migration issues (Dahlstedt & Neergaard, 2019). Thus, it is necessary to discuss the conceptualization of the acculturation process, the measurement of acculturation, and the potential outcomes of the acculturation to the individuals, ethnic communities, and societies.

This work employs Berry's acculturation framework (Berry, 1997, 2004), a widely used model in migration study to understand the progress of attitude and behavior changes of foreign-born individuals in their dynamic interactions with the host society's culture (Figure 1). Berry (1997) identified four acculturation strategies based on the response to the two dimensions: the degree of "maintenance of cultural heritage" and the degree of "adaption to the host culture". According to Berry (2005), integration is considered as the best strategy with optimal acculturation outcome, characterized by maintaining one's original cultural heritage while having regular contact with and participating in the host society. Assimilation indicates the strategy to replace the original culture with the mainstream culture of the host society. Segregation, as a strategy, is utilized by an individual who wishes to maintain the original culture and avoid interaction with dominant social groups. Marginalization happens when one maintains little of the original culture but fails to integrate with the host society's culture.

The outcome of acculturation could be diversified, considering the individual's or group's experience and the social context. On the one hand, many studies demonstrated that a higher acculturation level correlates to a broadened social network, better language skills, better health resources, access to information, and the quality of received care (Berry, 2005; Bjarnadottir et al., 2016; O'Callaghan et al., 2016). On the other hand, the process of acculturation is stress-laden (Bekteshi & Kang, 2020; Guo, Stensland, Li, Beck, et al., 2020). Acculturation might bring overwhelming mental and psychological stress from a stressful personal life and social pressure on the immigrant and the ethnic communities (Berry, 2013; Vinokurov et al., 2002). The stress and difficulties of acculturation become more obvious and challenging to overcome, especially for first-generation
immigrants of advanced age (Koehn et al., 2018; Woo et al., 2014).

3.2 Filial Piety and Dual Filial Piety Model (DFPM)

3.2.1 What is Filial piety

The Chinese character of filial piety (孝 pronounced as ‘Xiao’) consists of two components which include both older adults (upper half) and the children (bottom half). The character shows two essential concepts about the classic concept of filial piety. First, the children are expected to carry and support the parents and show respect to other older adults. In
addition, it illustrates the hierarchical relationships inside the family where the children are subjected to the power of their parents.

Filial piety is one of the most important and stable elements of cultural heritage among Confucianism-influenced societies, particularly among East Asian countries such as China, Korea, Japan, and Vietnam (Sung, 1995; K. S. Yang et al., 1989). Filial piety has been the fundamental moral principle guiding family relationships, defining the obligation and responsibilities of family members (typically between parents and children). The early structured text of filial piety from the pre-Qin era is Xiao Jing (孝经 - Classic of filial piety), which illustrates the concept of filial piety and its ideal practice within the family and broadly in society (Yan, 2017). In the traditional view of filial piety, the oldest son and the daughter-in-law of the family are expected to take most of the responsibilities to provide financial, physical, and mental support to the aged parents, as well as to bring honor to the family, since the oldest son’s family is also expected to inherit most of the family wealth (Ikels, 2004).

As with other central values of Confucianism, filial piety is deeply rooted in the society, and explicitly and implicitly suggests the “proper” way of running society, both in ancient times and in modern societies. It was particularly meaningful for the patriarchal family system in the time of feudalism, when most people were primarily involved in labor-intensive agricultural production, with limited productivity for each and every family (Hamilton, 1990).

3.2.2 The Dual Filial Piety Model (DFPM)

Filial piety has been widely studied with respect to family dynamics in Confucian heritage societies (Canda, 2013; S. Cheung et al., 2020). Because of the complexity of the concept, previous studies revealed positive and negative findings from the aspects of family relationships and family-based elderly care in modern societies (H. M. Chan & Pang, 2007; R. Fan, 2007; T. Y. Lum & Vanderaa, 2010; Yeh, 2009). The beneficial impacts reflect the emotion and affection from the reciprocity of the parent-child relationship (T. Y. S. Lum et al., 2016; Sung, 1995; K. S. Yang et al., 1989). The harmful impacts lie in the compulsoriness and authoritarianism, which could potentially lead to increased care burden and potential exploitation (Canda, 2013; S. Park & Kang, 2007; Yan, 2017). It is worth noting that different social environments create additional features and modifications to traditional filial piety, which influence the perceptions and practice of the concept (Hsu, 2019; Jones et al., 2002; Yamazaki et al., 2017; Yeh et al.,...
Thus, it is necessary to identify an appropriate model to capture the core elements that help observe the trends in filial piety development and apply the model to different societies.

Based on the content analysis of the development of filial piety (K. S. Yang et al., 1989; Yeh, 2009), Yeh and Bedford (2003) constructed the Dual Filial Piety Model (DFPM) to address the conflicting findings, which integrated two essential components of filial piety: reciprocity and authority. Yeh and Bedford (2003) concluded with two types of filial piety: Reciprocal filial piety (high reciprocity and low authority) and Authoritarian filial piety (high authority and low reciprocity) (see illustration in Figure 2). Reciprocal filial piety describes a balanced parent-child relationship. It reflects the positive impacts where the children's support and care are motivated by gratitude for their parent's love and care (Yeh, 2003, 2009; Yeh & Bedford, 2003). Authoritarian filial piety demonstrates a more asymmetric parent-child relationship where the children are guided by social roles and obedience to satisfy the parent’s expectations and often suppress their own wills (Yeh, 2009; Yeh et al., 2013; Yeh & Bedford, 2003). The empirical studies using DFPM consider reciprocal filial piety as the "core filial piety principle", which remains mostly unchanged over time (Yeh, 2009; Yeh et al., 2013). On the other side, authoritarian filial piety is subjected to other social movements and liberations in modern societies, such as individualism, feminism, and education level (Shi & Wang, 2019; Sun, 2017; Yeh, 2009; Yeh et al., 2013).
DFPM provides an important theoretical basis for empirical studies conducted in recent years (Leung et al., 2010; Schwartz et al., 2010; Yeh et al., 2013) while it has limitations to reflect contemporary social changes. First, the practice of filial piety is subjected to the capability of the children (H. M. Chan & Pang, 2007; T. Y. S. Lum et al., 2016). In contrast to the large family with many children, the family size today determines the care burden allocated to each child (or the only child), which could be overwhelming. Second, young people today have more autonomy and freedom to choose their lives (e.g. employment, place of residency), which has disrupted the original family settings and the practice of filial piety (C. K. Cheung & Kwan, 2009; Guo, Stensland, Li, & Dong, 2020). Last, but not least, with the development of Internet technology and the improvement
of education, young people can accumulate knowledge and information at a much faster pace, which reduces the usefulness of their parent’s advice and reduces the parent’s authority and power in the family (Chow, 2006; T. Y. S. Lum et al., 2016).

