

Saint Petersburg State University
Graduate School of Management

MASTER THESIS
THE HRM CHALLENGES DUE TO THE AGING POPULATION: EVIDENCE
FROM CHINESE FIRMS

Done by

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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ
ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

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ABSTRACT

Master Student's Name	Fan Yuanxing
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Master Thesis Title	The HRM challenges due to the aging population – Evidence of the Chinese Firms
Description of the goal, tasks and main results the research	<p>Research Goal: China now facing serious population ageing and the ageing level is expected to continue increasing. Except for its impact on social and economic. There are also lots of managerial challenges brought by an ageing workforce. In general, lack of research on the topic of the ageing workforce at the firm level. It is necessary to conduct this research. At the same time, because ageing is a context-specific issue. Except to learn from existing research, it is necessary to conduct specific research in the Chinese context. The research goal is to provide a preliminary understanding of this topic and guidelines for Chinese firms to manage the ageing workforce and ensure their long-term development.</p> <p>Research tasks: Understand what characteristics of aging and aging workforce in Chinese context. Understand what challenges of aging workforce Chinese firms face and what HRM practices can be used to address these challenges.</p> <p>Research Methods: Qualitative Research</p> <p>Main Results: 1. The challenges of the ageing workforce Chinese firms facing. The common and unique factors and reasons. 2. The HRM practices Chinese firms can use to address these challenges. Discussion of the HRM practices and ways to adjust based on the Chinese context.</p>
Keywords	Human Resource Management; Aging workforce; Workforce management; Recruitment and retention; Age diversity, discrimination; Knowledge transfer; Employer branding and attractiveness; Old talent management; Age-inclusive policy; Employee training

АННОТАЦИЯ

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Название ВКР	Проблемы управления человеческими ресурсами в контексте старения населения: опыт китайских компаний
Описание цели, задач и основных результатов исследования	Цель исследования: Китай в настоящее время сталкивается с серьезным старением населения, и ожидается, что уровень старения продолжит расти.

	<p>За исключением его влияния на социальную и экономическую сферу, существует также множество управленческих проблем, связанных со старением рабочей силы. В целом, характерно отсутствие исследований по теме старения рабочей силы в фирмах. Необходимо провести это исследование. В то же время старение - это проблема, зависящая от конкретного контекста. Чтобы извлечь уроки из существующих исследований, необходимо провести конкретные исследования в китайском контексте. Цель исследования - дать предварительное представление об этой теме и рекомендации китайским фирмам по управлению стареющей рабочей силой и обеспечению их долгосрочного развития.</p> <p>Задачи исследования: понять, каковы характеристики старения и стареющей рабочей силы в китайском контексте; понять, с какими проблемами старения рабочей силы сталкиваются китайские фирмы и какие методы управления персоналом можно использовать для решения этих проблем.</p> <p>Методы исследования: Качественное исследование</p> <p>Основные результаты: 1. Проблемы стареющей рабочей силы, с которыми сталкиваются китайские фирмы: Управление персоналом; Расширение и развитие бизнеса; Набор и удержание персонала; Дискриминация по возрасту; Передача знаний. Общие и уникальные факторы и причины. 2. Методы управления персоналом, которые китайские фирмы могут использовать для решения этих задач: Брендинг и привлекательность работодателя; Управление старыми кадрами; Политика, учитывающая возрастные особенности; Обсуждение этих практик управления персоналом и способов их корректировки с учетом китайского контекста.</p>
<p>Ключевые слова</p>	<p>Управление человеческими ресурсами; Стареющая рабочая сила; Управление персоналом; Набор и удержание; Возрастное разнообразие, дискриминация; Обмен знаниями; Бренд работодателя и его привлекательность; Управление старыми талантами; Возрастная политика; Обучение персонала</p>

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INTRODUCTION

Population ageing is one of the major trends in global population development today. Around 16% of the world's population will be over the age of 65 by 2050 (UN, 2020), which will have a significant and lasting impact on socio-economic and firm sustainability in the coming decades. While the degree of ageing in developed countries continues to deepen, developing countries will become the main force for the growth of the elderly population in the next few decades. Existing research has pointed out that the cause of ageing is the result of the simultaneous reduction of death and fertility rate (Galor, 2012), and its direct impact on the economy includes sustainable economic development, labor productivity, labor market structure, and public policy (Feyrer, 2008). According to existing research, for firms, the impact of ageing is more complicated. On the one hand, affected by the external economic environment and changes in labor supply, ageing is not conducive to the expansion and sustainable development of firms (Aghion, Howitt, 2009). On the other hand, firms face challenges in recruiting and retaining employees (Kooij et al. 2014), more complex employee needs and preferences (Wang, Shultz, 2010), and reduced productivity due to age discrimination in the workplace (Arlene, Hirsch, 2017).

In order to reduce the negative impacts of ageing on the development and management of firms, it is crucial to use human resource management practices to address these challenges. Such as the existing research, the importance of employer branding and employer attractiveness in helping firms to win in the highly competitive human resources market (Berthon, Ewing, & Hah, 2005). The theory of old talent management demonstrates the value and potential issues of ageing employees and how to better deal with the strengths and weaknesses of ageing employees (Feldman, Kim, 2015). And age inclusion policies can help create an inclusive and supportive workplace, which is critical for both elder and younger employee groups (AARP, 2018).

Although ageing is becoming a global problem, it still has different characteristics based on different countries and cultural backgrounds (UNDESA, 2017). For developing countries, they are in the early stages of ageing. Their population ageing has not been accompanied by

social and economic growth like developed countries and may be forced to the allocation of limited resources across generations. More specifically, when ageing happened, their socioeconomic level is still far from the level of developed countries when they entered the ageing society. In other words, developing countries may face the situation of getting old before getting rich and this suggested that developing countries need to develop new policies. Or adjust structures from the firm level to better address the challenges of the ageing workforce (Lee, Mason, 2011). In addition, there is a lack of understanding and practice experience of ageing in developing countries. Due to differences in population trends and economic development processes, developing countries are in an ageing stage different from developed countries, and there is no way to directly replicate the attempts of developed countries to deal with ageing (United Nations, 2016). As the main source of ageing population growth (United Nations, 2020), if developing countries cannot effectively deal with ageing, it will have a negative impact on their economic development, labor productivity, and communication between generations (WHO, 2015). It may further intensify the contradictions between different age groups, and the loss of knowledge and skills. Furthermore, for firms in developing countries, in order to ensure long-term development and stable operation, it is necessary to have a deep understanding of the characteristics of ageing in developing countries and the challenges it brings to the firms (Kwon, 2017). At the same time, it is necessary to analyze from an empirical point of view, what kind of HRM method should be used, or how to adjust the existing HRM methods of developed countries to deal with the ageing workforce, so as to help firms deal with these challenges more efficiently.

In addition, in order to better address the challenges that ageing brings to firms, human resource management practices also need to be adjusted based on different national cultural and economic backgrounds, culture, and industries (Jackson, Schuler & Jiang, 2014).

China has become the country with the largest elderly population in the world and has entered a period of a deep ageing society. It is expected to reach 480 million people by 2050, accounting for about a quarter of the global elderly population (National Bureau of Statistics of China, 2020). The development of China's ageing population presents the characteristics of large numbers, fast speed, large scale and unbalanced structure, accompanied by problems such

as increased financial burden and insufficient labor supply. This not only affects the business development and transformation of the firm but also poses a major challenge to the firm's management (寇磊鹏, 2021). In contrast to China's severe ageing, research on the impact of ageing on firms and workforce management is incomplete. There are omissions in the existing literature on this topic. For example, Reports from the government and social organizations have analyzed the ageing situation in China, but they have not given specific explanations on the possible impact on firms, especially HRM. For example, the National Bureau of Statistics of China (National Bureau of Statistics of China, 2021). Li, Wang's study of Chinese firms' management methods for the ageing workforce is based on anecdotal evidence, lacks analysis of the industry and understanding of ageing in a certain region, and does not comment on HRM practices (Li, Wang, 2021). In the study on age diversity in the workplace, Wang and Liang explored the impact of age diversity on employee performance in Chinese firms. Its conclusions are limited by the number of samples it selects, it does not require the proportion of elderly employees in its sample, and it does not require cross-industry research. At the same time, no empirical analysis of Chinese firms based on this theory is given (Wang, Liang, 2021). In addition, culture and values can also affect the ageing workforce, people's attitudes towards ageing employees, and management practices. It is necessary to conduct an empirical analysis of the specific impact of culture on management practices (Zhang, Wang, 2021). Considering the limitation of existing research. In order to obtain the most authentic and accurate information, this paper provides empirical evidence from real firms in traditional and labor-intensive industries of China, conducts exploratory and qualitative research, and provides preliminary understanding for further in-depth research on this topic in the future. Therefore, in this study, the research questions are -

1. What challenges of aging workforce Chinese firms face?
2. What HRM practices help to address aging challenges in Chinese context?

This paper is divided into 3 chapters. The first chapter includes the theories and modern practices on what impact ageing has brought to the socio-economic and firms, and how HRM practice responds to these impacts and challenges. The necessity of conducting this research in the Chinese context. The research gaps are also mentioned in the first chapter. The second

chapter is about research methods, including the design of interview questions, selection of research objects, collecting of data, summarizing, and analyzing research results, etc. The third chapter is about the in-depth analysis of the collected data and cases. Including the analysis of interviews, the human resource management methods in the Chinese context, and the future research direction of human resource management on ageing.

CHAPTER 1 - THEORETICAL BACKGROUND OF AGING POPULATION

1.1) Aging phenomenon and its impact on country and firm level

1.1.1) The definition of elderly

Before analyzing the phenomenon of ageing, it is necessary to understand how to define the elderly population. For some developed economies, such as the United States and developed countries in Europe, 65 is the commonly used age cutoff, people do not receive full retirement security benefits until they turn 65 (Kinsella, Phillips, 2005). However, due to the level of social development in different regions, the average life expectancy is different, and the definition of the term "old age" in different regions is also different (Lloyd, 2000).

At the beginning of the 21st century, the global average life expectancy was 65 years, and by 2050, this figure will increase to 75 years. For developed economies, life expectancy is projected to increase from 75 to 85 between 2000 and 2050. For developing economies, it's 63-74. For some developed economies, it is common to use 65 years old as the average retirement age as the standard for measuring the elderly population. But in Japan, the age of the working population is much older than 65. The retirement age in the United States is also increasing year by year, and by 2027, it is expected to increase to 67 years old (UN, 2007). For developing economies, on the one hand, the average age of their population is lower, and on the other hand, the social welfare system, and insufficient medical resources per capita also lead to longer periods of poor health. The age standard for the elderly population should also be lower than in developed economies (Auerbach, Alan, 2017).

According to the existing research, scholars for example including Lloyd and Midwinter generally do not agree to define the elderly purely by age, but there seems to be no suitable alternative method as the general basis for the definition. From the theoretical perspective, except for age, the elderly can also be perceived and understood in several different ways, including appearance, life status (such as retirement or cessation of socially productive activities), or character transitions (grandparents or mentors), but these factors are often

influenced by cultural differences and the influence of socioeconomic background factors (Morgan, Kunkel, 2001).

To sum up, although the definition of the elderly population varies according to regional and cultural differences. For this paper, age 60-65 is used as the standard for defining the elderly population. This is in line with the criteria established by the United Nations in 1956 to define ageing (United Nations, 1956). On the other hand, according to “The Law on Protection of the Rights and Interests of the Elderly of China”, the standard for the elderly population is 60 years old. Considering that the research of this paper is based on existing theories and practices of ageing and combined with the Chinese context., aged 60-65 is more appropriate to define the elderly population, and it is also convenient for follow-up research and analysis.

1.1.2.) Understanding of aging and its developed process

According to the standards established by the United Nations in <<The Aging of Populations and Its. Economic and Social Implications>> in 1956. Combining the methods mentioned above to define elderly people. A region is considered to be ageing when the population aged over 60 accounts for more than 10% of the total population, or the population aged over 65 accounts for more than 7% of the total population (United Nations, 1956).

Judging from the changes in the population structure at various stages of social development, As Bloom mentioned in his research on the economic impact of population ageing, the role of declining fertility rates and increasing life expectancy are the main drivers of population ageing. Because of the relatively peaceful and stable environment, the development of medical technology and social welfare (Bloom, Canning & Fink, 2021). As mentioned above, the average age expectancy continued to increase, and the death rate has decreased. At the same time, the change in parents' awareness of childbearing, the development of the economy and industrialization have led to changes in production activities. And a growing number of fertility control methods have led to a continued decline in fertility rates (He, Goodkind, & Kowal, 2016). Looking at the stages of social development, although the decline in the initial death rate has led to a short-term trend of the younger structure of the population. But the subsequent

continued decline in the fertility rate has accelerated the pace of global ageing (Lutz, Qiang, 2002; Lee, Mason, 2020).

Oded Galor in "The Demographic Transition: Causes and Consequences" introduced the factors and mechanisms such as changes in fertility rates, death rates and expected age as possible triggers of the demographic transition (Galor, 2012). Based on his research, he divided the demographic transition process into four phases. Pre-industrial is the first stage, characterized by high birth and death rates leading to slow population growth. In the second stage, the age structure tends to be younger. The death rate has dropped rapidly while the fertility rate has remained at a high level. Due to the increase in the neonatal survival rate, the proportion of the working-age population (15-60) has increased, and the total population has increased rapidly. Society has entered the stage of demographic dividend. In the third stage, due to changes in social and economic factors, the fertility rate began to decline, the death rate continued to decline, the population growth began to slow down, and the population structure officially entered the ageing process. In the fourth stage, persistently low fertility reduces the proportion of the young population over time. The increase in life expectancy has further reduced the proportion of the working-age population and accelerated the ageing process.

