INSTITUTO
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Factors that Influence the Turnover Intention of the Pharmaceutical Employees in China-A Social Exchange Theory Perspective

LI Yanhui

Doctor of Management

Supervisors:
PhD Sara Ramos, Assistant Professor,
ISCTE University Institute of Lisbon
PhD Inês C. Sousa, Invited Assistant Professor,
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Abstract

In order to explain the turnover intention of pharmaceutical employees in China, we developed six models based on the social exchange theory, and empirically tested them in several Chinese pharmaceutical enterprises with different types of ownership.

The results have shown that in the context of the Chinese pharmaceutical sector, 1) High-performance human resource practices (HPHRP), age-diversity practices (ADP), and organizational justice (OJ) have negative effects on turnover intention directly and indirectly; 2) Affective commitment (AC) and normative commitment (NC) partially mediate the relationship between HPHRP and turnover intention, ADP and turnover intention, and OJ and turnover intention ; 3) OJ has a stronger effect on AC and NC than HPHRP or ADP; 4) Age moderates the direct relationship between HPHRP and turnover intention, ADP and turnover intention, and OJ and turnover intention, such that the relationships are stronger for younger workers than for older workers; 5) The different ownership nature of the enterprise moderates the direct relationship between HPHRP and turnover intention, ADP and turnover intention, and OJ and turnover intention , such that the relationships are stronger in the state owned enterprises (SOEs) than in the non-state-owned enterprises (non-SOEs).

The results are important both for pharmaceutical organizations and for all stakeholders interested in the subject as the public power. This thesis enriches the literature on the localized empirical study of relevant theories and gives the implication practically to the manager or Human Resource department to promote staff stability and ensure the healthy and sustainable development of pharmaceutical enterprises.

Keywords: human resources practice; age diversity practice; organizational justice; turnover intention; social exchange theory

JEL: D23 Organizational Behavior; O15 Human Resources

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Resumo

Para explicar a intenção de saída dos trabalhadores do setor farmacêutico na China, foram desenvolvidos seis modelos, tendo por base a Teoria da Troca Social, e testados empiricamente em várias organizações farmacêuticas chinesas com diferentes tipos de propriedade.

Os resultados mostraram que, no contexto do setor farmacêutico chinês, 1) Práticas de recursos humanos de elevado potencial, práticas de diversidade etária, justiça organizacional têm efeitos negativos diretos e indiretos na intenção de saída; 2) Os compromissos afetivo e normativo medeiam parcialmente a relação entre práticas de elevado potencial e intenção de saída, práticas de diversidade etária e intenção de saída, justiça e intenção de saída; 3) A justiça tem um efeito mais forte nos compromissos afetivo e normativo do que nas práticas de elevado potencial ou de diversidade etária; 4) A idade modera a relação direta entre práticas de elevado potencial e intenção de saída, práticas de diversidade etária e intenção de saída, justiça e intenção de saída, de tal forma que as relações são mais fortes para os trabalhadores mais jovens do que para os mais velhos; 5) A natureza da propriedade da organização modera as relações diretas entre práticas de elevado potencial e intenção de saída, práticas de diversidade etária e intenção de saída, justiça e intenção de saída, de modo que as relações são mais fortes nas empresas estatais do que nas não-estatais.

Os resultados são importantes tanto para as organizações farmacêuticas quanto para todos os interessados no tema, incluindo o poder público. Esta tese enriquece a literatura sobre estudos empíricos que localizam teorias relevantes e fornecem implicações práticas para a gestão ou departamento de Recursos Humanos no sentido de promover a estabilidade do staff e garantir o desenvolvimento saudável e sustentável das empresas farmacêuticas.

Palavras-chave: práticas de recursos humanos; práticas de diversidade etária; justiça organizacional; intenção de turnover; teoria da troca social

JEL: D23 Comportamento Organizacional; O15 Recursos Humanos

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摘 要

为了解释中国医药行业员工的离职意向，我们基于社会交换理论开发了六个模型，并在中国几家不同所有制制药企业中进行了实证检验。

结果表明，在中国医药行业背景下，1）高绩效人力资源管理实践（HPHRP）、年龄多样性管理实践（ADP）、组织公平（OJ）直接和间接地对离职意向产生负面影响；2）情感承诺（AC）、规范承诺（NC）在HPHRP与离职意向、ADP与离职意向、OJ与离职意向之间的关系中起部分中介作用； 3) OJ对AC和NC的影响强于HPHRP或ADP；4) 年龄调节 HPHRP 与离职意向、ADP 与离职意向、OJ 与离职意向之间的直接关系，HPHRP、ADP、OJ对于年轻员工的离职意向直接影响要强于对年长员工的影响； 5) 企业的不同所有制性质调节 HPHRP 与离职意向、ADP 与离职意向、OJ 与离职意向之间的直接关系，使得HPHRP、ADP、OJ对国有企业（SOEs）员工离职意向的直接影响强于对非国有企业 （non-SOEs）员工的影响。

本文结果对于医药行业以及对公共权力的主题感兴趣的所有相关者都很重要。本文丰富了相关理论的本土化实证研究文献，对管理者或人力资源部门促进人员稳定，保障医药行业健康持续发展具有现实意义。

关键词：高绩效人力资源管理实践；年龄多样性管理实践；组织公平；离职意向；社会交换理论

JEL: D23 组织行为; O15 人力资源

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List of Abbreviations

HPHRP	High-Performance Human Resource Practices
ADP	Age Diversity Practice
OJ	Organizational Justice
OC	Organizational Commitment
AC	Affective Commitment
NC	Normative Commitment
CC	Continuance Commitment
HRM	Human Resources Management
HR	Human Resources
HRP	Human Resources Practices
SOEs	State Owned Enterprises
Non-SOEs	Non-State-Owned Enterprises
POEs	Private Owned Enterprises

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Chapter 1: Introduction

1.1 Research problem

After years of development, China's pharmaceutical sector has entered in a period of mature development, and China's pharmaceutical market has become one of the largest pharmaceutical markets in the world (Tommaso et al., 2017). China's pharmaceutical sector has been growing at an average annual rate of 16.72 % since the reform and opening-up in 1978 (Fang, 2016). Increasingly, the Chinese government has focused on the fields of medical health and innovation of medical science and technology and has introduced several policies to encourage the healthy and rapid development of the pharmaceutical sector. The innovation of pharmaceutical technology, the upgrading of industrial development level and implementation of "going out" strategy by local pharmaceutical enterprises have become important goals for China's pharmaceutical sector to develop in the future (Tu, 2021). Local pharmaceutical enterprises are rapidly entering on the stage of international development. With the trend of Research and Development (R&D) globalization, China is becoming increasingly important in pharmaceutical R&D and the creation investment of new drug creation and preparation (Ceng, 2014; Yang & Xi, 2014). Meanwhile, China's local pharmaceutical sector still lacks competitive advantages in international trade for its low production technology, weak R&D capacity, and unreasonable management structure (Ni et al., 2017). In order to improve their innovation strength in R&D and enhance the international competitiveness, pharmaceutical enterprises, especially private pharmaceutical enterprises, are in urgent need of talents, especially those high-skilled talents with core technology.

However, the talent keeping and the lack of talent are still problems that the organizations including pharmaceutical sector are facing. The demission rate of the pharmaceutical companies is high. Ageing problem has become more and more serious. The talents competition in China's pharmaceutical industry is intense.

The pharmaceutical organizations' turnover rate is a problem. Some local pharmaceutical enterprises lack modern management concepts and means with low utilization of resources as they simply equate the management of human resources with personnel dossier management. Also, the lack of a complete recruitment and training mechanism makes it difficult to recruit

and maintain excellent talents (Z. Feng, 2018; Zhang, 2018; Zhou & Yuan, 2018). The loss of human resources is serious, in particular, the lack of superior management leaders, experts, and technical personnel, who are the core elements of enterprise development, hinders the progress of pharmaceutical enterprises (Z. M. Liu et al., 2019). According to Aon Hewitt's 2017 Human Capital Research Report, the turnover in foreign and local pharmaceutical companies is 25.1% and 19.5%, respectively, in China, of which the voluntary demission rate is 16.1 % and 14.8 %, respectively (Aon Hewitt, 2017). It is evident that there is a brain drain in pharmaceutical enterprises is not optimistic. Once these employees choose to leave their enterprises, it will affect the normal order of the enterprises, and even have a negative impact on the enterprises.

The other situation that the pharmaceutical sector is facing is the aging problem. The increase of life expectancy and the decline of fertility rate have made aging an inevitable trend worldwide (The Population Division of United Nations Secretariat, 2019). In line with it, China has become an aging society since 2000 (National Statistics Bureau of China, 2018). With the large aging population and the rapid growth rate of older individuals, China has the largest population of older adults, almost a quarter of all older people in the world (Peng, 2011). The National Bureau of Statistics' data revealed that the Chinese older population aged 65 years and above had reached 158 million by the end of 2017, which was projected to expand to 366 million in 2050 (National Statistics Bureau of China, 2018). The proportion of older people will increase from 11.4% in 2017 to 26.1% in 2050 (The Population Division of United Nations Secretariat, 2019). Currently, China is in the early stage of an aging society. In 2000, the young-old (60–69 years old), middle-old (70–79 years old), and oldest old (over 80 years old) in China accounted for 58.8%, 31.9%, and 9.2% of the total aging population (aged 60 years and over), respectively (National Statistics Bureau of China, 2000). However, China's population is growing older at an unprecedented pace. Between 1982 and 2017, China's older population grew by an average of 3 million per year, with an annual average growth rate of 6.2%. Furthermore, with China's second baby boomers (i.e., people born in the 1960s to mid-1970s) reaching their old age, the pace of aging accelerated (Cha, 1991). It was projected that the proportion of older adults in China, however, will reach 14% in 2025 (The Population Division of United Nations Secretariat, 2019). The number of older people at work increased by 139%, from 3.86 million in 2000 to 9.24 million in 2015. The employment rate, however, declined from 33.0% in 2000 to 26.8% in 2015 (National Statistics Bureau of China, 2000, 2016).

It reported that by 2025, the elderly population will exceed 300 million; By 2040, it will exceed 400 million; It will peak at around 470 million in 2050 (Zeng & Fan, 2019). At present, China's aging population mainly presents the following characteristics.

It's huge. Based on the China's large population, with the increasing life expectancy of the population, the aging of the population continues to increase. The number of elderly populations in China has increased from 178 million in 2010 to 249 million in 2018, accounting for 13.3 % to 17.9 % of the total population, and has become the country with the largest elderly population in the world, accounting for the 25 % of the world's elderly population (Zeng & Fan, 2019).

The proportion of the younger elderly population become larger. The increasing speed of aging population makes the rise of the number of the younger elderly people obviously. According to the sample survey data of the 1% of the national population, from 2010 to 2017, The proportion of the China's younger elderly population (60 to 69 years old) of the total elderly population has increased from 7.48 percent in 2010 to 10.44 percent in 2017 (National Statistics Bureau of China, 2016).

Although the larger size of the younger elderly population, the utilization rate is relatively low. China has officially entered the aging society since 2000, with the increasing of the elderly population each year. The elderly population in China is not only the largest in the world, but also is in the most rapidly aging speed. From the perspective of the internal structure of the elderly population, the younger elderly population (60 to 69 years old) accounts for a large proportion of the population. In 2017, the younger elderly population (60 to 69 years old) accounted for 10.44% of the total population and 60.26% of the elderly population. Although China's younger elderly human resources are very rich, but the utilization rate is relatively low. In 2017, the number of employed people aged 60 to 65 in China was only 5.1 % of the total employed people, and the proportion of the elderly people over 65 accounted for only 4.9 %. That is far lower than Japan's rate of 60% and India's 58% (Zeng & Fan, 2019).China will officially implement a delayed retirement policy in 2022, which means that workforce ageing will gradually become the norm. Therefore, how to motivate older employees and promote successful ageing at work in order to help the organizations harness the human capital of the older workforce and their creativity for mutual benefits will become a new human resources management (HRM) topic that requires urgent attention and solution (Kooij & Kanfer, 2019). In the context of the delayed retirement policy, how can organizations develop, motivate and deploy their older workforce effectively in China? What motivates the older workforce to continue to work and how may their mental health be affected by work? How to develop HR practices to keep workers of all ages satisfied, engaged, productive, and healthy, with a particular focus on how to support workers who must work into later years (Truxillo et al., 2014)?

The talents competition in China’s pharmaceutical industry is intense. Competition in

China's pharmaceutical industry is fierce, with a large number of companies. According to the data from China National Bureau of Statistics, there were 7392 companies in 2019, with 1,957,654 workers work for pharmaceutical industry. From 2012 (with the 6387 companies) to 2019, the number of companies in the pharmaceutical industry increased by more than 1000.

Nowadays, the R&D competition in the field of innovative drugs is becoming more and more fierce. It is not uncommon for advanced pharmaceutical enterprises to go abroad and recruit excellent R&D talents from all over the world. The R&D competition in the pharmaceutical industry can also be seen as a competition for talent to a certain extent. Over the past decade, talent mobility in the pharmaceutical industry has been maintained at about 20%. Frequent personnel changes have brought a lot of interference to the R&D departments of pharmaceutical enterprises (Tecent, 2021).

According to China's National Bureau of Statistics, R&D expenditure increases year after year in pharmaceutical sector. Pharmaceutical companies have built their R&D centers and recruited high-level research scientists (Ge & Xu, 2021). However, the total number of talents is still not sufficient, particularly for the cutting-edge talents. Michael Page's China 2021 Talent Trends Report mentioned that 53% of Chinese healthcare and life science enterprises plan to increase their staff by 14% in 2021, local pharmaceutical enterprises will double their recruitment from 2017 to 2019 (Michael Page, 2020).

With the transformation and upgrading of China's pharmaceutical industry, the deepening of the reform of the review and approval system and the transformation of pharmaceutical innovation ecology, the turnover of core executives of pharmaceutical innovation enterprises will become more frequent, and the competition for high-level talents will become increasingly fierce.

The key to the development of modern enterprises lies in people (Collings & Mellahi, 2009; Ulrich et al., 2022). Especially for pharmaceutical enterprises which urgently need to strengthen their R&D and innovation capabilities to expand new markets to enhance their international competitiveness, R&D technicians, marketing staff and middle and senior management personnel who boast advanced professional skills, rich work experience and a vision are the "cornerstone" of the development of pharmaceutical enterprises. Therefore, the loss of these talents will affect the normal order of enterprises, and even have a negative impact on enterprises. That is why employee turnover is one of the key concerns of the HRM department. On the one hand, the loss of such as R&D technical personnel who are responsible for the work featured by "high risk, high investment and long period", will not only result in enterprises' loss of technical resources and R&D strength, but also affect the sustainability of projects and the

progress of new drug application (Schuhmacher et al., 2016). As a result, the development of R&D business and the overall layout may need to be readjusted, resulting in a huge waste of company resources and the outflow of research and technical data, which may bring great losses to the enterprise. On the other hand, those marketing staff, sales personnel and middle and senior management personnel who choose to leave their enterprises will take away former enterprises' technical information, development strategies and management experience (Sanjeev, 2017). At the same time, they will also hand over the enterprises' resources of established customer relations to competitors, thus affecting the enterprises' performance. Furthermore, it will also affect the existing team members (Butali et al., 2013), and there may be a loss of followers, which will cause greater damage to these enterprises and directly weaken their competitiveness. Therefore, enterprises have attached special importance to retaining pharmaceutical personnel and other high-tech personnel, especially the core talents.

It is of far-reaching significance to timely grasp the psychological trend of employees and take targeted measures to reduce the demission rate of employees, especially the core technical personnel, to maintain the sustainable development of the enterprise. Foreign scholars have matured the research on the issues of employee turnover, especially in the field of turnover intention. However, in China, there are few studies on the localized empirical research of relevant theories, especially the systematic research on turnover intention in pharmaceutical enterprises.

1.2 Research purpose

This study intends to explain the factors that influence the turnover intention of pharmaceutical employees in China through the empirical research of employees in Chinese pharmaceutical enterprises and the interactive relationships between these variables.

To develop a methodology forecasting employee turnover intention at organizational levels which fits for the different ownership companies in China to improve the human resource practices to keep talents. By introducing the social exchange theory, this research analyzes employees' psychological process of turnover intention and studies the antecedents and related mechanisms of employee turnover intention. On this basis, two moderating variables, employees' age and their respective pharmaceutical enterprises with different natures, can be integrated to study their moderating role in the process of factors lead to turnover intention.

1.3 Research contribution

This research theoretically enriches the understanding of the generation mechanism of employee turnover intention in Chinese pharmaceutical enterprises. And it is expected to improve the predictability of employee turnover intention in Chinese pharmaceutical enterprises practically. In this way, it provides reference value for managers or HR departments to formulate feasible strategies in time to promote staff stability and ensure the healthy and sustainable development of pharmaceutical enterprises.

Chapter 2: Literature Review

2.1 The pharmaceutical sector

The pharmaceutical industry is constantly been defined as the industry that involves the process of discovering, developing, and manufacturing drugs by both private and public organizations (Jan Ascher et al., 2015). Why is the pharmaceutical industry? It is known how the evolution of the pharmaceutical industry has had an impact on people's lives, both because it has contributed, and still contributes to generating well-being in terms of health and quality of life for individuals, and because it is one of the most relevant sectors for the economy at a global level (EFPIA, 2019).

The Chinese pharmaceutical sector is a fusion of traditional and modern industries and is a crucial component of the country's economy. The pharmaceutical business contributes significantly to the preservation and enhancement of people's health, as well as to family planning, the control of epidemics, disaster relief, military combat readiness, and the advancement of economic and social growth. Its primary subcategories include antibiotics, biochemical drugs, chemical raw materials and preparations, Chinese patent medicines, radiopharmaceuticals, decoction pieces, sanitary products, medical devices, pharmaceutical machinery, pharmaceutical packaging materials, and pharmaceutical business.

Currently, China's pharmaceutical sector primarily comprises five sub-industries, both commercial and industrial:

1) Biomedicine

The biomedicine industry is one of the hotspots in global industrial competition and one of the critical directions for developing China's emerging industries, which receive substantial state support. In 2019, its market size was 317.2 billion-yuan, accounting for 15.03% of China's overall pharmaceutical market (Huang et al., 2021). The current Chinese biomedicine industry has four characteristics: market scale expansion and accelerated industrial development, primary policy strong influence, and cluster development (Li et al., 2020). Furthermore, the National High-Tech District Biomedical Industry Policy focuses on science and technology innovation, talent cultivation, and financial support. However, little emphasis has been placed on developing small and medium-sized enterprises, resource guidance, and trade (Qiao et al.,

2020). Biomedicine currently accounts for but remains far below the international average.

2) Chemical medicine

Chemical medicine primarily consists of novel medications, enhanced new drugs, and generic drugs. Chemical medication accounted for more than 51.05% of the market in 2019, reaching 1.07 trillion yuan (Huang et al., 2021). It is the market leader in China's pharmaceutical business and the backbone of the domestic pharmaceutical industry. The yearly growth rate of chemical medicine is predicted to be realized in the future. The COVID-19 pandemic has heightened market interest in the pharmaceutical industry, with new medicine research and development being particularly active in the capital sector.

3) Modern Chinese medicine and ethnic medicine manufacturing

Chinese patent medicine still has a large market in our country. Statistics show that the market size of traditional Chinese medicine reached 715.3 billion yuan in 2019, accounting for 33%. Nevertheless, the industry's overall R&D investment ratio is low, and innovative drugs are few. There are 72 listed enterprises in the whole TCM industry, and the total R&D expenditure was only 8.163 billion yuan in 2018, accounting for 2.7% of the total revenue (Huang et al., 2021). Currently, the difficulty in selling Chinese patent medicines in the international market mainly concentrates on access to registration and certification. Because of lacking the modern pharmacological theory basis for an explanation, it cannot convince patients in modern society. Due to its complexity, it is difficult for traditional Chinese medicine to go abroad. Although many countries have recognized traditional Chinese medicine and even recognized acupuncture and other forms of traditional Chinese medicine, the registration of Chinese patent medicines is difficult to achieve. The implementation of the overseas development project of traditional Chinese medicine proposed in the "Outline of Strategic Planning for the Development of Traditional Chinese Medicine (2016-2030) Plan" explores the construction of several overseas centers of traditional Chinese medicine and supports the participation of traditional Chinese medicine institutions in the "Belt and Road" initiative by the overall deployment of the national "Belt and Road" initiative. It will expand the foreign investment and trade of Chinese medicine and open the opportunity for Chinese medicine to drive the trade of goods and services.

4) Medical key instruments and raw materials manufacturing

Under our country's vigorously developing national economy, the demand for new medical technology and instruments is increasing. However, the market competition for medical equipment has increased from the original product competition to the competition of financing means. The key to the market competition is the relatively low price and abundant capital (Meng,

2022). In the medical device industry, the high-end sub-industry is monopolized by a few international giants. Low-end sub-sectors (such as medical disinfection equipment and conventional medical supplies) are dominated by local domestic enterprises. Because small and medium-sized medical equipment enterprises financing is relatively tricky, the current small and medium-sized medical equipment sales enterprises face massive capital pressure.

5) Pharmaceutical distribution industry

There are three links in China's drug circulation: wholesale medicine links, retail medicine enterprises and hospital clinic pharmacies. Hospitals occupy a dominant position in the distribution of medicines and hold the absolute right to speak. This situation cannot guarantee the existence of pharmaceutical companies and makes a sufficient profit, which could not be more conducive to the long-term stable development of the pharmaceutical industry (Tao, 2022). With the continuous advancement of medical reform, the level of medical treatment will gradually improve, the pharmaceutical market will further expand, and the pharmaceutical distribution industry will become an industry with great potential. However, there are still some problems with the development of the distribution industry. First, the market concentration is too low, there are too many circulation links, the overall competitiveness of the industry is not strong, and the profitability is weak; Second, the labor cost of the transportation process is high; Third, the enterprise's market development capabilities and service capabilities are weak, and the economic benefits of the enterprise have declined because of lacking an effective management and development mechanism.

The pharmaceutical industry occupies a very important position in national economy and future economic development planning in China. China has a population of approximately 1.4 billion people, and it is a population that is rapidly aging. This will increase demand for pharmaceuticals, and place increasing burden on the health care budget and system as a whole. As China opened its economy in the late 1980s, and joined the World Trade Organization (WTO) in late 2001, it transitioned to a largely market-based economy. This transition witnessed a period of rapid economic growth, including for China’s local pharmaceutical industry (World Health Organization, 2017). China’s pharmaceutical industry has been growing at an average annual rate of 16.72% since the reform and opening-up in 1978 (Fang, 2016). Especially in recent years, the Chinese government has issued several policies to encourage the healthy and stable development of the pharmaceutical industry. China is in the process of a dynamic transformation of its health care sector, with substantial focus on the pharmaceutical industry. New policies, rules and regulations are being adopted at a rapid pace. In 2016, the Healthy China 2030 Plan issued by the CPC Central Committee and the State Council states that it is

necessary to promote innovative development of the pharmaceutical industry by strengthening innovation in pharmaceutical technology and upgrading the level of industrial development, especially encouraging local enterprises to cooperate with international industries local enterprises and enhance international competitiveness (The State Council of China, 2016). In the 14th Five-Year Plan, the CPC Central Committee continues to take "comprehensively promoting the construction of a healthy China" as a major task in the future (Han et al., 2021). China has become the second largest pharmaceutical market in the world in 2021 (Jakovljevic et al., 2021).

Local pharmaceutical companies are rapidly entering at an international development stage. Under the influence of R&D globalization, China plays an increasingly important role in pharmaceutical R&D and the investment of new drug creation and development (Z. Feng, 2018; Yang & Xi, 2014). Revenues of the Pharmaceutical Industry in China in the first half of 2020 is 1.23904 trillion-yuan, year-on-year growth is 0.2% (Guo et al., 2020).

However, at the same time, China's pharmaceutical industry remains struggling with some problems, including a large number of small-scale enterprises, serious homogeneous competition among enterprises, low production technology and unreasonable management structure. Moreover, Chinese pharmaceutical companies also have low market concentration and lack competitive advantages in international trade for being short of domestic patent medicines (Ni et al., 2017). The rapid growth of China's pharmaceutical manufacturing sector over the past 30 years was not accompanied by an equally robust development of the medicines regulatory framework (World Health Organization, 2017).

The pharmaceutical industry is an interdisciplinary high-tech industry. The R&D, management and production of pharmaceutical industry are characterized by high technology, which requires higher in talents' knowledge level, professional skills and technical experience. Pharmaceutical enterprises, especially private pharmaceutical enterprises, are in urgent need of talents to enhance their R&D and innovation strength as well as their international competitiveness. On the one hand, a series of incentive plans have been issued at the national level to attract overseas high-level talents to come back to China for innovation and entrepreneurship, including "the Recruitment Program of Global Experts" and "National Special Support Program for High-Level Personnel Recruitment" initiated by the central government, "Chang Jiang Scholars Program" launched by the Ministry of Education, "Hundred Talent Program" started by the Chinese Academy of Sciences and other programs sponsored by cities. Nearly one-third of the talents from Recruitment Program of Global Experts is proved to be outstanding scientists and technicians in the field of biological medicine.

Excellent overseas biomedical talents are returning to China at a faster pace. At the same time, the number of returned overseas students is also increasing. The "Young Overseas High-Level Talents Introduction Plan", the "Chunhui Plan" of the Ministry of Education and the "Homeland-Serving Action Plan for Overseas Chinese" of the Ministry of Human Resources and Social Security have also increased the proportion of returned overseas students, which provides a talent reserve for the development of high-tech industry including pharmaceutical industry. On the other hand, of all impediments that limit growth, talent retention is the greatest hurdle faced by pharmaceutical companies in emerging markets including China. In fact, employee turnover rates are in the double digits due to loss of talent to fierce competitors in the emerging markets (Booz & Company, 2013). In China, the ability of R&D is weak, and talents are still scarce. And the difficulty of recruiting experienced R&D talents to improve the R&D strength is still one of the contributory factors restricting the international development of local pharmaceutical enterprises (Zhou & Yuan, 2018). Some local pharmaceutical enterprises lack modern management concepts with outdated management methods and low effective use of resources. Due to the lack of a complete recruitment and training mechanism in pharmaceutical enterprises, excellent talents cannot be retained (Z. Feng, 2018). As such, the brain drain in pharmaceutical enterprises is not optimistic. To ensure talent retention by companies in the long term, employee needs must be met and nurtured in a manner that is sustainable. Therefore, turnover and its antecedents need to be investigated in this specific context.