3.2.3 Filial piety in contemporary society and in migrated families

Although immigration may disrupt how traditional Chinese families work, Chinese immigrants are characterized by a strong sense of family bonding and greater interdependence between family members (Guo et al., 2016). Families are always the most valuable element, and the basic unit for policymakers and for providing care to older adults. Filial piety has been the cornerstone of family structures and family-based care culture in East Asia for over 2,000 years (X. Fu et al., 2016; Zhai, 2019). As a central virtue in Confucianism, filial piety concerns family caregiving responsibilities, and creates the context for building close parent-child relationships in Chinese families, as well as in other East Asian families (Cua, 2000; X. Fu et al., 2016; Lieber et al., 2004; M. Park & Chesla, 2007). Given the long history and rich existing text, and various interpretations of Confucianism (over 2,500 years) in East Asia, filial piety, together with other concepts in Confucianism, has received both praise and criticism from scholars (Canda, 2013). Therefore, even though filial piety originates from the good nature of mutuality and reciprocity in the family, it is also a contested virtue that is often characterized as promoting authoritarianism, masculism and suppression, with compulsory duties, obligations, total obedience, and self-sacrifice (Canda, 2013; C. L. W. Chan et al., 2012; Cua, 2000). However, the ideas and practices of filial piety have been weakened through modernization and demographic changes that value an individual’s autonomy and reduce family co-residence (Ikels, 2004; T. Y. S. Lum et al., 2016; Zeng & Zou, 2017). Previous literature also suggests that virtue is a dynamic concept that is being redefined and evolving under different circumstances by the actual practitioners – the children from the Confucianism-influenced families.

Filial piety faces multiple challenges and erosion under the tremendous changes of urbanization, modernization, and globalization (C. K. Cheung & Kwan, 2009; Guo, Stensland, Li, Beck, et al., 2020; Lieber et al., 2004). The trend of continuing digitalization has also brought in new perspectives and enriched the ways of communication and interactions between two generations. Thus, this thesis aims to describe the concepts of filial piety, explore the current models of filial piety measurement, and examines its applicability to Chinese migrants with regard to the trend of increasing digitalization.
3.3 Digital transformation of society and its impacts on older immigrants

3.3.1 Digital transformation of society
Following the path of technical development and diffusion of innovation in society, the adoption and development of ICT products has accelerated in the last decade (OECD, 2019). The massive adoption and continuous use have also stimulated the development and evolution of ICT products to more complex functions and stronger computing abilities that satisfy needs across different fields. Digitalization in industry has already drastically changed many aspects of how we live, work and communicate (Turkle, 2011; World Economic Forum, 2016). Besides the uptake of digitalization in industry and business fields, the discussion has already extended to society as a whole and created extensive debates on its societal influences (Reis et al., 2018). The development has also facilitated the communication and sharing of information in societies, which is a vital part of social participation. The digital transformation is inevitably going to reshape societies in the future because of the high expectations of ICT products and their future development.

The adoption and continuous use of ICT products, such as smartphones and computers, have established a concrete base for businesses and public institutions to promote the digitizing of private and public services (Caruso, 2018). As digitalization in industry and our social lives continues, some offline information and services have begun to move online, and some are exclusively available online. Thus, it is becoming increasingly essential for people to be connected to the Internet as a way of participating in modern society (Huxhold et al., 2020). On the other hand, those who are not connected are vulnerable to being excluded during the digital transformation of society. The perceived gap between the connected and non-connected is called the digital divide (Helsper, 2012). As the prevalence of the Internet and its application in society continues, the inequality of accessing and using the Internet is one of the main causes of social disparities, and these social disparities might further reinforce the digital divide (Helsper, 2012; Huxhold et al., 2020; van Deursen & van Dijk, 2019).

3.3.2 The impact of digital transformation on older immigrants
Despite being viewed as lagging behind, Internet use among midlife and older adults has in fact increased steadily over the last two decades (Hunsaker & Hargittai, 2018). The use of digital technologies and the
Internet have become one indispensable part of older adults’ everyday lives (Selwyn et al., 2003). On the other hand, the development in ICT and the digitalization of society could make it more difficult for “disconnected” older adults to access both online and offline information. Following the process of diffusion of innovation, older adults with a less-favored socio-economic status are in danger of being excluded from society in the rapid technical and digital transformation (Helsper & Reisdorf, 2013). It is not merely the age, but the working experience, education, socio-economic and demographic factors associated with this age group that causes the digital disparities and inequalities between the older adults and younger age groups (Friemel, 2016; Huxhold et al., 2020; van Deursen & Helsper, 2015a).

Older immigrants benefit from the development of ICT in many aspects, such as being able to maintain frequent contact with their home countries via long-distance communication (Ballantyne & Burke, 2017; Khvorostianov, 2016), and access to information in different languages to improve social participation (Ferreira et al., 2017). However, compared with native older adults and younger immigrants, foreign-born seniors have a higher risk of being excluded from the digital transformation of society and other rapid social changes. Although connection to the Internet remains the most significant barrier for older adults, prior studies have demonstrated that the differences between native older adults and older immigrants are becoming smaller (Friemel, 2016; Nguyen et al., 2017; Zibrik et al., 2015). The disparities between older native adults and older immigrants concern the availability of online resources (Golub et al., 2019), the ability to identify and utilize online resources (X. Liu et al., 2017), and the skills and knowledge to convert online resources to offline resources (Massey et al., 2017; Zhao et al., 2018).
4 Methodology

The section describes the methodology and the data collection used in this study (Table 1). The first part of the method describes the PRISMA guideline for conducting a literature review, which creates the foundation for the next study. The purpose of this review is to guide the following study by identifying the potential barriers and facilitators for older immigrants to utilize digital technology with regard to elderly care in the future. Qualitative content analysis was used to identify the relevant data in the included literature. The second part describes the methodology of conducting a semi-structured in-depth interview using qualitative data collection and data analysis. Thematic analysis was employed for analyzing the qualitative data.