Ageing is now a global phenomenon that exists in almost every country. In 2022, the number of people over the age of 65 in the world was approximately 750 million, and by 2050, the number of people over the age of 65 is expected to exceed 1.5 billion. Globally, during the roughly 20-year period from 1990 to 2022, the proportion of elder people in the total population has increased by about 3% to 10%. By 2050, the proportion of the elderly population will exceed 16%, and by then one-sixth of the world's population will be over the age of 65. At the same time, the phenomenon of deep ageing is also obvious. The number of people over the age of 80 has almost tripled from 1990 to 2022, and there are about 150 million people over the age of 80 worldwide (United Nations, 2022).

Currently, according to the population structure of developed countries and developing countries (Table 1), the aging level of developed countries is much higher than that of developing countries. The aging level of countries with economies in transition is lower than

that of developed countries, but still higher than that of developing countries. Severe aging is expected to prevail in all types of countries in the coming decades.

Table 1 – Population by broad age group for the world and groups of countries (National Bureau of Statistics, 2018)

Population by broad age group for the world and groups of countries, 1950, 1975, 2005, 2025 and 2050										
Age group	Population (millions)					Percentage				
	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050
World										
0-14	864	1 498	1 821	1 909	1 833	34.3	36.8	28.2	24.2	20.2
15-24	459	757	1 159	1 211	1 225	18.2	18.6	17.9	15.3	13.5
25-59	991	1 469	2 812	3 593	4 051	39.3	36.1	43.5	45.4	44.6
60+	205	350	672	1 193	1 968	8.2	8.6	10.4	15.1	21.7
Total	2 519	4 074	6 465	7 905	9 076	100.0	100.0	100.0	100.0	100.0
65+	131	232	476	832	1 465	5.2	5.7	7.4	10.5	16.1
80+	14	31	87	160	394	0.5	0.8	1.3	2.0	4.3
Developed countries										
0-14	175	202	170	165	167	27.0	24.3	17.3	15.8	15.6
15-24	105	137	128	118	116	16.2	16.5	13.0	11.2	10.8
25-59	289	360	483	472	440	44.6	43.3	49.1	45.1	41.2
60+	79	131	203	293	345	12.2	15.8	20.6	28.0	32.3
Total	647	830	984	1 047	1 067	100.0	100.0	100.0	100.0	100.0
65+	53	93	153	224	280	8.2	11.2	15.5	21.4	26.2
80+	7	16	39	61	105	1.1	1.9	4.0	5.8	9.8
Economies in transition										
0-14	56	71	57	51	43	29.0	26.6	19.0	17.7	16.5
15-24	39	49	53	36	29	20.4	18.4	17.6	12.3	11.0
25-59	78	113	144	141	113	40.6	42.2	47.8	48.6	43.2
60+	19	34	47	62	76	10.0	12.8	15.7	21.5	29.3
Total	191	268	302	289	261	100.0	100.0	100.0	100.0	100.0
65+	13	23	37	44	0 056	6.7	8.5	12.4	15.3	21.4
80+	2	3	6	8	14	1.0	1.2	1.9	2.7	5.4
Developing countries										
0-14	634	1 224	1 593	1 693	1 623	37.7	41.1	30.8	25.8	20.9
15-24	316	571	0 978	1 058	1 080	18.8	19.2	18.9	16.1	13.9
25-59	624	996	2 186	2 980	3 498	37.1	33.5	42.2	45.4	45.1
60+	107	184	422	838	1 547	6.4	6.2	8.1	12.8	20.0
Total	1 681	2 975	5 179	6 569	7 748	100.0	100.0	100.0	100.0	100.0
65+	65	116	286	564	1 129	3.9	3.9	5.5	8.6	14.6
80+	5	13	41	91	275	0.3	0.4	0.8	1.4	3.5

Between 2020 and 2050, the region with the largest increase in the elderly population and the fastest ageing rate is East and Southeast Asia. Between 1990 and 2020, the percentage of the local population aged 65 or above doubled in this region, from 6% in 1990 to 11% in 2020. Among them, China contributed the largest proportion. Globally, life expectancy has reached 72.3 years, with women living longer than men at 74.7 years versus 69.9 years (United Nations, 2022).

1.1.3.) Impact of aging - Globally and Country level

From the global and country perspective. As mentioned above, population ageing is a phenomenon in which the proportion of the elderly population in society increases due to declining fertility rates and increasing life expectancy (Galor, 2012). With the ageing of the population, many challenges have emerged, including insufficient labor supply, slowing socio-

economic development, and forced adjustments in employment policies. Ageing has come to a global issue, not just for developed countries. By 2050, most of the elderly population growth will come from developing countries (Milena, 2016). Ageing has become one of the important subjects of social economics. In order to ensure normal socioeconomic activities and development, researchers must consider these challenges and develop practical countermeasures. The literature in the *Journal of Aging & Social Policy* conducts in-depth research on the issue of ageing and its significant impact on the economy, society, and public politics. For example, scholars such as Jacquelyn James, Green & Riddell's research of the impact of ageing on labor productivity rate (James, Moen, & Swanberg, 2013). Axel Börsch Supan used European cases to explain the impact of ageing on the labor market and public policies in his research (Börsch, 2003). David E. Bloom's research on the impact of ageing on innovation and growth of productivity (Bloom, Canning & Fink, 2018).

The social and economic impact of ageing is complex and has been extensively studied by scholars from all over the world. In general, according to Feyrer's research results, changes in age structure can have potential impacts on socioeconomics, productivity, consumption patterns, etc., which may affect the level of economic development (Feyrer, 2008). Bloom also expressed similar views in his recent study on the impact of population ageing on economic development. He believes that changes in the demographic structure have a major impact on the social economy, productivity, consumer buying habits, and labor market structure (Bloom, Canning & Fink, 2021). Because the elderly tends to have more health problems and require more medical care than younger. The ageing population has increased demands on healthcare and support services as well. It also brings challenges to the government budget and social security system. (Kim, Lee, 2015). The OECD addresses the public policy implications of population ageing in its analysis of pension systems in OECD and G20 countries. The report discusses pension system reform, retirement age and social protection and support for older workers (OCED,2021).

For developed countries, ageing brings an increase in demand for public health and medical resources, etc., which may not have a negative impact on the economy in the short term

but may still bring concern and challenges for long-term economic development due to labor shortages (Lee, Mason, & Cotlear, 2010). The European Commission used the example of European countries in its report on ageing research to confirm its impact on healthcare spending, pension reform, and labor market (European Commission, 2021). Although the immigration or foreign labor policies adopted by the developed economies that can help reduce the impact of ageing, immigrants tend to be younger on average than the native population. In the research on labor migration, Kahanec confirmed the positive impact of immigration on ageing. Immigrants from Western Europe and Central Europe, after undergoing language and skills training, can participate in social production and alleviate the problem of labor shortage (Kahanec, Zimmermann, 2020). In addition, immigrants can contribute to the economy by paying taxes and filling labor shortages in certain industries (Böheim, Leoni, 2019). But at the same time, immigrants also brings social conflicts and security problems, and it is extremely vulnerable and unsustainable due to changes in the external environment (Castles, Miller, 2009).

Developing countries have also faced the problem of a decrease in working-aged labor. The demand for economic and technological development makes individual production units more inclined to choose working-aged labor with good physical conditions and innovation abilities. The intensification of ageing not only limits the supply of labor in the short term but even affects the sustainability of long-term economic development, increasing the difficulty of the evolution and transformation of the industrial structure (Zhang, Wang, 2020). And it further increases the difficulty of the industrial transition from developing economies to developed economies (Ahmad, Khan, 2018). In addition, in some developing countries such as China, because of the level of economic development and cultural concepts. The concept of family care is very common, and more emphasis is placed on family care for the elderly rather than formal health care services (Bongaarts, Zimmer, 2002).

- **Impact on labor productivity**

According to Mankiw, N. G's definition in macroeconomics, labor productivity is the amount of output that a labor can create per unit of time, also known as the output per labor (Mankiw, 2020). Labor productivity is affected by a variety of factors. The first is that elderly people usually have more accumulated experience. A study of Austrian employer-employee

matching data confirms that, under the condition of underage 55, assuming that the other elements remain unchanged, the older the employee, the higher the labor productivity. (Mahlberg, 2013). Earlier studies on this topic in Israel and the United States also reached similar conclusions (Hellerstein & Neumark, 1995; Hellerstein et al, 1999). The second is the decline in the health of the labor force. It is inevitable that when the labor force exceeds a certain age, the health status, especially cognitive ability such as memory and learning ability decline and resulting in a decline in labor productivity. For example, research on Canada, Norway, and the United States shows that under the premise of controlling other variables, increasing age has a significant negative impact on labor's skills and performance (Green & Riddell, 2013). Austrian scholar Mahlberg's research on the European labor market also confirmed the inverted U-shaped (Table 2) relationship between the labor force's participation rate and age. That is, after a certain age, the performance declines with increasing age (Mahlberg, 2009). The third is the change in the thinking and preferences of the labor. Compared with the working-age labor, the elderly lack an innovative spirit and sense of responsibility, which is not conducive to the improvement of labor productivity. The United States conducted a statistical analysis of innovators between 1975 and 1995, and the result was that the median age of innovators was about 48 years old (Feyrer, 2008). Liang also analyzed the cross-country data, and the results showed that entrepreneurship was negatively correlated with age, and it weakened with increasing age. At the same time, the probability of the emergence of innovative enterprises or new industries in an ageing society is also relatively low (Liang, 2018).

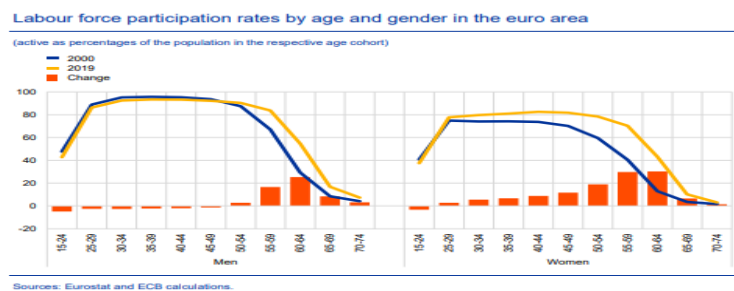


Table 2 – The inverted U-shaped relationship – example of euro area (Mahlberg, 2009)

- **Impact on social security system**

The purpose of social security is to provide financial support to eligible people who are retired, sick, etc., and this activity is mainly supported by payroll taxes (Taylor, Francis, 2019). The specific policies of social security may vary from different countries, but with social

progress and economic development, its contents become more and more similar. According to the definition given by the International Labor Organization (ILO), the purpose of social security is to ensure that members of society can obtain the protection necessary to maintain their basic life. Includes 9 items: medical care, sickness allowance, unemployment allowance, old-age allowance, work-related injury allowance, family allowance, maternity allowance, disability allowance, and survivor's allowance.

The social security system commonly used today is based on the premise of industrialization and is produced under the joint action of urbanization and ageing. Studies have found that a country's income level, income gap, level of population ageing, level of opening, population diversity and other factors have impacts on social security (Culter & Johnson, 2004; Tabellini, 2000; Rodrik, 1998). The deepening of ageing inevitably affects the social security system. People's incomes fall in old age while spending on health care and care increases dramatically. The society's demand for elderly care, medical care, and support services increases with the increase in the proportion of the elderly population. These inevitably force the government to allocate more public resources to social security. Ageing inevitably lead to an increase in the burden of social pensions, reducing the supply of scientific research and thus negatively affecting innovation. From the perspective of the government, according to the generational alternation model constructed by Gonzales-Eiras and Niepelt, when factors such as tax rates, total budgetary expenditures, and scheduled retirement age remain unchanged, social security expenditure has a compressive effect on the government's public R&D investment. (Gonzales, Niepelt, 2012). The increase in pension expenses caused by ageing inevitably reduces the resources allocation of scientific research, thereby affecting innovation as well (Han, He & Lyu, 2020).

- **Impact on public policy**

At the same time. Many countries are trying to adjust pension policies to reduce fiscal expenditures and slow down the increase in the number of new pensioners. Most commonly, this is achieved through key parameters, including raising the mandatory retirement age and stricter eligibility checks. For example, the French government is considering postponing the age of receiving pensions and raising the retirement age to 64; Brazil has passed a reform of its

labor law in 2019, raising the statutory retirement age from 56 to 65 for men and 65 for women. The age of 53 was raised to 62. This change of policy is happening all over the world, countries such as the United States, China and Portugal will propose different adjustments to this policy (David, Vitor, 2020).

At the same time, countries are trying to adjust their management policies to reduce the impact of labor shortages caused by ageing. For example, Italy and Spain are implementing relevant policies on narrowing the gender gap in the labor force, because considering that the participation rate of women in social labor is only 50% compared to 80% for men, because of the transformation of working methods, women are sufficient to be competent in the existing social labor force. For most jobs, if the policy is implemented well, the negative impact of ageing on labor supply will be greatly ameliorated (Dabla, Kochhar, 2019). At the same time, provide better public support for newborns, including education, medical care, etc. Encourage the female to join the social production. In addition to this, various countries are also considering employment incentives and social support policies for older workers, because of the increase in average life expectancy (David, Vitor, 2020).