2.2 Social exchange theory

2.2.1 Basic concept

The Social Exchange Theory generally refers to the basic psychological process during the social exchange and the relationship between the process and exchange behaviors. The Social Exchange Theory is one of the most prominent conceptual perspectives in management and related fields such as sociology and social psychology. It can be traced back to the 1920s (Malinowski, 1922; Mauss, 2002), combining anthropology (Firth, 1967; Sahlins, 2013), social psychology (Gouldner, 1960; Homans, 1958; Kelley, 1959) and sociology (Blau, 1986). The Social Exchange Theory originated from borrowing and revising the utilitarian hypothesis of classical economics (Turner & Turner, 1978). After World War II, it emerged in the sociological studies in western countries, and gradually became one of the most influential theoretical frameworks in the study of social relations including employment relationships (Shore & Coyle

Shapiro, 2003). In classical economics, people are deemed rational, and they always pursue the maximization of material benefits when they trade or exchange with others in a market full of free competition. One of the theoretical roots of social exchange theory in its sociological sense is the discourse of German sociologist Simmel. He believes that exchange is the materialization of interaction between people, which means that the relations between people are contained in to and fro items. The elements of social exchange include individuals' demand for valuable items, the ownership of other people of this valuable item, individuals' ownership of items needed by others, and the willingness of both parties to provide and accept each other's items. Social conflict and power emerge as a result of this process, as do individuals' psychological needs, which serve as the driving force behind social exchange (Simmel, 1950). The Social Exchange Theory is deeply influenced by Skinner in the aspect of behavior psychology. Skinner developed the Reinforcement Theory based on animal experiments. He believes that reinforcement (i.e., providing a certain reward) is the fundamental law of behavior formation and change, and a means to increase the probability of specific reactions. For example, an individual will conduct behaviors that can maximize the reward and minimize the punishment in a particular scene, and in a similar scene where he has been paid in the past, the individual will repeat those behaviors that get paid.

The modern social exchange theory puts forward the following points of view on this basis (Blau, 1986; Homans, 1958) : People exchange material and non-material resources, hoping to obtain more benefits from social exchange, and establish and maintain most social relations through social exchange behavior. People do not always seek to maximize their benefits, but they try to get certain benefits when they have social interaction with others; people are not entirely rational, but they do calculate the costs and benefits in the social transaction; people do not grasp all the information about alternative options, but they often pay attention to certain alternative options, which form the basis for measuring costs and benefits; people often act under constraints, but they still compete with each other when seeking profits during the transaction; people often seek profits in transactions, but when they are involved in the exchange, they are limited by the resources they have; in all societies, people are indeed engaged in economic transactions in well-defined markets, but this is only a special case of exchange in a more general sense that occurs between individuals in all social contexts. People do pursue material purposes in transactions, but they also mobilize and exchange non-material resources, such as emotions, services, and symbols.

Representatives of the modern Social Exchange Theory include Homans (1958), Blau (1986) and Emerson (1976). In the next section we will introduce the Social Exchange Theories of Homans, Blau and Emerson.

2.2.2 Social exchange theory of Homans

The Social Exchange Theory of Homans explains human behavior from a micro perspective based on the theories of sociology, economics and psychology (Homans, 1958), which mainly studies the exchange process of individuals. He believes that individuals are trying their best to balance the process of exchange with others, and they are also pursuing benefits. In other words, they obtain as much return value as possible at a certain cost. Homans' social theory is mainly based on the Operant Conditioning Theory. According to the Operant Conditioning Theory, human consciousness cannot be directly observed, and the satisfaction of needs must be realized through physiological mediation, and there is a certain functional relationship between stimulus responses. Human behavior is, first of all, a response to external stimuli. People will seek rewards and avoid or reduce punishments. Homans draws on this theory and emphasizes the important role of people's motivation. From the micro perspective of social psychological research, he explained that the interaction between people is a kind of exchange process. Human behavior is the exchange of rewards or punishments between individuals in interaction. He thinks that social behavior is "the exchange of goods, including not only material things but also non-material things, such as the symbols of approval or prestige" (Homans, 1958, p. 606). Homans' social exchange theory is based on Individualism Methodology and Psychological Reductionism, and it is used to explain and deduce group behavior from the perspective of individual psychology. Homans believes that individual behavior constitutes social behavior, and the result of individual behavior constitutes social reality. Social behavior is nothing more than a state of equilibrium reached by rational individuals who play games so many times in the market. Homans proposed ten basic laws followed by individuals' social behavior: action, interaction, emotion, stimulation, reward, cost, investment, profit, deprivation, and satisfaction. They interact with each other to form a general proposition or standard system for human behavior. Homans proposed the essence of individual exchange from the perspectives of economy, society, purpose, subject, and provided a theoretical basis for explaining human social exchange behavior. The remuneration or return mentioned by Homans is no longer limited to the scope of classical economics, instead, it includes the elements of sociality, emotion, and value perception such as obligations, responsibilities, status, authority, and friendship. At the same time, it highlights the important role of human emotions and needs in the process of social

exchange and emphasizes the selectivity of rational people. Homans' theory breaks through the category of traditional economics and organically combines the economy, sociality, and value rationality of exchange in explaining human exchange behavior.

But at the same time, Homans' theory also has certain limitations. Homans mainly studied the law of social exchange between individuals at the micro-level, emphasizing the purpose and motivation of individuals in social exchange, but he did not dig into the role of social factors in social exchange at the macro level. Influenced by the Operant Conditioning Theory, Homans equated human social behavior to the simple instinctive behavior of animals for survival while ignoring human sociality. However, the essence of human beings is not a social phenomenon with a single-theory.

2.2.3 Social exchange theory of Blau

Blau (1986) defined exchange behavior as a voluntary behavior of an individual who is inspired by the reward from the other party of exchange. It is an action that occurs when others make a response of repayment and stops when others do not. Blau divides exchange into an economic exchange and social exchange. The characteristics of economic exchange are detailed and clear. Economic exchanges are based on formal contracts to ensure that both parties perform specific responsibilities, while social exchanges contain unspecified obligations, at least initially — "involves the principle that one person does another a favor, and while there is a general expectation of some future return, its exact nature is definitely not stipulated in advance" (Blau, 1986, p. 93). Therefore, in the early stage of the exchange, one party needs to believe that the other party will fulfill its responsibilities in the future, and the performance of duty, as usual, will enhance the trust of both parties and make each other have an obligation to repay, but they do not know whether and when the other party will repay. Therefore, this kind of exchange relationship has uncertainty and risk (Blau, 1956). The biggest difference from Homans is that Blau believes that complex relationships in society cannot be simply reduced to individual psychological factors. Blau leans toward the Holistic Structure Theory more and the "Holism Methodology". He thinks that complex social relations have an overall macro-structure. This macro-structure is composed of groups interacting with each other. Such a complex structure relies on mandatory measures and formal procedures to balance constraints.

Based on the simple exchange structure of micro individuals, Blau thinks that the organizational structure at the macro level and complex exchange process are the components of social relations, and that social structure and social norms determine social exchange. At the same time, Blau also believes that social exchange is only a form of social behavior. For a social

behavior to become a social exchange, the following two requirements must be met: The first is that the purpose of the behavior can only be achieved through interaction with others; the second is that the implementation of the behavior is conducive to the purpose of the behavior itself. Social exchange is an uncertain responsibility relationship that will occur in the future. When one party has offered help or other resources to the other party, he will expect to get a return from the other party in the future. The premise is that one party believes that the other will repay him equally in the long run. Blau put forward six principles in social exchange: the principle of reason, the principle of reciprocity, the principle of justice, the principle of marginal utility, and the principle of imbalance. Once a social exchange occurs, the beneficiary must undertake and fulfill the obligation of return. If the rules of fairness and reciprocity are broken, the exchange process will automatically stop and even lead to conflict. The social regulation of the ratio between reward and cost in the exchange relationship directly affects the degree of people's expectation of reward. In social units, the more stable and balanced some exchange relations are, the more likely other exchange relations will become the opposite.

Blau also divides the process of social exchange into attraction, competition, differentiation, and integration. Independent individuals who expect internal and external rewards are attracted to the exchange. All parties in the exchange relationship try their best to show their ability to repay and attract others to exchange with themselves through competition. Due to the imbalances in the types, quantity, quality, and scarcity of the resources that people have, those who have the advantages in providing resources can successfully realize the exchange process and become winners, while those who lack effective resources fail to get corresponding returns of their expectations, thus leading to polarization. Blau summarized four general remunerations, namely money, social approval, respect, and obedience, and used them as the basis for the classification of structural differentiation. When resource-deficient people repay the providers of resources by obeying, the integration of power is formed. The imbalance in the process of exchange creates power, and at the same time, it also forms opposition and conflict. Blau emphasized that the core principle of social exchange is reciprocity. Both parties of exchange link to each other, each providing valuable resources, and trying their best to strike a balance between the cost and reward to facilitate the exchange process.

Blau highlights the fairness and imbalance in social exchange, making his theory closer to social reality. Blau's view on the social structure from a macro perspective avoids the limitations of Homans and others psychological reductionism. At the same time, Blau introduced the macro exchange network into social exchange relations, combining the micro-level individual exchange behavior with the macro-level social relations. And he also

introduced the concepts of shared values (a set of unified social standards accepted by all parties involved in the exchange) (Blau, 1968) and institutionalization (a set of stable and universal norms related to specific exchange relationships proposed based on shared values) (Blau, 1986). His theory provides a theoretical basis for the analysis of institutionalized structure and relationship, and non-institutionalized interpersonal interaction. It also provides an important theoretical basis for this thesis to analyze the exchange relationship between employees and organizations.

2.2.4 Social exchange theory on employee-organization relationship

Social exchange theory is one of the most influential conceptual frameworks for understanding organizational behavior and a dominant theoretical framework for understanding the employee-organization relationship. Emerson (1972) subsequently developed a psychological basis for exchange based on the reinforcement principles derived from the kind of behaviorism popular in the early sixties to explain the persistence of exchange relations. Understanding relationships, underlying mechanisms, and associated results is a common but not unique focus of social exchange theory.

It is indicated that the employee-organization relationship is the most important among all the relationships organizations have with their employees (Coyle-Shapiro & Shore, 2007). The word "employee-organization relationship strategy" was used to express the employer's viewpoint on the employment relationship. The related scholars were the forerunners in conceptualizing the employee-organization relationship (Tsui et al., 1995). The employee-organization relationship defines the formal or informal economic, social and mental link between employee and employer (Hom et al., 2009). It was also said that the parties of the organization were the ones who established and maintained this relationship, including the organizational entity, employers, managers, subsystems, and HR function employees (Jiang et al., 2012). In an employee-organization relationship, the behaviors of one-party result in consequences for the other in different states of the relationship (Hon & Grunig, 1999). According to Shih et al. (2011), an employee-organization relationship strategy should incorporate the employer's expectations for the precise contributions from workers and the incentives it employs to influence those contributions. In the study of the relationship between employees and organizations. It is assumed that employees regard all prospective agents and contract makers-administrative contract makers, such as HR resource policies, as unique, "humanlike" agreement makers with whom the employee has a relationship (Coyle-Shapiro & Shore, 2007).

Previously, research on employee-organization interaction relied on systems theory (Grunig & Huang, 2000) to understand the framework of the employee-organization relationship and its link with the employee and organizational outcomes. Social exchange theory originated in psychology and sociology and was applied to relational communication and obliged interactions. Relationship, reciprocity, and trade are the three essential components of social interaction (Coyle-Shapiro & Shore, 2007).

According to the literature, the influence of the connection between employees and businesses on employee behavior is examined under the social exchange theory, which also discusses how it may alter how employees engage in social exchange reciprocation (Wikhamn & Hall, 2012). There has been researched employing social exchange theory to explain employee attitudes and behaviors (Farh et al., 2007). Based on its theoretical underpinnings, social exchange theory offers a solid explanatory framework for recognizing the factors that influence an employee's perception of the relationship between the organization, and the employee, leading to various outcomes based on the self-perception developed. According to a social exchange perspective, trust is the belief that an exchange partner would act decently and not maliciously based on assumptions about the partner's character and intentions. After briefly tracing the history of social exchange theory and its relationship to trust, researchers are now focusing on the employee-organization frameworks that incorporate social exchange theory (Jacqueline & Diehl, 2018). A conceptual framework for the hospitality sector is created based on the employee-organization relationship using the social exchange theory as the theoretical framework. It aims to consider perceived organizational support as the precursor to psychological empowerment, with work engagement and organizational citizenship conduct is taken into account as its result (Meira & Hancer, 2021).

2.2.5 Summary of social exchange theory

According to the Social Exchange Theory, the relationship between employee and organization is a social exchange relationship (Tsui et al., 1995; Zhu, 2003). The relationship between the organization’s giving to employees and the employees’ return to the organization includes two aspects: the inducement provided by the organization to the employees and the contribution made by the employees to the organization, also known as the inducement-contribution model (Zhang, 2004a). Barnard, who first proposed the theory of inducement and contribution, believed that the foundation of a successful organization is people’s willingness to contribute their efforts to the cooperative system. The contribution of individuals who constitute the strength of an organization is brought by Inducement. Based on Barnard’s theory, March and

Simon (1958) explained and defined the exchange relationship between employee and organization with two concepts of motivation and contribution. The inducements provided by the organization interact with the contributions of employees. The organization must manage the inducement-contribution balance to ensure that it can provide continuous motivation to employees who make considerable contributions. Tsui et al. (1995) explained that inducement refers to all kinds of material and developmental inputs provided by the organization to employees, including salary, welfare, and training, while contribution refers to the organization's requirements for employees in their job roles, such as earnestly fulfilling their job responsibilities, and in their roles outside their jobs, such as actively helping colleagues. Based on the Social Exchange Theory, they analyzed the economic and social exchange relationship between employees and organizations from the perspectives of inducement and contribution.

Based on the Social Exchange Theory, this thesis explains the interaction among high-performance human resource practices (HPHRP), Age diversity practice (ADP), organizational justice (OJ), organizational commitment (OC) and turnover intention. According to the Social Exchange Theory, employees and enterprises are in a mutually dependent exchange relationship, and the behavior of one party is affected by the behavior of the other. Human resource practices (HRP) at the organizational level reflect the organization's investment in employees, and employees get rewards from HRP, including economic resources such as salary and benefits, and social resources such as training, capacity building, respect, and development opportunities. At the same time, it also includes socio-emotional exchanges such as mutual trust and understanding, and long-term contact. Both parties complete the social exchange through the exchange of valuable resources. At the same time, based on reciprocity and the consideration of reward, the OJ related to personal interests, including distribution, procedure and interaction, of which employees are aware in the process of exchange with organizations, will affect employees' expectations of organizational investment and the degree of return. These expectations will further affect employees' work behavior, work attitudes and loyalty to the organization, as well as the stability of the exchange relationship between employees and the organization (Cropanzano et al., 2002; Rupp & Cropanzano, 2002). Based on the Social Exchange Theory, the exchange relationship between an organization and employees is mutually beneficial. Both parties need to have a certain amount of investment and a certain return: the employees repay the salary and other benefits given by the enterprise with their work performance and loyalty to the enterprise. In this exchange process, when the mutual responsibility is equal, or the payment and return are equal, a long-term, stable and positive

relationship can be developed and maintained. Based on the explanation of the relationship between enterprises and employees stated in the Social Exchange Theory, it helps enterprises better predict employees' turnover intentions through HPHRP, ADP, OJ, and OC.

2.3 Turnover consequences

In terms of the overall situation of various industries in China, the turnover of Chinese employees has kept growing for two consecutive years according to the White Paper for Human Resources released by the HR Research Center of 51job in 2017. This report says that the overall demission rate reached 21.6% in 2017 (Research Center of Five-one Job, 2017). In contrast, the demission rate of foreign and local pharmaceutical companies that mentioned above is 25.1% and 19.5%, respectively, in China, which is higher than or near the overall demission rate. This situation should be addressed. Employee turnover rises slightly, and the willingness of employees to change jobs is still relatively strong. The data show that 81.6% of the employees are willing to change jobs within six months. The brain drain has become a major problem which plagues various industries.

The development of modern enterprises relies much on talents. Because of the turnover, it is generally believed that it will have a great impact on the development of enterprises with incurring the cost of turnover, affecting the stability of employees and teams, and reducing the overall competitiveness (Zaharieva & Sylqa, 2020). Employee turnover increases the operating costs of enterprises, including recruitment and management costs, loss of critical talent and competences, as well as the direct economic losses caused by backbone loss and core technology outflow (Yuan & Zhang, 2008). At the same time, frequent employee turnover also affects the stability and loyalty of other employees, affecting the cohesion of the enterprise. Especially for the pharmaceutical enterprises which urgently need to strengthen their R&D innovation market development capabilities to enhance their international competitiveness, R&D technicians, marketing staff and middle and senior management personnel with advanced professional skills, rich work experience and a vision are the "cornerstone" of the development of pharmaceutical enterprises. From a companies' perspective, the impact of a competent employee leaving is an all-encompassing issue, both tangible and intangible. Facing the loss and departure of excellent employees is the premise of enterprise personnel crisis management. A good team disintegrates or becomes dysfunctional with the departure of some key employees (Francis & Sandberg, 2000). As a result, tasks in execution are interrupted, and R&D project or business efficiency is greatly reduced. To a certain extent, the vacancies left by departing

employees force companies to re-expend a lot of costs to find successors. Turnover also sometimes leads to the low level of customer satisfaction, customer loyalty and the lost revenues (Goleman, 2017). These all gives competitors a favorable opportunity to catch up. At the same time, the exodus of some core employees will also hand over the enterprises' resources of established customer relations to competitors, thus affecting the enterprises' performance (Ganco et al., 2015). Furthermore, it will also affect the existing team members, and there may be a loss of followers, which will cause greater damage to these enterprises and directly weaken their competitiveness. More seriously, the resignation of senior executives or other core employees usually results in a major change in the competitiveness of the enterprise. If there is a collective job-hopping, it is likely to cause a fatal blow to the enterprise (Ni et al., 2015). Therefore, enterprises have attached special importance to retaining pharmaceutical personnel and other high-tech personnel, especially the core talents (Ranft & Lord, 2000; Zhou & Wang, 2019). For example, in 2019, China's newly established Sci-Tech innovation board, which is specifically targeted at science and technology innovation enterprises including those in the biomedical field, has clarified the requirements of enterprises' core technologies and core technical personnel for the first time, and listed the stability of core technical personnel as one of the conditions for stock issuance (Wang et al., 2019). This reflects that enterprise employees, especially core technical personnel, gain special attention from the state to the enterprise.

2.4 Turnover intention

The management of employee turnover has become one of the important issues for the HRM department in an enterprise. It is of far-reaching significance to maintain the sustainable development of the enterprise by immediately grasping employees' psychological trends and taking corresponding measures to reduce the turnover rate of staffs, especially of the key technical staff. Therefore, many scholars and managers at home and abroad have focused on employees' turnover intention, which can predict the turnover behaviors of employees (Yuan et al., 2017). Mobley pointed out that employee turnover refers to the termination of an individual gaining material interests from an organization. In general, it can be divided into two categories: voluntary turnover and involuntary turnover (Bludedorn, 1978; Price, 1978). The former means that the employee decides to leave the organization, commonly called resignation, while the latter means that the organization takes the turnover decision, including layoff, discharge and dismissal. In general, scholars pay more attention to voluntary turnover, and the research on turnover intention also focuses more on voluntary turnover (Anvari et al., 2014;

Sandhya & Sulphey, 2020). Turnover intention herein also focuses on the range of employees' voluntary turnover intention. The research on turnover intention in foreign countries is relatively mature. Many of them focus on the relationship between individual employee's psychological variables and turnover intention from a micro perspective and attempt to describe the psychological change process of the employee from the turnover intention to turnover behavior, which plays key roles in explaining the reason of employee turnover (Hartmann & Rutherford, 2015; Kraak et al., 2017). As the research progresses, foreign scholars' research on employees' turnover intention tends to analyze each influential factor in multiple levels. In addition to the individual employee's attitude and personal psychological variable, which have been studied, scholars study the different demographic characteristics (Lu & Gursoy, 2016), and also pay attention to the regulatory role of such influential factors as organizational factors, including job characteristics, job matching, organizational characteristics and external job opportunities, and social factors including different labor market policies in different countries and regions, different levels of economic development and different cultural backgrounds (Cooke et al., 2019). In China, scholars have also conducted some research on the influential factors in the turnover intention of employees, but the research conclusions are relatively scattered (Li et al., 2019; Zhang et al., 2019). There are some reports on the research (Syed & Wang, 2018; Zhao, 2016) on the loss of medical representatives, sales personnel and R&D personnel in pharmaceutical enterprises, but the dimension of these researches is quite single, only taking one or two variables to discuss the reason of talent loss. The explanatory strength and comprehensive analysis are not sufficient, and the theoretical value remains to be discussed. Moreover, it is rare to find reports on in-depth research on employees' turnover intention in the localized pharmaceutical industry, especially among different positions in pharmaceutical enterprises. As pharmaceutical enterprises differentiate from other kinds of enterprises, and their management and requirements on employees are also special, it is worthy of separate and in-depth research on the influential factors of employees' turnover intention in Chinese pharmaceutical enterprises against the backdrop of China's specific system, culture and society.

Currently, the most representative research model of the employees' turnover intention at home and abroad is Price-Mueller model (James, 2001; Price & Mueller, 1986). There are four types of variables related to turnover in the model: environment variables, individual variables, structure variables and process variables. There are two environment variables: kinship responsibility and opportunity; three individual variables: general training, job participation, and positive/negative feelings; seven external variables which are structure variables: initiative, outcome fairness, work pressure, salary, promotion opportunity, routine work, and social

support; and four process variables: job satisfaction, OC, job-seeking behavior, and turnover intention. As this model has absorbed a large amount of empirical research from multiple fields of disciplines such as economics, sociology, and psychology and distinguished multiple related variables, it displays a fine predictive capacity in explaining the psychological change process of employees' turnover. However, due to its complexity, it is not conducive to conduct in-depth empirical research. The theoretical explanation about the regulatory role among some variables has not yet been formed. Also, the control factor of the demographic statistics variable has not been taken into consideration.

2.5 Factors influencing the turnover intention

According to the social exchange theory (Cropanzano & Mitchell, 2005), employees and enterprises are in a mutually dependent exchange relationship, and the behavior of one party is affected by the behavior of the other party. HRP at the organizational level reflects the organization's investment in employees, and employees get rewards from HRP, including material resources such as salary and benefits, and social resources such as training, ability improvement, respect, and development opportunities. At the same time, it also includes socio-emotional exchanges such as mutual trust and understanding, and long-term contact. Also, based on the consideration of reciprocity and return, the perceived fairness in the organization, including distribution, procedures, and interaction, which employees feel related to their personal interests during the exchange with the organization, will affect their expectations for organizational investment and the degree of return. This further affects employees' work behavior, work attitude and loyalty to the organization, and affects the stability of the exchange relationship between employees and the organization (Cropanzano et al., 2002; Rupp & Cropanzano, 2002). The premise based on the theory of social exchange believes that the organization and employees are a two-way mutually beneficial exchange relationship. The organization-employee exchange as one of the predominant exchange relationships, has received a lot of attention (Mendryk, 2020). The link between the employees and their organization is based on the foundations of trust and a general exchange viewpoint (Schermuly & Meyer, 2016). The employee perceptions of the quality of their exchange with their organization overall relate to their performance and attitudes (Kehoe & Wright, 2013). Both parties need to have a certain amount of investment and a certain return. This research aims to explain the interaction between companies and employees based on the social exchange theory,

so as to help companies to better predict employee turnover intentions through HPHRP, ADP, organizational fairness, and OC.

2.5.1 HPHRP and turnover intention

Theoretically, researchers have argued that human resources can be the source of sustainable competitive advantage for organizations (Barney & Wright, 1998; Barney, 1991). Empirically, a large number of studies have revealed positive relationships between high involvement, high commitment, high-performance work systems and firm performance (Batt, 1999; Collins & Smith, 2006; Ichniowski et al., 1997).

Scholars define human resources as the sum of management decisions and behaviors which would influence the relationship between enterprises and employees (Beer, 1985). HPHRP was defined as a set of practices that have a vital effect on the effectiveness of the organization's activities (Daspit et al., 2018). HPHRP aims to improve employees' outcomes rather than adjust organizational decline such as reducing scale and cutting wages (Paauwe, 2009). With the employee as the core, it attaches importance to information sharing and employee participation, adopting various talent management methods to maintain the long-term relationship between enterprises and employees (Shi & Li, 2011). HRM is believed to have an effect on employees' work behaviors and attitudes, and HPHRP can effectively integrate enterprises resource, which exerts a positive effect on enterprise performance (Wright et al., 2001). Guest (1997) presented a model to explore the linkage between HRM and performance. Later, he found worker attitudes and behavior mediate the HRM-performance relationship. Certain HR practices are associated with higher work satisfaction. These HR practices which include job design, direct participation and information provision are proven to be related to higher performance (Guest, 2002). HPHRP used in the current study has a positive of employees' job achievement in an effective manner and on the other hand, has a positive effect on the organizational performance (Wright et al., 2005).Compared with the traditional HRP model, HPHRP with employee's participation and sharing as new features, has gradually become a new direction of HRP development (Ma et al., 2017; Van Esch et al., 2018). HPHRP has been proven to have a positive effect on employee's absenteeism reduction and on employee's retention, and meanwhile, AC plays a completely mediating role in the relationship between employees' perception of HRP and their retention willingness (Kehoe & Wright, 2013). However, there are some disputes about the relationship between HPHRP and employee's turnover in current existing research, which lack the distinction of heterogeneity of HPHRP in different industries, job characteristics, and types of business. Some scholars found that the effect of HPHRP on employees' turnover behaviors

is related to position levels, contract types and types of enterprises ownership, and that HPHRP is more effective on turnover reduction of employees whose position level is lower or middle in a state-owned, collective or foreign-funded enterprise (Mao & Zeng, 2017), but the specific influential mechanism has to be further studied. How HPHRP exerts influence on turnover intention? What is the specific mediating and adjusting mechanism between them? Is there any difference between the specific content of research on the HPHRP in China and in foreign countries? What role do the dimension and scale of the foreign HPHRP play in the Chinese scenario? These questions need to be further verified and discussed in the research.

HRP has a strong relationship with the diversity of industrial characteristics (Datta et al., 2005). Zhang and colleagues believe that HPHRP has certain limits on its universality and is not a universal human resources system in a complete sense. The content of such a system may change with the characteristics of different industries or enterprises and may be restricted by a specific industry or a corporate group sharing a certain common characteristic.