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<td>Eight respondents: five women, three men. Age 50 to 64 Mean age = 56.5</td>
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<td>Analysis</td>
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*Table 1 Overview of the methods*

4.1 Literature review – PRISMA method

The systematic literature review was employed to identify the direction of investigation into the barriers and facilitators in the Swedish context. The results of the literature review can be found in the next chapter. Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines were used to structure the entire process of the literature review (Moher et al., 2009). The review included the electronic databases covering the relevant research fields, namely Science and technology studies, Social science, Ergonomics, Gerontechnology, Gerontology, Healthcare, Social service, and Nursing. Six relevant databases were searched in this study, which included Web of Science, Scopus, PubMed, Medline, EBSCOhost Library, Information Science &Technology, and EBSCOhost Ergonomics.

Specific keywords and keyword groups are determined through iterations...
in several trial searches. The keywords searched can be divided into four groups: (1) "old" and its synonyms; (2) the ICT-based technology (e.g. e-Health, and monitoring systems) and broader terms (e.g. technology and gerontechnology); (3) "home care", "aging in place", and the terms related to home care; and (4) “immigrant” and its synonyms that indicate migration background. Articles that contain at least one keyword of each of the above-mentioned groups in their titles, abstracts or keywords were searched for. First, the search retrieved all the articles that matched with any of the included keywords in group 1. Second, within the previous results, the search continued if the records matched with any of the keywords of group 2. For groups 3 and 4, by repeating the same strategy used in the second step, the results were narrowed down to the intersection of all groups.

4.1.1 Quality Appraisal of Paper
The Mixed Methods Appraisal Tool (MMAT), version 2018, was used to assess the quality of the included articles (Hong et al., 2018). This tool is designed to appraise the empirical studies included in a systematic review, and covers qualitative, quantitative, and mixed-method studies. The MMAT checklist facilitates researchers to evaluate and describe the methodological quality of the following five most common categories of empirical research designs: Qualitative; Quantitative-randomized control trial; Quantitative non-randomized control trial; Quantitative descriptive; and Mixed-methods (Pluye et al., 2009). As a widely used quality appraisal tool for systematic literature reviews, the MMAT checklist is efficient and user-friendly (Pace et al., 2012). MMAT focuses on the details of each criterion and can better indicate the quality of the included studies, while discouraging the provision of an overall score and the exclusion of articles with low methodological quality (Hong et al., 2018). The MMAT checklist contains two screening questions and five categories of quality criteria for different empirical designs. The quality of the included studies is evaluated by answering the criteria in the appropriate categories as “Yes” (Y), “No” (N), or “Can’t tell” (N/A).
4.1.2 Inclusion and exclusion criteria

Articles are also excluded if they are related to older adults suffering from cognitive impairments because they have difficulties using ICT. When discussing the technology used for cognitively impaired older adults, scholars focus more on using technology solutions to support family caregivers and reduce the care burden (Boots et al., 2014; Brodaty & Donkin, 2009). Furthermore, the use of ICT by older adults with cognitive impairments and its influences must be examined closely together with the specific causes of cognitive diseases and the degrees of impairment. Thus, such articles are excluded since they do not suit the purpose of this review.

4.1.3 Data Extraction

Based on the inclusion and exclusion criteria as stated above, the first author removed the duplicates according to the titles and then screened the eligible articles according to their titles and abstracts. The second and the third authors reviewed the process and results of inclusion and exclusion, so as to ensure that all eligible articles would be screened according to the criteria. The first author read through the identified articles in full to summarize the relevant findings of each article that fitted the purpose of this review. Afterward, the results were reviewed and discussed by all the authors to reach a consensus for creating certain themes; then, the relevant findings were categorized into different themes using an iterative process. All authors further discussed and summarized the relevant information into different themes so as to support the analysis and comparison of evidence in the next steps. The characteristics of the studies and the respondents were retrieved and organized into a standardized table, which included the author’s name, year of publication, and the studied samples (e.g., age, ethnicity, size, and location). Furthermore, the study design, data collection method, and the main

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*Table 2 Examples of the Groups of Keywords*
findings related to the purpose of this review were abstracted and classified into the table.

4.2 Qualitative method

4.2.1 Introduction of research methodology

The purpose of this study is to explore and understand the midlife and older Chinese immigrants’ perception of filial piety and plans for their later lives in Sweden, where a continuous digital transformation of society is being experienced. As discussed in the previous chapters, midlife and older Chinese immigrants are influenced by acculturation, social welfare, and digitalization that might result in a different perception of what are considered to be acceptable filial practices. In addition, previous studies suggested that changes in the external environment could significantly influence the willingness and capability to practice filial piety. Understanding how midlife and older Chinese immigrants perceive such changes, especially with regard to their life experiences as care providers and care receivers, could provide meaningful insights for decision-making on future elderly care selection, expectations of inter-generational relationships, and interactions with the host societies.

To explore the perceptions and behavior of midlife and older Chinese immigrants in Sweden, it was felt that a qualitative approach was suitable. A qualitative exploratory approach allows for a more in-depth study of people in their own contexts and understandings, with the purpose of exploring and explaining why people form specific attitudes, perceptions, and behaviors in different ways (Schutt, 2014). Following the exploratory nature of this research, semi-structured interviews are employed, characterized as being not as formal as a questionnaire and not as loose as free conversation (Kvale, 1983; Qu & Dumay, 2011). The semi-structured interview guide was developed using pre-defined themes, with the freedom to express and exchange understanding, and allow room for deep interpretations.

4.2.2 Iteration of the research objective and method during the progression of the initial research

The original purpose of the thesis was to focus exclusively on older adults and how their perceptions of filial piety have changed, both from their life experiences in Sweden and from the use of digital technologies. In order to reach as many respondents as possible, the initial research plan employed a mixed-method approach that included questionnaire surveys, followed
by in-depth interviews. However, even though the research had utilized all planned media channels and social media to disseminate the information, the first stage of the research did not attract enough older respondents to complete the surveys by January 2020. Meanwhile, the outbreak of the COVID-19 pandemic significantly disrupted communication and the opportunities to contact older Chinese adults physically. Thus, after analyzing respondents to the surveys, the study design shifted from a mixed-method approach to a qualitative approach, employing in-depth interviews. With a qualitative method, the midlife and older Chinese respondents would be able to share their life experiences and opinions about filial piety in a digitalizing environment and aging as immigrants in the multiculturalism society of Sweden. In the course of modifying the research method, the initial research purpose and research questions were discussed, examined, and finally retained.