1.1.4.) Impact of aging – challenges at Firm level

Understanding the challenges of ageing form firm-level is necessary because it can help firms to develop effective strategies to address these challenges. The impact of ageing on firms is complex and can be differentiated into external and internal factors. External factors refer to changes in the economic, sociocultural context, and demographics that affect a firm, such as changes in consumer preferences or changes in social security policies (Bloom, Canning, & Fink, 2010). Internal factors refer to changes within firms related to workforce ageing, such as changes in productivity, internal communication, innovation, and knowledge transfer (Kim, Feldman, 2015). Through analysis and understanding of these challenges, firms can develop HRM practices that address the needs of older workers. Beyond that, understanding the impact of an ageing workforce on overall business strategy can help firms maintain a competitive advantage.

- **External challenges**

According to Bloom's research on the impact of ageing on the economy, he has come to the following conclusions by analyzing a large number of existing data on population structure in various countries. The demographic transition due to an increase in the number of elderly populations inevitably affect economic growth and consumer habits. For example, an elderly population has different needs compared with the younger population, so consumption patterns are also different. In addition, there are differences in the physical and psychological state of the ageing workforce, as well as in skills and abilities, which affect productivity and economic growth (Bloom, Canning, & Fink, 2010). For firms, changes in consumer consumption patterns affect the demand for goods and services, which in turn affects the profitability and growth of firms within these industries (Lee, Mason, 2011). Furthermore, poor economic growth affects the firm's confidence in business expansion and investment (Aghion, Howitt, 2009).

In addition, about the social security system, social insurance programs financed by payroll taxes or contributions have the most direct impact on firms. Population ageing has led to higher social insurance expenditures, and an important feature of social insurance is that the payment of benefits is based on the payment of contributions. Workers' compensation insurance is typically funded through employer-paid premiums, which are considered a form of payroll tax was first proposed by Summers (1989). As the population ageing, the increasing need for more social insurance could increase labor costs for employers. And this may have an impact on employee wages, labor demand and corporate investment, innovation etc... In Hamaaki & Iwamoto and Olghe's empirical analysis, they also summarized the conclusions about how employees' compensation and insurance affect employees' wages. The impact mainly depends on two factors, one is the labor supply and demand elasticity, and the other is the expected benefit level of employees from social insurance (Olghe et al, 2003; Hamaaki & Iwamoto, 2010). The analysis result of the first factor is that when labor supply is inelastic and labor demand is relatively elastic, corporate social security contributions will be passed on to employees in the form of reduced wages to a large extent. On the contrary, the impact on employee wages is small. The second factor can be summarized as that when the evaluation of social insurance benefits is high, then even if the labor supply elasticity is relatively large, enterprises can transfer the contributions to their wages. However, this conclusion may not be suitable for the

actual situation of each country and may vary due to the cultural background of the country and the firm, labor market policies, industries and other factors. For example, the data analysis of some industries with high labor costs in the United States in the 1980s showed that 85% of the payroll tax was actually borne by employees, and employee wages fell accordingly (Gruber & Krueger, 1991). In Japan, in some industries with elastic labor supply, there is still a situation where payroll tax is transferred to employee wages, which is affected by the background of loyalty culture and lifetime employment system of Japanese firms (Hamaaki, Iwamoto, 2010).

- **Internal challenges**

About workforce management. As the average age of employees increases, firms may face challenges related to recruitment, retention and succession. Employees of different age groups have different needs and preferences, and firms need to adapt their HRM policies and practices to accommodate these challenges (Ford, Hulin, 2019). With the deepening of ageing problems, firms face the challenge of recruiting and in sufficient working-aged labor. This situation varies according to different industries. For some traditional industries such as labor-intensive industries like construction, lower wages and harsh working environments are not conducive to firm recruitment (Kooij et al. 2014). For the employees, elderly employees may prefer more flexible work arrangements or opportunities for phased retirement (Wang, Shultz, 2010), as well as different training and development, especially in terms of technical skill retraining, in order to ensure the elderly employees can still be competent for the firm's new business (Finkelstein, Burke, 2015). Elderly employees also have higher needs for health and wellness support. For firms, investing in programs that promote employee health and employee health support policies inevitably increase the cost of the firm's use of labor (Henkens, Tazelaar, 2018).

There are also challenges of age diversity and age discrimination. The concept of age diversity is not only having a single meaning, but a dual-dimension divided into face meaning and in-deep meaning. The face meaning is the distribution of different employees by generation groups, and the in-deep meaning is the diversification of values and thinking styles of different generation groups and employees. (Kunze, Boehm, & Bruch, 2018). Although the existing articles have different explanations for age diversity and differences in how it is measured. What similarities are the dual-dimension characteristics of age diversity. Meaning that there are not

only communication problems, teamwork, conflicts, etc. caused by the differences between generation groups. There are also problems such as the destruction of the workplace cooperation atmosphere due to differences in values and ways of thinking, and the inability to effectively implement employee incentives (Shore, Goldberg, 2015). When age diversity is relatively high in a firm, there is a greater potential for intergenerational conflict and age-based stereotypes and discrimination (Kunze, Boehm, & Bruch, 2013). Age discrimination refers to the unfair treatment of different generation groups. Persistent ageism in organizations can have various negative impacts on human resource management, including emotional changes and employee behavior, increased psychological stress, and negative attitudes toward others and work (Posthuma, Campion, 2020). The impact of age discrimination is divided into organizational and individual levels. The impact on the organizational level is mainly reflected in the organization's producibility, the implementation of human resource management methods, and organizational innovation (Arlene, Hirsch, 2017) and the impact on individuals is reflected in employee work performance, job satisfaction, loyalty, employee stickiness, employee innovation, etc. (Iweins, 2013; Dormann and Griffin, 2015).

The effective transfer of knowledge and experience among employees is also a challenge that firms must face. Knowledge transfer is critical for firms. Elderly employees often possess valuable knowledge and experience that are critical to a firm's business success (DeLong, 2004). Ng and Feldman used the example of American organizations to prove the importance of the knowledge and experience of older employees to organizations by examining the relationship between information exchange, knowledge exchange, and employee creativity (Ng, Feldman, 2019). However, the different communication styles between different generation groups may prevent information from being effectively passed between employees or cause ambiguity in the process of sharing (Bock, Kim, 2002). In the research on managing the generational mix, Martin expressed that there are different communication styles between different generations, and their values are also different (Martin, Tulgan, 2019) Beyond that, elderly employees may lack the motivation and time to share knowledge. Kim confirmed this point using the case of South Korean organizations, where the study found that older employees are less likely to engage in knowledge sharing due to factors such as communication frequency and job autonomy (Kim, Lee, 2019). Sharing knowledge is not necessary for elderly employee if they

don't feel valued or treated well enough. At the same time, they won't easily accept extra working hours when they cannot get extra benefits (Kooij, Jansen, & Dikkers, 2014).

1.2.) Managerial practices to address aging challenges at firm level

To address these challenges, it is necessary to find practical methods from the perspective of HRM. As mentioned above, ageing has brought internal and external challenges to the firm. The slowdown of economic growth affects the firm's business and growth. Affected by policy changes, firms may face higher labor costs. Internal management challenges are caused by the increase in the number of ageing employees. Age diversity and age discrimination and knowledge management issues may all have negative effects on the firm. From the perspective of HRM, employer attractiveness is crucial in the requirement stage, which can help firms win in the fierce competition in the labor market (Berthon, Ewing, & Hah, 2020). Internally, employees from age groups have different needs and preferences, and elderly employees, their needs are more complex and require special attention. For example, elderly employees may have different work habits, skills, health issues and retirement plans than younger workers (Bal et al. 2015). Through the practice of HRM, elderly employees can be provided with age-inclusive policies and motivation plans which meet their needs, these can help to reduce the negative impact of age diversity and age discrimination and can improve their work productivity (Kooij et al, 2008). In addition, the theory of old talent management recognizes the value of ageing employees and the potential problems they may bring to the firms. The practical methods mentioned in the theory can also help firms to better address the problems brought about by ageing (Feldman, Kim, 2015). In the next paragraph, a detailed critical analysis of these managerial practices is introduced as well as what still needs to know.

1.2.1.) Employer branding and employer attractiveness

Facing the highly competitive labor market, employer branding and employer attractiveness are particularly important (Berthon, Ewing & Hah, 2020). Building a positive employer image can help the firm attract and retain the necessary high-skilled talent (Kim, Lee,

2019). In Berthon's research, he conducted in-depth interviews with 30 job seekers and 30 human resource managers in various industries in the UK through qualitative analysis methods, conducted an inductive analysis of their appeals, and determined 6 dimensions related to employer attractiveness. Include, how the firm shapes its identity, including mission, firm norms, firm culture, etc., to convey information about the firm; whether the firm's employees can obtain a balance between life and work; whether the firm provides equal career development opportunities; possible compensation and benefits; job characteristics including complexity, technicality etc.; and what is the image of the employer in the media and among job seekers (Berthon et al, 2005). He also conducted more research on the relationship between employer branding and corporate social responsibility in attracting talent labors by using the example of US organizations, which further proved that enhance employer branding and employer attractiveness can help the firms win in the labor market competition (Berthon, Ewing & Hah, 2020). In addition, Ng & Feldman's research on employees from different industries and age groups in the United States confirmed that elderly labor also has the possibility of becoming highly productive and valuable employees. They examined ten factors related to age and job performance, and the relationship between dimensions, including task proficiency, adaptability, and interpersonal skills, showed that elderly employees (over 50) might even perform better than employees of working age because of their experience and high skill proficiency (Ng, Feldman, 2010), but they are undervalued in the labor market because of age-related stereotypes and discrimination (Kim, Feldman, 2015). Employer branding and attractiveness can help enhance the positive image of elderly labor as important contributors to the labor market and address the challenge of the insufficient labor force to a certain extent by promoting the employment and retention of older workers (Fasbender, Wang & Liang, 2018). Although existing research has established that a positive employer brand and employer attractiveness can help firms address ageing issues. However, from the perspective of management practice, it is necessary to conduct further research about employees' views on the above-mentioned dimensions, the importance of each dimension for different job-seeking groups, and the influence of age stereotypes on employer attractiveness. In addition, whether these findings can be commonly used in different industries and countries and how they work in some specific context.

1.2.2.) Old talent management

The theory of old talent management recognizes the value of ageing employees and the potential problems they may bring to the firms (Feldman, Kim, 2015). The theory provides firms with a theoretical framework that can help them manage their ageing employee by addressing the unique characteristics of elderly employees including different needs, job preferences, physical and mental states, retirement planning etc. It also recognizes that older workers' knowledge, skills, and experience that are critical to firms' development (Fasbender, Wang, & Liang, 2018). In addition, in Ng and Feldman's research, they collected and summarized studies on age-related differences in work performance and conducted comparisons between younger and older workers. Challenged the stereotypes such as the low work productivity rate of elderly employees, emphasizing that elderly employees can make the same contribution just like employees of working age (Ng, Feldman, 2012).

From the perspective of management practice. First, regarding recruiting and retaining ageing talents with the necessary skills and experience, HRM methods can be used, including targeted recruitment of elderly labor that meets firm standards, providing them with flexible work arrangements, equal opportunities for training and career development, employee support, etc. (Kanfer, Ackerman, 2004). By shaping the firm's image of valuing elderly employees, it can also help firms win in the competition in the human resource market (Ambler, Barrow, 1996; Kim, Lee, 2019). Wang in his research on employee retirement also gave recommendations on enhancing the brand attractiveness by valuing elderly employees. And this can help the firms win in human resources competitions (Wang, Shultz, 2010). Training and development are other practice of elderly talent management which can help firms deal with the ageing issue (Kim, Lee, 2020). Because elderly employees may have unique needs, preferences, and skills, in order to adapt to the changes in the firm's business, it is necessary to provide them with training on new technologies and skills to help them participate in work and develop themselves (Kanfer, Ackerman, 2004). As a special point in training and development, knowledge transfer includes seminars, mentoring etc. It aims to guide young employees in the firm to learn from elderly employees, including work experience, skills, knowledge, etc., which can reduce the firm's

negative impact caused by the retirement of elderly employees and is conducive to the long-term development of the firm (Kim, Feldman, 2015).

Another management practice is about health support for elderly workers. Although with the improvement of medical technology, the physical condition of the elderly population has been significantly improved. But their demand for health support is still higher than that of working-aged employees. Kooij pointed out that health promotion programs are particularly important for improving the emotional commitment/job satisfaction of older employees in the survey on job satisfaction of older employees (Kooij et al, 2014). Firms can help elderly workers maintain good health, work productivity, and employee loyalty by providing health support programs that meet their physical and psychological needs (Kim, Lee, 2019). Although the above research confirms the positive impact of elderly talent management on ageing issues. In order to answer questions about the management of ageing talents in a more targeted manner according to the contexts of different industries and countries. It still needs to conduct further studies including age diversity in the workplace, strategies to resolve internal conflicts, and what should be included in training and development.