The application of HPHRP in enterprises negatively correlates with employees' turnover behaviors (Afsar et al., 2018). Based on this idea, and according to the social exchange theory, we expect that if the HPHRP could fit more of the demands of the employee, the less they will want to leave their organization. Therefore, we propose that:

H1: HPHRP has a negative effect on turnover intention.

2.5.2 ADP and turnover intention

ADP is believed to be an age-related human resources policy and strategy to support and promote all ages of employees (Boehm et al., 2014). The characteristics of employees' age diversity have drawn the attention of more and more managers and scholars. Through studies, foreign scholars have emphasized the impact of implementing age-supportive HRP on the employee's investment and the organization's role in promoting a longer and healthier career and life (Sousa et al., 2019; Sousa & Ramos, 2019). Other studies, from the perspective of diversification, indicate that the ADP has different organizational effect on different types of organizations (Ali & French, 2019).

A widely-used indicator to illustrate population aging is the potential support ratio (PSR), which is calculated by dividing the number of people of traditional "working age" (i.e., 16-64 years) by the number of "older people" 65 and over. According to Gerland et al.(2014), the PSR in Germany is projected to decline from 2.9 in 2014 to 1.4 in 2100 (80% PI: 1.1-1.7) and in the United States from 4.6 in 2014 to 1.9 in 2100 (80% prediction interval [PI]: 1.6-2.2). Especially in European countries such as Germany, Italy, and Spain, which have historically different

immigration patterns than the United States or Australia, the simultaneous aging and shrinking of populations will lead to shortages of skilled workers, as well as increased pressure on individuals to save for retirement because there will not be enough people of working age to support them when they reach retirement age (Chand & Tung, 2014).

The aging of the workforces in most industrialized countries is not only influenced by population aging but also by changes in labor-force participation patterns, such as delayed entry as well as early or delayed retirement (Alley & Crimmins, 2007; Beehr & Bennett, 2015; Martin & Xiang, 2015).

Organizations increasingly recognize the need to retain these older, skilled and experienced employees and manage them effectively. While they may want to manage the underperforming older employees, enterprises also need to avoid the loss of skills and knowledge through unnecessary friction. Age diversity is addressed and managed to ensure the development of human capital (skills, education, training, competencies and experience) for all age employees. Failure to recognize this age diversity in the workplace may exacerbate the potential of great group conflict (Kunze et al., 2013) and may miss the revenues from innovation (Lorenzo et al., 2017). Since China entered the aging society at the turn of the century, the aging of the population has been increasing. Our country has become the country with the largest aged population in the world, and is also one of the countries with the fastest aging population.

The society and cultural atmosphere of human resources development for the elderly in China is not strong. The consciousness and perspective of elderly human resources development are still weak. The related policy system and guarantee mechanism have not yet been formed, resulting in a low development level and a comprehensive utilization rate, which is not adapted to the status of the aging population in China (Zhang & Shang, 2019).

With the aging of China's population, the age structure of employees in enterprises will also represent an increasingly obvious trend of diversity. Employees of different ages went through different times. Particularly, under the influence of different policies in different periods of China (such as before and after the reform and opening-up policy) and in the context of historical, cultural and economic development, they have formed different values, outlooks on life, professional ethics, knowledge and skill levels, and communication methods. In China, the research on age diversity started late, and the existing research on age mainly focuses on the relationship between the age of employees and employees' job performance or the relationship between age diversity and enterprise management performance (Zhang & Luo, 2015). However, to our knowledge, it has not been reported, in the Chinese scenario, whether the human resources policies and measures adopted by enterprises in accordance with the age

diversity structural characteristics have any effect on the OC and turnover intention of employees.

Research on the organizational level in other countries showed that companies' age discrimination and age diversity climates could negatively impact firm and team performance, and employee retention via employees' AC and social exchange perceptions (Boehm et al., 2014; Kunze et al., 2011). Thus, the relationship between ADP and turnover intention can be understood as a social exchange between the worker and the organization. Based on this idea, we expect that if an organization creates and implements ADP, workers will engage more in their job, and will prefer more to stay at their organization. In this sense, we propose that:

H2: ADP have a negative influence on turnover intention.

2.5.3 OJ and turnover intention

OJ refers to the subjective feelings of employees toward fairness in the organization (Colquitt et al., 2001). It is a subjective perception and psychological experience of employees, which includes the employees' sense of justice towards all kinds of internal institutions, policies and measures related to personal interests. Many studies have shown that perceived OJ impacts the job performance and turnover intention of employees (Meng et al., 2020; Zhou & Qi, 2020).

Current organizational behavior theory believes that OJ mainly consists of three dimensions: distributive justice, procedural justice, and interactive justice (Zhao et al., 2020). Distributive justice refers to a perceived fairness about the distribution of tangible (such as money) and intangible (such as identification) outcomes. It mainly focuses on whether the distribution result is fair by calculating the ratio of the employee's giving and taking and comparing it with that of the reference object. Procedural justice is a perceived fairness of the rules and decision-making process used for determining the distribution result. It is mainly concerned with the extent to which the employees would increase their acceptance of the distribution result, when the employees face an unfavorable distribution result if the procedures by which they judge the distribution process is fair. Interactive justice is defined as the perceived fairness of the method used for explaining the result and procedure. The fair procedure does not necessarily make sure that people would develop a feeling of fairness when they face the distribution result, especially the unfavorable distribution result. During the distribution process and after the distribution result is presented, how managers at all levels in the organization implement it and communicate it with their subordinates will also impact the employee's fairness feeling towards the distribution result, especially in the case of an unfavorable result.

Currently, it is generally believed that OJ has a great effect on employees' turnover intention, but there are great differences in research conclusions, since it lacks a consistent conclusion about the effect of OJ in all dimensions on turnover intention. Foreign studies have shown that procedural justice exerts a stronger influence on turnover intention than distributive justice (George & Wallio, 2017). Chinese scholars Tian (Hui, 2014), in their studies on employees in Chinese enterprises, found that distributive justice and interactive justice have a prominent negative influence on turnover intention, while there is not an obvious effect of procedural justice on turnover intention. There are still some different opinions regarding the correlations between OJ in all dimensions and all components of OC and their correlation and degree of influence with turnover intention. What is the degree of influence of the three dimensions of OJ respectively on OC? Which dimension has a stronger influence? There is no consensus yet. Under the scenarios of different cultures and values, the studies in China and the West have come to different conclusions.

Studies have shown that, on the one hand, OJ can improve employee's job satisfaction. When employees perceive OJ, they will develop a certain "Halo Effect", believing that the organization can guarantee their vested interests and that they can be respected and identified in the organization. In consideration of human rights, employees will improve their satisfaction with the organization, thus their loyalty. On the other hand, high perceived OJ will increase employees' turnover capital perception, enlarge the uncertainty about the external environment and decrease the turnover intention. In the second place, the OJ phenomenon can improve communication, trust, and cohesion, which helps to decrease turnover intention (Wang et al., 2017).

In accordance with social exchange theory, we argue that OJ, perceived by workers as an organizational respect to them, induce workers' fairness feeling and trust in the organization. It will reciprocate through increasing levels of work commitment that, in turn, will lead to a desire to stay in the organization. Conversely, when the employee fails to get the perceived OJ, they are more likely to disengage themselves from the work role and want to leave the organization. Therefore, we argue that:

H3: OJ has a negative effect on turnover intention.

2.6 OC and turnover intention

OC, formally proposed by Becker, was defined to be "a psychological phenomenon in which employees have to remain in an organization with the increase of their investment in the organization" (Becker, 1960). Subsequently, researchers have constantly been updating the definition of OC, believing that it refers to the identification with and participation in an organization by a person (Porter et al., 1974), and an employee's positive attitude or psychological intention towards an organization (Mowday et al., 1979), namely, employees' identification with, participation in and loyalty to an organization. They believe that OC is employees' recognition of organizational goals, organizational culture and organizational values, as well as their strong willingness to make equal or even extra efforts for the organization and to remain in the organization.

Conceptually, OC originated from Social Exchange Theory. Scholl (Scholl, 1981) and other scholars believe that reciprocity and mutual benefit is a mechanism behind OC. There are other scholars who put forward that OC is a series of liabilities and obligations paid by employees in return for the organization's investment (Robinson & Rousseau, 1994) and a bond between employees and organizations (Meyer & Herscovitch, 2001).

With the deepening of the research, Meyer and Allen proposed a three-component model of OC and pointed out that OC is composed of affective commitment (AC), normative commitment (NC), and continuance commitment (CC). AC refers to the emotional attachment to, identification with, and participation in the organization of employees (Meyer & Allen, 1991). AC develops when employees realize that they share the same ideology or values with the organization and acquire identity from the organization, or that the organization meets the need of employees (Meyer et al., 1998). NC refers to an obligation to stay in the organization formed due to the internalization of loyalty norms or the acceptance of favors requiring a return. CC is being aware of the cost of leaving the organization (Meyer & Allen, 1991). Research indicates that CC consists of high personal sacrifice and low employment choices (Kathleen et al., 2005). High personal sacrifice reflects a connection brought about by the high sacrifice when the employee leaves the organization, while low employee choices mirror a pure external contingency and a feeling of being trapped in the organization (Meyer et al., 2002). From the perspective of Social Exchange Theory, AC and NC are formed on the basis of the sociality of the exchange process, while CC is generated based more on the economy of the exchange process. Commitment theories and research further manifested that a specific commitment

component experienced by a person can be impacted by the personal internal environment created by the other commitment component (Stanley et al., 2013).

By definition, turnover can derive from a lack of commitment. Cotton and Tuttle (1986) proposed that OC is one of the most important predictor variables in the turnover intention study. Scholars, under a large amount of research, get the same conclusion that OC negatively correlates with turnover intention (Silaban & Syah, 2018), and its role in effectively predicting employees' job performance, absenteeism and turnover behaviors (Hung et al., 2018; Meyer et al., 2002), which stresses the importance of including it on our research model.

2.6.1 HPHRP, OC and turnover intention

Al-Hawary and Alajmi (2017) examined the impact of HRP (human resource planning, recruitment and selection, rewards and incentives, and performance appraisal) on OC (affective, normative and CC). Their results underlined that HRP was positively correlated to OC. Also, Kooij and Boon (2018) found a positive effect of HPHRP on AC.

Previous research has shown that OC mediates the relationship between HPHRP and turnover intention. For instance, Nasurdin (2018) illustrated two forms of high-performance work practices (performance appraisal and compensation) lead to reduced turnover intention via OC. The mediating effects of OC on the relationship between human resource (HR) practices (career management, performance appraisal, compensation, person-job fit and job control) and turnover intention were examined, on which the partial mediating effects were discovered (Juhdi et al., 2013). AC fully mediates the relationship between HR practice perceptions and intent to remain with the organization (Kehoe & Wright, 2013). Full mediation of AC was found on the effect of HPHRP on in-role job performance (Al-Abbadi, 2018). It has been reported a correlation between Performance Appraisal and Training and Development (HRM practices) with OC which in turn contributed to an inverse relationship with employee turnover intention. Employee commitment will improve organizational effectiveness through the retention of skilled and experienced employees., thus reducing turnover intentions (Kadiresan et al., 2015). A study of the OC as mediating variable between the relationships of salary, performance appraisal, career growth and turnover intention, indicated that four out of six variables had partial mediation including career growth (career goal progress), career growth (promotion speed), career growth (remuneration growth) and performance appraisal (Nawaz & Pangil, 2016). On the basis of these findings, the following hypothesis is proposed:

H4: OC mediates the relationship between HPHRP and turnover intention.

2.6.2 ADP, OC and turnover intention

The topic of age diversity is arguably a new one of relatively less researched, especially in developing countries like China. Based on the social exchange theory (Blau, 1986; Connelly et al., 2011), employees consider organizational HRP as an indicator of the organization's investment in them and as recognition of their contributions, thus motivating their desire to reciprocate through positive attitudes in turn. The crucial point for achieving higher levels of commitment depends on the measures and the conditions that meet the employee's basic psychological needs (Meyer & Maltin, 2010) and increase workers' job satisfaction (Lin & Huang, 2020). Organizations should develop policies aiming at implementing diversity management practices in order to increase levels of employee commitment (Gilbert et al., 1999). We can expect that when organizations implement ADP, such as recruiting, developing, recognizing, and rewarding workers of all ages, give different supports based on the different age needs, they promote and reinforce commitment. Thus, following the principles of social exchange theory, ADP will have a positive impact on OC should be expected.

Literature on the topic suggests that the development of an organizational age-diversity climate is directly related to collective perceptions of social exchange and indirectly to employees aggregated turnover intentions (Boehm et al., 2014). The mediating roles of AC in the relationship between ADP and turnover intention have been supported by Sousa's recent study, which showed the more ADP were perceived by workers, the more committed to their organization they were, thus in turn resulting in decreased turnover intention (Sousa et al., 2021). For example, it may be the case that an older talent who has been above 60 years old in a pharmaceutical company has not have enough physical energy but is full of technical experience. A company with high levels of ADP would probably place this person in a fitful position that does not require a physical effort but could give the job guidance to a new one, such as the training department. This specific action may be perceived as positive by all workers, who will perceive the organization they work for takes care of them. As a result, employees may be more committed to their organization and will not want to leave. In reverse, if the older worker is fired or decides to leave because of no fitful position, employees will perceive that their company does not embrace diversity, especially does not welcome the older one and will increase their turnover intention. Consequently, we formally hypothesize:

H5: OC mediates the relationship between ADP and turnover intention.

2.6.3 OJ, OC and turnover intention

Existing studies mostly pointed to the direct effect of perceived OJ on turnover intention, but research about the mediator variables between them is still scarce. Research in China indicated that the negative effect of OJ on turnover intention is indirectly achieved by the complete mediating role of OC (Hui, 2014). Some scholars verified that all three dimensions of OJ have a significant and positive effect on the three dimensions of OC. Among them, interactive justice has a more prominent effect on AC and NC; and procedural justice has a more significant influence on CC (Hui, 2014). OC plays a partial mediating role in the effect of leader justice on turnover intention and a complete mediating role in the effect of procedural justice on turnover intention (Ma et al., 2014). Therefore, we argue that:

H6: OC mediates the relationship between OJ and turnover intention.

2.7 The moderating role of age

Studies showed that age has a certain connection with OC. Meyer and colleagues (Meyer et al., 1993) conclude that older employees are more likely to show an AC to the organization, for the reason of their greater satisfaction with their jobs, their higher positions in the organization and their cognitive justification for their staying in the organization in general. In comparison, the turnover situation of young workers is increasing with many cases of “lightning resignation” and “naked resignation” in China (Liu & Huang, 2014; Liu & Zhao, 2014). The young employees have stronger confidence in their own work ability, lower job satisfaction and loyalty, different views on success, frequent changes in occupational concepts, stronger aspirations for an equal, free and democratic working environment, and more focus on personal living standards and quality (Lele & Liu, 2017). Young and old workers differ to a great extent concerning their interests and needs (Freedman & Bartholomew, 1990). Younger workers might put more importance on monetary aspects, whereas older workers tend more to be pride in the organization, and think integrity is important. The studies have also proven the discrimination concern between young (Magd, 2003) and old workers (Jenkins, 2008) in the work environment. According to the Socioemotional selectivity theory, the perception of time makes a fundamental effect on the choice and chasing of social goals. The social goals are age-related different because of the inextricable link between time remaining in life and chronological age. When time is perceived as unlimited, knowledge-related objectives are prioritized, which usually happens in younger workers. In contrast, when time is perceived as

limited, like most older people will do, emotional goals assume primacy (Carstensen et al., 1999).

2.7.1 HPHRP, age, OC and turnover intention

From a cross-sectional dataset of 753 Dutch employees, researchers discovered support for a moderated mediation model in which age moderated the indirect effect of perceived organizational support for strengths use (POSSU) on contextual performance via work engagement. The indirect effect was found to be significantly stronger for younger employees, despite the fact that it was significant for all age groups. These findings highlight the importance of emphasizing individual strengths among younger employees, who may be able to solidify their tentative, positive (work) identities as a result of POSSU (Meyers et al., 2020).Based on the lifespan personality development approach, studies showed that individuals acquire more self-knowledge (Erikson, 1959; Markus & Wurf, 1987; Neugarten, 1980) by studying their emotions, thoughts and behaviors, and comparing themselves to others (Markus & Wurf, 1987) with the increasing age. Particularly, individuals learn more about their own positive and negative qualities (Bosma & Kunnen, 2001) through dealing with problems, challenges, or life-adjustment situations (Baltes, 1987). This suggests that younger workers find themselves in a less clearly confirmed situation at work due to insufficient views of their own qualities (Bosma & Kunnen, 2001), their job role (Ng & Feldman, 2010), or both. For them, HPHRP might be a particularly beneficial work resource that could be more valuable for settling into the job. In contrast, older workers might have a more complete and realistic view of their personality, especially their strength in the job, making it easier for them to use their resources in a self-initiated way at work. The older workers might be more independent on their job and less affected by the HPHRP than their contrast, the younger workers. For example, the training practice and the work environments designed in the HPHRP could benefit more to the younger workers by improving their productivity and their retention. Based on this, we could expect that employees' age might moderate the direct effect of HPHRP and OC and this indirect effect via OC. Consequently, we propose that:

H7(a): Age moderates the direct relationship between HPHRP and turnover intention, such that the relationship is stronger for younger workers than for older workers.

H7(b): Age moderates the indirect relationship between HPHRP and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers.

2.7.2 ADP, age, OC and turnover intention

Based on the literature on age at work, it is supposed that younger workers will benefit more from ADP which leads to increased levels of OC than older workers. Results support the moderating role of age on the positive effect of employees' diversity management perceptions on job satisfaction through OC (García-Rodríguez et al., 2020). Previous studies showed that older workers are more committed to their organizations than younger workers (Ertas, 2015). According to the literature, individuals undergo a 'maturation' process that makes them more responsible, dependable, dominant, self-confident, and self-controlling over time (Roberts et al., 2006). These traits let the employee be more effective in performing their roles including their work role (Caspi et al., 2005). Based on personality development over the lifespan, individuals change in response to facing new responsibilities and demands that are tied to a specific age or life phases (e.g., entering the labor market, marriage) (Specht et al., 2014). Therefore, during the process of social life, the younger employees who are relatively less self-controlling and self-confident with less-autonomous positions and smaller organizational networks in general, might need more support from the organization before they can accumulate and use their strengths at work. Vice versa, older workers become more able to invest their resources at work even without being stimulated to do so by the organization. Through the ADP, the initial, indefinite notion of responsibilities that younger employees have might be consolidated, giving more engagement and more commitment to their job thereof.

These all suggested that the ADP may have more effect on improving the younger workers' OC, which is already proven to be lower than those of the older workers through satisfying the particular needs of younger employees. For example, companies could provide different training times and particularly training lessons concerning age and work experience for improving general and specific job skills which may be more helpful for the younger workers and make them feel respected and concerned by the companies. Such practices are tailored to the needs of young professionals (Dorta-Afonso & Cantero-García, 2020). How work can be better distributed among people and across different periods of the lifespan in order to help individuals combine work, education, leisure, and family and how to reduce work-related stressors that might be harder for younger workers to overcome, may benefit younger workers more to outperform in the job and then become more committed to the organization. Therefore, it is reasonable to expect an amplified effect of ADP on the commitment of younger compared to older workers. From this point, we propose that employees' age could moderate the direct

and indirect effects of ADP on turnover intention. Consequently, the following hypotheses are submitted:

H8(a): Age moderates the direct relationship between ADP and turnover intention, such that the relationship is stronger for younger workers than older workers.

H8(b): Age moderates the indirect relationship between ADP and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers.

2.7.3 OJ, age, OC and turnover intention

People's age distinctively affect their perception of fairness in OJ (Perry et al., 1996). Certain studies found age was significantly related to both procedural and distributive justice (McFarlin & Sweeney, 1992), while in some other studies, a negative relationship was reported between age and distributive justice and significant positive relationship between age and procedural justice (Tang & Sarsfield-Baldwin, 1996). Other authors came to different conclusion: age had no effect on people's perceptions of justice (Cohen-Charash & Spector, 2001). With these conflicting results, the correlation between age and OJ is probably more complicated than what has been found when measuring a direct relationship. We argue that younger employees are less likely to stand on the functional positions that help them to get more independent power in the organization by their own initiative. Older workers have had more opportunities to advance to higher-level, more autonomous positions (Ng & Feldman, 2010; Wright & Hamilton, 1978), and have broader social networks within the organization(Finkelstein et al., 2003). These factors together might make it not so hard for older workers to acquire chances to adjust their working condition and resources to benefit them as the younger ones (Bindl & Parker, 2010). So, the younger workers might be more sensitive to the OJ. The perceived justice might affect younger workers' commitment to the organization and turnover intention more than the older workers. Based on this, we argue that employees' age could moderate the direct effect of OJ on turnover intention and the mediating effect of OC in the relationship between OJ and turnover intention.

Therefore, this work formulates the following hypotheses:

H9(a): Age plays as a moderator in the direct effect of OJ on turnover intention, such that the relationship is stronger among younger workers.

H9(b): Age moderates the indirect relationship between OJ and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers.

2.8 The moderating role of ownership

With the continuous deepening of China's economic system reform, China has formed a coexistence of various ownership enterprises. Chinese scholars usually divide Chinese enterprises into state-owned enterprises (SOEs), private-owned enterprises (POEs) and foreign enterprises (including wholly foreign-owned enterprises, Sino-foreign joint ventures and Sino-foreign cooperative enterprises) according to the natures of different ownership systems (Wu, 2012). The latter two types could be called non-state-owned domestic enterprises(non-SOEs). Scholars who conduct their studies within the Chinese context will also focus on the impact of the nature of enterprise ownership (enterprise ownership) on other variables. The nature of ownership is a determinant of enterprise behavior (Wu, 2014).

Pharmaceutical Ownership Structure in China is undergoing institutional evolution from the status constituted by the state ownership all since 1980s when China applied the reform and opening-up policy. Pharmaceutical enterprise ownership structure reform, implemented earliest in third Plenary Session of the 12th CPC Central Committee in 1985, put forward pharmaceutical state-owned industrial enterprises director responsibility system, and carry out attracting external economic joint internal economic mode to develop the lateral economic association. Later, a batch of pharmaceutical company groups were formed by the combination of lateral economy. The contract responsibility system and dual price system are regarded as the two major institutional innovations of this period (Jefferson & Rawski, 1994). Aligned with the rules of the separation of ownership and management, pharmaceutical companies gradually contracted a responsibility system. This period also witnessed the proliferation of collective firms, which were 'quasi-state-owned' firms under the control of local government officials(Putterman, 1995). Their entry leaded fiercely to competition that eroded state ownership enterprise profits (Naughton, 1994).

The size of the private sector, including foreign ownership, was very small at this stage (Jefferson & Rawski, 1994). Since 1992, the government in China moved forward to encourage the development of private ownership and the market economy. Foreign direct investment (FDI) surged, and the Company Law was passed in 1993, building up the legal status of private firms. This stage witnessed unprecedented growth of private and foreign-owned firms. In 1997, the 15th CPC enacted the policy known as "grasp the large and let go of the small" (National Bureau of Economic Research, 2015), which means to corporatize large SOEs and to privatize or shut down small and loss making SOEs in order to revitalize SOEs. At the meantime, it focuses on

the pharmaceutical accelerate economic restructuring in the Medicine Management of the National Conference of Directors. From 1998 to 2007, more than 83% of SOEs were shut down or privatized, with a greater number of smaller ones shut down than larger SOEs (National Bureau of Economic Research, 2015). Meanwhile, most collective firms underwent a similar privatization movement (Kung & Lin, 2007). The main characteristic of this reform period is the waxing of private and foreign owned firms and the waning of state-owned and collective firms. Until the early 2000s, centralize state ownership among large SOEs became the new purpose of the enterprise reform, through improving the governance, transparency, and ultimately, the performance of the major SOEs. Thirty years of continuous reform left China with hybrid ownership of industry including the pharmaceutical sector (Walheer & He, 2020).

Currently, the top 20 multinational pharmaceutical companies in the world have all set up joint ventures, which are giving way to holding or wholly owned business models that occupy the key regional and high-end product markets in China. There are more than 1800 joint pharmaceutical enterprises and dozens of imported pharmaceutical enterprises in China, and they account for about one third of the whole pharmaceutical enterprises (Liu & Racherla, 2019).

Chinese scholars have studied and compared the relationship between enterprise HRP model and ownership type. The results show that traditional state-owned enterprises and private enterprises lag behind foreign-owned enterprises in basic work of HRP and fairness of internal procedures. Furthermore, traditional state-owned enterprises are behind private enterprises and foreign-owned enterprises in terms of working organization and external talent introduction. There is a link between internal policies and measures of HRP model and ownership form in Chinese enterprises (Zhang, 2004b).

Researchers found that OC also has a certain connection with organizational nature except other factors such as age, seniority.

2.8.1 HPHRP, ownership, OC and turnover intention

Liu et al (Liu & Wang, 2002) introduced the background factor of different corporate culture in China and the West, and found that against the context of foreign-funded enterprises, organizational culture influences the CC, while in the context of SOEs, organizational culture has more effect on the AC. These results show that under different background of corporate culture, the different emphases of exchange relationship between enterprises and employees on economic exchange or social exchange would influence the different component of employees' OC.

The coexistence of different types of companies can differ in their practices regarding to the retainment of their workers (Cooke et al., 2018; Froese et al., 2020). Liu et al. (2017) argued about the importance of firm ownership in the functioning of human resources systems and advances knowledge of the appropriate alignment between HR systems and firm contexts. Their study also showed that employees who experienced maintenance-oriented HR systems more strongly augmented the positive relationship between employee-experienced performance-oriented HR systems and domain-relevant skills in POEs than in SOEs.

The usability of an HR practice depends on its perceived instrumentality in helping individuals to accomplish personal goals or satisfy personal needs(Wright, 2008). More specifically, the related research indicates that when HR systems are more aligned with employee needs, they will be better situated to stimulate desirable employee attitudes and behaviors(Nishii & Wright, 2008). These points concur with the rules of the social exchange theory. Employees in both SOEs and non-SOEs have needs for employment security and equal rights protection (X. Liu et al., 2019). Yet, employees from non-SOEs are exposed to much less support and protection from the internal maintenance-oriented HR systems and also the external institutional environment (Liu et al., 2017). Based on the property of the SOEs, besides the protections provided by internal maintenance-oriented HR systems, SOEs employees' employment security are also protected by external institutional arrangements. Therefore, even when SOEs employees are laid off due to SOEs' financial difficulty in market competition, they can still enjoy the protection from governments, the Chinese communist party's district administrative committees, and other government agencies such as labor bureaus and reemployment centers. They have the responsibility to secure new jobs for them (e.g., transfer to other SOEs) and granting them medical insurance and pensions (Wong & Ngok, 2006). In contrast, non-SOEs employees do not enjoy the above external institutional protection independent from their firms' internal maintenance-oriented HR systems (B. Zhang et al., 2020). As a result, HPHRP should be more influential and important for employees from non-SOEs than SOEs.