4.2.3 Qualitative data collection and analysis

The recruitment advertisement was posted for volunteers for the semi-structured interview on two Chinese-language news websites that focus on Nordic countries. Then, a self-selection snowballing sampling strategy was taken to invite new respondents from their social networks. Respondents who were originally from mainland China were included if they had lived in Sweden for more than two years and planned to stay and age in Sweden in the future. An interview guide and informed consent were sent to each respondent before the interviews to help them prepare for the interview topics. The guide included a description of the background, purposes, research methods, and confidentiality of respondents’ information, and the interview questions.

The data were collected during the period between 15 September 2020 and 25 December 2020. All the qualitative data were collected through video conferencing due to Swedish recommendations to refrain from unnecessary visits during the COVID-19 pandemic. The qualitative data was obtained from semi-structured interviews with a total of eight Chinese immigrants living in Sweden. The virtual interviews with respondents lasted from 30 to 60 minutes.

Thematic analysis was undertaken for the interview data in accordance with the topics and the aims in the interview framework under this approach (Braun & Clarke, 2012; Nowell et al., 2017; Patton, 2014). The analysis extracted, segmented, and summarized important concepts from the qualitative data, and categorized the information with themes
identified from prior research (Braun & Clarke, 2006). The analysis identified patterns in the main themes and interpreted the relations among different themes (Patton, 2014). Then, the shared experiences and meanings in relation to the research questions were identified (Braun & Clarke, 2006). The analysis is based on the assumptions that (1) filial piety is still the core value of Chinese immigrant families; (2) the acculturation experience modifies the practice of filial piety within the Swedish context; and (3) the experience of digital lives enhances the experience of aging in a foreign country.
5 Results

5.1 Older immigrants’ experiences of using information and communication technologies for elderly care at home

The initial search in terms of titles, abstracts, and authors’ keywords retrieved 1,177 articles from databases and personal libraries (Figure 3). After the duplicates were removed, the titles and abstracts of the remaining 667 records were reviewed, of which 629 articles were excluded according to the inclusion and exclusion criteria. Thus, 38 articles were excluded according to the inclusion and exclusion criteria. Finally, 12 articles were selected and analyzed.

Figure 3: PRISMA flow diagram: Inclusion and exclusion process of related articles

The included studies in the literature review demonstrated the experiences of older immigrants in comparison with native older adults. These studies also suggested the barriers and the facilitators that influence the older adults’ use of digital technology for elderly care at home.
5.1.1 Home care services availability and application of ICT in home care services

Although home care was the main inclusion criterion, home caregivers did not participate directly in these studies, except one (Millard et al., 2018). Introduced as a new approach to traditional family- and community-based care among immigrant families, home care is seen as insufficiently resourced to serve older immigrants residing in ethnically-diverse low-income communities or rural areas, given the cost and availability of services (Chung, Thompson, et al., 2017; Goodall et al., 2014; Hames et al., 2016; Millard et al., 2018; Walters et al., 2017). Also, home care providers could not supply home care services suitable for older adults’ culture and language preferences in many situations (Arcury et al., 2018; Chang et al., 2015; Chung, Thompson, et al., 2017; Goodall et al., 2014; J. Li et al., 2018; Millard et al., 2018; Walters et al., 2017; Yamazaki et al., 2017).

As shown in the included studies, older immigrants adopted two types of technology: unobtrusive technologies, such as sensor-based home monitoring systems and personal emergency response systems (Berridge et al., 2019; Chung, Demiris, et al., 2017; Chung, Thompson, et al., 2017; Hames et al., 2016; Yamazaki et al., 2017), and the technologies that require more controls and interactions, such as digitalized self-health management tools, e-Health, and communication tools (Arcury et al., 2017, 2018; Chang et al., 2015; Goodall et al., 2014; J. Li et al., 2018; Millard et al., 2018; Walters et al., 2017). The included studies suggested that older immigrants with lower education levels were found to be less experienced in using ICT-based technologies and lacking in digital literacy (Arcury et al., 2017, 2018; Chang et al., 2015). Their low education levels usually correlated to insufficient language proficiency, which hindered communication and brought about additional barriers to their access to healthcare resources (Arcury et al., 2017, 2018; Chang et al., 2015; J. Li et al., 2018). Their disadvantageous economic status was related to their migration experience and increased the difficulties in utilizing new technologies (Arcury et al., 2017, 2018; Chang et al., 2015; J. Li et al., 2018).

5.1.2 Barriers and facilitators to leveraging technology for home care services

5.1.2.1 Shared barriers to leveraging technology for home care services

Older immigrants shared common barriers to accessing technology in home care services. The first commonly mentioned barrier was low socioeconomic status, as many immigrants were engaged in low-paying
industries with shorter career histories than their native counterparts (Arcury et al., 2017, 2018; Chang et al., 2015; Chung, Thompson, et al., 2017). The short length of careers resulted in low social security benefits that were not sufficient to cover home care services and technologies (J. Li et al., 2018; Yamazaki et al., 2017). The cost is the most significant barrier to acquiring and maintaining the use of technology (Arcury et al., 2017, 2018; Chang et al., 2015; Chung, Demiris, et al., 2017; Goodall et al., 2014; J. Li et al., 2018; Millard et al., 2018).

Second, older adults were usually not sufficiently proficient in the language of their host society, and in some cases, even suffered from mother-tongue illiteracy (Arcury et al., 2017, 2018; Chang et al., 2015; Chung, Thompson, et al., 2017; Goodall et al., 2014; J. Li et al., 2018; Millard et al., 2018). Lacking language proficiency hindered the use of technology with a system of unfamiliar languages, and limited the communication channels and forms (Arcury et al., 2017; Berridge et al., 2019; Chang et al., 2015; Chung, Thompson, et al., 2017; Goodall et al., 2014; Millard et al., 2018; Walters et al., 2017).

Third, social integration was a significant barrier for older adults and limited the scope of their social networking and their ability to seek information (Arcury et al., 2017, 2018; Chang et al., 2015; Goodall et al., 2014; J. Li et al., 2018). Generally, older immigrants preferred to live in an environment where members shared the same cultures, languages, and experiences (Chung, Demiris, et al., 2017; Chung, Thompson, et al., 2017; Goodall et al., 2014; Hames et al., 2016; J. Li et al., 2018; Yamazaki et al., 2017). However, this behavior narrowed the possibility of finding wider public information or strengthening the value of the information shared within the community (Chang et al., 2015; Goodall et al., 2014; J. Li et al., 2018). In addition, this tendency reduced the need for using ICT, demotivated the willingness to learn new technology, and also diminished the participation of ethnic minorities in social activities (Chang et al., 2015; Goodall et al., 2014; Walters et al., 2017).