1.2.3.) Age-inclusive policies

Age inclusion policies are policies and practices that promote the inclusion of employees of all ages in the workplace (Shore, Cleveland & Sanchez, 2018). Empirical research on age-inclusive workplaces published by the Society for Human Resource Management (SHRM) notes the importance of creating an age-inclusive workplace, including promoting diversity, equity, and inclusion among employees of all generations. The implementation of age-inclusive policies by firms is conducive to improving labor productivity, improved employee engagement, reduced turnover and legal compliance (SHRM, 2020) Similar to the theory of elderly talent management, the age-inclusive policy recognizes that employees of different age groups may have different needs, preferences, and unique strengths. In contrast, age-inclusive policies focus more on creating a supportive and inclusive work environment for employees of all age groups (AARP, 2018). In addition to this, the practice of age-inclusive policies can help firms retain valuable older employees, promote knowledge transfer, meaning the transfer of knowledge,

experience and skills from elderly employees to younger employees, and create a more supportive, diverse and inclusive workforce which can help firms address the challenges of ageing (AARP, 2018; WHO, 2017). From the perspective of management practice, AARP summarizes the existing specific methods to deal with age diversity in the workplace through research on the existing age-inclusive policies in the workplace in the United States, combined with in-depth interviews with employers and experts. To summarize, first, it is necessary to provide elderly employees with more flexible working arrangements than younger employees, which may include remote work, to reduce the impact of health problems on elderly employees. At the same time, provide more flexible working hours, taking into account their different schedules and preferences for using time, for example, they may tend to work more intensively because of their relatively fixed daily life patterns, in order to have more free time. For example, work 10 hours a day for 4 days and then rest for 3 days. Work results rather than work hours are oriented in performance appraisals (AARP, 2015). In addition to this, Kim and Feldman's pointed out in their study that employee training may also occur both among elderly employees and younger employees. Improve mutual understanding among different age groups, reduce the impact of age discrimination, and encourage elderly employees to transfer their knowledge by sharing experience and mentorship, which is beneficial to the long-term development of the firm (Kim, Feldman, 2015). Although AARP has confirmed in its research on age-inclusive policies in the workplace that this theory can help firms address the issue of ageing. However, further research is needed on how this theory can be practiced in different industries and under different contexts, the effectiveness of these practices may vary depending on the specific circumstances and needs of each organization.

1.2.4.) Other practical method - extend retirement age

In the context of population ageing, extending the retirement age is also an HRM practice commonly adopted by countries and firms. On the one hand, it reduces the firm's burden of paying employees' pensions and reduces the cost of using labour (Munnell, Sass, 2008; Clark, Ogawa & Matsukura, 2015). On the other hand, it can help organizations retain valuable elderly employees, and at the same time, provide more time for knowledge transfer (AARP, 2018). However, this practice has generated considerable debate globally, including the analysis of its

disadvantages. These include health problems and the relative lack of job stability for elderly employees, as well as reduced job opportunities for young people. Even may lead to more serious social conflicts, such as the recent protests in France caused by the government's extension of the retirement age for workers. Although according to Gruber & Milligan's research, the employment of elderly employees can reduce the unemployment rate of the working-aged labor force. The firm can hire more working-aged labor forces because of the reduction in employment costs (Gruber & Milligan, 2010), but this conclusion does not mean that the approach of extending the retirement age can be practiced in different countries and socio-cultural and business industry contexts, more in-depth context-based research on this management approach needs to be carried out.

1.3.) Aging as the context-specific issue

Based on the above critical analysis of the impact of ageing and how management practices can address the ageing issue. Although ageing has become a common social and management problem. But there is no uniform and effective practical method to solve this problem once and for all. Specifically, ageing may have unique characteristics based on the difference in the cultural and socioeconomic background of each country. And the management practices also need adjustment due to different countries and industries.

More specifically, ageing is a context-specific problem. Analyze from a macro perspective, because the ageing process and characteristics of different countries and regions may vary greatly due to factors such as culture, socioeconomic environment, and geography (Phillips, Chan, 2020). For example, Ayalon confirmed in his research on age discrimination that the problem of age discrimination is related to national history and culture (Ayalon, Tesch-Römer, 2018). Cultural differences lead to different attitudes towards the elderly. In some countries, such as South Korea and Japan, elders may be highly respected and valued for their experience and knowledge (Kim, Kim, J, 2017), while in other cultures they may be marginalized or stigmatized, for example, despite being a developed country in the United States, age discrimination is still a widespread problem and affects the lives and work of the elderly. Due to negative stereotypes about ageing and productivity, elderly employees may face

discrimination in the job market. At the same time, elderly may also be undervalued because ageing-related health conditions are perceived as a burden on society (AARP, 2013). Therefore, in order to have a more accurate understanding of ageing in a specific country, it is necessary to analyze it according to its specific socio-cultural background, geographical factors, etc.

Ageing is also a context-specific issue from a firm management perspective. Because of the ageing process, characteristics and possible challenges to management may vary according to factors such as industry, job type, organizational culture and workforce demographics (Ng, Feldman, 2010). For example, elderly employees may face age discrimination in some industries or job types, while in others they may be valued for their experience and knowledge (Posthuma, Campion, 2009). Specifically, in physically demanding industries such as construction or manufacturing, elderly employees are at a disadvantage due to their physical inadequacies to perform their jobs (Holtermann, Mathiassen & Straker, 2019). But in industries such as finance or consulting that require more cognitive skills, they may have an advantage due to their experience and knowledge (Smith, 2020) Furthermore, firms' cultures that value youth and innovation may hinder the career development of elderly employees. However, in organizations that value experience and knowledge, the experience and knowledge of elderly employees are highly valued as important intangible assets of the firm. (Kooij et al, 2019). Based on the above reasons, in order to obtain the most accurate and complete information on the challenges that ageing brings to firms, it is necessary to analyze factors such as industry, firm culture, employee structure and so on. This can also lead to more accurate and effective management methods that can better address these challenges.

1.3.1.) Why it's necessary to conduct research under the Chinese context.

For today's China, after the the economic reform in 1978 and joining the World Trade Organization in 1995, China has achieved rapid economic growth. But at the same time, it has also brought some economic and social problems. As one of the most important social problems, the population problem has always existed in all stages of China's social and economic development (杨娟, 2009) . What is different from the past is that it is no longer a problem

of population size, but a problem of age structure. With the rapid development of the economy, the ageing level is also increasing rapidly. For China, it only took 18 years to complete the transition from a stationery-type population structure (the population structure is dominated by middle-aged people) to a contracting-type population structure (lower numbers or percentages of younger people). According to the previous experience of developed countries, this process needs at least 25 years (Saroha, 2018).

- **Overview of existing research on challenges of aging in the Chinese context**

China's ageing problem is particularly complex. The most obvious characteristics include a large number of elderly people, rapid ageing, large scale, and structural imbalance (Fang et al, 2020). Ageing is accompanied by problems such as increased government financial burden and insufficient labor supply. It not only affects the firms' abilities to produce and generate profits but also has a serious impact on the overall economic and social welfare (Banister, Bloom & Rosenberg, 2012). The disappearance of the "demographic dividend" and the drawbacks of "getting old before getting rich" bring huge challenges to the Chinese economy and society (Huang, Li & Tian, 2021). At the same time, when responding to the ageing problem, issues such as the lack of governance and policy support, the lack of governance subject structure, and the unsound social security system have emerged (Chen, Powell, 2012). Considering China's ageing characteristics. It is incorrect to directly conclude that firms' productivity is expected to decline. The factors such as the number of people with higher education experience continuing to increase, the overall quality of employees better, the advancement of medical technology, and the widespread use of automation technology must be considered (陈卫, 2023).

In addition, there are differences in the labor market structure between different regions. Due to differences in the level of economic development, population distribution, industrial layout, geographical factors, and the level of openness, there are huge differences in the level of the ageing population between regions (吴媛媛, 宋玉祥, 2020). Taking the "Heihe-Tengchong Line" as a reference, the area east of this line is densely populated and economically developed, and the level of ageing is higher than that of the area west of this line. This spatial distribution and stage differences outline the regional pattern of labor supply in China (Zhang,

Zou, 2012; 张雅杰 et al, 2020). Taking Shanghai as an example, due to better infrastructures, Shanghai attracts people from the surrounding area. As the first city to enter the ageing society in China. The degree of ageing in Shanghai is the highest among first-tier cities with more the 30% of the population aged above 60 and much higher than the cities surrounding it (李涛, 2020). In general, China's ageing population is also characterized by uneven distribution. In economically developed first-tier cities, the degree of ageing is relatively low except in Shanghai. For some of the second-and third-tier cities, due to the export of young and middle-aged labor, the ageing issue is also common in their labor market.

After gaining a certain understanding of the characteristics of ageing in China, I began to collect information on existing research on the challenges posed by ageing. The current research on ageing is mainly divided into the challenges of ageing on the socio-economic level and the challenges on the management and firm levels. There is already sufficient information on the challenges of ageing at the social level, while the challenges at the management and firms levels are a relatively new area of study, but there is growing interest in this topic due to China's rapidly ageing population and changing labor market.

Challenges at the socioeconomic level mainly include health and health care, financial security, intergenerational relationships, and public policies. Existing research has confirmed the basic physical condition of the elderly in China. Generally speaking, the physical condition of the younger elderly has improved significantly, but the psychological pressure is also increasing. Zhang and Dupret reached this conclusion in their survey of the physical and psychological state of the elderly in China through a survey of elderly people over 60 years old in 2015 (Zhang, Dupre, 2020). In the research on wealth inequality in the elderly, Feng pointed out that many elderly people in China face financial insecurity due to factors such as insufficient pension support, insufficient savings, and limited access to social welfare programs (Feng et al, 2019). In addition, research on intergenerational relationships mainly includes the relationship between family members (Chen, Silverstein, 2019), filial piety, and care (Zhang et al, 2020). Public policies mainly include changes in retirement policies (曹信邦, 张静, 2022), employment of the elderly labor force, and pension systems (Li, Wu, 2019).

For the challenges that ageing brings to firms and management. Existing research does not have a complete study to point out the challenges of ageing that Chinese firms may face. Existing research mainly expands the content of ageing on social and economic challenges, mainly on the external challenges that ageing may cause to firms, including research on age diversity in the workplace, work-life balance and innovation. Specifically, by verifying the relationship between age diversity, transformational leadership and creativity, Zhang conducted hierarchical linear modelling to analyze the data on 65 teams and confirmed that only when transformational leadership is high, age diversity positively affects team creativity. However, the main limitation of this study is that it did not verify the direct relationship between age diversity and team creativity (Zhang, Zhou, X, 2019). In the study of work-life balance, Li and Wu pointed out the conflict between family and work that older workers may face, confirming the importance of work-life balance (Li, Wu, 2019). With regard to innovation, rising labor costs brought about by ageing force firms to reduce investment in innovation. Ageing is lead to rising labor costs, including both direct employee wages and pension insurance. Rising employee wages can hurt a firm's profitability, potentially crowding out R&D spending on innovation. At the same time, a large number of funds are used to pay pension insurance and not used to increase the disposable income of employees, which may lead to a decline in their satisfaction with the firms (赵健宇, 陆正飞, 2018) .

In general, although existing research on aging in China is sufficient. However, as a relatively new topic, there is insufficient research on aging for firms and management challenges, and there is no relatively complete explanation on this topic as well. Therefore, the first research question of this study been set as “What challenges of aging workforce Chinese firms face?” On the one hand, to explore whether Chinese firms are facing the challenges of aging like firms in other aging countries, On the other hand try to discover the potential challenges that firms face in the Chinese context. The research on the impact of aging on the firm level have very important practical significance for the sustainable development of China's firms.

- **Undertaking HRM practices in Chinese context**

China's ageing process and its human resources development path have their own unique characteristics. Critical views on HRM methods of developed countries have always existed in China, mainly questioning the applicability of specific methods in China. With the development of the organization, this critical point of view has been paid more and more attention (Zhao, 2009). For China's firms, the biggest problem they face is still how to develop their own HRM method. From the empirical evidence, the "best practices" of the Western HRM methods are not fully applicable to China's firms, and HRM theories are not fully suitable for the organizations as well. The resulting problems include poor internal communication, decreased productivity, and conflicts among employees (Li, Rees, 2021). Although the conclusions may be affected by differences in the selection of samples, measurement tools and methods among studies, it can be seen generally that the practice of HRM in China's firms cannot be obtained through a unified HRM theory for a clear explanation.

For firms in China, the problem of the ageing workforce is becoming one of the main concerns of future development as the rapidly ageing in China. However, due to the different development paths of the HRM practice, as well as the uniqueness of Chinese society and culture, it is not advisable to directly replicate the practical method of other countries on the challenges of ageing to the firm. Currently, there is very limited information on the specific topic of the impact of ageing on Chinese firms and how HRM practices can help to address ageing challenges in Chinese firms. However, it can be found from some existing studies related to this topic that Chinese scholars are trying to find human resource management theories and methods suitable for Chinese firms, but most of them are still in the stage of theoretical development. First, from the perspective of innovation, the researchers found that firms pay more attention to older employees. The biggest difference between elderly employees and younger employees is their rich experience. They can use their previous experience as a basis for innovation. Young people may not have this kind of experience, and their probability of innovation failure are higher, but they may have innovations that can change the industry (随淑敏, 何增华, 2020). Related to this, in the study of knowledge transfer, the researchers suggested that staff training methods ensure knowledge transfer, but emotion (unwillingness,

insufficient work enthusiasm) and work pressure (insufficient salary and time) create barriers for knowledge transfer (张课, 2021). In addition, according to the survey results of Zhaopin, the largest human resources agency in China on the ageing status of enterprise employees. There are firms that have begun to provide re-education for elderly employees but only count for about 10% of the total firms. Most firms still pay little attention to older employees' secondary training and education (Zhaopin, 2020). For Chinese firms, most of them lack experience in dealing with the ageing challenges. Although the existing theories can guide the firm's HRM practice. To be able to provide detailed practical human resource management methods for other firms with serious workforce ageing. It is still necessary to understand the firm's current policies and HRM practices and make a summary from the perspective of empirical analysis, including practical details, whether it's effective enough and what are the difficulties. Therefore, I come up with the second research question “What HRM practices help to address ageing challenges in the Chinese context?” At the same time, the management practice of other countries mentioned above can provide directions for follow-up research.