Hence, the above all suggest that the ownership of the organizations should have the effect on the association between HPHRP and turnover intention to a greater extent in non-SOEs than in SOEs. Also, the moderating role of ownership nature is expected to be found in the indirect effect of HPHRP on turnover intention via OC. Based on this, we formally propose that:

H10(a): The different ownership nature of the enterprise moderates the direct relationship between HPHRP and turnover intention, such that the relationship is stronger in the non-SOEs than in the SOEs.

H10(b): The different ownership nature of the enterprise moderates the indirect relationship between HPHRP and turnover intention via OC, such that the relationship is stronger in the non-SOEs than in SOEs.

2.8.2 ADP, ownership, OC and turnover intention

Depending on their institutional and organizational orientations, organizations in China receive different treatment and resource allocations from the government, such as ownership (Park & Luo, 2001). China's state-owned pharmaceutical enterprises can get more support in policy and resources, while non-SOEs face more pressure in financing and taxation (B. Zhang, 2020).

The relatively deep pockets of the state create soft budget constraints for management of state-owned organizations (Yang et al., 2020). Backed up by the soft budgets and slack resources, the policies of such firms may be more tend to stability and not so eager to chase profit which lead to fast-paced working atmosphere of the firms. The SOEs may have an advantage in terms of accessing the complementary resources to meet the need of different age employees. For example, thanks in part to the slack resources that buffer the Chinese SOEs from future uncertainty to make more longer-term capital investments than their private-sector counterparts (Stan et al., 2014).Thus, the working environment of the relatively slow-paced and not to seek the instant success could give the freedom to no matter the younger or the older workers to allocate time to their interesting projects, or the items unknown to their superiors and relieve the younger ones' new career anxiety and the heavy workload to the older workers. Meanwhile, to the middle-aged workers, one of the most concerned things is the education of their children. Lots of the SOEs have their own kindergarten and school which could guarantee the education of the workers' kids. That is, the more HR systems are in satisfying employee needs, the more influential they are to employees (Nishii & Wright, 2008). Conversely, the relatively limited resources and budget in non-SOEs firms could not fulfill employees' need in different ages as adequately as the SOEs firms. Budget constraints may be created excessive incentive problems that push the employees to search, for example, innovative solutions, and improving the efficiency of work. It may lead to the bigger pressure of the younger or older employees in the non-SOEs, which will affect their commitment and, consequently, retention. We argue that ADP such as diverse maintenance-oriented practices related to age should augment the effect to the improving the employee commitment and diminish the turnover intention more in non-SOEs than in SOEs. Thus, it is reasonable to anticipate:

H11(a): The different ownership nature of the enterprise plays as a moderator in the direct effect of ADP on turnover intention, such that the relationship is stronger in the non-SOEs than in SOEs.

H11(b): The different ownership nature of the enterprise moderates the indirect relationship between ADP and turnover intention via OC, such that the relationship is stronger in the non-SOEs than in SOEs.

2.8.3 OJ, ownership, OC and turnover intention

SOEs and non-SOEs, in context of China, represent different organizational settings in which workers develop different job-related perceptions and show different work performance and behaviors. Maybe the most important distinction between state- and non-state ownership is that budgetary constraints that on SOEs tend to be softer (Kornai et al., 2003). Even when bankruptcy is not a threat, SOEs can generally tap into a larger pool of resources than non-SOEs because they enjoy greater political and legitimacy backing. Due to concern with socialist ideology and political stability, central and local Chinese governments still place a high priority on protecting employment security and equal rights of SOEs employees, who constitute the labor force representing Chinese socialism (Gang & Hope, 2013).

SOEs management's overall autonomy in hiring and firing workers is rather limited. SOEs have the political and social burdens, which usually through political connections with affiliated managers (C. R. Chen et al., 2017). SOEs are responsible for more than just social stability in China's socialist economic system. Promoting social development is also another task for them (Xin et al., 2019). Overstaffing has long been a problem in SOEs. The management of these firms has chosen not to lay off a large number of workers for fear of social instability and labor protests. SOEs employees relished the dubbed "iron rice bowl." in the past, which means that they were employed for life. Egalitarianism is the norm in the workplace in SOEs. The compensation is mostly determined by a prescribed reward system, rather than by individual performance (Wong et al., 2006) . And there is little difference between pay and bonuses among workers (Liu, 2003). Based on the property of the SOEs, besides the protections provided by internal series practices but also employee's perceived OJ in SOEs is also protected by external institutional arrangements.

The management system and governance structure of non-SOEs are remarkably different from those of SOEs. Since they are relatively free from government control, non‐SOEs have the great autonomy in hiring and firing workers (Chiu, 2002) and are gradually adopting more market‐oriented HRM practices with regard to recruitment, selection, training, performance

appraisal and compensation (Liang et al., 2012). Non-SOEs in comparison to SOEs prefer individual performance payment contracts which motivate staff to work hard for maximizing firm values (Goldeng et al., 2008). In order to seek efficiency, non-SOEs in China, for instance, POEs push employees to the appraisals and pay, linking labor contract renewal to performance. Performance-based bonuses have become the most important part of payment, resulting in significant discrepancies in people's incomes. Employee-employer power dynamics make it difficult for workers' voices to be heard on labor issues (Shen, 2010).

Different ownership structures trigger different perception among employees who pay attention to OJ consistent with their work-related behavior. Previous studies proved that state ownership attenuates and even reverses the positive relationship between distributive justice and extra-role behaviors (Chen, 2018). And the positive effect of distributive justice on trust in organization is also stronger in the joint venture companies (JVs) than in SOEs (Wong et al., 2006).

Taken together, and according to the social exchange theory, SOEs employee's perceived OJ can be met by not only internal series practices but also external institutional arrangements. In contrast, internal systems should be critical in meeting non-SOEs employees' needs for perceived OJ. Consequently, SOEs employees would respond less strongly to exposure from their firms' internal OJ systems. Based on this argument, the following hypotheses are proposed:

H12(a): The different ownership nature of the enterprise moderates the effect of OJ on turnover intention, such that the relationship is stronger in the non-SOEs than in the SOEs.

H12(b): The different ownership nature of the enterprise moderates the indirect relationship between OJ and turnover intention via OC, such that the relationship is stronger in the non-SOEs than in the SOEs.

2.9 Conceptual models

Based on the above discussion, this research has proposed the analysis models which are shown in Figure 2.1.

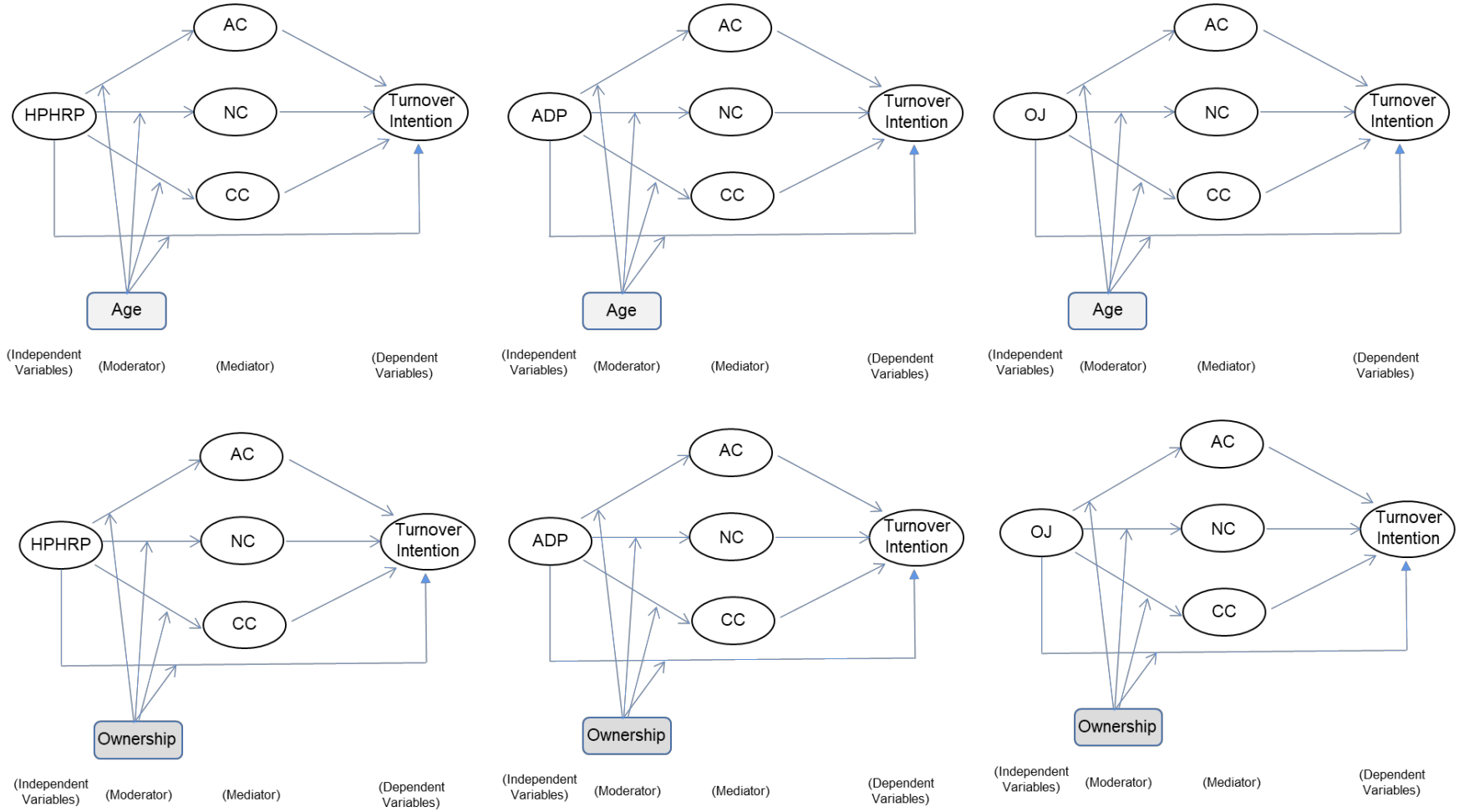


Figure 2.1 The proposed research models in this thesis

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Chapter 3: Research Methods

3.1 Procedure and sample

To accomplish the research objectives of this thesis, people working in China's pharmaceutical industry was invited to participate in a two-wave questionnaire by the research team. The questionnaire was shared in the personal and professional networks of the research team. Also, Survey Star, a large third-party company in China focused on online data survey and analysis, was hired to recruit more participants to the study. The Survey Star online survey software program has been widely used in recent years. Such that, Chinese scholars use the Survey Star to survey perceived nursing practice environment by sending the questionnaires to the nurses through this software (X. Zhang et al., 2020). The program platform sends the questionnaires to the members of their database working in the pharmaceutical industry, and the respondents are paid if they complete the two questionnaires.

At the beginning of the questionnaire, the purpose of this study was explained to participants by presenting the informed consent. The anonymity and confidentiality were ensured in the informed consent, and the contacts of the researcher were provided. Participants were asked to create a secret code that he/she would use in both waves of the questionnaires and that was easy to remember. Participant names could not be identified from the questionnaire or the codes. Respondents recruited through Survey Star had the same code and IP address in the platform so that the link for the questionnaires was sent to the same person.

In order to control the common method variance (CMV), procedural remedies approaches were taken to reduce the source of CMV. Among these approaches, temporal separation (e.g., a time delay between measures) between predictor variables (i.e., HPHRP, ADP, and OJ) and criterion variables (i.e., OC, turnover intention) was used, removing the saliency of any contextually provided cues in the retrieval stage of the response process (Feldman & Lynch, 1988; Podsakoff et al., 2012). This time-lag can make respondents less likely to use previous answers to fill in gaps in what is recalled and to infer missing information, thus reducing consistency motifs and demand characteristics (Podsakoff et al., 2003).

Therefore, in order to avoid CMV, four weeks temporal separation between predictor variables and criterion variables were introduced. The data collection of the study was conducted from January to March 2021 (wave 1) and from February to June 2021 (wave 2).

After the questionnaires were collected, data were reviewed. The codes created by respondents or the survey platform were matched strictly, with the questionnaires sharing the same code in wave 1 and 2 being identified as the effective ones. The other questionnaires had been deleted. In the end, the database for analysis was formed.

In total, 544 questionnaires were distributed, and 283 questionnaires were considered valid after wave 1 and wave 2 being matched, with effective rate of 52%. The questionnaires with answers demonstrating strong consistency were considered, while those with obvious logic error answers were removed. Table 3.1 shows the general demographic characteristics of respondents in this survey. The average age was 32.90 (*SD* =7.20 years old) (age range of 21-64). About 47% of the participants were aged 31-40, and about 1 %, the lowest percentage, were above 60 years of age. There were 162 female employees (57.24 %) and 121 male ones (42.76 %).

Table 3.1 The general demographic characteristics of respondents

	Characteristics	Number of people	Composition ratio (%)
Age (year)	20-64	283	100
Gender	Female	162	57.24
	Male	121	42.76
Education Level	Doctor	4	1.41
	Master	59	20.85
	Bachelor	171	60.42
	Junior College	45	15.90
	Senior High School	2	0.71
	Junior High School and below	2	0.71
The tenure in the present company (year)	0-2	64	22.61
	3-5	81	28.62
	6-10	94	33.22
	11-20	32	11.31
	21-30	10	3.53
	Above 30	2	0.71
The tenure in the pharmaceutical industry (year)	0-2	50	17.67
	3-5	78	27.56
	6-10	93	32.86
	11-20	47	16.61
	21-30	15	5.30
The ownership nature of enterprise where the respondents were in	State owned enterprises	119	42.05
	Private enterprises	137	48.41
	Foreign enterprises	27	9.54
The characteristic of foreign enterprise	Domestic enterprise	256	90.46
	Wholly foreign-owned enterprises	11	3.89

	Characteristics	Number of people	Composition ratio (%)
The number of the employees working in the respondents' organization	Sino-foreign joint ventures and Sino-foreign cooperative enterprises	16	5.65
	5-100	73	25.80
	101-300	65	22.97
	301-500	57	20.14
	501-1000	46	16.25
	Above 1000	42	14.84
The type of the contract.	Short- term contract (≦ 3 years)	86	30.39
	Mid-term contracts	81	28.62
	Long-term contract	114	40.28
	Project contract	2	0.71

Respondents with a bachelor's degree or above accounted for 82.68 % of the total (234). Those with a junior college education level, and senior high school and below accounted for 15.9 % (45) and 1.42 % (4) respectively.

The average length of the tenure in the present company was 6.79 (*SD* = 6.36 years), with the longest tenure being 47 years and the shortest one less than a month. The average length of the tenure in the pharmaceutical industry was 7.71 (*SD* = 6.43 years), with the longest tenure being 30 years and the shortest one about 15 days.

About 256 (90.46 %) respondents were from the domestic enterprise, with 119 from the SOE (42.05 %) and 164 from the non-SOE (57.95 %). In the non-SOE, 137 from the private enterprises, whereas the number of the respondents from foreign enterprises were 27 (9.54 %), in which 11 from wholly foreign-owned enterprises and 16 from sino-foreign joint ventures and sino-foreign cooperative enterprises.

The size of the respondents' organization ranged from 5 to 100 000 workers, with the average number of employees being 1087.21. About 26% of the respondents were from organizations where the number of employees was below 100, and around 15% of the participants were from the organizations which had above 1000 employees.

About 114 respondents had a long-term contract (nonfixed-term contract with organization), which accounted for 40.28 % of the sample. From these, 86 had a short-term contract (≦ 3 years), which accounted for 30.39 %. Respondents with a project contract (deadlines are set for the completion of certain tasks) only accounted for 0.71 %.

3.2 Measures

All the scales were identified through the literature review and have been widely used in the

Western background with well-reported reliability and validity. Since all participants were fluent in Chinese, translation of the items was required (from English to Chinese). We first translated the questionnaires to Chinese, and then an independent researcher performed a blind back-translation to English (Brislin, 1970; Van de Vijver & Hambleton, 1996). The back-translation version was compared to the original version and evaluated by a bilingual researcher, who did not suggest any modifications.

The wave 1 of the questionnaire included four sections: (1) demographic information of the respondents, including the age, gender, education level, the tenure in the present company; (2) HPHRP; (3) ADP; and (4) OJ.

The wave 2 of the questionnaire also included four sections: (1) demographic information of the respondents, including the tenure in the pharmaceutical industry, the ownership nature of enterprise where the respondents were in, the number of the employees in respondents' organization, and type of contract; (2) OC; (3) Turnover.

Unless noted otherwise, participants answered to all the items in both waves in a 7-point Likert scale from 1 (Strongly disagree) to 7 (Strongly agree) (Meyer et al., 1993). The Likert scale is an ordinal measurement that allows researchers to quantify the data collected from participants (Bishop & Herron, 2015).

3.2.1 Demographic information

The demographic information principally contains three aspects: 1) respondents' characteristics, including age, gender, education level, the tenure of the respondents in the organization and in the pharmaceutical industry, the type of the contract between the respondents and the organization; 2) the ownership nature of the company where the respondents worked (i.e., state owned, private or foreign enterprises); 3) the number of employees working in the respondents' organization.

3.2.2 HPHRP

HPHRP was assessed through ten questions that correspond to three dimensions: Development practices (Four items), Maintenance practices (Three items), Flexible practices (Three items) (Boon et al., 2011). A sample item for development practices is "The opportunity to follow training, courses and workshops", maintenance practices, "Periodic evaluation of my performance", and flexible practices, "Flexible working hours". All the items of this scale could be found in the Annex A.

3.2.3 ADP

ADP were measured using a seven-item scale that assesses the extent to which workers perceive an inclusive and non-discriminatory treatment of workers of all ages regarding age-sensitive HR practices (Sousa et al., 2019). A sample item for ADP is “Employees are developed (i.e., training) and advanced without regard to the age of the individual”. All the details of this scale are attached in the Annex B.

3.2.4 OJ

OJ was measured by the scale that contains four subscales that were Distributive Justice (four items), Procedural Justice (seven items), Interpersonal justice (four items), and Informational justice (five items) (Colquitt et al., 2001). A sample item for distributive justice is “Does your salary reflect the effort you have put into your work?”; for procedural justice “Are you able to express your views during those procedures?”; for interpersonal justice, “Has your supervisor treated you in a polite manner?”, and for informational justice, “Has your supervisor been candid when communicating with you?”. All the items of this scale are available in the Annex C.

3.2.5 OC

In this study, the three subscales of the OC scale developed by Meyer and Allen in 1993 were used: AC, CC, and NC in the OC, which has been widely accepted in the academic scope. The revised version contains six items for each subscale. A sample item for AC is “I would be very happy to spend the rest of my career with this organization”, CC, “Right now, staying with my organization is a matter of necessity as much as desire”, and NC, “I do not feel any obligation to remain with my current employer” (reversed). All the items of this scale are available in the Annex D.

3.2.6 Turnover intention

Turnover intention was assessed by three items which was widely used by the other researchers (Rusbult et al., 1988). A sample item is “I have recently spent some time looking for another job”. All the items are found in the Annex E.

3.2.7 Control variables

Gender, education level, organizational tenure, and contract type were included as control variables. Earlier research shows that gender (Fukui et al., 2020; Kim et al., 2022), education level (Ju & Li, 2019), contract type (Flickinger et al., 2016; Gan et al., 2018), and organizational tenure (Ju & Li, 2019; Van der Heijden et al., 2018) are related with the turnover intention. Age and ownership were presumed as the moderators. Age was measured in years. The ownership nature was coded by 0 = SOE, 1 = non-SOE. Gender (0= female,1 = male) and education level (0 = with an academic degree (bachelor degree and above), 1 = without an academic degree (junior college degree and below), respectively) were coded as dummy variables. Finally, organizational tenure, Pharmacy industry tenure, the company size and the contract type of the employees were also dummy coded (0 = >6 years, 1 = ≧6 years; 0 = >6 years, 1 = ≧6 years; 0 = ≦100, 1 = >100; 0 = Short-term and project contract, 1=Mid- and long-term contract, respectively).

3.3 Data analysis strategy

Data were analyzed using descriptive statistics, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), correlation analysis, multiple regression analysis, and pathway analysis.

Demographic characteristics that were operationalized with continuous variables (i.e., age, tenure of the respondents in the organization and in the pharmaceutical industry, number of the employees working in the respondents' organization) were described with mean and standard deviation. Characteristics that were measured through categorical variables (i.e., gender, education level, the type of the contract between the respondents and the organization, the ownership nature of enterprise where the respondents come or came from) were described with percentage or composition ratio.

Harman's single factor and the CMV of the scales were tested by SPSS 22.0 in this study. Next, the data was analyzed by EFA with SPSS 22.0, and was processed by CFA with AMOS 22.0 to confirm the factor structures obtained in EFA. Thereafter, we calculated the correlations coefficients and internal consistency reliability of studied variables. Then, multiple regression analysis was used to test how the variation in each of the explanatory variables impacts on the dependent one. Next, PROCESS v 3.1(Hayes, 2017; Hayes & Preacher, 2014) was used to test whether moderation variables exist in the independent variables and dependent variable. Bootstrapping was also implemented to validate the results obtained by the parametric method

(maximum likelihood estimation). We used 5,000 bootstrap samples to generate 95% bias-corrected confidence intervals (CI) for both direct and indirect effects.

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Chapter 4: Research Results

4.1 Common method variance test

In this study, questionnaires for all study variables were provided by the same subject, despite procedural remedies such as temporal separation, anonymous pattern and reverse items were used. Therefore, the problem of CMV may still exist. We conducted Harman's single-factor test using EFA (Zhou & Lu, 2011) and CFA (Podsakoff et al., 2003) to test CMV. Harman's single-factor is perhaps the most common test to identify CMV (Van Witteloostuijn et al., 2020). It loads all items from each of the constructs into an EFA to see whether one single factor does occur or whether one general factor does make up a majority of the covariance between the measures (Harman, 1967; Podsakoff & Organ, 1986). We test four models one by one: in Model 1, all constructs of this study were combined in one single factor; for Model 2, all constructs of the HPHRP related model combined into one single factor (HPHRP; AC; NC; CC; TUR model); in Model 3, all constructs of the ADP related model combined into one single factor (ADP; AC; NC; CC; TUR model); and Model 4, all constructs of the OJ related model combined into one single factor (OJ; AC; NC; CC; TUR model).

The results of Harman's single‐factor analysis of Model 1 showed that we had 11 factors, and the first factor accounted for 9.385 % of the variance after rotation, smaller than the critical value of 40 %, indicating that the CMV was not a concern in this study (Ashford & Tsui, 1991). The average variance extracted (AVE) were used for evaluating convergent validity. The AVE value of a single-factor Model 1 was 0.304, below the threshold value of 0.50 (Hair et al., 2013).

The results of Harman's single-factor analysis of Model 2 showed that the first factor accounted for 14.207 % of the variance after rotated. The detail could be found in the Annex F. The AVE value of a single-factor model was 0.287. Therefore, it didn't meet the standard requirement of convergent validity.

The results of Harman's single-factor analysis of Model 3 showed that the first factor accounted for 18.363 % of the variance after rotated. The detail could be found in the Annex F. The AVE value of a single-factor model was 0.309. Therefore, it didn't meet the standard requirement of convergent validity.

The results of Harman's single-factor analysis of Model 4 showed that the first factor

accounted for 12.892 % of the variance after rotated. The detail could be found in the Annex F. The AVE value of a single-factor model was 0.296. Therefore, it didn't meet the standard requirement of convergent validity.

Table 4.1 shows that these 4 single-factor models did not fit the data well. All models were evaluated based on multiple goodness-of-fit measures: the chi-square test (χ^2), the normed chi-square (χ^2 / *df*), the comparative fit index (CFI), the Tucker Lewis index (TLI), the root mean squared error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Criteria for good fit of the model to the data were considered as a normed chi-square below the cutoff of 3 (Hair et al., 2010). At the meantime, values of the CFI and TLI greater than 0.90 indicate an adequate model fit (Hair et al., 2010). Values of the RMSEA below 0.08 are considered to be acceptable, and below 0.05 are assumed good (Hu & Bentler, 1999). SRMR with the values below 0.08 are perceived to be a good fit of the model (Hu & Bentler, 1999). The detailed results are listed in Table 4.1. These results support that common method variance did not influence the validity of the factor structures.

Table 4.1 Harman's single factor fit indices results for each model

Models	Model 1 a)	Model 2 b)	Model 3 c)	Model 4 d)
χ^2(*df*)	5603.192 (1595)	2157.179 (434)	1863.386 (350)	3700.206 (779)
χ^2/*df*	3.513	4.970	5.324	4.750
CFI	0.570	0.581	0.606	0.537
TLI	0.554	0.552	0.574	0.513
RMSEA	0.094	0.119	0.124	0.115
SRMR	0.094	0.114	0.116	0.109

Note: a) all constructs in one single factor
b) all constructs of HPHRP; AC; NC; CC; TUR in one single factor
c) all constructs of ADP; AC; NC; CC; TUR in one single factor
d) all constructs of OJ; AC; NC; CC; TUR in one single factor

Above all, the results of the EFA and CFA of all of the single-factor models show that the data of all the models didn't meet the standard requirement of convergent validity. The detail could be found in the Annex F. And all of the models didn't fit the good model indices well. So that, the CMV is not the main caring problem in this study.

4.2 Measurement model test

4.2.1 HPHRP

In this study, an exploratory analysis was conducted to confirm the factor structure of the items of HPHRP with the data (KMO=.866, Bartlett's χ^2=1131.053, p= .000). According to the previous scholar (Howard, 2015), the load on the factors must be greater than 0.40. All the standardized loadings of HPHRP meet this standard and ranged from 0.48 to 0.83 (except the

item of WLB2, which had been deleted because its loading value was 0.25).