5.1.2.2 Shared facilitators for deploying technology in home care services

Facilitators encouraged older immigrants to accept new technologies as part of their home care services. The involvement of family members was the most effective facilitator in encouraging older adults to start considering technology (Arcury et al., 2017; Berridge et al., 2019; Chang et al., 2015; Goodall et al., 2014). Usually, the participation of family
members or familiar people could improve older adults’ feeling of security and increase their adoption of technology, while not necessarily leading to continuous use (Chang et al., 2015; Goodall et al., 2014).

Secondly, social and political support could promote the affordability and accessibility of ICT infrastructure and devices for older immigrants (Arcury et al., 2017; Chang et al., 2015; Chung, Thompson, et al., 2017; J. Li et al., 2018; Millard et al., 2018). Policymakers could take a distinct role in facilitating ICT accessibility by boosting investments in the construction of digital infrastructure and public facilities (e.g. libraries) (Arcury et al., 2017; Chang et al., 2015; Millard et al., 2018). Moreover, financial support could significantly relieve concerns over the cost of obtaining and maintaining new technology (Arcury et al., 2017; Chang et al., 2015; Chung, Demiris, et al., 2017; J. Li et al., 2018).

Thirdly, some studies have demonstrated that older immigrants would have a greater willingness to use technologies if they were tailored to their cultural preferences (Berridge et al., 2019; Chang et al., 2015; Chung, Demiris, et al., 2017; Goodall et al., 2014; Millard et al., 2018; Walters et al., 2017; Yamazaki et al., 2017). In fact, different ethnicities showed unique needs that were related to their cultural backgrounds and the particular context of use (Berridge et al., 2019; Chung, Demiris, et al., 2017; Yamazaki et al., 2017).

5.1.3 The disparities between native older adults and older immigrants

The included studies indicated that the older immigrants in the low-income communities were more socioeconomically disadvantaged and experienced worse health conditions than native older adults in the same area (Arcury et al., 2017, 2018; Chang et al., 2015; Goodall et al., 2014; Walters et al., 2017). The disparities in ICT use were significant for the low-income population, whose access to technology and healthcare was dwarfed by consideration of cost-efficacy (Arcury et al., 2017, 2018; Chang et al., 2015).

Older immigrants encountered more barriers to accessing the necessary health information and showed insufficient ability to use electronic self-management tools (Arcury et al., 2017, 2018). The older immigrants also showed lower e-Health literacy than native older adults, thus demotivating their utilization of the available online health resources to gain more knowledge about their health conditions or solve their health problems. As a result, older adults in the ethnic minority groups with low-income and poor educational attainments had weaker digital and eHealth literacy, thus
limiting their use of online resources (Arcury et al., 2017; Chang et al., 2015; Goodall et al., 2014; Walters et al., 2017).

5.2 Findings from qualitative interviews with older Chinese immigrants

Based on the literature review results and prior studies of filial piety among Chinese migrants, a qualitative interview study was conducted to investigate the particular situation among midlife and older Chinese immigrants in Sweden. The investigation combined the literature review results and previous knowledge of filial piety and compared them with the actual Chinese midlife and older immigrants’ perceptions and experiences in the Swedish context. Three main themes with subthemes were identified in the context of Swedish society: the opinions towards practicing filial piety; the needs and motivations of acculturation; and the dual roles of using digital technologies.

5.2.1 Opinions towards practicing filial piety

The respondents were previous filial caregivers/family caregivers to their parents and filial care recipients from their adult children. They had been educated in traditional filial norms from their pre-migration lives in China. Meanwhile, they had also been affected by individualistic and liberal thinking during their time in Sweden. This contextual influence modified their perceptions and expectations of conventional filial piety and the associated obligations and practices. In addition, the respondents also felt the differences when comparing themselves with the family members and friends in their hometowns. Most of them expressed their optimistic views on the changes in filial practices. Three sub-themes emerged during the discussion of filial piety in the Swedish context and their expectations of their children’s practices of filial piety. They emphasized (1) living arrangements, (2) views of reciprocal and authoritarian relationships, and (3) views on the shift of care responsibilities.

5.2.1.1 Living Arrangements

All respondents discussed their living arrangements, which could be viewed as operationalizing an abstract concept – filial piety. Intergenerational co-residence is the essential premise for practicing traditional filial piety. It provides the place for adult children to live closely with their parents, ensuring that they could immediately solve their parents’ problems. In turn, older adults, who held traditional views towards filial piety, were more comfortable if co-residence could be practiced. This was significant to the late-in-life immigrants, who
expressed higher insecurity in the host society, leading to a higher tendency toward co-residence with their adult children. This insecurity originated from insufficient income and an expectation of insufficient pensions in the future, lack of language fluency, and the foreign environment.

More respondents expressed their need to accept new living arrangements under different roofs. These respondents considered that it could be more beneficial to themselves and their adult children. The change was not merely advocated by the adult children but also from the parents’ demands for independent lives and social activities. Compared with the traditional dependent characteristics of older adults, these respondents focused more on affective connections rather than other support.

5.2.1.2 Views of filial piety: from the reciprocal and authoritarian filial piety

The conflict between inherited filial piety and the external context in which to practice filial piety could disrupt the traditional Chinese parent-child relationship. This disruption further influences parents’ expectations of becoming care recipients and adult children’s role and duty as primary care providers. This paper examined the relationship through the perspectives of reciprocal filial piety and authoritarian filial piety. More respondents showed an attitude of supporting their adult children in many areas, typically associated with housework (cleaning and cooking) and taking care of grandchildren. They did not expect any return for this support, either in the form of care, financial support, and so on. The respondents explained and reasoned their behavior from their perceived difficulties of living and working in a foreign country from their own personal experiences.

The late-in-life respondents who showed high insecurity demonstrated higher needs for a closer and interdependent relationship. This insecurity arose mostly from their current socioeconomic status and being an immigrant in later life. Despite the need for more control and care, the authoritarianism aspects of filial piety could not be reinforced for two main reasons. First, the respondents understood that the adult children were more “westernized”, which changed the traditional intergenerational familial power relations. Parents who tried to emphasize their authority could risk damaging the parent-child relationship, which was valuable to the parents under these conditions. Second, family reunification was the greatest motivation for respondents who migrated later in life, and even the process was associated with uncertainty and struggles. Love was the driving force for parents deciding to become late-in-life migrants. Thus, under these circumstances, filial piety has developed its reciprocal aspects,
rather than strengthening authoritarianism.