To summarize, in the second chapter of this paper, the research refers to the characteristic of Chinese ageing, theories, and protentional challenges to firms and their HRM practices. Use exploratory methods and interviews to collect data, to understand and summarize the real challenges faced by Chinese firms due to the ageing population and their current and applicable detailed HRM practice.

CHAPTER 2 - UNDERSTANDING OF AGING CHALLENGES FOR HUMAN RESOURCE MANAGEMENT FROM EMPIRICAL PERSPECTIVE – CHINESE CONTEXT.

After gaining an initial understanding of ageing issues, I decided to use the Chinese context to address existing research gaps and use Chinese data to answer our research questions. Because China is facing the largest ageing population in a single country and the fastest ageing rate in human history (Chen Wei, 2016). It is necessary to conduct a study of ageing in the Chinese context. Especially considering the trend of ageing which developing countries are becoming the main force for the growth of the elderly population (UN, 2020). China is now in the transition stage, and the firms are in a critical stage of business transformation and upgrading (卫兴华, 侯为民, 2007) . Considering that ageing is a background-based research problem, it needs to be analyzed according to China's unique social, economic, cultural and other factors. The research results on the impact of ageing and management practices can provide a reference for Chinese firms and other developing countries to address the issue of the ageing workforce.

2.1.) Methodology

2.1.1.) Research design

The choice of methodology was guided by the research questions, based on the theoretical knowledge about the ageing labor force obtained in the theoretical analysis section, combined with China's unique ageing background and causes, to gather information from managers and HRM practitioners of Chinese firms about the ageing challenges firms face and what HRM practices were used to address these challenges. I have found that exploratory methods, as well as qualitative research methods, were best suited to achieve this goal. (Piekkari, Welch and Paavilainen, 2009). The reason for this is first because of the nature of the topic. Existing research on this topic is very limited, especially under the Chinese context. This study attempts to obtain a preliminary, bolder and deeper understanding of this topic. Second, according to the research questions, what are the challenges of the ageing workforce for Chinese firms face? This type of question requires detailed textual information explanations. Interviews are used in

the research process. In addition, exploratory methods as well as qualitative analysis are relatively flexible. It is more conducive to discovering potential information during the research process (Swedberg, 2020).

The research was carried out in several phases, with the aim of gradually improving the understanding of the phenomenon of ageing in China and the responses of firms and ensuring the validity and reliability of the research results. In the first phase, we investigated available secondary data on ageing in China and the current state of industries and firms using census reports compiled by the Chinese government, industry reports, and media articles. Systematic analysis of China's ageing status, development trend, degree, impact on the labor market, the ageing situation within the industry, management practices and other information, to fully understand the characteristics of China's ageing, its impact on the firms and their management practices. The results of this overview were used to help us select interviewees for the pilot (HR practitioner and senior manager) and develop initial interview guidelines. In the second phase of my empirical research, I conducted pilot interviews with selected interviewees and tested our initial interview guidelines. In the third stage, I focused on using the information collected from the previous research stage to select interviewees and completed the interview guidelines for the data collection. In the fourth and main phase of the research, I conducted personal interviews with selected interviewees. I conducted a total of 12 interviews and manually analyzed the transcripts of the interview data to understand interviewees' perceptions of ageing issues on organizational challenges and how management practices are responding to these challenges. The final step of data collection included additional interviews with industry experts to understand the veracity of the conclusions and why the theoretical knowledge differs from the interview conclusions. This allows for additional validation of the research findings and ensures the credibility and accuracy of the research (Mihailova, Panibratov & Latukha, 2020).

2.1.2.) Respondent selection – Interviewees

In the process of selecting the interviewees. In order to make sure to target the specific industries which have the most intense ageing issue. I learn from the studies of other countries which industries may influence most by ageing. Based on the analysis of the existing research

especially the research gaps mentioned in the first chapter. My standard is to select interviewees whose firms are from different industries but mainly from traditional and labour-intensive industries and in the eastern and coastal areas of China. According to the report of the U.S. Bureau of Labor Statistics. In general, labour-intensive industries are more vulnerable to ageing, such as manufacturing, construction, and low-end service industries. Mainly because of the loss of skills and knowledge due to the retirement of elderly employees and the difficulty of knowledge transfer. At the same time, their health problems may also lead to increased healthcare costs and decreased labor productivity (Bureau of Labor Statistics, 2019) The NIOSH confirmed this view, while also pointing to information on the increased risk of a work-related injury or health issues of older workers in these industries (NIOSH, 2016). For China, it is in the stage of early ageing and the ageing level gradually increasing. At this stage, the ageing of the labor force is more common in traditional industries and labour-intensive industries as well, including manufacturing, low-end service industries, construction, agriculture and so on (葛延风, et al, 2020). Also, based on the information from census reports and industry reports. China's ageing issue is characterized by uneven distribution, taking the "Heihe–Tengchong Line" as the reference, the area east of this line is densely populated and economically developed, and the level of ageing is higher than that of the area west of this line. (Wang et al., 2016). As for this research, the traditional industry has been chosen because they are facing rather high levels of employee ageing issues. It's meaning less to choose such as IT, high-end service or high-tech industries because the average age of their employee are rather low and are not facing intense ageing issue.

After identifying the target industries, through my own personal network, including classmates, and alumni from the MBA Chinese University of Hong Kong and Shanghai University to conduct a preliminary screening of the interviewees. After ensuring that the potential interviewees have a deeper understanding of the firm and ageing issues, I finally selected 12 interviewees from different traditional industries. The selected interviewees are employees of the HRM department or senior managers of the firm. In total, I conducted 12 interviews. 7 of the interviewees are current students of MBA CUHK, 5 are part-time students and 2 are full-time students. I know them through my exchange at CUHK and we are classmates.

They are either entrepreneurs who are the owner of the firm or currently working as senior managers or HR directors. Their firms are belonging to the traditional industries (Manufacturing, Agriculture, Catering, Construction). During the initial inquiry, I confirmed their understanding of the firm's employees. The firms all have more than 50 employees and are local medium or medium-large sized firms. The city where they are located has a relatively high degree of ageing (>25% population aged 55 or above). Therefore, these interviewees meet the selection criteria. In addition, the rest interviewees are selected based on my personal or family networks. 3 of them are my friends' parents and 2 of them are introduced by my previous manager. They share the similar characteristic with other interviewees and meet the selection criteria.

2.2.) Interviews process

2.2.1.) Design of the interview guideline and data collection

I used interview guidelines for the interviews. The interview guideline is designed based on the research questions and research gaps. (Appendix 1) Refer to Chapter 1 about the challenges firms face and their managerial practices. The expected data include:

- Information about the firm
- Detailed information about elderly employees, include but not limited: Percentage of the elderly employees; the positions of the elderly employee; working status; any issues between the generation groups.
 - Issues, concerns, and managerial challenges caused by ageing workforce. Refer to Chapter 1 - the challenges faced by firms. Is the firm facing the same challenges? Discover detailed information about the challenges and find the potential challenges if there are any. Also, what are special under Chinese context and the reasons.
 - How firms respond to these challenges, from managerial and HRM prescriptive. What are the outcomes. Whether the practices are effective enough. If not, why?
 - Refer to Chapter 1 - the firm's managerial practices. Their opinion about these practices? Why? What should be added or adjusted under the Chinese context in order better address the challenges of ageing workforce.
 - Trying to get more potential information related to the research.

The interview is unstructured to make sure flexibility and comprehensiveness. The use of unstructured interviews can help to obtain more information and discover the detail about the real situation (Qu, Dumay, 2011). The duration of each interview is about one hour. All interviews have been recorded and transcribed. Data including interview transcripts, notes, and documents were systematized and analyzed manually. The interviews used open-ended questions to gather detailed information about phenomena from the interviewees' points of view (Mihailova, Panibratov & Latukha, 2020).

2.2.2.) Interview protocol

Before conducting the interview, all interviewees were required to sign the Interview protocol. The process of each interview followed the Interview protocol to ensure the consistency of the interviews, thereby ensuring the reliability of the collected data. The protocol should contain the following instructions to the interviewer. (Appendix 2):

- Self-introduction.
- the purpose of the interview and the questions it may include.
- Before the interview, ensure that the interviewee understands the interview process and agrees to keep the interview content confidential.
- Forms of recording during interviews.

2.2.3.) Data analysis

Of the 12 interviews, 7 interviews were face-to-face personal conversations, while 5 interviews were conducted by phone due to physical distance. Although English was the primary language used in the study, half of the respondents also indicated that they could conduct interviews in English. But in order to communicate more in line with their speaking habits and obtain potential information, the interview was conducted in Chinese. All interviews were audio-recorded and transcribed, after which the transcribes were sent to the interviewees for factual verification. Then I started to analyze the data.

The analysis of interview data was carried out in several steps. I started with a contexts analysis of the interviews with the aim of categorizing the information obtained. There are two respondents (9-10) which I found although their firms belong to the traditional industry and come from the region which with rather a high level of population ageing. But due to their business model. They are not facing the intense ageing issue.

The criteria for data classification are based on:

- The information about the firm and elderly employees: industry; service and product; employee size; the proportion of elderly employees (age over 50); Characteristics of elderly employees.
- The information about the challenges of the ageing workforce: workforce management; business expansion and development; recruitment, retention, and succession; age diversity and age discrimination; knowledge transfer; other challenges.
- Managerial (HRM) practices address these challenges: employer branding and attractiveness; old talent management; age-inclusive policy; other practices.

Titles were assigned to each type of data to allow comparison of results from different interviews (Boyce, Neale, 2006) and the data were summarized and put in each column (Table 3).

2.3.) Descriptive statistic – respondents' description

After analyzing the transcripts of each interview, I reconfirmed that respondents 9 and 10 were not suitable for further research (Marked red in the description table). Because of their firms' business model, the main business of respondent 9's firm is clothing retail, and its products are defined as fast fashion products. Although it belongs to the traditional service industry, it is located in a city with a relatively serious ageing population and has a certain demand for human resources. But for the needs of consumer empathy, better service, and brand image. The average age of their employees is about 29 years old. Respondent 10's firm's main business is import and export, and the average age of its employees is 35 years old. Both firms had an ageing population below 10% and were therefore excluded for the accuracy of the

research conclusions. The final finding is based on evidence provided by 12 respondents (10 effective, 2 excluded). The description of the respondents is presented in Table 3.

The reason for choosing age 50 as the standard for elderly employees is that the legal retirement age for Chinese female and male workers is 50 and 60 years old (Fang, Feng, 2018). After analyzing the age structure of the firms provided by the 10 effective respondents, except for the 8th and 12th which are female-dominated, the rest of the firms are male-dominated, and the 8th and 12th also have a large number of female employees who still working over 50 years old.

In Table 3, I numbered the respondents from 1-12 for anonymity reasons. The first column describes the topics of the information classification. Table 3 illustrates the main descriptive facts provided by the respondents. Contains information about the respondents' firms, the challenges the firm faces with the ageing workforce, and existing HRM practices to address the challenges. And summarized the common and unique findings of each respondent. It should be emphasized that the information mentioned in Table 3, especially the information about the willingness of trying to use HRM practice was all provided by the respondents. While acknowledging the subjective nature of management-based perceptions, I think the information in Table 3 can provide support for follow-up research.

Table 3 - Respondents' description

Interview Respondents	(1)	(2)	(3)	(4)	(5)	(6)
Information of the firm:						
Industry	Fishery	Manufacturing	Manufacturing	Agriculture	Catering	Catering
Location	Dalian	Shanghai	Shanghai	Guangzhou	Dalian	Zhuhai
Product and service	Deep water fishing	Toy produce	Car parts produce	Grow grain	Chain restaurant	Restaurant
Employee size	150+	400+	200+	90+	100+	50+
Proportion of elderly employees (age > 50)	20%	25%	24%	52%	38%	36%
Characteristics of elderly employees - Common	<ol style="list-style-type: none"> 1. Most of them are in management level or basic work level. 2. Experienced and skilled. With rather good physical condition. 3. Rather hard accept new technology, computing, and software. Level of education is low. 4. Have to face the pressure of life (family reason) and work. 					
Information of the aging situation:						
Aging Challenges firms facing - Common and unique factors						
Workforce management	<ol style="list-style-type: none"> 1. Conflict between age groups. 2. Increase of labor cost. 3. Different needs and preferences 4. Expected pension payments to increase 					
Business expansion and development	Affect Productivity	Affect Productivity	Affect Productivity	N/A	Affect Productivity	Affect Productivity
Recruitment and retention	<ol style="list-style-type: none"> 1. Hard to hair working aged labor, due to the nature of the job. (Low paid, duplication of work) 2. Low employee loyalty, a lot of part time employees. 					