A CFA was conducted for HPHRP with the data to verify the structure got by the EFA. To determine the goodness of fit of the scales, we used the threshold levels proposed by Hu and Bentler (1999) and complemented by Hair et al. (2010). The reference of criteria in detail is p <0.05, χ^2/df <3, GFI >0.9, RMSEA<0.10, RMR<0.05, CFI>0.9, NFI>0.9, NNFI>0.9, TLI>0.9, AGFI>0.9, IFI>0.9, PGFI>0.9, PNFI>0.9, SRMR<0.1. The CFA showed acceptable fit indices (χ^2/df =2.237; CFI=.936; SRMR=.059; RMSEA=.094) (Annex G). Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) were used for evaluating the reliability and convergent validity.

The Cronbach's alpha for the whole scale, which was 0.841, showed that the very good/excellent reliability (Kline, 2011). The CR values was 0.87, exceeding the minimum reliability value of 0.70 (Hair et al., 2010), and AVE value was 0.44, confirming the construct reliability of composite indicators.

4.2.2 ADP

An exploratory with the data was conducted to confirm the factor structure of the items of ADP (KMO=.823, Bartlett's $\chi2$=327.219, p=.000). All the standardized loadings of ADP were greater than 0.40 and ranged from 0.62 to 0.79.

Thereafter, ADP was conducted by confirmatory factor analysis (CFA) to verify the one-factor structure of ADP got by the exploratory factor analysis. The CFA showed good fit indices (χ^2/df=1.012; CFI=1.000; SRMR=.029; RMSEA=.009) without any adjustment (Annex H). The Cronbach's alpha for the whole scale, which was 0.91, showed that a very good/excellent reliability. The CR value was 0.91 and AVE value was 0.60, all above the minimum reliability value, confirming the construct reliability of composite indicators.

4.2.3 OJ

An exploratory with the data was conducted to confirm the factor structure of the items of OJ (KMO =.912, Bartlett's χ^2 =3273.741, p =.000). All the standardized loadings of OJ were greater than 0.40 and ranged from 0.52 to 0.77 (except PJ4, which had been deleted because its loading value was -0.049).

Thereafter, a CFA was conducted for OJ with the data to verify the three-factor structure of Justice got by the EFA. After establishing the covariance relationship among the measurement items with Modification Indices (MI) value greater than 10 in the same factor (DJ4-DJ1; PJ2-

PJ1; PJ5-PJ7; PJ1-PJ3). The CFA showed acceptable fit indices (χ^2/df=2.375; CFI=.904; SRMR=.072; RMSEA=.099) (Annex I).

The Cronbach's alpha for the whole scale, which was 0.92, showed a very good/excellent reliability. The CR value was 0.93 and AVE value was 0.42, all above the acceptable reliability value, confirming the construct reliability of composite indicators.

4.2.4 OC

In this study, an exploratory analysis was conducted to confirm the factor structure of the items of OC with data and four principal components were extracted explaining 61.452% (greater than 50 %) of the initial variance (KMO =.855, Bartlett's χ^2 =1106.647, p=.000). The detail of the Total Variance Explained of OC is showed in Annex G, which also presents item factor loads contained in the four factors of OC scale.

After deleting several items (AC1,2,6, NC1, CC1,2,5) that deviate from the factor according to their factor loading coefficient, and have cross-factor loadings, the EFA shows that three principal components were extracted in the factor structure of the items of OC, explaining 66.040 % (greater than 50 %) of the initial variance (KMO=.790, Bartlett's χ^2 = 629.271, p = .000) (Annex J). The item factor loads contained in the three factors of OC scale rather than four showed in Annex J. After adjusted, the EFA of OC revealed that this scale consists of three dimensions, that is, AC-3 items, NC-5 items, CC-3 items.

Thereafter, a CFA was conducted with the data. The CFA showed acceptable fit indices (χ^2/df=1.898; CFI=0.939; SRMR=.079; RMSEA=.080) after establishing the covariance relationship among the measurement items with modification indices (MI) value greater than 10 (NC6-NC2, NC5-NC4, NC6-NC4) (Annex K). The Cronbach's alpha for the whole scale was .800, for the AC was 0.790, for the NC was 0.832, for the CC was 0.670. The results of the convergent validity via AVE are showed in Annex L. The AVE values for each dimension indicate that all AVE values are higher than 0.40, which is at an acceptable level. The Fornell-Larcker criterion was used to assess the discriminant validity, which defines that the square root of each construct's AVE should be greater than the inter-construct correlations (Fornell & Larcker, 1981).And the CR values for the AC was 0.781, for the NC was 0.834, for the CC was 0.664. All above or close to the minimum reliability value. The result proves that the discriminant validity meets the standard (Annex M).

4.2.5 Turnover intention

An exploratory analysis with the data was conducted to confirm the factor structure of the items of turnover intention (KMO =.723, Bartlett's χ^2 =178.205, p=.000). All the standardized loadings of turnover intention were greater than 0.40 and ranged from 0.62 to 0.79.

The Cronbach's alpha for the whole scale, which was 0.89, showed a very good/excellent reliability. The CR values was 0.89 and AVE value was 0.74, all above the minimum reliability value, confirming the construct reliability of composite indicators.

4.2.6 Measurement model test

A CFA was conducted to validate the measurement models. The measurement model specifies the relationships between latent variables and their indicators (Henseler, 2017). Table 4.2 shows the model fit statistics for different measurement models. Model A was consisted of HPHRP, AC, NC, CC, TUR constructs; Model B contained ADP, AC, NC, CC, TUR constructs; Model C was made up of OJ, AC, NC, CC, TUR constructs. We used the threshold levels proposed by Hu and Bentler (1999) and complemented by Hair et al. (2010). The reference of criteria in detail is p<0.05, χ^2/df<3, CFI>0.9, TLI>0.9, RMSEA<0.1, SRMR<0.1. Model A and B showed an adequate model-data fit, and model C indicates a reasonable fit according to the reference criteria.

Table 4.2 Fit indices for measurement model

Models	Model A	Model B	Model C
χ^2 (*df*)	471.974 (220)	343.571 (179)	1643.733 (485)
χ^2/df	2.145	1.919	3.389
CFI	0.913	0.940	0.772
TLI	0.900	0.929	0.752
RMSEA	0.064	0.057	0.092
SRMR	0.064	0.056	0.075

Note: Model A: HPHRP-AC/NC/CC-TUR model
Model B: ADP-AC/NC/CC-TUR model
Model C: OJ-AC/NC/CC-TUR model

4.3 Correlation analysis

To analyze the correlation between HPHRP, ADP, OJ, OC (AC, NC, CC), and Turnover intention, the statistical methods adopted were Pearson's correlation analysis. All the statistical analyses were completed with SPSS 20.0 analysis software. Two-sided test was used.

Table 4.3 presents descriptive statistics (mean and standard deviation), reliability and bivariate correlations for all of the constructs. Gender was significantly related with NC (r =0.15,

$p<0.01$). Contract type showed a significant and positive association with OJ ($r=0.16$, $p<0.01$), AC ($r=0.20$, $p<0.01$), NC ($r=0.31$, $p<0.01$), CC ($r=0.18$, $p<0.01$), and it was negatively related to turnover intention ($r=-0.27$, $p<0.01$). The number of employees in the organization was only negatively correlated with turnover intention ($r=-0.18$, $p<0.01$). Both pharmacy industry tenure and organizational industry tenure showed a negative relation with turnover intention separately ($r=-0.23$, $p<0.01$; $r=-0.25$, $p<0.01$, respectively). The latter also showed positive relationship with AC, NC, CC significantly. We also found the type of ownership had a significant positive relationship with OJ ($r=0.12$, $p<0.05$) and turnover intention ($r=0.13$, $p<0.01$). Education was negatively related to OJ and NC ($r=-0.13$, $p<0.05$; $r=-0.19$, $p<0.01$), and positively with turnover intention ($r=0.22$, $p<0.01$). Age in the present study showed a positive association with NC and CC ($r=0.12$, $p<0.05$; $r=0.16$, $p<0.01$), and negative relationship with turnover intention ($r=-0.22$, $p<0.01$). HPHRP was positively related to ADP, OJ, AC, NC ($r=0.71$, $p<0.01$; $r=0.74$, $p<0.01$; $r=0.34$, $p<0.01$; $r=0.41$, $p<0.01$), and negatively correlated to turnover intention ($r=-0.34$, $p<0.01$). Turnover intention showed significant negatively relationship with all other constructs except the ownership.

Table 4.3 Correlation analysis (Pearson)

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender[a]	0.42	0.49														
2. Contract type[b]	0.68	0.46	0.11													
3.Employee number[c]	0.74	0.43	0.13*	0.14*												
4. Pharmacy industry tenure[d]	0.55	0.49	0.03	0.25**	0.23**											
5. Organizational tenure[e]	0.49	0.50	0.06	0.36**	0.16**	0.62**										
6. Ownership[f]	0.57	0.50	-0.00	-0.08	-0.16**	-0.14*	-0.14*									
7. Education[g]	0.17	0.37	-0.07	-0.24**	-0.07	-0.21**	-0.13*	-0.02								
8. Age[h]	0.00	7.20	0.01	0.23**	0.10	0.55**	0.59**	-0.08	-0.14*							
9. HPHRP	5.10	0.93	0.03	0.12	-0.01	-0.05	-0.03	0.01	-0.05	-0.04						
10. ADP	5.26	1.04	-0.02	0.07	0.04	0.04	-0.01	0.08	-0.03	-0.02	0.71**					
11. OJ	5.14	0.92	0.11	0.16**	0.03	0.02	0.05	0.12*	-0.13*	-0.06	0.74**	0.72**				
12. AC	4.95	1.40	-0.09	0.20**	0.07	0.09	0.17**	-0.02	-0.09	0.08	0.34**	0.39**	0.42**			
13. NC	5.10	1.04	0.15**	0.31**	0.10	0.10	0.17**	0.05	-0.19**	0.12*	0.41**	0.46**	0.53**	0.46**		
14. CC	4.29	1.15	0.05	0.18**	0.01	0.09	0.17**	-0.06	-0.09	0.16**	0.06	0.06	0.13*	-0.07	0.44**	
15. TUR	2.67	1.47	-0.07	-0.27**	-0.18**	-0.23**	-0.25**	0.13*	0.22**	-0.22**	-0.34**	-0.42**	-0.45**	-0.59**	-0.55**	-0.12*

* $p<0.05$ ** $p<0.01$

Note: N = 283. Reliability coefficients are reported in parentheses. Due to the complexity of the table, we decided to show only 2 decimal places to make the table comprehensible to the reader.

a. Female = 0, Male = 1

b. Short-term and project contract= 0, Mid- and long-term contract= 1

c. Employee number ≦ 100=0, employee number >100=1

d. Pharmacy industry tenure < 6 years=0, Pharmacy industry tenure ≧ 6 years=1

e. Organizational tenure < 6 years=0, organizational tenure ≧ 6 years=1

f. State owned company=0, non-state-owned company=1

g. with an academic degree (bachelor degree and above) =0, without an academic degree (Junior College degree and below) =1

h. Age is treated as a continuous variable, and after mean centered

4.4 SPSS process analysis results

4.4.1 HPHRP, AC, NC, CC, TUR and age

Hypothesis 1 predicted that HPHRP had a negative effect on turnover intention. As shown in Table 4.4, results revealed that the direct effect was significant (B = -0.17, 95% Boot CI = -0.32; -0.01). The indirect effects of HPHRP on turnover intention through AC and NC separately were also significant (B = -0.20, 95% Boot CI = -0.30; -0.13, B = -0.17, 95% Boot CI = -0.28; -0.08, respectively), suggesting a partial mediation (Al-Abbadi, 2018). There was no significant indirect effect through CC (B =0.00, 95% Boot CI = -0.01; 0.02), which partly supported the Hypothesis 4.

Table 4.4 Multiple regression results for HPHRP, commitment and turnover intention

Variables	AC			NC			CC			TUR		
	Coeff	SE	95% CI	Coeff	SE	95% CI	Coeff	SE	95% CI	Coeff	SE	95% CI
Independent variables												
HPHRP	0.50***	0.09	0.33, 0.66	0.42***	0.06	0.30, 0.54	0.05	0.07	-0.10, 0.20	-0.17*	0.08	-0.32, -0.01
Age	0.00	0.01	-0.03, 0.03	0.00	0.01	-0.02, 0.02	0.02	0.01	-0.01, 0.04	-0.02	0.01	-0.04, 0.00
Interaction												
HPHRP*Age	0.01	0.01	-0.02, 0.03	0.01	0.01	-0.01, 0.02	0.00	0.01	-0.01, 0.02	0.01	0.01	0.00, 0.03
Mediator												
AC										-0.41***	0.06	-0.52, -0.30
NC										-0.41***	0.09	-0.59, -0.24
CC										0.02	0.07	-0.11, 0.15
Direct effect												
HPHRP										-0.17*	0.08	-0.32, -0.01
Indirect effect												
HPHRP through AC										-0.20	0.04	-0.30, -0.13
HPHRP through NC										-0.17	0.05	-0.28, -0.08
HPHRP through CC										0.00	0.01	-0.01, 0.02
Control variables												
Gender[a]	-0.35*	0.16	-0.67, -0.03	0.23*	0.11	0.01, 0.45	0.06	0.14	-0.22, 0.33	-0.04	0.14	-0.30, 0.23
Contract type[b]	0.34	0.19	-0.02, 0.71	0.44***	0.13	0.19, 0.70	0.30	0.16	-0.02, 0.62	-0.02	0.16	-0.33, 0.28
Employee number[c]	0.16	0.18	-0.20, 0.52	0.11	0.13	-0.15,0.36	-0.07	0.16	-0.39, 0.25	-0.30	0.15	-0.60, 0.00
Pharmacy industry tenure[d]	-0.08	0.21	-0.50, 0.34	-0.10	0.15	-0.39, 0.20	-0.15	0.19	-0.52, 0.22	-0.22	0.17	-0.57, 0.12
Organizational tenure[e]	0.41	0.22	-0.02, 0.85	0.20	0.15	-0.10, 0.50	0.24	0.19	-0.13, 0.62	-0.05	0.18	-0.41, 0.31
Ownership[f]	-0.05	0.27	-0.58, 0.48	-0.09	0.19	-0.46, 0.28	-0.15	0.24	-0.61, 0.32	-0.34	0.22	-0.77, 0.09
Education[g]	-0.13	0.21	-0.55, 0.30	-0.27	0.15	-0.56, 0.02	-0.12	0.19	-0.49, 0.25	0.36*	0.18	0.01, 0.70

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

a. Female = 0, Male = 1; b. Short-term and project contract= 0, Mid-and long-term contract= 1; c. Employee number ≦ 100=0, employee number >100=1; d. Pharmacy industry tenure < 6 years=0, Pharmacy industry tenure ≧ 6 years=1; e. Organizational tenure < 6 years=0, organizational tenure ≧ 6 years=1; f. SOE company=0, non-SOE company=1; g. with an academic degree (bachelor degree and above) =0, without an academic degree (Junior College degree and below) =1

H7(a) stated that age moderates the direct relationship between HPHRP and turnover intention, such that the relationship is stronger for younger workers than for older workers. Post-hoc probing was used to test the main effect of HPHRP on turnover intention at specific levels of age. The interaction effect was plotted using one standard deviation below (-1SD) and above (+1SD) the mean of age (Aiken et al., 1991; Preacher et al., 2006). As could be seen in Figure 4.1, the relationship between HPHRP and turnover intention is stronger when age is low (B= -0.25, *t*= -2.41, 95% Boot CI = -0.45; -0.05) and there is no significant effect supporting the relationship between HPHRP and turnover intention when age is high (B= -0.08, *t*= -0.88, 95% Boot CI = -0.26; 0.10). Hence, these results supported Hypothesis 7(a).

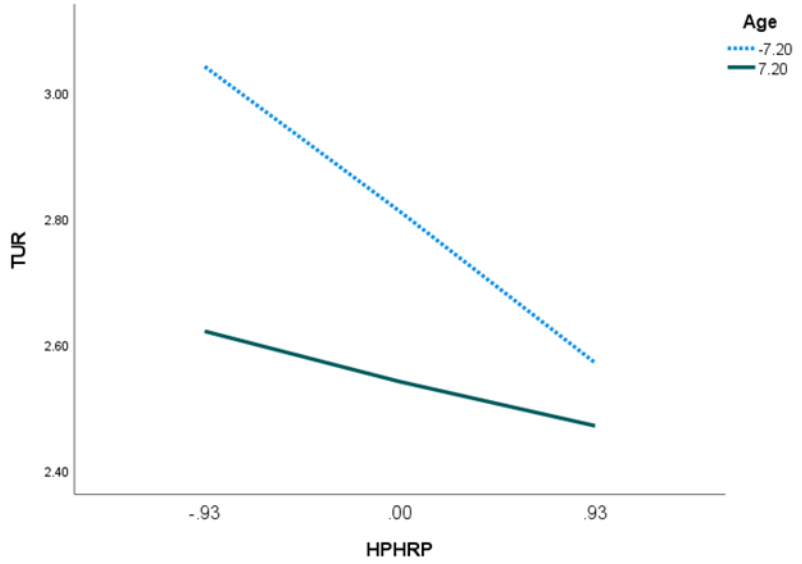


Figure 4.1 Moderating effect of age on the relationship between HPHRP and turnover intention

(The conditional direct effect of HPHRP on turnover intention via age)

H7(b) proposed that age moderates the indirect relationship between HPHRP and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers. Unexpectedly, this hypothesis was not supported by the results, since there is no significant moderation effect of age on the relationship between HPHRP and AC, HPHRP and NC, HPHRP and CC. The index of moderated mediation was 0.00(95% CI = -0.01; 0.01), 0.00 (95% CI = -0.01; 0.00), and 0.00(95% CI = 0.00; 0.00), respectively. The results of the direct effect of HPHRP on turnover intention moderated by age and indirect effect of HPHRP on turnover intention through AC/NC/CC moderated by age, respectively, are displayed in Table 4.5. The results of the moderated mediation model are depicted in Figure 4.2.

Table 4.5 Direct and indirect effect of HPHRP on turnover intention moderated by age

	Effect	SE	LLCI	ULCI
		Direct Effect		
M-1SD	-0.25	0.1	-0.45	-0.05
M	-0.17	0.08	-0.32	-0.01
M+1SD	-0.08	0.09	-0.26	0.1
		Indirect Effect through AC		
M-1SD	-0.19	0.06	-0.31	-0.09
M	-0.2	0.04	-0.3	-0.13
M+1SD	-0.22	0.05	-0.34	-0.13
		Indirect Effect through NC		
M-1SD	-0.15	0.05	-0.26	-0.06
M	-0.17	0.05	-0.28	-0.08
M+1SD	-0.19	0.06	-0.33	-0.09
		Indirect Effect through CC		
M-1SD	0	0.01	-0.02	0.02
M	0	0.01	-0.01	0.02
M+1SD	0	0.01	-0.02	0.02

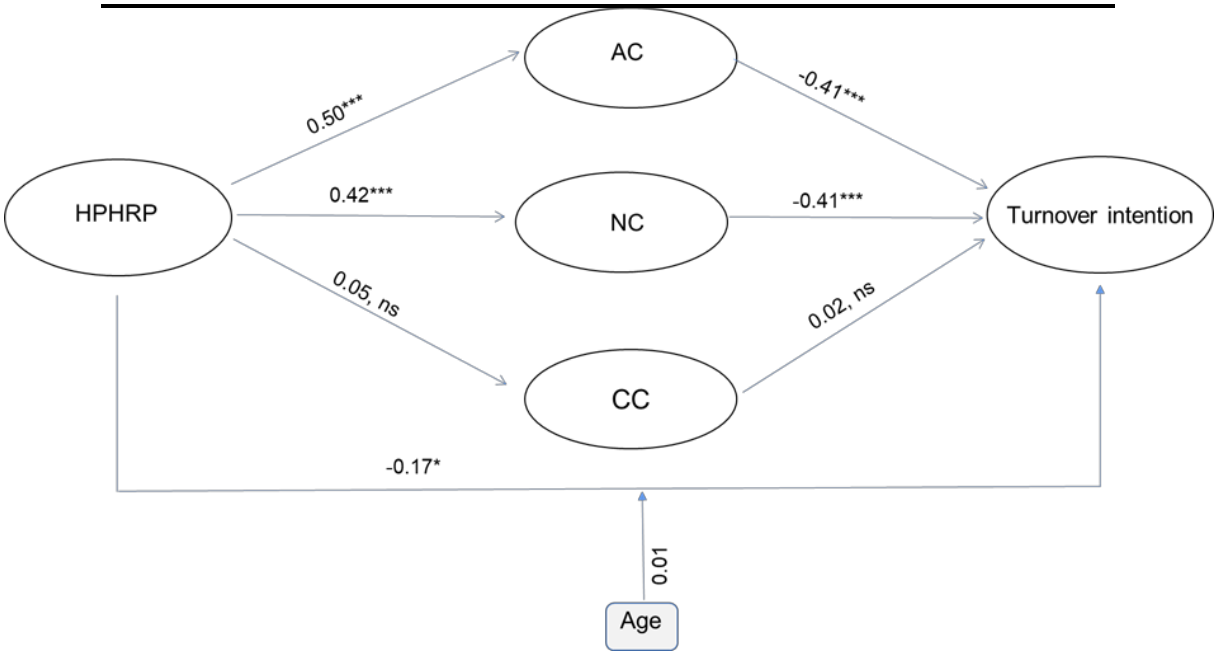


Figure 4.2 Results of the moderated mediation model

Note: * $p<0.05$ ** $p<0.01$, *** $p<0.001$, ns – not significant

4.4.2 ADP, AC, NC, CC, TUR and age

Hypothesis 2 predicted that ADP had a negative effect on turnover intention. Results showed in Table 4.6 proved that the direct effect was significant (B = -0.19, 95% Boot CI = -0.33; -0.05). The indirect effects of ADP on turnover intention through AC and NC separately were significant (B = -0.21, 95% Boot CI = -0.30; -0.14, B = -0.17, 95% Boot CI = -0.27; -0.07, respectively), suggesting a partial mediation (Ali & French, 2019). There was no significant indirect effect through CC, which partly supported the Hypothesis 5.

Table 4.6 Multiple regression results for ADP, commitment and turnover intention

Variables	AC			NC			CC			TUR		
	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI
Independent variables												
ADP	0.52***	0.07	0.38,0.67	0.46***	0.05	0.36, 0.56	0.06	0.07	-0.07, 0.19	-0.19**	0.07	-0.33, -0.05
Age	0.00	0.01	-0.03, 0.03	0.00	0.01	-0.01, 0.02	0.02	0.01	-0.01, 0.04	-0.02	0.01	-0.04, 0.00
Interaction												
ADP*Age	0.02	0.01	0.00, 0.04	0.01	0.01	0.00, 0.02	0.00	0.01	-0.02, 0.02	0.01	0.01	-0.01, 0.02
Mediator												
AC										-0.40***	0.06	-0.51, -0.29
NC										-0.37***	0.09	-0.55, -0.19
CC										0.01	0.07	-0.12, 0.14
Direct effect												
ADP										-0.19**	0.07	-0.33, -0.05
Indirect effect												
ADP through AC										-0.21	0.04	-0.30, -0.14
ADP through NC										-0.17	0.05	-0.27, -0.07
ADP through CC										-0.20	0.06	-0.32, -0.08
Control variables												
Gender[a]	-0.28	0.16	-0.59, 0.03	0.28*	0.11	0.07, 0.49	0.06	0.14	-0.22, 0.34	-0.08	0.13	-0.35, 0.18
Contract type[b]	0.41*	0.18	0.06, 0.76	0.48***	0.12	0.24, 0.73	0.31	0.16	-0.01, 0.63	-0.07	0.15	-0.34, 0.24
Employee number[c]	0.12	0.18	-0.23, 0.47	0.06	0.12	-0.18, 0.30	-0.08	0.16	-0.39, 0.24	-0.28	0.15	-0.58, 0.01
Pharmacy industry tenure[d]	-0.21	0.21	-0.61, 0.20	-0.21	0.14	-0.49, 0.07	-0.16	0.19	-0.53, 0.21	-0.18	0.17	-0.52, 0.17
Organizational tenure[e]	0.46*	0.21	0.04, 0.88	0.24	0.15	-0.05, 0.53	0.25	0.19	-0.13, 0.63	-0.08	0.18	-0.44, 0.28
Ownership[f]	0.15	0.26	-0.66, 0.37	-0.18	0.18	-0.54, 0.17	-0.16	0.24	-0.62, 0.31	-0.30	0.22	-0.73, 0.13
Education[g]	-0.14	0.21	-0.55, 0.26	-0.29*	0.14	-0.57, -0.01	-0.13	0.19	-0.49, 0.24	0.36*	0.18	0.02, 0.71

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

a. Female = 0, Male = 1; b. Short-term and project contract= 0, Mid-and long-term contract= 1; c. Employee number ≦100=0, employee number >100=1; d. Pharmacy industry tenure < 6 years=0, Pharmacy industry tenure ≧6 years=1; e. Organizational tenure < 6 years=0, organizational tenure ≧6 years=1; f. SOE company=0, non-SOE company=1; g. With an academic degree (bachelor degree and above) =0, without an academic degree (Junior College degree and below) =1

H8(a) stated that age moderates the direct relationship between ADP and turnover intention, such that the relationship is stronger for younger workers than for older workers. Post-hoc probing was used to test the main effect of ADP on turnover intention at specific levels of age. The interaction effect was tested using one standard deviation below (-1SD) and above (+1SD) the mean of age. As could be seen in Figure 4.3, the relationship between ADP and turnover intention is stronger when age is low (B= -0.23, t= -2.56, 95% Boot CI = -0.42; -0.05) and there is no significant effect support the relationship between ADP and turnover intention when age is high (B= -0.15, t= -1.51, 95% Boot CI = -0.34; 0.05). Hence, these results supported Hypothesis 8(a).