5.2.2 The needs and motivations of acculturation
Concerning the midlife and late-in-life migrants’ attempts to acculturate to Swedish culture, the respondents showed different experiences and indicated their expected outcome of acculturation. Some perceived acculturation as a necessary process for living in Sweden. The others felt it was overwhelming to make the adaption. Age at the time of immigration played an important role in determining the perceived difficulties and the outcome of attempts at acculturation. The respondents who immigrated earlier mostly reported positive experiences of interacting with Swedish society, learning cultures, and language. Meanwhile, the respondents who arrived later in life experienced difficulties interacting with native Swedish people and the society and were more insecure about their future lives. However, from observing respondents’ views on filial piety, it appears that the external environment is continuously influencing their views, no matter what their attitudes to acculturation.

5.2.2.1 The perceived needs for acculturation
The need for acculturation normally rises amid interaction with society. Acculturation happens slowly and continuously across their lives in Sweden. The first-generation older immigrants, who migrated in their early life, showed a more comprehensive and thorough knowledge of Swedish culture and systems, ranging from food, traditions and holidays to institutions and political parties. The understanding stems from the need to do business with and take jobs in Swedish society and communicate with people living in Sweden. Also, acculturation had helped them to reconsider their family relationships and plan for later life.

5.2.2.2 Overwhelmed and avoiding acculturation
The respondents who migrated in midlife and later life experienced more obstacles in identifying their roles in society. The most frequently expressed difficulty was the ability to speak Swedish or English. It constrained social interactions with local people and hindered the creation of new social connections. In addition, according to Swedish migration policies, the respondents still needed to have a job as they had not reached the retirement age in Sweden. Their work usually did not require language skills or create communication needs. Thus, it became almost impossible to spend extra time and energy on language learning, which was perceived as too challenging and unnecessary. Furthermore, the reason for immigration in midlife and later life was family reunification. The
respondents described their adult children as more familiar with and experienced in dealing with any problems they might face. Thus, considering the difficulties of acculturation, some respondents opted for a strategy of living in a closed social network and family environment.

5.2.3 The dual roles of using digital technologies
Older adults were described as “digital immigrants” at the beginning of the 21st century. With the development of ICT and network infrastructure, increasingly more older adults have become occasional or regular Internet users. The same progress also occurred among the older immigrant groups. All the respondents used smartphones to connect to the Internet daily. The use of mobile Internet had become an indispensable part of their daily routine and shaped the lives of those who had small real-life social networks in Sweden. Digitalization and Internet use played a significant role for the respondents in dealing with acculturative stress by reconciling cultural differences, maintaining connections to their home country and continuing comfortable cultural lives.

5.2.3.1 Keen midlife and older Internet users
All respondents used smartphones and the Internet on a daily basis, but not all of them had the experience of using computers. Considering the functions of smartphones, most respondents felt it was not necessary to learn to use a computer nowadays since smartphones could do most of the jobs of a PC. Three respondents used computers occasionally for work purposes, such as reading spreadsheets and writing emails, and most often used both Swedish applications and Chinese applications on their smartphones.

All respondents maintained daily usage of WeChat, which has a huge user base in both the domestic and international Chinese communities. They spent a lot of time using applications that provide them with multiple functions, such as sharing texts or audio with family members in group chats, reading “official accounts” (similar to blogs), sharing “moments” (similar to Twitter), and playing mobile games with strangers or friends. The respondents described their feelings of using communication technologies that enabled long-distance communications at an affordable cost and that preserved cultural identity and affection toward the homeland.

Although all the respondents were equipped with adequate skills to use smartphones, not all of them utilized commonly used Swedish applications
for information. The most frequent obstacles were the languages available in the applications. In this situation, the respondents needed to retrieve the information from direct personal communications or from Chinese information sources instead of directly accessing the available online information and resources.

5.2.3.2 The use of Internet in acculturation

Being a midlife or later-life immigrant is always a challenge, and sometimes it produces a great deal of stress. Instead of becoming trapped by their failure to assimilate to the host society culture, some respondents chose to “age in cyberspace” by combining their real lives in Sweden with virtual lives in online Chinese communities. This specific strategy helped them to endure the difficulties and loneliness of post-migration life in a foreign country by connecting them with online resources from their home country. The respondents were able to overcome nostalgia by reading and watching news and videos, engaging in online activities, thus maintaining connectedness with family members overseas. This phenomenon demonstrated a risky and contradictory situation faced by the respondents, in which the current hardship of acculturation might lead to long-term social exclusion and dependence on family members.
6 Discussion

This thesis started with questioning whether there is a gap between the native and foreign-born older adults in deploying new digital technologies at home for elderly care purposes. The results of the literature review suggested several gaps, including acculturation experiences, socioeconomic status, and cultural values and preferences of elderly care. The thesis continued to explore why and how the traditional value of family-based care beliefs sustain, influencing the digital empowerment of midlife and older adults in the Swedish welfare systems. Based on the prior literature and our field study, this chapter discusses the complexities of understanding care planning in a foreign environment that interweave with technology use and cultural preferences. In addition, the chapter reflects the necessity to develop an understanding of care cultures that provides meaningful insights for both policymakers and engineers.

6.1 The complexity of aging as an immigrant

The thesis argues multiple difficulties for aging immigrants in foreign countries, focusing on the elderly care planning around the home environment. First, the systematic literature review identified the inherent vulnerabilities resulting from migrations, including poor language proficiency, low socioeconomic status, and less participation in public affairs. Second, the individual’s acculturation experiences are dependent on the dominant social norms and cultures in the host countries and relate to the individual’s characteristics and migratory life-course. Last, but not least, it is challenging for the care provider and the policymaker to consider the care receivers’ cultural differences without recognizing the necessity to examine the cultural preferences.

Language proficiency is the most often seen barrier for social integration, which may not have been addressed over a long period and may worsen the risk of social isolation. Limited language proficiency restricts the number of information sources available and forms a barrier to the diffusion of innovation over time. To obtain more proactive practices, stakeholders must emphasize improving language proficiency by providing affordable language courses focused on daily communication. In addition to language courses, “supportive personnel” with bicultural or bilingual backgrounds can significantly encourage older immigrants to contact care services and utilize ICT.