Age diversity, discrimination	1. Considering the age of the employee, less career development opportunities for the elderly. 2. Misunderstanding and less communication between different age groups					
Knowledge transfer	1. Misunderstanding between age groups. 2. Elderly employees may not be willing to share and limited transfer methods.					
Other challenges - unique	1. Hard to conduct business transfer 2. Hard to conduct technology upgrade	N/A	1. elderly takes longer time to learn new skills	N/A	N/A	N/A
Managerial practices:						
Employer branding and attractiveness	N/A but willing to try	Yes	Yes	N/A	Yes	Yes
Old talent management	1. Mentorship 2. Elderly employee support 3. Staff training	1. Mentorship 2. Willing to try other practices	1. Staff training 2. Willing to try other practices	1. Staff training 2. Willing to try other practices	1. Staff training 2. Willing to try other practices	1. Staff training 2. Flexible working arrangement 3. Willing to try other practices
Age-inclusive policy	N/A but willing to try	N/A but willing to try	N/A but willing to try	N/A but willing to try	N/A but willing to try	N/A but willing to try
Other practices	N/A	Employee Benefits Policy	Employee Benefits Policy	N/A	Entrepreneurship grant	N/A

Interview Respondents	(7)	(8)	(9)	(10)	(11)	(12)
Information of the firm:						
Industry	Construction	Manufacturing	Retail	Import & Export	Food	Education
Location	Shanghai	Shanghai	Hangzhou	Dalian	Shanghai	Shenzhen
Product and service	Building	Textile produce	Cloth retailing	Import & Export	Processed meat produce	Language teaching
Employee size	300+	150+	80+	80+	120+	50+
Proportion of elderly employees (age >50)	24%	47%	5%	7.5%	30%	12%
Characteristics of elderly employees - common	<ol style="list-style-type: none"> 1. Most of them are in management level or basic work level. 2. Experienced and skilled. With rather good physical condition. 3. Rather hard accept new technology, computing, and software. Level of education is low. 4. Have to face the pressure of life (family reason) and work. 					
Information of the aging situation:						
Challenges related to population aging: Common and unique factors						
Workforce management	<ol style="list-style-type: none"> 1. Conflict between different age groups. 2. Increase of labor cost 3. Different needs 4. Expected pension payments to increase 					
Business expansion and development	Affect Productivity	Affect Productivity	-	-	Affect Productivity	Affect Productivity
Recruitment and retention	<ol style="list-style-type: none"> 1. Hard to hire working aged labor, due to the nature of the job. (Low paid, duplication of work) 2. Low employee loyalty, a lot of part time employees. 					

Age diversity and age discrimination	1. Considering the age of the employee, less career development opportunities for the elderly. 2. Misunderstanding and less communication between different age groups					
Knowledge transfer	1. Misunderstanding between age groups. 2. Elderly employees may not be willing to share and limited transfer methods.					
Other challenges - unique	1. Safety issue	N/A	-	-	N/A	1. Difficult to find a suitable successor
Managerial practices:						
Employer branding and attractiveness	N/A but willing to try	Yes	-	-	N/A but willing to try	Yes
Old talent management	1. Mentorship 2. Staff training 3. Willing to try other practices	1. Mentorship 2. Willing to try other practices	-	-	1. Mentorship 2. Willing to try other practices	1. Mentorship 2. Staff training 3. Flexible working arrangement
Age-inclusive policy	N/A but willing to try	Flexible working arrangement	-	-	N/A but willing to try	1. Equal treatment 2. Staff training 3. Reward and punishment system
Other practices	Additional Commercial insurance for elderly employees	N/A	-	-	N/A	1. Rehiring subsidy 2. Employee benefit policy

CHAPTER 3 - THE MAIN FINDINGS, RESULT DISCUSSION, AND THEORETICAL AND MANAGERIAL IMPLICATIONS

3.1.) The aging phenomenon of firm in Chinese context

- **The proportion of elderly employees keep increasing**

Respondents first affirmed the impact of ageing on the industry to which their firms belong, especially the impact on their workforce structure. As mentioned above, China is in its early stage of ageing. At this stage, the ageing of the labor force is more common in traditional industries and labor-intensive industries as well, including manufacturing, low-end service industries, construction, agriculture and so on (葛延风, et al, 2020). According to the interviewees' descriptions of their firms' current state. The proportion of elderly employees has increased year by year, and it is difficult for firms to attract new labor. This is related to the characteristics of their industries and businesses. Compared with other emerging industries or industries with higher added value, traditional and labor-intensive industries rely on a large number of laborers. At the same time, the deepening of China's ageing population has further exacerbated this phenomenon. Although for some industries, their main business has been transformed from simple production to service provision. But young people are still unwilling to engage in such industries because of the relatively hard and boring repetitive work content (Dai et al, 2022). For example, respondent #1 explained:

“Even for basic equipment operations, new employees still need up to two and a half years of training and operating experience, during which they need to be exposed to high-risk working environments for a long time. Young people today rarely make it through such a training cycle.”

Respondents #2 and #7 shared a similar view that although their training cycle was relatively shorter, their repetitive jobs were still difficult to attract young workers.

In addition, in some industries, not only its employees need a lot of experience and skill accumulation, such as the textile industry. Moreover, its salary package does not meet the growing needs of young employees. Respondent #8 gave the following explanation:

“For the traditional silk textile industry, it often takes decades of experience to be able to independently complete the production and creation of products. Young people's reluctance to enter the industry cannot simply be attributed to their lack of patience or laziness. We have to admit that young people today are facing much heavier life pressure than ten years ago, and the benefits that our industry can provide cannot meet their basic living needs.”

Another reason for the continuous increase in the proportion of elderly employees is related to the location of the firm. Although the firms of the interviewees are located in the first and second-tier cities in China. But most are in suburban areas and most of their employees are residents living nearby. Considering another characteristic of China's ageing is that the degree of ageing in suburban areas is more severe than that in urban areas (Wu, Huang, & Pan, 2021). Because of the relatively poor infrastructure and entertainment facilities in the suburban area, more young people tend to live in cities with good facilities and more job opportunities. Respondents 2 and 11 said that in order to control production costs, the firm had to locate the factory in the suburbs with lower rents. This phenomenon is unlikely to change because the rent cost in the first- and second-tier cities is much higher than the labor cost (Wang Lili, Qiao Xue, 2019).

As previously mentioned in the theoretical analysis section, population ageing has a direct impact on labor supply, and the ageing of the labor force is inevitable and may continue to increase. Respondents also generally stated that this is also happening in Chinese firms. But what different from other countries is. In China's industrial structure, traditional industries such as manufacturing, industry, and agriculture account for a huge proportion. As for the manufacturing industry, it even accounts for the largest share in the world (Sun et al, 2020). The data obtained from the interviews also prove that the proportion of elderly employees in China's traditional industries continues to rise. The reasons are, in addition to the deepening of China's

ageing population, the content and attributes of work, and geographical factors. Population policy is a very important point that distinguishes China from other countries. It was not until 2011 that the Chinese government abolished its one-child policy. Before that, each family was only allowed to have one child (Wang, Cai, 2017). Today, these children are becoming the main source of labor of the right age. The insufficient supply has directly led to firms having to recruit some elderly employees as supplements, which in turn has led to a continuous increase in the number of elderly employees. And this phenomenon will basically not change within 10 years, because the one-child population policy was just adjusted after 2011. Besides, the young labor force is moving to inner-city areas because of better infrastructure and job opportunities in inner-city areas. For China, with the shortage of urban land, new environmental protection regulations have begun to be implemented. Forcing manufacturing and industrial enterprises to relocate to suburban areas (Zhuang Guotai, 2015), and the ageing level in suburban areas is significantly higher than that in urban areas (Fan, 2018), which is another reason for the increase in elderly employees.

- **Characteristics of elderly workers**

After analyzing the information obtained in the interviews, I summarized the general characteristics of the elderly employees. Most elderly employees are at the management level of the firms or basic work level. This is related to their age, experience and the nature of the work. As respondent #5 stated:

“Most of the employees in management positions have worked in the firm for a long time, are familiar with the firm's business and have certain management capabilities. These employees usually serve as managers in sub-chain restaurants.”

Respondent #12 also indicated that most of their older employees work as heads of the departments or course directors.

To maintain the production level, firms also having elderly labors. Some of the respondents' firms do not have high requirements for skilled labor. Therefore, elderly employees (over 45 years old) can also participate in the work as assembly line workers or in some jobs that do not

require high skills. Although they can participate in the work, they still have to face some limitations due to their age, for example, opportunities for promotion and career development, hard to learn new knowledges and skills. According to the explanation of respondent #2:

“Usually, working as an assembly line worker only take about 2 days of training, and elderly labor can also be competent for this type of work. But considering that they cannot work for the firm for a long time, we often give priority to promoting opportunities for younger employees.”

In addition, the analysis results also show that the physical condition of the elderly workers is good, and there is no apparent inability to participate in the work caused by the decline in body function, although compared with the younger workers, their labor productivity was slightly lower. Contrary to good physical condition, elderly workers experience greater mental stress. China officially implemented the one-child policy after 1970, and each couple was required to have only one child (Gietel, Han& Cheng, 2019). After 2011, China began to implement the two-child policy (Li, Zhou& Jia, 2019). Besides, in traditional Chinese family culture, it is common for grandparents to help raise grandchildren at early old age because their own children are normally in their working age and often have to face very busy work (Cong, Silverstein, 2008). Ageing workers are directly affected by these policies as well as family culture. Respondents indicated that some of their elderly employees have to face the pressure of supporting their parents on their own because they had no siblings while helping with parenting and the stress of their own work.

Furthermore, compared with younger employees, elderly employees lack the ability or willingness to accept new technologies, learn software, and practice new knowledge and skills. In addition to their physical and mental condition, this is also related to their growth environment. At that time, China was in the "Cultural Revolution Period", and higher-level education was basically suspended. Combining all these factors, limited the elderly employees' ability to learn. As mentioned in the previous part, some firms are upgrading their products and services. For example, respondents #2 and #11 are upgrading their production equipment and updating their products. Elderly employees usually need to spend 1.5-2 times longer on skill

training than younger employees, and still, the yield rate is lower than the younger employees. Respondent #12 gave more descriptions about the use of the software by their elderly employees:

“Many elderly employees are resistant to using the new software, and they are even unwilling to learn. Sometimes we need to provide them with additional technical support to help them do their jobs.”

Additionally, all of my respondents' firms had issues with gender dominance. This is mainly due to the nature of their work and the products and services provided. Taking respondents #8 and #12 as examples, the products they provide are silk fabrics and language learning programs. These two industries usually have a strong trend of female dominance. On the contrary, for respondents #1, 2, 3 and 7, the construction industry and manufacturing industries have a strong male-dominated trend (Gardiner, Tiggemann, 1999). Considering the research questions of my study, the influence of gender on elderly employees is not be involved in detail, but it to provide directions for further research in the future.

3.2.) The challenges of aging Chinese firms facing

After gaining a certain understanding of the characteristics of the ageing workforce in Chinese context. I summarized and analyzed the particularity of the challenges of the ageing workforce of the Chinese firm. This further proves the original intention of the study. The issue of ageing is a context-based issue. The specific conditions of ageing in each country are different, and both theory and practice need to be adjusted according to the actual situation. At the same time, in order to expand the theoretical and practical information based on the challenges of the ageing workforce for the Chinese firm, it is necessary to conduct research on this topic.

- **Workforce management**

When explaining the challenges that an ageing workforce poses to Chinese firms. Regarding workforce management, my respondents extensively emphasized the issues including the conflicts between different generation groups, the rising labor costs, and the unique needs and preferences of elderly employees. This is critical to understanding the impact

of an ageing workforce on firms. The respondents explained in detail that the conflicts between different generation groups not only affected teamwork but even negatively affect the implementation of the firm's strategy and doing business. As respondent #5 stated:

“Conflicts between our younger employees and managers are quite common now, especially between Gen Z and elderly managers, who have very different values and opinions on work. From some managers perspectives, generation Z lacks a sense of responsibility at work. On the contrary, the opinion or decisions of managers are considered obsolete. The result of their conflicts often affects productivity while impacting our consumers' experience.”

What is different from other countries, as mentioned above, children born under the one-child policy are the main source of the young labor force now. As stated by respondent #7.

“As the only child in a family, this generation is spoiled by their parents too much. As a result, a selfish and self-centered character has been developed. Their values have greatly changed from those of the previous generation and become less willing to listen to others, especially elders.”

This leads to a lot of conflicts in the workplace. Beyond that, elderly labor in China has unique needs and preferences. In order to meet their needs, firms need to use additional resources, which indirectly leads to an increase in labor costs. Although the respondents stated that their elderly employees do not have a high demand for health support due to their good physical condition, this is because the statutory retirement age in China is still relatively low, which is 50-55 years old for women and 55-60 years old for men (程杰,李冉, 2022). Cultural reasons and the family factor are another main reason which affects the needs and preferences of elderly employees and their work performance. Not because they want to start their own life after retirement. As in Chinese culture, it is a tradition that the grandparents should step back from work and help their children to rise their next generation. The common needs of elderly

employees are more flexible work arrangements or more free time. But this has resulted in firms having to face unsatiable productivity due to high labor turnover. As respondents #4 and #8 said:

“Some of their elderly employees choose to work part-time because they can spend more time with their families.”

- **Business expansion and development**

Another challenge of the ageing workforce is the decline in labor productivity, which pose challenges to the firm’s business expansion and development. Although respondent #5 mentioned that because of the use of new equipment, which was able to replace a large number of labors, they did not experience a significant decline in productivity. On the contrary, after training, the productivity of individual elderly employees increased. But generally speaking, our respondents extensively emphasized the phenomenon that as employees age, their performance declines. And it is not only simply because of the physical condition of the elderly employees. Respondent #5 explained that:

“Elderly employees ask for leave more frequently than younger employees. Some elderly employees are also not motivated enough to work, which has a great impact on our business because we need them to provide thoughtful services to customers.”