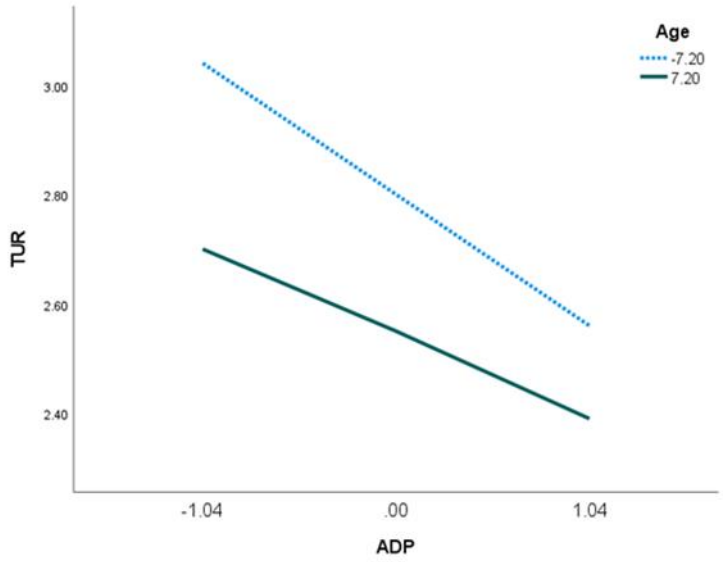


Figure 4.3 Moderating effect of age on the relationship between ADP and turnover intention

(The conditional direct effect of ADP on turnover intention via age)

H8(b) proposed that age moderates the indirect relationship between ADP and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers. This hypothesis was not proved by the results. There were no significant moderation effects on the indirect relationships via the 3 types of commitment. The index of moderated mediation via AC, NC, CC was -0.01(95% CI = -0.02; 0.00), 0.00(95% CI = -0.01; 0.00), 0.00(95% CI = 0.00; 0.00), respectively. The results of the direct effect of ADP on turnover intention moderated by age and indirect effect of ADP on turnover intention through AC/NC/CC moderated by age respectively are listed in Table 4.7. The results of the moderated mediation model are depicted in Figure 4.4.

Table 4.7 Direct and indirect effect of ADP on turnover intention moderated by age

	Effect	SE	LLCI	ULCI
		Direct Effect		
M-1SD	-0.23	0.09	-0.42	-0.05
M	-0.19	0.07	-0.33	-0.05
M+1SD	-0.15	0.10	-0.34	0.05
		Indirect Effect through AC		
M-1SD	-0.16	0.04	-0.25	-0.08
M	-0.21	0.04	-0.30	-0.14
M+1SD	-0.26	0.06	-0.39	-0.17
		Indirect Effect through NC		
M-1SD	-0.14	0.05	-0.24	-0.06
M	-0.17	0.05	-0.27	-0.07
M+1SD	-0.20	0.06	-0.32	-0.08
		Indirect Effect through CC		
M-1SD	0.00	0.01	-0.01	0.01
M	0.00	0.01	-0.01	0.01
M+1SD	0.00	0.01	-0.02	0.02

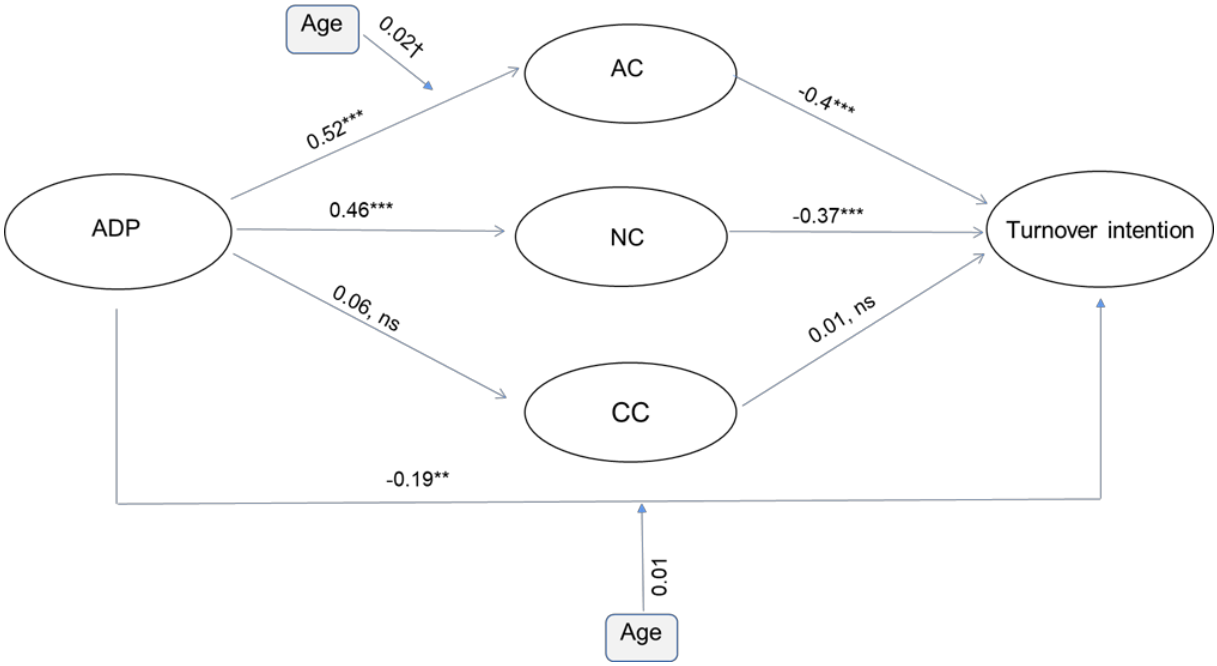


Figure 4.4 Results of the moderated mediation model

Note: † p<0.1 * p<0.05 ** p<0.01, *** p<0.001, ns – not significant

4.4.3 OJ, AC, NC, CC, TUR and age

Hypothesis 3 predicted that OJ had a negative effect on turnover intention. Results showed in Table 4.8 proved that the direct effect was significant (B = -0.23, 95% Boot CI = -0.40; -0.07). The indirect effects of OJ on turnover intention through AC and NC separately were significant (B = -0.25, 95% Boot CI = -0.36; -0.16, B = -0.21, 95% Boot CI = -0.32; -0.10, respectively), suggesting a partial mediation(Ali & French, 2019; Poon, 2012). The indirect effect through CC was not significant, which partly supported the Hypothesis 6.

Table 4.8 Multiple regression results for OJ, commitment and turnover intention

Variables	AC			NC			CC			TUR		
	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI
Independent variables												
OJ	0.63***	0.08	0.47, 0.80	0.55***	0.06	0.44,0.66	0.13	0.08	-0.02, 0.28	-0.23***	0.08	-0.40, -0.07
Age	0.01	0.01	-0.02, 0.04	0.01	0.01	0.00,0.03	0.02	0.01	-0.01, 0.04	-0.02	0.01	-0.04, 0.00
Interaction												
OJ*Age	0.01	0.01	-0.01, 0.03	0.01	0.01	-0.01,0.02	0.00	0.01	-0.02, 0.02	0.02†	0.01	0.00, 0.03
Mediator												
AC										-0.39***	0.06	-0.51, -0.28
NC										-0.38***	0.09	-0.55, -0.20
CC										0.02	0.07	-0.11, 0.15
Direct effect												
OJ										-0.23	0.08	-0.40, -0.07
Indirect effect												
OJ through AC										-0.25*	0.05	-0.36, -0.16
OJ through NC										-0.21*	0.06	-0.32, -0.10
OJ through CC										0.00	0.01	-0.02, 0.03
Control variables												
Gender[a]	-0.43*	0.16	-0.74, -0.13	0.15	0.11	-0.06, 0.36	0.03	0.14	-0.25, 0.32	0.01	0.14	-0.26, 0.28
Contract type[b]	0.32	0.18	-0.03, 0.67	0.42***	0.12	0.18, 0.66	0.28	0.16	-0.04, 0.60	-0.03	0.15	-0.33, 0.28
Employee number[c]	0.15	0.18	-0.20, 0.50	0.10	0.12	-0.14, 0.33	-0.07	0.16	-0.39, 0.24	-0.31*	0.15	-0.61, -0.02
Pharmacy industry tenure[d]	-0.12	0.21	-0.53, 0.28	-0.13	0.14	-0.41, 0.14	-0.15	0.19	-0.52, 0.22	-0.19	0.17	-0.54, 0.15
Organizational tenure[e]	0.29	0.21	-0.13, 0.71	0.10	0.14	-0.19, 0.38	0.22	0.19	-0.16, 0.60	-0.03	0.18	-0.38, 0.32
Ownership[f]	0.01	0.26	-0.50, 0.52	0.06	0.18	-0.29, 0.41	0.13	0.24	-0.33, 0.60	0.36	0.22	-0.07, 0.79
Education[g]	0.01	0.21	-0.40, 0.42	-0.16	0.14	-0.44, 0.12	-0.09	0.19	-0.46, 0.28	0.35	0.18	0.01, 0.70

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$

a. Female = 0, Male = 1; b. Short-term and project contract= 0, Mid- and long-term contract= 1; c. Employee number ≦100=0, employee number >100=1; d. Pharmacy industry tenure < 6 years=0, Pharmacy industry tenure ≧6 years=1; e. Organizational tenure < 6 years=0, organizational tenure ≧6 years=1; f. SOE company=0, non-SOE company=1; g. With an academic degree (bachelor degree and above) =0, without an academic degree (Junior College degree and below) =1

H9(a) stated that age moderates the direct relationship between OJ and turnover intention, such that the relationship is stronger for younger workers than for older workers. Post-hoc probing was used to test the main effect of OJ on turnover intention at specific levels of age. The interaction effect was tested using one standard deviation below (-1SD) and above (+1SD) the mean of age. As could be seen in Figure 4.5, the relationship between OJ and turnover intention is stronger when age is low (B= -0.35, t= -3.24, 95% Boot CI = -0.56; -0.14) and there is no significant effect support the relationship between OJ and turnover intention when age is high (B= -0.12, t= -1.09, 95% Boot CI = -0.33; 0.09). Hence, these results supported Hypothesis 9(a).

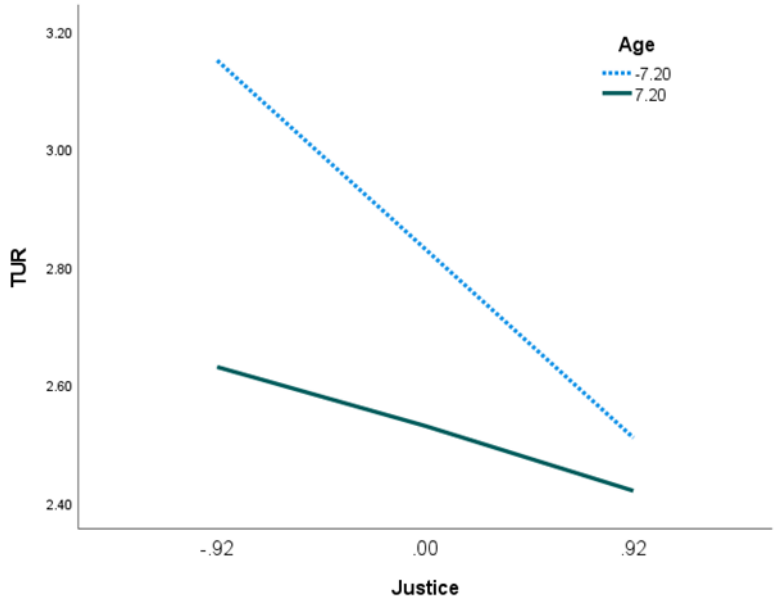


Figure 4.5 Moderating effect of age on the relationship between OJ and turnover intention

(The conditional direct effect of OJ on turnover intention via age)

H9(b) proposed that age moderates the indirect relationship between OJ and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers. Unexpectedly, this hypothesis was not proved by the results. Since there is no significant moderation effect of age on the relationship between OJ and AC, OJ and NC, OJ and CC. The index of moderated mediation was, respectively, 0.00(95% CI = -0.02; 0.01), 0.00(95% CI = -0.01; 0.00), and 0.00(95% CI = 0.00; 0.00). The results of the direct effect of OJ on turnover intention moderated by age and indirect effect of OJ on turnover intention through AC/NC/CC moderated by age respectively are listed in Table 4.9. The results of the moderated mediation model are depicted in Figure 4.6.

Table 4.9 Direct and indirect effect of OJ on turnover intention moderated by age

	Effect	SE	LLCI	ULCI
		Direct Effect		
M-1SD	-0.35	0.11	-0.56	-0.14
M	-0.23	0.08	-0.40	-0.07
M+1SD	-0.12	0.11	-0.33	0.09
		Indirect Effect through AC		
M-1SD	-0.22	0.06	-0.35	-0.11
M	-0.25	0.05	-0.36	-0.16
M+1SD	-0.28	0.06	-0.42	-0.17
		Indirect Effect through NC		
M-1SD	-0.19	0.06	-0.31	-0.08
M	-0.21	0.06	-0.32	-0.10
M+1SD	-0.23	0.07	-0.37	-0.10
		Indirect Effect through CC		
M-1SD	0.00	0.01	-0.02	0.03
M	0.00	0.01	-0.02	0.03
M+1SD	0.00	0.01	-0.02	0.03

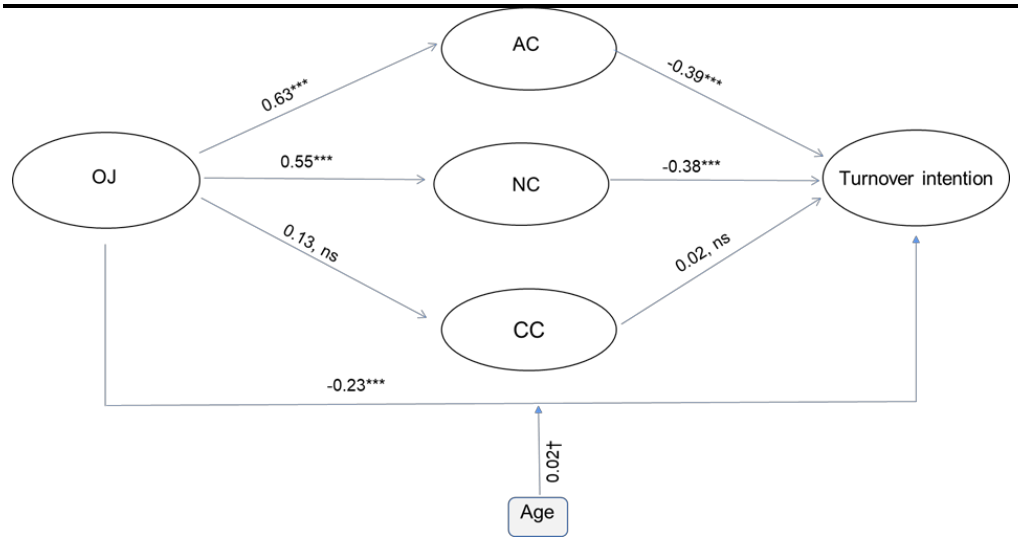


Figure 4.6 Results of the moderated mediation model

Note: † $p<0.1$ * $p<0.05$ ** $p<0.01$, *** $p<0.001$

4.4.4 HPHRP, AC, NC, CC, TUR and ownership

H10(a) stated that ownership moderates the direct relationship between HPHRP and turnover intention, such that the relationship is stronger in the non-SOEs than in the SOEs. Multiple regression was used to analyze the proposed model and the results are shown in Table 4.10. Post-hoc probing was used to test the main effect of HPHRP on turnover intention between SOEs and non-SOEs. As could be seen in Figure 4.7, the relationship between HPHRP and turnover intention is stronger in SOEs (B= -0.23, t= -2.38, 95% Boot CI = -0.41; -0.04) and there is no significant effect supporting the relationship between HPHRP and turnover intention in non-SOEs (B= -0.02, t= -0.21, 95% Boot CI = -0.24; 0.20). We found that these results were contrary to our prediction on Hypothesis 10(a).

Table 4.10 Multiple regression results for HPHRP, commitment and turnover intention

Variables	AC			NC			CC			TUR		
	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI
Independent variables												
HPHRP	0.46***	0.11	0.24, 0.68	0.34***	0.08	0.18, 0.49	-0.05	0.10	-0.24, 0.15	-0.23**	0.10	-0.14, -0.04
Ownership[h]	-0.04	0.16	-0.35, 0.28	-0.18	0.11	-0.39, 0.04	0.11	0.14	-0.17, 0.39	-0.34**	0.13	-0.60, -0.08
Interaction												
HPHRP* Ownership	0.09	0.17	-0.25, 0.42	0.21	0.12	-0.02, 0.44	0.23	0.15	-0.06, 0.52	0.20	0.14	-0.07, 0.47
Mediator												
AC										-0.40***	0.06	-0.51, -0.29
NC										-0.45***	0.09	-0.62, -0.27
CC										0.04	0.07	-0.09, 0.17
Direct effect												
HPHRP										-0.23**	0.10	-0.14, -0.04
Indirect effect												
HPHRP through AC										-0.18	0.05	-0.29, -0.10
HPHRP through NC										-0.15	0.05	-0.25, -0.07
HPHRP through CC										0.00	0.01	-0.02, 0.02
Control variables												
Gender[a]	-0.36*	0.16	-0.67, -0.05	0.22	0.11	0.00,0.43	0.05	0.14	-0.22, 0.33	-0.07	0.13	-0.33, 0.19
contract type[b]	0.34	0.19	-0.03, 0.70	0.44***	0.13	0.19, 0.69	0.30	0.16	-0.02, 0.62	-0.02	0.15	-0.32, 0.28
employee number[c]	0.16	0.19	-0.21, 0.53	0.12	0.13	-0.13, 0.37	-0.10	0.16	-0.42, 0.22	-0.25	0.15	-0.54, 0.05
Pharmacy industry tenure[d]	-0.07	0.21	-0.49, 0.35	-0.07	0.15	-0.35, 0.22	-0.13	0.19	-0.49, 0.24	-0.16	0.17	-0.50, 0.18
Organizational tenure[e]	0.41	0.22	-0.02, 0.84	0.20	0.15	-0.09, 0.50	0.22	0.19	-0.16, 0.60	-0.06	0.18	-0.41, 0.30
Education[f]	-0.14	0.21	-0.56, 0.28	-0.28	0.15	-0.58, 0.01	-0.16	0.19	-0.53, 0.21	0.33	0.17	-0.01, 0.68
Age[g]	0.00	0.01	-0.03, 0.03	0.00	0.01	-0.01, 0.02	0.02	0.01	-0.01, 0.04	-0.02	0.01	-0.04, 0.01

Note: *p<0.05, ** p<0.01, *** p<0.001

a Female = 0, Male = 1

b Short-term and project contract= 0, Mid- and long-term contract= 1

c Employee number ≦ 100=0, employee number >100=1

d Pharmacy industry tenure < 6 years=0, Pharmacy industry tenure ≧ 6 years=1

e Organizational tenure < 6 years=0, organizational tenure ≧ 6 years=1

f with an academic degree (bachelor degree and above) =0, without an academic degree (Junior College degree and below) =1
g Age is continuous variable, and after mean centered
h SOE company=0, non-SOE company=1

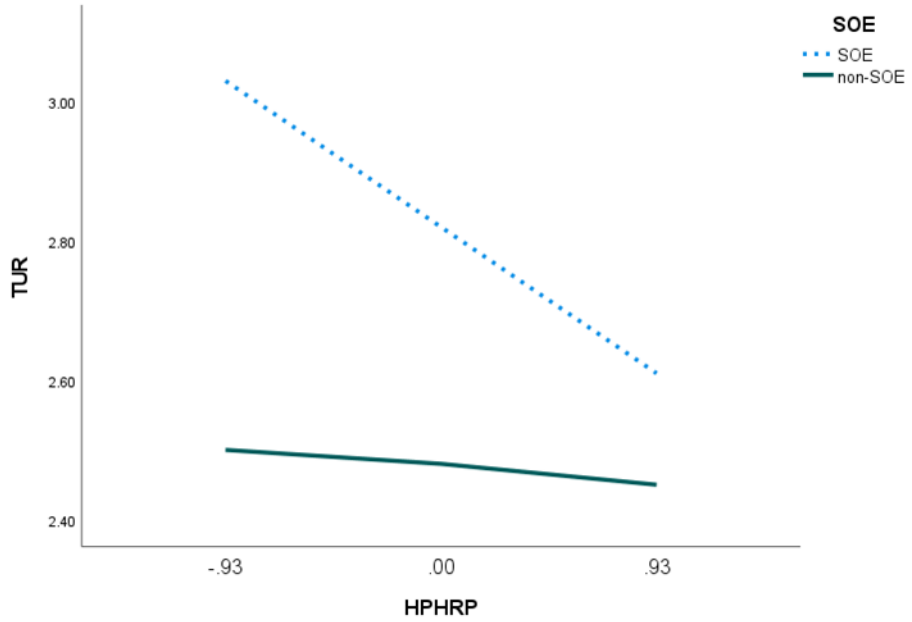


Figure 4.7 Moderating effect of ownership on the relationship between HPHRP and turnover intention

(The conditional direct effect of HPHRP on turnover intention via ownership)

H10(b) proposed that ownership moderates the indirect relationship between HPHRP and turnover intention via OC, such that the relationship is stronger in the non-SOEs than in SOEs. Unexpectedly, this hypothesis was not proved by the results since there is no significant moderation effect of ownership on the relationship between HPHRP and AC, HPHRP and NC, HPHRP and CC. The index of moderated mediation was -0.03(95% CI = -0.17; 0.08), -0.09(95% CI = -0.22; 0.01), 0.01(95% CI = -0.03; 0.06), respectively. The results of the direct effect of HPHRP on turnover intention moderated by ownership and indirect effect of HPHRP on turnover intention through AC/NC/CC moderated by ownership respectively are listed in Table 4.11. The results of the moderated mediation model are depicted in Figure 4.8.

Table 4.11 Direct and indirect effect of HPHRP on turnover intention moderated by ownership

SOE	Effect	SE	LLCI	ULCI
	Direct Effect			
SOE	-0.23**	0.10	-0.41	-0.04
Non-SOE	-0.02	0.11	-0.24	0.20
	Indirect Effect through AC			
SOE	-0.18	0.05	-0.29	-0.10
Non-SOE	-0.22	0.06	-0.35	-0.11
	Indirect Effect through NC			
SOE	-0.15	0.05	-0.25	-0.07
Non-SOE	-0.24	0.07	-0.40	-0.12
	Indirect Effect through CC			
SOE	0.00	0.01	-0.02	0.02
Non-SOE	0.01	0.02	-0.02	0.05

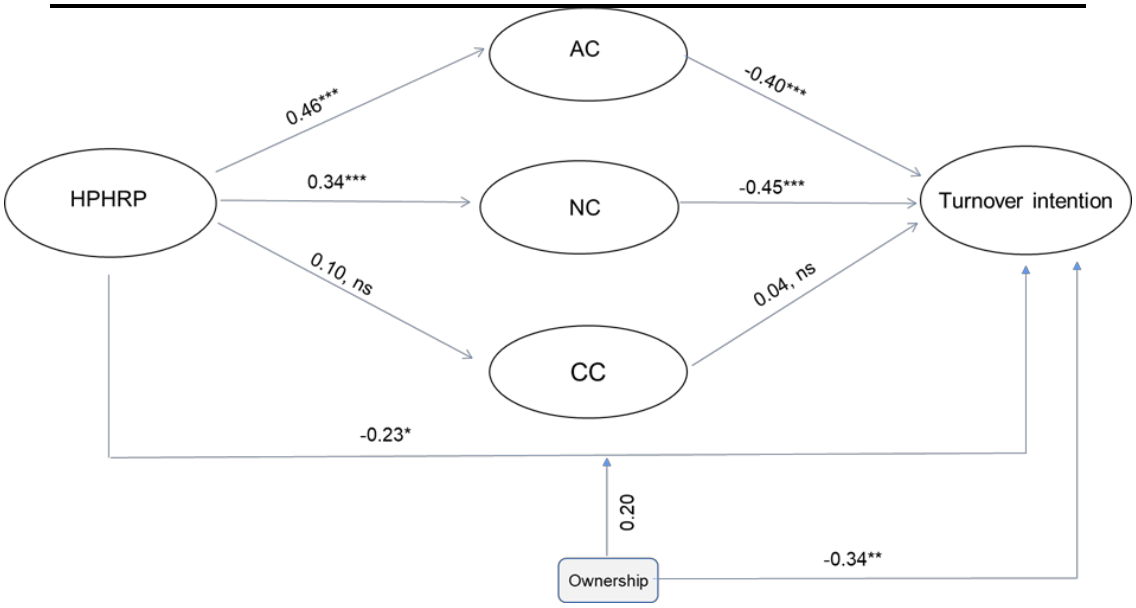


Figure 4.8 Results of the moderated mediation model

Note: * p<0.05 ** p<0.01, *** p<0.001, ns – not significant

4.4.5 ADP, AC, NC, CC, TUR and ownership

H11(a) stated that ownership moderates the direct relationship between ADP and turnover intention, such that the relationship is stronger in the non-SOEs than in the SOEs. Multiple regression was used to analyze the proposed model (Table 4.12), and post-hoc probing was used to test the main effect of ADP on turnover intention between SOEs and non-SOEs. As could be seen in Figure 4.9, the relationship between ADP and turnover intention is stronger in SOEs (B= -0.37, t= -3.99, 95% Boot CI = -0.55; -0.19) and there is no significant effect supporting the relationship between ADP and turnover intention in non-SOEs (B= -0.05, t= -0.59, 95% Boot CI = -0.24; 0.13). We found that these results were contrary to our prediction on Hypothesis 11(a).