Socioeconomic status is an essential indicator to differentiate the
experiences of acculturation and aging in the host society. Wealthier older immigrants’ decision-making regarding consumption is more dependent on perceived usefulness and functions. However, older immigrants with low economic means need to compromise with limited information, limited social networks, and insufficient health resources because they may stay on the “wrong” side of the digital divide. Public investment in the infrastructures and public facilities could mitigate the cost of implementing new technologies, thus boosting ICT adoption. The training course for enhancing digital literacy will always be popular among older adults if affordable and delivered in appropriate languages. Such courses will help older immigrants build confidence, raise their perceived benefits of embracing new technology, and reduce anxieties over technology.

The vulnerabilities are interrelated, resulting in poor health conditions and difficulties in utilizing healthcare resources. The difficulties often deteriorate as people become older and more dependent on the healthcare system, which requires more social and political attention. Furthermore, older immigrants could face the “double exclusion” of information due to being old and an ethnic minority, limiting possible social participation to attract social attention.

The results suggested the importance of promoting cultural integration as a more practical approach to reducing disparities by encouraging more positive interactions between immigrants and society. This approach could be an effective way to diminish the differences, while acculturative strategies and their outcomes are correlated to the social context and the general policy toward immigrants. From the perspective of providing elderly care to older immigrants living at home, the literature suggested a lack of recognition of cultural heterogeneities in providing culturally appropriated technologies and care services. Although each ethnicity has unique cultural preferences in receiving care services, it could be challenging or be easily ignored for the elderly care providers and policymakers to closely assess the care needs and cultural differences if the homogenous mindset toward different groups persists.

With the factors identified within the literature review, the thesis continued to plan and conduct fieldwork with the Chinese community according to identified factors and cultural preferences. The results of the fieldwork showed that the individual’s planning for later life and elderly care are still primarily motivated and guided by the deep-rooted dominant cultural heritage. Meanwhile, conflicts and the adjustment of perception occurred when the expected cultural care behaviors failed to be compatible
with the prerequisites of social norms in Sweden. During the process of justification and adjustment, the traditional Chinese care culture is redefined under practical situations in their daily post-migratory lives. The thesis revisited the empirical results to discuss what is changed in considering good filial piety, how and why filial piety continues to create positive intergenerational relations, and how the development of digital technology and the continuous digitalization of society could facilitate necessary changes.

6.2 The expectations of filial responsibilities and practices among midlife and older Chinese immigrants in Sweden

6.2.1 The normative expectations of filial responsibilities and filial practices

As mentioned in the above section, acculturation describes the process of negotiating one’s cultural heritage with the culture in the host society. The degree of acculturation provides meaningful insight to explain one’s expectation of to what degree adult children should take filial responsibilities, and what should be considered as good filial practices.

The findings are in line with the previous studies on Asian migrants, which suggest that age at the time of migration plays a significant role in determining the degree of acculturation. The immigrants who migrated in adolescence felt less acculturative stress compared to late-in-life immigrants. In addition, the younger immigrants could accumulate the knowledge of the host society, learn the language, and interact with native people for a more extended period. Meanwhile, midlife and older immigrants could struggle to understand the host society’s language, cultures, and social networks. This finding has been proved and verified from several different perspectives when comparing the different migratory life courses. First, the older immigrant, who migrated at a younger age, showed much higher confidence in their language capabilities. Second, the immigrant with a longer length of living and working in Sweden experienced a better socioeconomic status before and after retirement than the late-in-life immigrants. Third, late-in-life immigrants had difficulties establishing and extending new social connections in Sweden, which constrained their interaction with the host society and limited their sources of information. Thus, considering the language proficiency, income, and social connectedness, older Chinese immigrants with lower acculturation results in a higher probability of vulnerabilities and dependency with advancing age, increasing the need for filial practices from their adult children, including co-residence, financial support, and
Filial piety remains a central and strong influence among midlife and older Chinese immigrants in considering the relations between family members and planning for their later lives. Although the definition of the concept can be ambiguous, the individual’s interpretation of filial piety demonstrated a dynamic and robust nature regarding expected filial responsibilities practices.

First, despite the universal entitlement of welfare services in Sweden, midlife and older Chinese immigrants expected to live with adult children’s families, while care from the children was not considered as obligated. The respondents who were entitled to the elderly care services were more likely to substitute, entirely or partially, the typical Chinese family-based elderly care with a flexible combination of formal care options and informal care. Older Chinese adults are no longer necessarily dependent on adult children. However, the situation can challenge filial piety with regard to the frail older adult who needs care from adult children.

Second, the respondents’ attitudes toward co-residence with adult children have also changed based on their migratory experiences. The respondents, especially those with a high acculturation level, showed their understanding of living arrangements that did not require intergenerational co-residency. This stems from their willingness to maintain their social networks and social activities, and from their empathy towards the younger generations, and demonstrated a more independent style of arranging one’s life. At the same time, it rejected the most fundamental element of practicing filial piety.

Finally, despite the growing understanding of being independent in later life, flexibility around filial responsibilities and practices and the preparedness of the gap between expected care and received care is associated with one’s knowledge of Swedish cultures and of their adult children. All respondents focused on building a more equal and mutual relationship with their adult children instead of commending or controlling them. Some took care of the adult children’s family without expecting reciprocal care but maintaining positive affections and interactions.

All of the above shows that filial piety persists among the Chinese immigrants in Sweden, even though the definition of the normative value is ambiguous and good filial practice lacks consensus. However, filial piety
is learned from the daily parent-child interaction and the positive growing experiences in the family. Thus, filial piety and filial practice could be influenced significantly by the external environment and be interpreted differently from one family to another.

6.2.2 A shift from the traditional pattern of practicing filial piety

This thesis employed the Dual Filial Piety Model used by other authors to examine the traditional pattern of practicing filial piety in Confucian societies. By comparing the findings with the identified traditional pattern, the thesis suggested that filial piety is not only influenced by the external environment to practice the norm, but also shifts in line with family members’ expectations and daily parent-child interactions.

The most significant change in filial piety is how the older generation views the parent-child relationship. During the rapid modernization and urbanization in Chinese societies (mainland China, Hong Kong, and Taiwan), prior studies have documented the changes in filial piety, especially in the more developed areas where the number of people in the family is much smaller. This change has encouraged parents to value the parent/child relationship, which creates an equality between two generations in contemporary Chinese societies. From the findings among Chinese immigrants in Sweden, we learn that the responsibilities and obligations from authoritarian filial piety could not be enforced within the social context. The change of social context encouraged the emergence of new ties among family members to preserve the value, emphasizing equality and mutuality. Some respondents had noticed somewhat the changes of filial piety, which tended to be based more on reciprocity instead of authoritarianism when compared with their own experiences as family caregivers or with their counterparts in China.