Respondent #7 also stated that for some of their jobs that require a lot of physical strength, older employees often take longer to complete the work than younger employees. This kind of work often does not require high skills but a lot of physical input. Under the premise that technology has not improved in a very short period of time, it is inevitable that labor productivity will decline with the age of employees. Additionally, elderly employee also has to face relatively complex family situations, which sometimes affect their working progress. At the same time, before retirement, elderly employees may be more concerned with life-work balance or other priorities than with their work, which affects their motivation for hard work (Henkens, Tazelaar, 2018). Respondent #12 gave the following explanation:

“Some of our ageing employees are ready for their retirement life or believe that career development opportunities no longer exist. In their later stages of work, there was even a situation of passive sabotage.”

- **Recruitment and retention**

The challenges of recruitment are mainly due to the insufficient supply of young labor in specific regions and the characteristics of the industry itself. As analyzed in the previous section, respondents indicated that young people are unwilling to engage in their industries because of the relatively hard and boring repetitive work content. They also don't want to spend extra time commuting, especially if the firm is in the suburbs area and with a relatively poor working environment(刘运国, 吴丽薇, & 郑明晖, 2020). As respondent #4 explained:

“Although our main business is now highly mechanized, the working condition also much better than before. But young people are still unwilling to join us because they need to work in the fields and away from the city. As elderly workers retire, we are facing a serious labor shortage because people are still needed to operate the equipment.”

Furthermore, firms also have to face the challenges of retaining older employees due to their low employee loyalty. The respondents mentioned that except for the elderly employee who is already at the management level. Employee loyalty among elderly workers is also relatively low. As stated by respondents #4 and #8, their elderly employees tend to work part-time, which is very common in the industry, and they do not abide by contracts very much. In other words, their loyalty to the firm is relatively low. If any unfavorable events appear, or their needs are not met, which may lead to the loss of skilled labor.

Unlike other countries, China's ageing workforce is highly mobile. In general, older employees are less mobile than younger employees. This is because older workers may have settled in the local community for a long time, such as home ownership or family factors, which may make it more difficult for them to relocate for work. Additionally, older workers may have health issues that limit their mobility (Kim, Feldman, 2015). But this situation is not common

in China. Employees who are currently ageing in the early stages are born around 1970. China is in the stage of the "Cultural Revolution". The country cancels the college entrance examination, and the high school enrollment rate is also low. The opportunities for this generation to receive higher education are very limited. This directly limits their skills and career development, and their limited education level also makes them less able to accept knowledge and can only do some basic work (马凤芝, 陈海萍, 2020). In addition, as mentioned above, they also must take care of the family. So, they tend to do some part-time basic jobs with lower skills and requirements. And once the firm fails to meet their needs and preferences, they may leave or change jobs. These are all possible reasons that lead to the challenges of employee retention because of the high mobility of elderly Chinese employees, especially those engaged in basic production or work line.

- **Age discrimination**

The research also revealed the negative impact of age discrimination on firms. One is that it leads to lower employee morale and productivity. As my respondents mentioned, some of them don't offer equal opportunities for career development and promotion to elderly employees, especially those who are engaged in basic production lines. Unfair treatment may lead to demotivation of the work of elderly employees. Employers, they need to recognize the value of elderly employees, especially in the context of an ageing society. The second is the lack of mutual understanding between the different generation groups, which leads to poor communication between them and increased internal conflicts. As respondent #12 stated:

"Younger employees do not show enough patience with older employees, and even consider them a burden, because they need to spend extra effort to help them, such as assisting with using software. But what they don't realize is that the experience of older employees may help them make fewer mistakes and be more productive."

For firms, elderly employees may have valuable skills and experience that can benefit the firm. But firms with age discrimination may not be able to retain talented and experienced elderly employees, even leading to accelerated loss of labor (Allen, 2019). Although, in the

context of China's ageing population continues to increase. China's ageing workforce is easier to employ because of the limited supply of young labor. However, many job opportunities remain low-paying, precarious and insecure. The construction industry, for example, is one that has seen an increase in older workers, whose average age even over 40. However, systemic wage arrears and extremely dangerous working conditions remain widespread in the industry. Elderly employees, they lack the protection of laws, regulations and labor contracts (Zhang Zhixin, Lu Hang & Sun Zhenya, 2022). In addition, China's pension system is still under development, and many older employees cannot enjoy adequate retirement benefits, especially those who work part-time (Niu, Zhou & Gan, 2020). These can affect the productivity of ageing workers, intensify internal conflicts and affect the long-term development of the firm.

- **Knowledge transfer**

There are also challenges in the transfer of knowledge between elderly and younger workers. As mentioned above, there is insufficient mutual understanding between different generation groups. The respondents also mentioned the lack of communication among them. Employees of different generation groups may have different preferences and work styles which led to difficulties in transferring knowledge (Bock, Kim, 2002). When older employees retire or leave the firm for other reasons, this can lead to a loss of intangible assets for the firm, and it can even create skill gaps that are difficult to fill. As interviewee #1 explained:

“The only way to train new divers is through experienced elderly employees, we rely on them to pass on their experience and knowledge to the new employees. But this is becoming more and more difficult because young people have different attitudes towards work and are unwilling to communicate with elderly workers.”

He also mentioned that after the last two deep divers retired, they had to stop related businesses because of the loss of skilled employees. Overall, knowledge transfer is critical for firms to remain competitive in the long run (Davenport, Prusak, 1998). By ensuring the transfer of knowledge and experience between elderly and new employees, firms can help new employees avoid costly mistakes, reduce the cost of employee training, and ensure business continuity. Employee succession planning is particularly important, and prioritizing seniority

over merit makes the effective implementation of succession planning difficult in China. Specifically, respect for elders and obedience to authority are highly valued in Chinese culture, which discourages younger employees from challenging or questioning the decisions of older employees. Therefore, this is not conducive to effective knowledge transfer and succession planning, as younger employees are less willing to express themselves or offer new ideas.

- **Other challenges**

In addition to the common challenges mentioned above encountered by the respondents. Some of them also face unique challenges related to the specific industry, location, and business.

Hard to conduct business transfer and technology upgrade

These problems are very common in some Chinese traditional industries and firms that have high skill requirements for employees. On the one hand, their resources are very limited, on the other hand, because of the nature of the job, they are highly dependent on human resources(杜传忠, 金华旺& 金文翰, 2019). As Respondent 1 explained:

“The services we provide are very special. Although we have to face the shortage of skilled labor, it is unrealistic to attract more labor through business transformation, which involves huge costs and we still have to face competition from other market segments; Most of our underwater operations still require experienced divers, existing equipment is not adequate for the complex work environment, or we cannot afford the most advanced equipment.”

Respondent #12 also indicated that it was difficult to find a suitable successor due to similar reasons. For their employee, because of highly specialized skills. It is also very difficult to transition as they get older. With the retirement of elderly employees and the inability to replenish new employees, the firm have to face the state of the shrinking business scale.

Safety issue

As employees age, their reflexes and physical coordination inevitably decline. There is also an increased risk of accidents while performing certain high-risk jobs (Hoffman, 2009). Not only do the elderly employees themselves face safety risks but may even lead to large-scale safety accidents. As respondent #7 stated:

“Older workers are more likely to be injured on the job, and we often need to reposition employees as they age.”

Considering the particularity of these challenges, they are more related to specific industries and businesses. In this study, I am not giving a specific analysis, but address these challenges in a way that is more consistent with the topic. This additional information could be further researched and provide directions for future study.

3.3.) HRM practices of Chinese’s firms to address the aging challenges

From a theoretical point of view, the phenomenon of ageing is complex and multilayered (Binstock et al, 2011). To address the challenges of an ageing workforce, firms can seek solutions from the perspective of human resource management practices methods (Truxillo, Cadiz, & Hammer, 2015). In general, the ageing problem is become more and more serious in developing countries, especially in China (Zeng, 2016). However, the existing literature lacks research on the impact of ageing on Chinese firms, and there is not enough data to help researchers understand HRM practices that can be used to address these challenges. By referring to and analyzing existing literature of other countries, theoretical support is provided for this study. During the research, it is found that Chinese firms have already implemented some HRM practices to address the challenges brought by the ageing workforce and summarized their own unique theories. This paper analysis the existing HRM practices of Chinese firms to address the challenges of an ageing workforce.

- **Building employer branding and attractiveness**

I define the pattern of employer attractiveness as the firms' practices of building a good employer brand. A positive brand image is considered to be important for the firm to win in the labor market competition, retain employees, and ensure long-term competitive advantage. One of the biggest challenges highlighted by almost all respondents is the difficulty of attracting younger labor, which has been shown to improve through positive employer branding. This is also an important element that indirectly promotes and help firms to win in the labor market. Respondent #12 from the firm that has successfully implemented the employer branding program explained:

“We admit that our business or salary is not absolutely attractive to young people, but through the shaping of firm culture, values, and positive media publicity, at least more job seekers are willing to ask us about job details than ever before.”

Against the background of China's ageing population and a highly competitive human resources market, a good employer brand is an important factor to help firms succeed in the competition in the human resources market. To be able to work in a firm with a good reputation and value for its employees is embedded in the heart of every job seeker. This is not a benefit specific to large-scale firms but applies to all including small and medium-sized firms. It is related to the culture of the firm, the standards and attitudes treated employees, and benefits (Franco, Haase, 2021). In China, employer branding as an intangible asset of the firm has received more and more attention since 2000 (Wang Haizhen, 2009). But more on a theoretical level. Because from the perspective of employment, because China was in the rising stage of demographic dividend at that time, the supply of the working-age labor force was sufficient (Cai, 2010). However, this situation changed in China's sixth and seventh census reports, and the fertility rate was lower than the replacement level of 2.1 (Yu Jia, Xie Yu, 2019; Dai, Shen & Cheng, 2022). With the further intensification of aging in China, economic development, and the impact of uneven population distribution caused by urbanization, the problem of the insufficient working-aged labor supply has emerged in some areas (Zhang Chewei, Cai Yifei, 2012). For Chinese firms, they are not prepared to deal with the recruitment challenges caused by the aging population. Fortunately, firms have realized that building a positive employer brand

can help them succeed in a competitive labor market. Pang Dong Lai is a local retail brand in Henan. Henan is a province with a large working-age population loss in China, with a relatively deep ageing rate and the highest dependency ratio in China. In order to attract young employees, its implementation of supportive and inclusive employee policies reflects its culture of valuing its own employees. On the one hand, it provides equal career development opportunities for its employees, and on the other hand, it provides comprehensive support and employee benefits. At the same time, build a young and dynamic corporate culture. This has attracted a large number of young people to switch to work from first-tier cities such as Shanghai to Pangdonglai, a local firm.

In fact, building a positive employer branding is much more complicated, involving shaping the identity, including mission, firm norms, firm culture, the balance between life and work; equal career development opportunities; employee policy; compensation and benefits; job characteristics and what are the images of the employer in the media and among job seekers (Berthon et al., 2005). Chinese firms can practice from the perspective of HRM, formulate supportive and inclusive employee policies, and shape the firm's image that values employees. This can help attract labor and help the firm succeed in the fierce competition in the labor market. The specific content of each stage of practice needs to be adjusted according to the specific challenges faced by Chinese firms. As mentioned above the challenges faced by Chinese firms, are in areas with a high degree of ageing and a concentration of elderly populations. The establishment of an employer brand needs to take into account the characteristics of high mobility in the elderly labor force in China, highlighting the firm's emphasis on their needs and preferences, equal opportunities, skills learning and career development rights, etc., to retain and attract labor as much as possible. At the same time, update the corporate culture to make it easier for the young workforce to accept, especially for the one-child generation. Similar practices were mentioned many times by respondents, such as respondents #2, #3, #5, #6, #8, and #12. These firms have implemented employee policies similar to Pang Dong Lai. By formulating a series of employee-supportive practices to attract young people to join. In addition, social media that are widely used by young people in China can be used to convey firm information. For example, respondent #12 mentioned that they use Dou Yin, Weibo, WeChat, and other social media to promote their firm, tell stories about what happened in their workplace,

and have achieved certain results. There are more young people who started to ask for their recruitment-related information through private messages.

In addition, employer branding can also play a positive role in the retention of elderly employees (Tanwar, Prasad, 2016). Employers in China have realized the value of elderly labor. According to my research, China's labor force in the early ageing stage is still in the good physical condition and can participate in production work normally. Furthermore, retaining skilled and experienced elderly employees is crucial for firms. By creating an employee-oriented, inclusive, and equal employer branding, employees' stickiness and loyalty to the firm can be increased (Kumar, Sharma, 2019). In addition, considering the unique needs of Chinese elderly employees, the firms also need to show their support for employees' families and understand employees' needs for caring for their families, which is in line with Chinese family culture. Respondent 5 explained his specific managerial practice:

"We place great emphasis on creating a positive working environment, including safety and a more comfortable working environment compared to other restaurants. We believe that having a good mood can increase employee productivity.; We also provide additional health insurance for our employees' families; Most of our ageing employees are willing to work in the firm until retirement."

Overall, almost all respondents expressed a willingness to try the practice of building positive employer branding, with the exception of firms already implementing the programs. Building a positive employer brand can be one of the ways to address the challenges of an ageing workforce. However, the specific practical methods may need further research, in order to adapt to China's different industries and firms engage in different businesses.