Table 4.12 Multiple regression results for ADP, commitment and turnover intention

Variables	AC			NC			CC			TUR		
	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI
Independent variables												
ADP	0.55***	0.10	0.34, 0.75	0.42***	0.07	0.28, 0.56	-0.04	0.09	-0.22, 0.14	-0.37***	0.09	-0.55, -0.19
Ownership	0.06	0.16	-0.25, 0.37	-0.09	0.11	-0.30, 0.12	0.12	0.14	-0.15, 0.40	-0.36**	0.13	-0.62, -0.11
Interaction												
ADP*Ownership	-0.05	0.15	-0.34, 0.24	0.06	0.10	-0.14, 0.26	0.21	0.01	-0.05, 0.46	0.31**	0.12	0.08, 0.55
Mediator												
AC										-0.38***	0.06	-0.49, -0.27
NC										-0.39***	0.09	-0.57, -0.21
CC										0.02	0.07	-0.11, 0.15
Direct effect												
ADP										-0.37***	0.09	-0.55, -0.19
Indirect effect												
ADP through AC										-0.21	0.05	-0.32, -0.12
ADP through NC										-0.16	0.05	-0.27, -0.07
ADP through CC										0.00	0.00	-0.02, 0.01
Control variables												
Gender[a]	-0.31	0.16	-0.62, 0.00	0.25	0.11	0.04, 0.46	0.05	0.14	-0.22, 0.33	-0.10	0.13	-0.36, 0.16
contract type[b]	0.38*	0.18	0.03, 0.74	0.47	0.12	0.23, 0.72	0.29	0.16	-0.02, 0.61	-0.06	0.15	-0.36, 0.23
employee number[c]	0.11	0.18	-0.25, 0.46	0.08	0.12	-0.17, 0.32	-0.10	0.16	-0.42, 0.22	-0.23	0.15	-0.53, 0.06
Pharmacy industry tenure[d]	-0.20	0.21	-0.61, 0.21	-0.19	0.14	-0.47, 0.09	-0.16	0.19	-0.52, 0.21	-0.12	0.17	-0.45, 0.21
Organizational tenure[e]	0.43*	0.21	0.01, 0.86	0.23	0.15	-0.06, 0.52	0.23	0.19	-0.15, 0.61	-0.08	0.18	-0.42, 0.27
Education[f]	-0.16	0.21	-0.57, 0.25	-0.30	0.14	-0.59, -0.02	-0.17	0.19	-0.54, 0.20	0.34	0.17	0.00, 0.68
Age[g]	0.00	0.01	-0.03, 0.03	0.01	0.01	-0.01, 0.02	0.02	0.01	-0.01, 0.04	-0.02	0.01	-0.04, 0.01

Note: *p<0.05, ** p<0.01, *** p<0.001

a Female = 0, Male = 1

b Short-term and project contract= 0, Mid- and long-term contract= 1

c Employee number ≦ 100=0, employee number >100=1

d Pharmacy industry tenure < 6 years=0, Pharmacy industry tenure ≧ 6 years=1

e Organizational tenure < 6 years=0, organizational tenure ≧ 6 years=1
f with an academic degree (bachelor degree and above) =0, without an academic degree (Junior College degree and below) =1
g Age is continuous variable, and after mean centered
h SOE company=0, non-SOE company=1

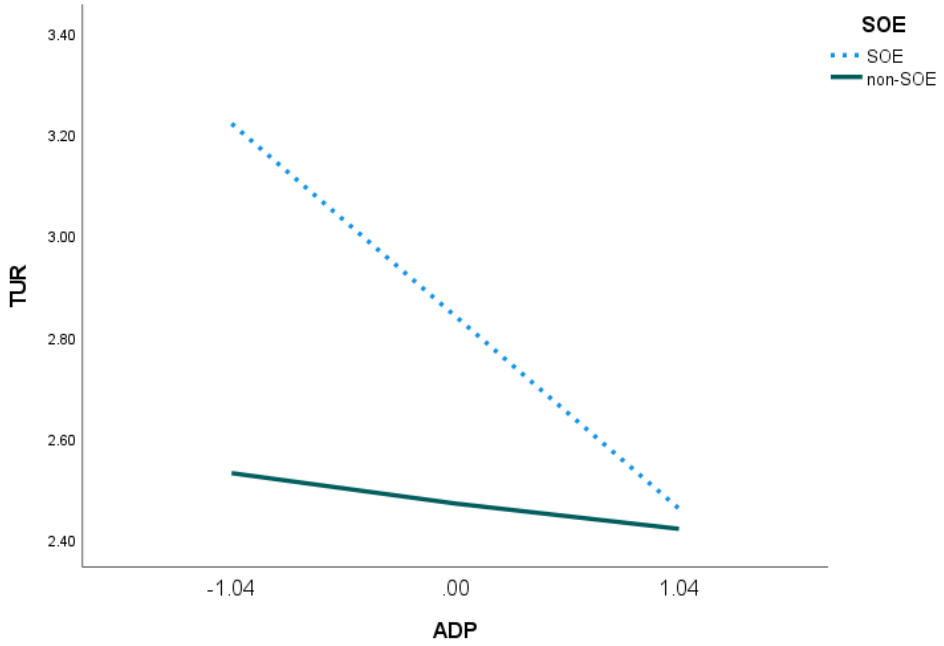


Figure 4.9 Moderating effect of ownership on the relationship between ADP and turnover intention

(The conditional direct effect of ADP on turnover intention via ownership)

H11(b) proposed that ownership moderates the indirect relationship between ADP and turnover intention via OC, such that the relationship is stronger in the non-SOEs than in SOEs. Unexpectedly, this hypothesis was not proved by the results as there is no significant moderation effect of ownership on the relationship between ADP and AC, ADP and NC, ADP and CC. The index of moderated mediation was 0.02(95% CI = -0.08; 0.12), -0.02(95% CI = -0.12; 0.05), 0.00(95% CI = -0.03; 0.04), respectively. The results of the direct effect of ADP on turnover intention moderated by ownership and indirect effect of ADP on turnover intention through AC/NC/CC moderated by ownership respectively are listed in Table 4.13. The results of the moderated mediation model are depicted in Figure 4.10.

Table 4.13 Direct and indirect effect of ADP on turnover intention moderated by ownership

SOE	Effect	SE	LLCI	ULCI
	Direct Effect			
SOE	-0.37**	0.09	-0.55	-0.19
Non-SOE	-0.05	0.09	-0.24	0.13
	Indirect Effect through AC			
SOE	-0.21	0.05	-0.32	-0.12
Non-SOE	-0.19	0.05	-0.29	-0.11
	Indirect Effect through NC			
SOE	-0.16	0.05	-0.27	-0.07
Non-SOE	-0.19	0.06	-0.31	-0.09
	Indirect Effect through CC			
SOE	0.00	0.01	-0.02	0.01
Non-SOE	0.01	0.01	-0.02	0.03

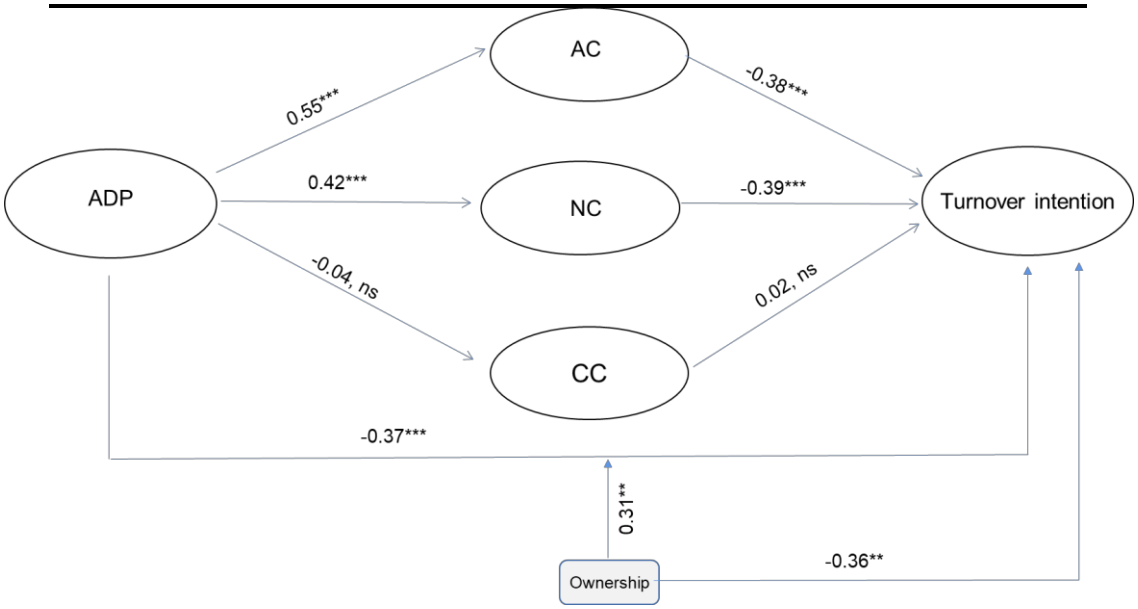


Figure 4.10 Results of the moderated mediation model

Note: * $p<0.05$ ** $p<0.01$, *** $p<0.001$, ns – not significant

4.4.6 OJ, AC, NC, CC, TUR and ownership

H12(a) stated that ownership moderates the direct relationship between OJ and turnover intention, such that the relationship is stronger in the non-SOEs than in the SOEs. Multiple regression was used to analyze the model (Table 4.14). Post-hoc probing was used to test the main effect of OJ on turnover intention between SOEs and non-SOEs. As could be seen in Figure 4.11, the relationship between OJ and turnover intention is stronger in SOEs (B= -0.38, t= -3.56, 95% Boot CI = -0.59; -0.17) and there is no significant effect of the relationship between OJ and turnover intention in non-SOEs (B= -0.12, t= -1.09, 95% Boot CI = -0.33; 0.10). These results were contrary to our prediction on Hypothesis 12(a).

Table 4.14 Multiple regression results for OJ, commitment and turnover intention

Variables	AC			NC			CC			TUR		
	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI	Coeff	SE	95%CI
Independent variables												
OJ	0.66***	0.12	0.43, 0.89	0.48***	0.08	0.32, 0.63	-0.04	0.11	-0.17, 0.25	-0.38***	0.11	-0.59, -0.17
Ownership	0.12	0.16	-0.19, 0.42	-0.04	0.11	-0.25, 0.16	0.15	0.14	-0.13, 0.42	-0.39***	0.13	-0.65, -0.13
Interaction												
OJ*Ownership	-0.03	0.16	-0.35, 0.30	0.15	0.11	-0.07, 0.37	0.22	0.15	-0.07, 0.51	0.26†	0.14	-0.01, 0.53
Mediator												
AC										-0.37***	0.06	-0.48, -0.26
NC										-0.40***	0.09	-0.58, -0.23
CC										0.04	0.07	-0.09, 0.17
Direct effect												
OJ										-0.38***	0.11	-0.59, -0.17
Indirect effect												
OJ through AC										-0.25	0.06	-0.37, -0.14
OJ through NC										-0.19	0.06	-0.31, -0.08
OJ through CC										0.00	0.00	-0.02, 0.02
Control Variables												
Gender[a]	-0.46***	0.15	-0.76, -0.16	0.13	0.10	-0.08,0.33	0.02	0.14	-0.25, 0.29	-0.04	0.13	-0.30, 0.22
contract type[b]	0.30	0.18	-0.06, 0.65	0.41***	0.12	0.17, 0.65	0.28	0.16	-0.04, 0.59	-0.02	0.15	-0.32, 0.28
employee number[c]	0.14	0.18	-0.21, 0.49	0.10	0.12	-0.14, 0.34	-0.10	0.16	-0.41, 0.22	-0.24	0.15	-0.53, 0.05
Pharmacy industry tenure[d]	-0.14	0.20	-0.54, 0.27	-0.13	0.14	-0.41, 0.14	-0.15	0.18	-0.52, 0.21	-0.15	0.17	-0.48, 0.19
Organizational tenure[e]	0.28	0.21	-0.14, 0.69	0.10	0.14	-0.18, 0.38	0.20	0.19	-0.17, 0.58	-0.02	0.18	-0.37, 0.33
Education[f]	-0.02	0.21	-0.43, 0.39	-0.19	0.14	-0.47, 0.09	-0.13	0.19	-0.50, 0.24	0.30	0.17	-0.04, 0.64
Age[g]	0.01	0.01	-0.01, 0.04	0.01	0.01	0.00, 0.03	0.02	0.01	-0.01, 0.04	-0.02	0.01	-0.04, 0.00

Note: †p<0.1, *p<0.05, ** p<0.01, *** p<0.001

a Female = 0, Male = 1

b Short-term and project contract= 0, Mid- and long-term contract= 1

c Employee number ≦ 100=0, employee number >100=1

d Pharmacy industry tenure < 6 years=0, Pharmacy industry tenure ≧ 6 years=1

e Organizational tenure < 6 years=0, organizational tenure ≧ 6 years=1
f with an academic degree (bachelor degree and above) =0, without an academic degree (Junior College degree and below) =1
g Age is continuous variable, and after mean centered
h SOE company=0, non-SOE company=1

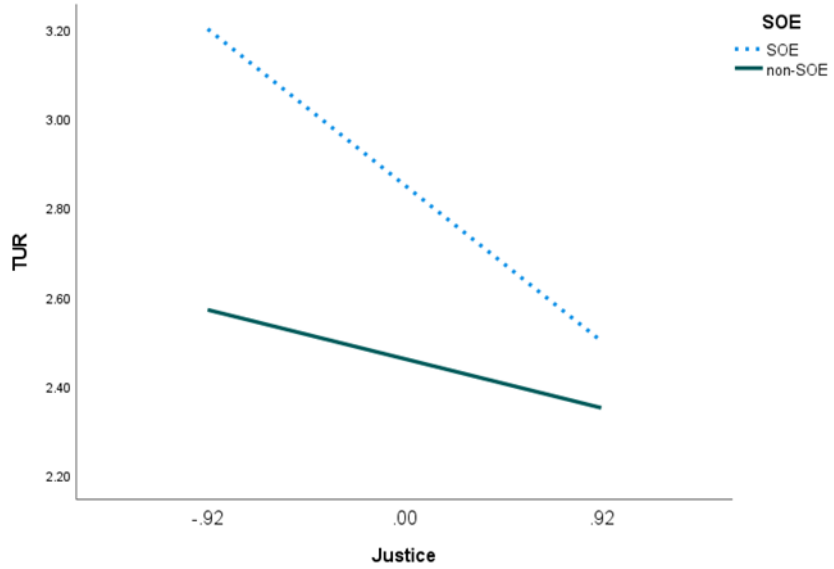


Figure 4.11 Moderating effect of ownership on the relationship between OJ and turnover intention

(The conditional direct effect of OJ on turnover intention via ownership)

H12(b) proposed that ownership moderates the indirect relationship between OJ and turnover intention via OC, such that the relationship is stronger in the non-SOEs than in SOEs. Unexpectedly, this hypothesis was not proved by the results. Since there is no significant moderation effect of ownership on the relationship between OJ and AC, ADP and NC, ADP and CC. The index of moderated mediation was, respectively, 0.01(95% CI = -0.11; 0.14), -0.06(95% CI = -0.17; 0.04), 0.01(95% CI = -0.03; 0.06). The results of the direct effect of OJ on turnover intention moderated by ownership and indirect effect of OJ on turnover intention through AC/NC/CC moderated by ownership respectively are listed in Table 4.15. The results of the moderated mediation model are depicted in Figure 4.12.

Table 4.15 Direct and indirect effect of OJ on turnover intention moderated by ownership

SOE	Effect	SE	LLCI	ULCI
	Direct Effect			
SOE	-0.38***	0.11	-0.59	-0.17
Non-SOE	-0.12	0.11	-0.33	0.10
	Indirect Effect through AC			
SOE	-0.25	0.06	-0.37	-0.14
Non-SOE	-0.24	0.06	-0.38	-0.12
	Indirect Effect through NC			
SOE	-0.19	0.06	-0.31	-0.08
Non-SOE	-0.25	0.07	-0.4	-0.12
	Indirect Effect through CC			
SOE	0.00	0.01	-0.02	0.02
Non-SOE	0.01	0.02	-0.03	0.05

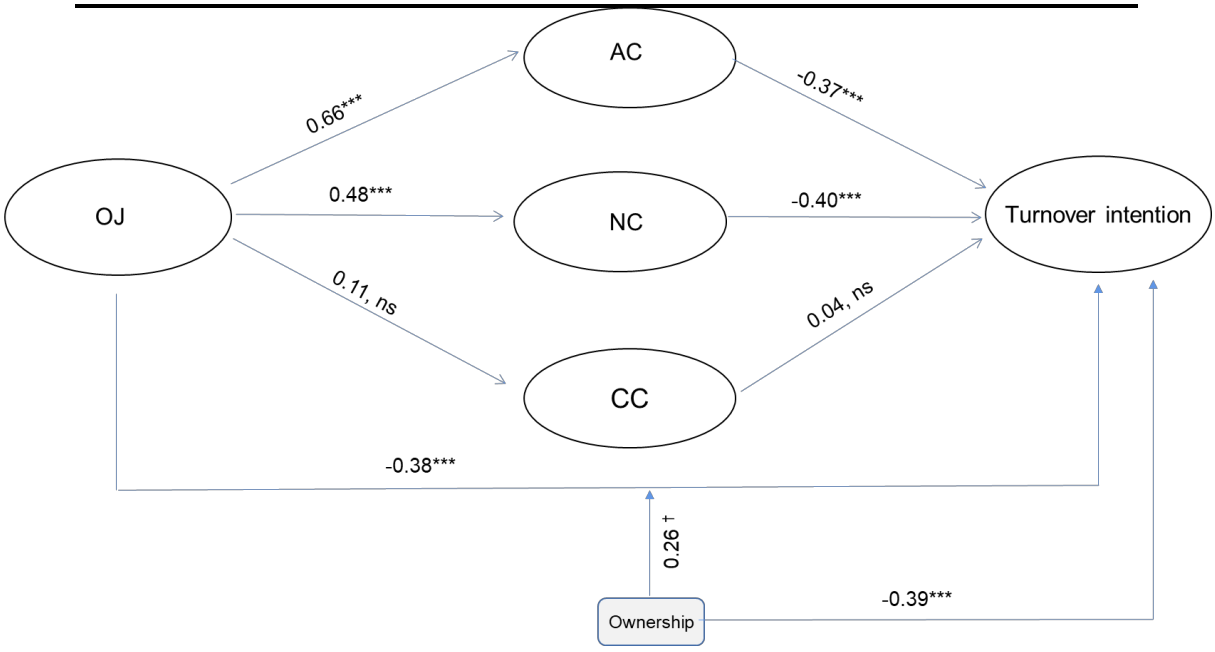


Figure 4.12 Results of the moderated mediation model

Note: * $p<0.05$ ** $p<0.01$, *** $p<0.001$, ns – not significant

4.4.7 Summary of hypothesis test results

By performing the relevant test analysis, we tested the hypotheses proposed in the previous literature review, particularly H1 to H12 for the factors of turnover intention in the pharmaceutical industry. The aggregated test results are summarized below (Table 4.16).

Table 4.16 Summary of hypothesis test results

No.	Hypothesis	Test results
H1	HPHRP have a negative effect on turnover intention	Supported
H2	ADP have a negative influence on turnover intention	Supported
H3	OJ has a negative effect on turnover intention	Supported
H4	OC mediates the relationship between HPHRP and turnover intention	Partly Supported (AC, NC mediates the relationship significantly, but not CC)
H5	OC mediates the relationship between ADP and turnover intention	Partly Supported (AC, NC mediates the relationship significantly, but not CC)
H6	OC mediates the relationship between OJ and turnover intention	Partly Supported (AC, NC mediates the relationship significantly, but not CC)
H7(a)	Age moderates the direct relationship between HPHRP and turnover intention, such that the relationship is stronger for younger workers than for older workers	Supported
H7(b)	Age moderates the indirect relationship between HPHRP and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers	Not supported
H8(a)	Age moderates the direct relationship between ADP and turnover intention, such that the relationship is stronger for younger workers than older workers	Supported
H8(b)	Age moderates the indirect relationship between ADP and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers	Not supported
H9(a)	Age plays as a moderator in the direct effect of OJ on turnover intention, such that the relationship is stronger among younger workers	Supported
H9(b)	Age moderates the indirect relationship between OJ and turnover intention via OC, such that the relationship is stronger for younger workers than for older workers	Not supported
H10(a)	The different ownership nature of the enterprise moderates the direct relationship between HPHRP and turnover intention, such that the relationship is stronger in the non-SOE than in the SOE	Supported conversely (the ownership moderated the direct relationship, such that the relationship is stronger in the SOE)
H10(b)	The different ownership nature of the enterprise moderates the indirect relationship between HPHRP and turnover intention via OC, such that the relationship is stronger in the non-SOE than in SOE	Not supported
H11(a)	The different ownership nature of the enterprise plays as a moderator in the direct effect of ADP on turnover	Supported conversely (the ownership moderated the direct relationship, such that

No.	Hypothesis	Test results
	intention, such that the relationship is stronger in the non-SOE than in SOE	the relationship is stronger in the SOE)
H11(b)	The different ownership nature of the enterprise moderates the indirect relationship between ADP and turnover intention via OC, such that the relationship is stronger in the non-SOE than in SOE	Not supported
H12(a)	The different ownership nature of the enterprise moderates the effect of OJ on turnover intention, such that the relationship is stronger in the non-SOE than in the SOE	Supported conversely (the ownership moderated the direct relationship, such that the relationship is stronger in the SOE)
H12(b)	The different ownership nature of the enterprise moderates the indirect relationship between OJ and turnover intention via OC, such that the relationship is stronger in the non-SOE than in the SOE	Not supported

Chapter 5: Discussion and Conclusion

5.1 Results discussion

In response to the transformation and upgrading of China's pharmaceutical industry, with the circumstance of the increasingly competition for high-level talents, how to retain and keep the employee, especially in their different ages, motivated and productive is a great challenge. However, to authors' knowledge, few empirical studies have comprehensively studied the China's pharmaceutical employee's turnover intention. The present study examined the mediating effects of AC, NC, and CC in the relationship between HPHRP and turnover intention, ADP and turnover intention, OJ and turnover intention, as well as the moderating role of age and ownership in these mediated relationship under the context of China's pharmaceutical industry.

The findings show that both AC and NC mediated the relationship between HPHRP and turnover intention, ADP and turnover intention, OJ and turnover intention. Previous studies have already proved that such variables are related to the retention of the employee in other country and other industries (Dorta-Afonso et al., 2021). However, this study confirmed the factors that influence employee turnover intentions in China's pharmaceutical organizations. In this specific context, the key factors perceived by the employees that influence turnover intention have been identified and further management strategies can be proposed.

Our findings are consistent with the social exchange theory (Blau, 1964). When employees see organizational HR practices as a kind of supportive form to them will increase the perceived organizational support feeling, because workers think that their organization cares about them and do will to support them. This perception of the investment of organization will enhance the employees' affection and obligation link to their organization, and increase the return to their work or companies by their good performance or their commitment (Allen et al., 2003). Therefor we could see the reciprocal social exchange relationship between workers and their organization or their employer as the basement of the well-run companies with the high loyalty and low withdrawal from workers. In this relationship, both sides expect the same thing, reciprocity, which is the key rule of social exchange theory (Cropanzano & Mitchell, 2005). And workers believe they should get what they deserve (Gouldner, 1960).

5.1.1 CMV

Much perceived opinion of workers may escape the notice from employers or peers and, hence, be known only to the individuals (Organ & Ryan, 1995). Therefore, this study has researched the effects of human resources related practices through self-reporting from the employees in pharmaceutical. Self-reporting method has been used in organization behavior research for many years, in particular the written questionnaire, as the primary means of data collection (Donaldson & Grant-Vallone, 2002).It is a kind of feasible and effective method to capture the primary source data on the individuals' psychological researches especially on perceptual and attitudinal variables measurement. Therefore, it is the first choice for us to use the self-reporting way to measure the respondents' perception about the HPHRP, ADJ, OJ, OC, turnover intention. Only the perception from the employees could really tell the employers what are the employees' want and need indeed. Although the validity of results based on applying self-report for the measurement of both dependent and independent variables raises scholars' concern, there are some methods such as the procedural remedies approaches to avoid or reduce the impact of systematic response distortions, common method variance (CMV). Like in our thesis, we choose to temporally separate the questionnaire into two questionnaires, which were sent to the same respondents by two waves. At least four weeks interval were required between these two waves. This separation gave a time delay between the measures of the predictor variables (i.e., HPHRP, ADP, and OJ) and criterion variables (i.e., OC, turnover intention), so that any contextually provided cues could be avoided during the questionnaire retrieval period. The respondents who almost forgot what they response at the first wave questionnaire by at least two weeks' time usually could not be reminded by the foreside answers to chase consciously or unconsciously the consistency between the related questions. In this way, CMV were reduced at most.

We used Harman's single-factor analysis to identify the CMV. After loading all of the items of the related variables based on the different research models into one factor, we later tested it by EFA and CFA. The above results show that one single factor did not present at every model that we hypothesized and no one general factor could make up a majority of the covariance between the measures. And all of the single-factor models didn't fit the good model indices well. These all proved that CMV was not the main concern in our thesis. This result helps us to confirm the effectiveness of the time-lag way to collect the questionnaire as a kind of procedure remedies to lessen the CMV and raise the validity of the results in the context of Chinese organizational behavior or social psychological related researches, which would be a reference

to explore the researches in the same context.

5.1.2 HPHRP, OC and turnover intention

HPHRP could be one of the important measures in reducing the employee turnover intention in the China's pharmaceutical industry context. HPHRP are a set of practices that have a vital effect on the effectiveness of the organization's activities that could reduce the turnover (Daspit et al., 2018). HPHRP, based on the resources and control fundamentals, mainly contains three parts: (1) Personnel mobility, including recruitment, training, personnel transfer, employment guarantee; (2) Evaluation and reward, including performance evaluation, compensation and other incentives; (3) Employment relations, including job design, policy to encourage employee participation in decision-making (Bamberger et al., 2014).

It is further argued that HPHRP will increase social exchange relationship between organizations and employees. Both organization and employees link to each other through exchanging valuable resources. The exchange process is promoted by both parties trying to strike a balance between the cost and reward. HPHRP as the way that the organization provide their economic and social resources choose to improve employees' outcomes rather than adjust organizational decline such as reducing scale and cutting wage. Seeing the employee as the crucial exchange object, HPHRP strengthens employees' inspiration such as information sharing and employee participation. By applying various talent management instruments of HPHRP, organizations could facilitate employees' real needs and then maintain the long-term relationship between organizations and employees. Tsui (1997) defined for the first time about the relationship between the organization-employee as investment and contribution. Individual willingness to cooperate and contribution is the basic conditions for the establishment of an organization. Whether an individual has the willingness to cooperate depends on the balance between contribution and investment. Contributions are personal activities that contribute to the achievement of organizational goals; Investment is the incentive practices which are supplied by the organizations to meet the individual objective and motivation. When organizations invest or assigned for each individual incentives with individual contribution equally or more than, the relationship between organization and workers is in balance. Vice versa, relationship will not be in balance and kept well along, if the employees' contribution is perceived above the organizations' investment, which will lose the incentive to the workforce. It could be seen by the employees as the organizational investment in employees' development, and expressing the organizations' desire to keep long-term relationships with their workforce considering the mechanism of HPHRP anchoring in the HR systematic practices such as

comprehensive recruitment, rigorous selection, extensive training and performance management (Takeuchi et al., 2007). The highlights of HPHRP, such as flexible work designs, decision-making based on employees' involvement, and compensation based on performance, could meet the real needs of the workers, and could be perceived by employees as showing their employers' trust, recognition and investment on them and value their contributions to the organization. It promotes employees to form a sense of organizational support. This support feeling will effectively stimulate the autonomous motivation of workers, and inspire them adopt self-reinforcing strategies to invest more time, wisdom, social resources on their work and explore their limitless capability to overcome the difficulties in the job.