Chinese immigrants seemed to be open to using Swedish elderly care services and moving to special housing or nursing homes, if necessary, which would have been considered unfilial from traditional viewpoints. Physical caregiving, financial and emotional support were the typical aspects of elderly care described in the Confucian classics (Sung, 1998). The findings provide a new perspective of considering the care responsibilities associated with filial piety within Chinese communities in contemporary societies. The practice of physical care is not the only and essential indicator for judging if one meets the expectation to be a filial child. Outsourcing care by other, either paid or public elderly care services, could complement the family-based care providing and reduce the care burden. The older Chinese immigrants in Sweden also tended to develop
other dimensions in constructing familial relations, instead of advocating the traditional model that meets with the traditional image of a filial child. In line with this way of thinking, along with the improvement of financial condition and the mobility of the younger generation, the conservative way of practicing filial piety is not sustainable. Using parental authority to enforce filial responsibilities can damage the intergenerational relationship in families in Chinese society and among Chinese families in foreign environments.

6.3 The effects of using digital technologies among Chinese immigrants

There is no doubt that the development of digitalization has extended to older adults and to older immigrants. Despite being perceived as digital immigrants, increasingly more older Swedish adults participate in the digital society (Anderberg et al., 2020; Inter, 2020). With the continuous digitalization of society and the development of ICT infrastructures, more midlife and older adults are connected to the Internet. All respondents are equipped with adequate digital skills to maintain daily use of the Internet via smartphones and tablets. However, computer use among older Chinese immigrants is not common because of limited skills and experience.

Midlife and older adults can maintain frequent contact with friends and family members living in the country of origin. Maintaining frequent connections with the home country helps the new immigrant reduce the acculturative stress of moving to a foreign environment, especially for the late-in-life immigrants. On the other hand, the respondents showed that this can have an unintended effect on acculturation. The use of the Internet slows down or even totally blocks the acculturation process for the immigrants who experienced difficulties in interacting with the host society, typically among the late-in-life immigrants. The situation will increase the potential of them being more dependent on their adult children with advancing age. Some respondents spent most of their time obtaining information from and making connections with their country of origin while showing less interest in their host society. Mixing real lives in Sweden and virtual lives in cyberspace will create more difficulties in participating in the host society and create barriers that hinder information dissemination. With limited knowledge of the host society, this group of older immigrants can be categorized as the “Separation” group referred to in Berry’s acculturation theory and become at significant risk of social isolation.
The findings raise another interesting question about how digitalization impacts the importance and necessity of acculturation. Moreover, to what degree can online activities substitute the acculturated social participation that affects immigrants' physical, mental, and psychological health?

### 6.4 Limitations of the research

The research employed a qualitative approach to investigate how migration experiences and the continuous uptake of digital technologies influenced filial piety, the dominant cultural norm for familial relationships, and elderly care among Chinese immigrants. The qualitative study design is explorative from the micro-level, through the lens of emphasizing the values of the individuals’ experiences, knowledge, and opinions on the studied topics. Despite the benefits of a qualitative approach in explorative studies, there were limitations to it in our study. First, the nature of the qualitative approach is explorative and interpretative. This thesis focused on midlife and older adults in the Chinese community, which has lacked public attention and is less organized. In addition, the data collection process was disrupted by the COVID-19 pandemic, limiting the approaches to reach a broader population. Second, the thesis did not attempt to achieve a truly representative sample by screening participants using additional criteria (i.e., socioeconomic status and length of residence), other than appropriateness of the age range to the research questions. Most of the respondents work in the same industry, representing the traditional image of the Chinese immigrant, while the “new Chinese immigrants” may interpret filial piety in a different way. Finally, with the comprehensive welfare schemes, the influence of socioeconomic differences to using elderly care services was not analyzed thoroughly. However, these disparities may cause differences in the individual’s utilization of the services and planning for elderly care, which might provide a new dimension to the thesis.

### 6.5 Future Work

This work examined how filial piety was influenced by the uptake of new technology under the Swedish welfare state. The thesis explored the conditions of the midlife and older Chinese immigrants living in Sweden who wish to retire and live in Sweden in the future. Although the result demonstrated a clear pattern of arranged elderly care influenced by filial piety and social changes, a quantitative study involving both the younger and older generations could provide more perspectives on how digitalization and welfare policy influence filial expectations and filial practices within the Chinese community in Sweden. In addition,
comparative experiments between the native Swedish elderly adults and the older Chinese adults regarding the views of care responsibilities and digital technology use could provide more knowledge on cultural differences and how these affect the needs for care, as well as provide insights for policymakers in the multicultural society.
7 Conclusion

The Chinese migrant is one of the largest international immigration groups, with a long history of settling in different continents. Unlike the prevailing western individualism culture in Sweden, the Chinese are known for their traditions of familism and collectivism for supporting family members, especially in immigrant families. With the deep-rooted Chinese culture of taking care of aged parents in the family, the Chinese migrants have demonstrated how they redefine and reshape the expectations of cultural norms and related care practices as responses to the reality in the foreign context. Nonetheless, the traditional care culture of filial piety has still helped the children and parents to find a path for maintaining familial closeness. Compared with prior studies in China, filial piety and filial practices in Sweden are based more on reciprocity and positive interactions instead of authoritarianism and demand. It is worth noting the importance of engaging the younger generation to see the differences in their understandings in comparison with the older generation, to see how tradition is evolving over time with different degrees of acculturation.

The uptake and continuous use of ICT products, as well as the continuous digital transformation in China and Sweden, have provided possibilities for midlife and older Chinese adults to live more independently in comparison with their counterparts in China, even in the transnational context. It also helps midlife and older Chinese adults to maintain social connectedness with the host society. On the other hand, in contrast to the idea that the uptake of the Internet could act as a bridge for midlife and older immigrants to their host society, the thesis demonstrates a different but meaningful perspective. The adoption and use of ICT products can also reinforce social isolation and social exclusion when midlife and older immigrants are digitally excluded from the host society, regardless of whether this is voluntary or involuntary. More research on this phenomenon is required to provide meaningful insights since the digital transformation of society and international migration continue to change society for the future.
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