- **Adopt old talent management methods**

In addition to building positive employer branding, the practice of old talent management theory can also help address the challenges of workforce management and knowledge transfer. As discussed in the previous section, the unique needs and preferences of elderly employees is one of the reasons that lead to conflict among different generation groups and blockage of

knowledge transfer. This is especially a challenge for firms with high demand for skilled labors. These firms have a strong dependence on skilled employees, they need to retain experienced and skilled elderly employees and rely on them to transfer knowledge and experience to the successor in order to remain the firm's business. For example, evidence from Respondent #1, who provides deep sea fishing services, that if they lost their skilled elderly employees and can't find a suitable successor, that meant they had to give up the business. Respondents explained:

“Elderly employees, especially their knowledge and experience, are crucial to us, so we must find ways to meet their needs to retain them.”

Effective workforce management and knowledge transfer are important for a firms' long-term growth. The theory of old talent management includes understanding the characteristics of elderly employees, such as needs, preferences, physical and mental states, retirement planning etc. It also recognizes that elderly employees' knowledge, skills, and experience that are critical to firms' development (Fasbender, Wang, & Liang, 2018). The practice of the theory is extended after adjusting to the situation of Chinese firms. According to the analysis of the information provided by the interviewees, the existing management practices of ageing talents in Chinese firms mainly include providing employee training and career development programs to meet the changing needs and preferences of elderly employees, team-building activities to improve mutual understanding between employees of all generation groups, and a mentoring program to ensure knowledge transfer. As respondents #7 and #8 explained:

“The main purpose of team building is to improve team cohesion. Enhance the understanding of elderly employees to younger employees during team activities, which can reduce conflicts between them and facilitate their communication; Provide specific employee training programs for elderly employees to meet their needs and help them with their personal development while encouraging them to pass their knowledge to the younger employees.”

The use of mentorship is even more common, it can help firms reduce the impact of loss of skilled talent. Almost every interviewee said that they used this practice and mentioned that

in addition to being an effective practice for the manage old talents, it also helps to save the cost of employee training.

On the contrary, the interviewees said that although the theory of employee retraining is increasingly accepted by Chinese firms, very few have started to practice it. The reason can be summed up as the time limitation caused by family factors, which is related to the unique Chinese family cultural mentioned above. There is also resistance among elderly employees to retraining. On the one hand, this is due to their low education level (the generation born during the Chinese Cultural Revolution), their limited ability to acquire new skills, and on the other hand, their low motivation. Employee incentive programs can be used to address these issues, including providing extra rewards for employees who perform well in training, parent-child activities organized by the firm, and so on. In addition, considering the acceptability of elderly employees, employee training can be based on practical demonstrations instead of theoretical training. At the same time, control the training time and try not to disturb the normal work and life of employees.

- **Implement age-inclusive policy**

Furthermore, inclusive employee policies can help avoid age discrimination, according to a review of the existing literature. Inclusive employee policies, as the bottom line of behavior that employees should abide by, are conducive to the building of diverse workplaces, ensuring fairness. Employees should not be treated differently due to factors such as age (Konrad, Prasad & Pringle, 2006). However, inclusive employee policies are not common in Chinese firms, as reflected in the interviews. For Chinese firms, when it comes to promotion, career development, etc., the priority of young employees is much higher than that of older employees. Especially for firms in traditional or labor-intensive industries, still give priority to the younger employees because of their relatively stable physical condition and longer expected employment time. Research on workplace inclusiveness in China mostly focuses on its impact on corporate innovation capabilities, and more on gender inclusiveness. According to the Hays Asia Diversity and Inclusion Report, only around 43% of respondents stated that their chances of career development are not affected by diversity and inclusion issues. About 44% of employees said that age is the main factor affecting their career development. For most of the firms,

inclusive work environments only exist at the management level. But as the elderly employee group become larger and larger, Chinese managers began to realize the importance of the age-inclusive policy, and all the respondents expressed an interest in the practice methods. Respondent #12's firm is the only one that has implemented a similar policy for managing elderly employees. And is trying to shape an age-inclusive work environment:

“We have provided training for all employees to help deepen their understanding of each other and encourage young employees to communicate more with elderly employees; We implement a zero-tolerance attitude towards workplace discrimination or bullying and have established corresponding reward and punishment mechanisms; In terms of benefits and promotion, we mainly use the students' evaluation of teachers as the basis to ensure that employees have equal career development opportunities.”

In addition, inclusive policies recognize the value of elderly employees and emphasize employer responsibilities (AARP, 2018). As the number of elderly employees continues to increase, the firm can also reduce the impact of labor shortages by supporting elderly employees to participate in production activities more extensively. For Chinese firms, specific practices need to be adjusted. Including focusing more on what the elderly employees care the most, for example, the balance of family and work, as well as more flexible work arrangements (Liu Lei, 2015).

- **Other managerial practices**

In addition to the managerial practices mentioned above, respondents also informed us about other management practices they are using. Respondents #2, #3 and #12 introduced the details of their employee benefit policies, including providing additional health insurance for elderly employees, helping them with their retirement plans, extra paid vacations, etc. Aims to attract and retain talented employees by offering more attractive compensation packages. But after an in-depth investigation, different employee benefit policies may cause the voice of inequality within the firm (Kim, Feldman, 2015). Furthermore, Respondent #5 indicated that they provide entrepreneurship grants for retired elderly employees, which means opening new stores with no initial fee. Considering the research question of the thesis, this is not an HRM

practice and may not suit different firms' strategies. Respondent #12 brought up an interesting practice where they would rehire retired employees if they are willing to continue working. Respondents explained:

“On the one hand, this can alleviate the problem of labor shortage, and on the other hand, it can also meet their needs of work, which is a win-win situation.”

Considering that such practice may have legal risks, such as the content of the contract, whether it complies with Chinese laws, etc. More in-depth analysis of this practice needs to be conducted.

3.4.) Theoretical and practical contribution

- **Theoretical contribution**

The theoretical contribution of this study is to provide a summary of ageing, the challenges the ageing workforce brings to corporate management, and the practical HRM methods to address these challenges in Chinese context. First, this study enriches the research on the ageing phenomenon based on the Chinese context. It confirms that the research on the phenomenon of ageing should be based on a specific context. Although there are similar reasons for the ageing phenomenon, such as low fertility and increased life expectancy (Bloom, Canning & Fink, 2018). But the specific details vary due to the specific socio-historical cultural and economic backgrounds of different countries. In general, China's ageing phenomenon and the unique characteristics of the ageing labor force are affected by its population policies, including family planning policy factors (one-child policy), historical and political factors (Cultural Revolution), as well as the influence of cultural factors (family culture and workplace class culture), geographical factors (urbanization factors).

After getting a deeper understanding of ageing in the Chinese context. This study also summarizes the challenges that ageing brings to Chinese firm from a theoretical perspective and add new insights. First, the existing academic materials include English and Chinese literature. There is no summary of the challenges ageing may pose to Chinese firms. Most of them are

only based on the analysis of ageing on China's economy, social development, and innovation. Which has the limitation of understanding the whole picture(Zhang, Wang, 2020; Li, Wang, 2019; 贺丹, 刘厚莲, 2019). This study summarizes and provides a theoretical basis for the challenges that ageing may bring to Chinese firms by referring to the research data of other countries with relatively serious ageing, the particularity of China's ageing, and combining the research method of empirical analysis. In addition, enriching the understanding of the causes of these challenges, in addition to the factors mentioned in the theoretical analysis section include reveals the importance of family to Chinese ageing workers (cultural factors), the characteristics of existing ageing workers (the generation during the Cultural Revolution was extremely lacking in higher education), and the potential impact of population policy (the one-child policy) on the young generation's participation in the workplace.

At the same time, this research also summarizes what kind of HRM practice from the theoretical level, or how to adjust the HRM practice based on the Chinese background before implementation, which can help Chinese firms more effectively deal with the challenges brought by these ageing labor forces. By using the same method of empirical analysis, it is proved that building a brand image that values employees, age-inclusive policies, and ageing talent management theory can help Chinese firms deal with these challenges. At the same time, the details of these HRM theories, including brand culture, employee training, and employee motivation, need to be adjusted accordingly according to the Chinese contexts, in order to help Chinese firms better understand what theories can be used to help address the challenges brought by the ageing workforce.

- **Practical contribution**

There are two main practical contributions of this study. The first reference is to help Chinese firms understand the challenges that the ageing workforce may bring to them, and on the other hand, it helps firms to address these challenges more effectively from the perspective of HRM practice. Specifically, as the ageing of China continues to intensify, more and more firms will have to face the problem of an ageing workforce. The findings of this study can help them predict the possible impact of ageing on them in advance, thereby, being able to prepare

and avoid the potential risks. Although the finding may need to be adjusted according to the different industries the firm is in, it can still help the firm save a lot of trial-and-error costs. The other contribution refers to the HRM practical methods for the Chinese firms, which can help them better address the challenges brought by an ageing workforce. Specifically, establish an employer brand based on the Chinese background that is more in line with the needs and preferences of the ageing and working-age workforce. Corporate culture needs include, for example, meeting the needs and preferences of older and younger workers, as well as provide a fair and inclusive work environment. The background that China's pension system and labor security law are still in the development stage, from the perspective of HRM practice, taking care of employees' concerns have a very positive impact on the firm's long-term retention of employees and recruitment. At the same time, creating an inclusive work environment can help avoid age discrimination in the workplace. The specific implementation of age-inclusive policies can help address the challenges of internal conflict between different generation groups, as well as the negative impacts of age diversity and age discrimination. Ageing talent management can help address the challenges of business expansion, and knowledge transfer. Among them, the practical method of employee training is particularly important. Considering the needs of Chinese elderly employees, it is necessary to provide them with more flexible training arrangements and case-based training to help them learn. At the same time, through employee training, avoid the impact of traditional hierarchical awareness in the workplace on the effective implementation of succession planning.

CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

This study explores the management challenges that ageing may bring to Chinese firms, combines the characteristics of China's ageing and empirical evidence, and summarizes human resource management practices that can help Chinese firms deal with these challenges. It provides a preliminary understanding of the research on this topic and expands the theoretical knowledge. The study concludes that for firms in China, the challenges that ageing may bring include workplace management issues due to internal conflicts. The challenges of recruiting and retaining employees and business expansion and development resulting from changes in labor structure and supply. Increased age diversity and challenges of age discrimination due to changes in the age structure of the workforce. And the challenges of knowledge transfer caused by the lack of effective communication between employees. And at the same time, based on the China context, gives a specific analysis of the reasons. In addition, the study also analyzed the practical methods that can be used by Chinese firms to address the challenges. Includes methods for building a good employer brand, implementation details of age-inclusive policies, and practical approaches to old talent management. Also, the detail was adjusted based on Chinese contexts.

However, the study has some limitations related to the fact that although the study covered some industries but still not cross-industries research. At the same time, although the information comes from the firms' managers and HR departments, there is no way to reach out to their elderly employees. Although the research is supplemented by literature to try to understand the real situation, it still lacks an understanding of the real thought of ageing issues from the perspective of employees. Future research can analyze whether employer branding, age-inclusive policies, and ageing talent management help firms in other industries of China address the challenges of ageing. And conduct further research from the perspective of elderly employees. In addition, this study may also provide a theoretical basis for other developing countries, who can verify whether the finding of this study is applicable to different contexts. Taken together, further research will help to enhance the theoretical and practical value of this study, and also provide deeper insights.

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Appendix

1. Interview protocol

I want to thank you for taking the time to meet with me today!

My name is Fan Yuanxing, student at St. Petersburg State University, GSOM. I would like to talk to you about your understanding of aging within your firm. Specifically, as one of the components of my research, I am trying to get in-deep understand the managerial practice of your firm to address the aging challenges.

The interview should take less than an hour. I will be recording the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we're on record, please be sure to speak up so that we don't miss your comments.

All responses will be kept confidential. This means that your interview responses will only be used for research, and I will ensure that any information I include in my research does not identify you as the respondent. Remember, you don't have to talk about anything you don't want to, and you may end the interview at any time.

Are there any questions about what I have just explained?

Are you willing to participate in this interview?

Yes No

Interviewee Witness Date

2. Interview guideline

<p>Questions</p> <p>No more than 15 open-end questions</p> <p>Ask factual before opinion</p> <p>Use probes as needed</p>	<p>The questions are just giving the guideline for the interview. The form of the question is not fixed. Ask the questions in a most suitable way to the interviewee. The interview should be able to get at least the key data list below.</p> <ol style="list-style-type: none"> 1. Please describe your firm. (Industry; Location Product and service; Employee size 2. What is the current state of the elderly employee? (Proportion of elderly employees; Characteristics of elderly employees) 3. What are the challenges your firm facing? (External: Requirement, business expansion etc.; Internal: recruitment, retention and succession; different needs between different age groups; age diversity and age discrimination; transfer knowledge) Please describe them in detail and how these challenges affect your firm? 4. What management practices has your firm adopted to address these challenges? 5. How are they worked? If not, what reason do you think it is? 6. Have your firm tried managerial practices like (Employer branding; Old talent management; age inclusive policy). How's the outcome? 7. What barriers have been encountered in implementing these management practices. How overcome them. 8. Please give some recommendation about how can better address the challenges?
<p>Closing Key</p> <p>Components</p> <p>Additional Comments</p> <p>Thank you!</p>	<p>Is there anything you would like to add?</p> <p>I'll be analyzing the information you gave me and send you the draft report.</p> <p>Thanks for your time.</p>