One of the characterizations of a long-term social exchange relationship is commitment (Colquitt et al., 2014). On the social exchange relationship between organization and employee, HPHRP helps organizations to hoist the satisfaction of the employees to the social exchange process with their organizations. The employees are likely to reciprocate the commitment to their employers besides their individual resources. Feeling as a part of the team, the AC could be developed by HPHRP, which includes development, maintenance, and flexible practices which were proved by previous studies to have effects on the turnover intention via OC.

AC, as an emotional attachment to and involvement with an organization, succinctly summarized as wanting (Meyer & Allen, 1991), could mediate the relationship between HPHRP practice perceptions and intent to remain in the organization (Kehoe & Wright, 2013). As suggested by Yang (2012) that the development construct of HRP facilitates the development of frontline employees' AC in the organization, our study results also supported this conclusion in a different context. This also concurs with the results showed that some of the high-performance human resource management practices related to 1) communication and clear job description, 2) extensive training, and 3) participation positively influence AC (Alqudah et al., 2022).

NC is mainly about the employee's sense of obligation (Bergman, 2006), responsibility to support and feeling of remain a member of organization (Meyer et al., 1990). The scholars recently noted that workers may develop a sense of duty to their organization and they will express their beliefs in certain workplace behavior (McAllister & Ferris, 2016). In our study, NC was found to partially mediate the HPHRP and turnover intention, which could be indirectly supported by the study of Choi et al. (2015) that conscientious employees tend to generate feelings of moral imperatives to keep in line with their organization's benefits. Based on the mutually high social exchanges, the workers may be driven by their recognition of companies' care of them through HPHRP, which then develop their NC toward back. Also, McAllister and

Ferris (2016) said that employees may invoke normative beliefs that guide their behavioral intentions which could explain NC has the statistical effect on leave intention of employees in this study.

CC, as the extent to which the individual has to stay with the organization, succinctly summarized as needing (Meyer & Allen, 1991), is based on the recognized costs of giving up benefits from an individual's investments in the organization and the price of leaving a company (Meyer & Allen, 1997). Although the literature has consistently displayed discriminant validity for the scale of CC through the distinctiveness of the CC from the AC and NC and through differential relationships with other variables as compared to AC and NC, the index point of CC scale is unstable (Zheng et al., 2010). That maybe one of the reasons that CC was tested no statistical meaning of mediation effect on all of three relationships in this study.

Scholars found that training and development and reward system were positively and significantly impacted AC; as well as both recruitment and selection and reward system were positively and significantly affected CC. However, no significant impact was found between NC and any of the suggested human resource management practices in Jordan's chain pharmacies (Bisharat et al., 2017). This divergence with our results intrigued us. Based on different contexts, the employee's perception about HR practices could be distinctive. As Bisharat (2017) deduced that it could be due to the fact that the majority of pharmacists in Jordan have very little options in the pharmaceutical marketplace, and are likely to be committed to their organization not only emotionally but also because of the lack of other or better job opportunities. This situation is different in China. Considering the large amounts of pharmaceutical organizations, and competition for talents between companies, job opportunities could not be lack especially for the expertise, senior managers and others. The employee's concern about the costs of forgoing benefits from their organization maybe not based on the organizations' initiatives such as HR practices, ADP, OJ. More than that, the respondents in our study are Chinese people, who are mostly get the collectivism education, which may lead them to consider the involvement and the obligation to the work and to the organization should outweigh than their benefits at least from their value judgement.

5.1.3 ADP, OC and turnover intention

ADP, as the new practices adopted by the modern enterprises mainly focuses on the employees' age diversity attributes, and helps the workers under different age could fit perfect to their job and smooth the work difficulties. In our research, ADP is confirmed to has the negative effect on the employee's turnover intention in context of China. ADP, including age-neutral recruiting

and equal access to training, has a positive impact on the climate of age diversity, which facilitated collective perceptions of social exchanges in organizations (Boehm et al., 2014). Other scholars get the similar results, likewise, age diverse workers can be stimulated by perceived age inclusive HR practices that form a constructive age diversity atmosphere which inspire the employees to transfer their knowledge which will benefit on their organization development (Burmeister et al., 2018). Social exchange theory deduces to the crucial investment function of appropriate levels of organization support, resource allocation and self-motivation to enable employees to develop work-related responsibilities effectively (Martins et al., 2015).The application of ADP is based on the social exchange theory's potential guidance to forming both organizations and employees' perceptions of diversity practices (Nachmias et al., 2021).

About how ADP could affect the perception of the employees, and could help to keep them stay with the organizations, an explanation might be before the ADP implemented, organizations more or less exist some unfair treatment of employees from different age groups or totally neglect the age diversity attribute of the employees creates age-based subgroup separates and stimulates age-related discrimination climate (Ng & Feldman, 2012). Widespread age discrimination or stereotypes in the organizational environment may affect the older employees' career life in many aspects including work security, assignment and promotions (Guglielmi et al., 2016).Age discriminations are not only specific to the older employees but it can affect the employee at any age. For example, a middle age employee could feel pressure and frustration by the harshness and stereotypes of family members, relatives, friends, colleagues around them for failing to achieve a professional level believed should fit for age. This kind of stereotype or discriminations can adversely affect individual psychological and economic well-being. Negative stereotypes have a negative impact on the performance memory tasks of different age employees. Age discrimination make the employees feel being not respected or valued by employers, which might in turn, arouse the communication problems or conflict, avoidant behavior that are harmful to the organization-employee's social exchange interaction. And then, employees will doubt if the contributes that they pay to their employers will be equally compensation or return back. This distrust feeling of their employers will hinder the employees' further input of their individual resources, like time, knowledge and other kind of resources that will be crucial to the work effectiveness or work performance. At the meantime, not so smooth and close social exchange relationship between the organizations and employees could not maintain the long and steady relationship between each other. Employees under these unstable connection with their employers will not so easy to make commitments to their boss,

and also will choose to leave decisively when their unvalued feeling stronger and stronger. Actually, some scholars point out that there are deep-rooted age-bias in some societies (J. Chen et al., 2017). Maybe this bias has not been so obvious nowadays, but we still could find some hints from some recruit advertisements of some Chinese organizations. A thing these recruitments have in common is that there is an age requirement or several years tenure experience necessity in it. The former one usually asks for younger workforce at most 30 or 35 years old, the latter usually calls for 3-5 years of tenure experience. Maybe some firms will say that age or work experiences requirement is related with the characteristic of the work. They suppose that the younger employees have more energy and more time to engage into some specific works which sometimes are heavy loaded, however some works need some older ones who are more mature and more experienced to face and handle the difficulties in works. It seems fall into contradictory predictions about the age or tenure with the work. Some older workers feel very sad when they find there is not any chance to get their eager job only because they are only one year or two older than the job requires. Vice versa, the younger persons feel very frustrated about the works that they have been preparing and striving for long time even before graduating from schools need the tenure and work experience. But if they could not be employed by similar works, they will never have the chance to accumulate the tenure and work experience to improve their blank resume. Both of younger and older workers will feel negative from these recruit advertisements. And even the employees who are already working in these organizations will perceive their organizations' attitude to their ages from these advertisements. It will affect their safety feeling and arouse their worries about their future career when the age-related problems come. How will the firms treat them? Just like the advertisements, reject them simply and directly? This uncertainty strongly affects the employees' expectation about the equality of their input to companies and the return back from the latter. They will not be satisfied only from the salaries or compensation from the companies. From a psychological point of view, they think the emotion that they put into the work is not valued and will not pay back. Since they perceive that they did not get the real esteem from the organizations who care less about their individual problems such as age, employees will not make commitment to their firms anymore, and they will be inspired easily to leave the companies with the feeling that companies see their hard work unworthy.

It has been proved that age does not predict job performance (Ng & Feldman, 2008). The aging workforce is becoming a major organizational phenomenon and gets a widely recognized (North, 2019). ADP's core idea is awareness and respect the diversity of the employees, especially the various age. Based on this, ADP affords a set of age-friendly practices that facility

all ages in the firms could work smoothly. When younger employees find the organization could give them the chance to enter into the organization to have the internship or the training class, they will believe they are being valued and being expected by companies. And they will see these supplied training courses and internship chance as the organizations' willing to invest on them. And they would like to pay more reciprocation, such as working hard, making more commitment, insisting on staying their organizations. At the same time, when these younger ones notice that older workforce being accepted and helped to get the opportunity of ongoing career growth by their organizations, they will also growing the positive expectation on the future that their employers will treat them well on themselves when they become older and older (Wang & Wanberg, 2017). Therefore, such ADP could let all of the employees in the organizations with different age perceive being acknowledged, and being invested. This emotional perception could help the organizations attract and retain various employees without being bothered by age problem. HR practices that based on the employees' age diversity could play an important role on keeping and inspiring the best talents. ADP promote the strong, positive employer–employee relationships characterized by mutual caring, support, which subsequently lead to lower turnover intention (Boehm et al., 2014). It could make the workers perceive whereby inputs and social connections from employees of all age groups are valued by in organization, thereby both the older workers and younger workers will be more likely to be satisfied with their work and workplace.

ADP in this research present a significantly positive relation with AC and NC. The latter two variables showed negatively related with turnover intention significantly, but not the continuous commitment, which is totally in line with the previous study (Luz et al., 2018). ADP are a set of flexible practices that could encourage workers throughout the life span, by accommodating and leveraging age differences (Sousa et al., 2019). It is perceived as age-supportive practices that inspire workers to embrace the organizational membership as an important part of their identity, so that ADP could foster the employees' AC to involve themselves to the organization (Sousa et al., 2021). Workers are more emotionally linked to the organization to less likely leave the organization if they are supplied by good career prospects and opportunities for skill development, provide job security, and promote the necessary adaptations in the work (Morrow, 2011). Through ADP, it is easier for them to produce social emotional connection with their organizations, which make them desire to stay for a lengthy time.

NC has been found to link strongly with AC and to share many of the same antecedents and consequences (Meyer et al., 2002). As we could see in our research, AC and NC always get the

same factors and lead similar effects to the consequences. ADP also affect the NC, besides the AC. Different from AC (a mindset of desire), NC is characterized as a mindset of obligation, such as the obligation of working hard and remaining with their organizations as we mentioned in the literature. NC can be experienced as a moral duty or a sense of indebtedness.

In China, ADP is a very new concept to most of people. But it is really well-known by the employees about its necessary considering more and more apparent aging problem, which every employee will face or being face now. Therefore, ADP will be cherished by most of the employees. They believe that ADP are meant to be benefit more or equal to themselves in this social exchange relationship than their organizations who are perceived to charge a lot of money and other resources for executing ADP. This perception will inspire employees to feel an obligation to remain in their organization for as long as possible to reciprocate for the organizations' input in helping them to handle age-related problem successfully. This obligation feeling might be based on the employees' education or the social culture that surround them. These will carry with individuals' recognitions about the appropriateness of particular attitudes and behaviors. Chinese traditional culture emphasizes the moral of return kindness, collectivist values, and harmony relationship (P. Feng, 2018; Yao & Shao, 2021). It's the root of the moral pressure that partly make the individuals develop the obligation feeling to return when they think they own someone or their firms indeed. They think they are expected by the family, organizations, society to compliance with etiquette and ethical standards in their behavior. Therefore, NC is developed on a belief about the appropriateness of being faithful to their firms and being remaining in firms for a longer period of time. Once a person perceives the value of ADP would believe that these practices are the organizations' give for them, and may feel obligation to be loyal with their organizations for a long length of time to return back for this gives they believe requires reciprocation.

In the case of CC, it refers to employees' perceptions of the cost of leaving the organization as compared to the external environment. When we involve the social exchange theory into it, we could infer that CC is not about the interrelationship between employer-employee. It does not relate to considering the equal or unequal exchange problems. It is about the employees' calculating and weigh the cost of their changing or leaving their work. Such that, the antecedents of CC might tend to be factors outside of the organizations such as the economic situation of the world or the country, the development of industry, the burden of family of themselves, the transferability of employees and so forth. Thus, the organizations' investment such as age-supportive practices' implement is not enough to change the employees' feeling about the leaving cost. Our findings show that there is no significant link between ADP and CC

and that CC has no mediation effect between the ADP and intention to leave.

5.1.4 OJ, OC and turnover intention

OJ has a direct and an indirect effect on the turnover intention. AC and NC partially mediate the effect of the OJ to reduce the turnover intention. The findings here about the relationship between the OJ and turnover intention partly through the commitment enhance the former researcher's conclusion (Suifan et al., 2017). To be seen as one of organizational resources, OJ is a significant motivational tool for organizational behaviors, which could predict the employees' outcome (Huang et al., 2019). The perception of the OJ could be considered by the workers as the support of the organization who really care about their value, hence to involve themselves more to the companies and deepen their relation to the employer, which then reduce the intention to leave.

In our questionnaire, OJ contains four dimensions, including distributive justice, procedural justice, interpersonal justice and informational justice. OJ is significantly related to turnover intention, indicating that for pharmaceutical employees, they take very seriously about the job is not only it could give full play to their expertise, achieve career target, demonstrate their own value and be recognized and respected by the organizations and society, but also the salary and remuneration appropriately match to their effort and output for the work (fair distribution), a sound corporate decision-making system (fair procedure), respect from the superiors, good interpersonal relationships (fair interpersonal) and extent to access to comprehensive information about organizational decision-making (fair information). If not satisfied with above aspects, employees in pharmaceutical sector will have the intention to leave.

OJ affects the employees' attitude and behavior strongly. When employees perceive either distributive, procedural, interpersonal, information equality is neglected or vandalized by the organizations or the superiors at there, this unfair feeling will break the employees' psychological link with their organizations, even will lead to angry mood. People are usually initially sensitive to the fairness of the outcome, here means distributive justice, and then trace the other justices such as the procedural, interpersonal, information fair. Based on social exchange theory, employees enter into the organization with exchange purpose, taking their knowledge, skills and other capitals for material and psychological guarantee from the organizations. Although employees especially pharmaceutical sector's workforce who mostly get higher education do not think money as the first thing during long period of the life career, but salary and remuneration's distributive justice are still very important things to be considered by the employees when they make decision to leave or remain in their firms based on the

exchange balance with their organizations. In China, nowadays, there are a lot of enterprises emerging out since the government propose Mass Entrepreneurship, Mass Innovation plan since 2014 (Chen, 2021). They are usually very young and not so mature on management practices such as HR practices. When employees enter into these companies, they do not trust very much on their firms considering many private enterprises in China have very short lifespans. A scholar mentioned that the average life expectancy of Chinese enterprises is much lower than that of enterprises in developed western countries. On the world's top 500 list, the average life expectancy of Chinese private enterprises is only 15.23 years. It is much lower than the average lifespan of SOE enterprises. If private enterprises that have not entered the top 500 are counted on, the life expectancy of Chinese private enterprises will be even lower. But nowadays, the number of the private enterprises is much more than the SOE number (Lu & Jiang, 2016). Considering the short lifespan, the employees in it do doubt at first if the enterprises have prepared well in how to manage them, how to pay them reasonably. They will challenge with their organizations easily about their management's capability if they perceive the salary or remuneration is not fairly distributed. They will tend to think that the companies lack management experience and organizational fairness which will lead them to lose the confidence on their firms, and will easy be attracted by other recruitments.

Employees concern further about the fairness of the decision-making process after the distribute fairness being doubted. It is also related with the social legal system to a certain extent. In developed western countries, enterprise rules and regulations have strict legal effects. A sound legal system could guarantee the basic distribution of employees' salary. This is not the case in Chinese companies, especially the rules and regulations of private technology companies lack seriousness. Nowadays, the well-educated employees have deeper and deeper democratic consciousness. Their requirement of equal is not satisfied by the traditional old enterprise management philosophy which is based on the autocracy. Employees have noticed the procedural justice also reflects on their equal rights. Scholars have already found that whether employees have the opportunity to express one's opinion greatly during the procedural of performance evaluation could affects their perception of the fairness (Landy et al., 1978). It is not always easy to achieve absolute distribution fairness by quantifying the work performance in detail of pharmaceutical organizations. It involves so many different work positions in pharmaceutical sector, which need various professional qualifications. Once employees perceive the assignment unfair, they will first turn to think about the fairness of the distribution process. If employees believe that the organizations' distribution results are obtained through a distribution procedure which is considered by the employees could delegate the interests of all

of them and is consistent, accurate, unbiased, they will understand the distribution result even it turns out not so ideal to them. Even they will try to persuade themselves to accept the salary based on the recognition that the employers have tried their best to guarantee the fairness and efficiency of the process of the distribution. On the contrary, strong sense of injustice feeling to the process evokes the employees' unbalance evaluation to the exchange relationship with their employers, and then leads to the turnover intention.

Interpersonal fairness reflects how well authorities or superiors treats employees with respect, dignity when organizations execute procedures or determines outcomes. From social exchange theory, we also know that the contents of exchange between employers and employees include not only the monetary but also the emotional connection. As human being, employees have the emotional need. The satisfaction extent of this demand will also affect the employees' intention to stay or leave. Even with a high salary or being full of promotion chance, the work that gives the employees unfavorable feeling of the interpersonal relationship with authorities or superiors will not attract so much to the employees. In pharmaceutical sector, the proportion of technical staff or talent is relatively larger than other sectors. Technical workers or specialists usually have the common traits that they are rational, even a little stubborn, trusting the knowledge and truth, brave to challenge authority. They will not blindly obey the orders of their superiors, and attach great importance to the attitude of their superiors treats them, the willing to involve them to the policy making process and the respect for their opinions in the organizations' management affairs. However, in traditional Chinese enterprises, senior leaders are often authoritarian. They were used to giving orders to subordinates without thinking about communicating with them to give them the opportunity for feedback. This type of leadership causes the power distance between the leaders and the employees and make communication channel closed (Zhou & Liao, 2012). And it may break the emotional link between leaders and their subordinates, and the interpersonal justice feeling.

Information fairness mainly refers to whether the employees has been conveyed comprehensive information. Employees need the rational and timely explanation from their organizations about e.g., why a certain kind of procedure is adopted or why the salaries or remunerations are distributed in a certain way, or why the other colleagues are given the promotion or training chance. Employees need to make a series of judgments about the social exchange equality between them with their organizations. These judgements are not easy to be reasonable and objective considering the exchange process is not to buy the clearly priced goods with only money. It requires multidimensional information for reference. For example, a longitudinal employees' salary and promotion situation data of the enterprise, or the horizontal

data comparing the employees themselves with other colleagues. If the information which employees acquire is not enough, or one-dimensional, the employees will make biased judgements which will lead to their dissatisfaction on the social exchange relationship with their firms. If this lack part of the information can be conveyed directly, timely, comprehensively, and accurately by superiors or HR department instead of letting the workforce to guess or to obtain inaccurate and one-sided data through unconventional ways, the employees' misunderstanding will be reduced. And objective judgement about the OJ will help them evaluate more realistically about whether the incomes including tangible and intangible benefits equal to their contributions.

OJ also partly through the AC and NC to affect the employees' turnover intention. The process of making decision to leave is gradually. If staff are often treated unfairly, it will inevitably affect their trust on their organizations, and then reduce their commitment. The emotional investment in the organization is tapered off which is followed by the leave intention. We could confirm by our results that AC and NC could partly mediate the effect of OJ on Chinese pharmaceutical employees' turnover intention.

5.1.5 HPHRP, ADP, OJ and OC

HPHRP, ADP, OJ, these three kinds of practices are utilized by organizations work as different social exchange tools. These instruments give the exchange orientations. Based on this trade relationship between employees and organization, if employees perceive the tools as benefits and support for them, they will more likely feel obligation (Eisenberger et al., 2001) and effort and performance (Orpen, 1994). A positive reciprocity orientation pushes the tendency to return positive treatment for positive treatment. A negative reciprocity orientation involves the tendency to give back negative treatment for negative treatment.

Furthermore, we found that OJ had a stronger effect on affective and NC than HPHRP or ADP. Employees with a high perception of OJ will tend to have a high value for the OC. When a worker shows an increase or a reduction in the ratings of the perception of OJ, he/she will tend to present the equal rates for OC (Jesus & Rowe, 2016). OJ can have the stronger impaction for the commitment through linking the employee reactions to the organization behaviors (Jesus & Rowe, 2016).

This phenomenon maybe relates with the cultural differences. And the effect of cultural differences can be examined at the country level of analysis (Hofstede, 2003). China is one of more collectivist countries. One of the most rules in running a collectivist society is equality. Socialism characteristic of China stress more on the socialist equality when people tend to live

in-group life. Since 1990s, the former leader Deng Xiaoping mentioned the final purpose of the economic reform in China is could afford for the sharing the wealth (Anshu et al., 2018).And nowadays, the Chinese government takes achieving common prosperity as its goal (Kakwani et al., 2022). The basic logic in it is equality for everyone. The sense of fairness has been embedded in the cognitive structure of the Chinese people. They demand more and more on equality. And the same expectation of the justice happens on the workplace. Within the Chinese context, one's organization is often regarded as an in-group. They believe everyone in organizations should be treated the same way. Employees are more easily motivated by the norms or the practices that are emphasized on justice.

Another reason might be the function defection of the labor union in China which leads to the employees' higher sensitivity to the OJ. The organizations' labor unions are not established by the employees themselves in China, but was organized and established by the enterprise under the guidance of the higher-level federation of labor unions. Labor union in China has a certain of drawbacks that limits the development of it. Like the outdated concepts, weak institutional independence, relatively low quality of personnel, and imperfect mechanisms, these flaws make the labor union cannot have the same power as western countries' labor unions. The function of Chinese labor unions could not represent the employees' welfare and fundamental interests and negotiate with the employers for the benefit of employees. Therefore, employees have to be more awareness about the OJ by themselves to ensure that their interests are not compromised. Social exchange theory holds that employees interact with each other through information sharing, whether they are subject to fair or unfair treatment, a common sense and climate of fairness will be formed in the organizations. When perception of fairness is low, turnover intention even collective turnover will occur (Ye et al., 2012).

5.1.6 Age as moderator

The study also examined the moderating role of employee age on the association between each of the HPHRP, ADP, OJ and turnover intention. Young and old workers concern different needs and interests in great extent (Freedman & Bartholomew, 1990). This may be the basement of the explanation of why there are different effects between each initiative and turnover intention according to employees' age. The understanding and perception to HPHRP, ADP, OJ differ when people are young or old. From the whole life span, they are experiencing diverse phases. They will produce corresponding feedback to the practices from organization based on their development phases. To what extent they want to give back could be directly linked to their intention to stay.

In this study, one interesting result is that age moderated the direct relationship between ADP and turnover intention, such that the relationship is stronger for younger workers than older workers. Moreover, age also moderated the indirect relationship between the ADP and turnover intention, such that the effect of the ADP on the turnover intention through AC is stronger with increasing age, which is converse direction to the moderate effect on the direct relationship. In the context of our study, the organizations might offer the special training relatively to the younger workers' current extremely necessary needs such as work skills course that focus on the practical operation which is not so easily available during the school time. Else, the tuition fee reimbursement for the extending education is the welfare of some organizations to improve their employees' academic education level. Systematic useful life skills training that never taught by the parents or the school are supplied by the employers to help the young workers to smooth their transition from the role of students to the professionals. For example, interpersonal communication skills, financial management skills, career plan methods, philosophy and psychological courses about e.g., the meaning of work or life, stress management, emotion management and so forth. These serials free trainings from the organizations could be seen by the young workers especially the new workers as the large investment to them to improve their career (including work and life) capacity and build the confidence and courage to face the unknown difficulties that will emerge in the future work and life. Based on the social exchange theory, the younger workers would intend to stay in the company as the giveback to the resources that the companies offer.

However, the psychological process that the younger employees insist on keeping with the organization is not so affected by the commitment to the employer as the older workers do. Previous scholar showed that the employee's age or work career could affect their commitment to the organizations. Older and more experienced workers with high levels of autonomy will significantly increase the OC. In contrast, the younger and less experienced employees have the relatively less commitment to their employers. The possibility of having control over the work is related with commitment to pay to the organizations. When the workers perceive greater control over work, such as older or experienced workers do, they would present more OC. However, the younger ones have less feeling about the work control would show no such strong OC like the older workers considering their unfamiliarity with work or lack of systematic guidance about the new work (Brimeyer et al., 2010). It also confirmed by other research concluded that the senior nurses who were presumed to be the most experienced employees regarded themselves as the most valuable and committed workers (Riaz et al., 2017). Porter (1974, p. 35) mentioned that OC is the "strength of an individual's identification with and

involvement in a particular organization". It needs time or work tenure for the workers to recognize and familiar with their enterprises, to understand and identify with the enterprises' culture, vision, values and goals, so that they could build the psychological link with the employer through aligning their personal values and goals to the corporates. That might be the reason that why the older workers who stay longer time in companies than the younger force usually has higher levels of OC and loyalty (Brosi & Kleiner, 1999).

To the younger workers, ADP do the effect on their stay or leave, but this intention is not driven through the commitment. Ertas (2015) said that younger workers showed not so much commitment as older employees to their organizations. And the older employees could be led by the AC to a strong belief in and acceptance of the organizational goals and values (Meyer et al., 1993). Therefore, when the age moderated the effect of ADP on turnover intention and the effect is mediated by AC, ADP could do more to older workers to avoid their leave intention then to the younger ones.

This result may differ from the previous studies (García-Rodríguez et al., 2020). Nevertheless, the cultural orientation and different industry of the working group in this research context may explain this finding. Most research is focused on the hotel industry on western countries (Gajjar & Okumus, 2018; Raina & Kalse, 2018), where the employees have the different characteristics and educational background. This may lead to different perception about the organization support and the way that they pay back to their organization.

5.1.7 Ownership as moderator

Ownership moderation effect were also found in this study. Previous study proposed that turnover is related with the context. It is suggested that HR policies or practices interact with surrounding organizational conditions to influence the timing and nature of knowledge/skill/ability depletion at the unit or organizational levels (Nyberg & Ployhart, 2013). There is a large diversity of two types of corporates ownership (SOEs and non-SOEs) in China. As we wrote before, SOEs' policy and enterprise culture are more subject to government intervention in contrast to the non-SOEs. The influence of different unions, labor legislation and other such features at the firm level will lead to the diversity in human resource management and employee outcome in line with the contingency perspective (Delery & Doty, 1996) and PO fit theory (Kristof, 1996), it needs to take into account of refining the firm ownership as contextual characteristics into the models of human resources system researches. The type of ownership significantly moderated the direct effect of the HPHRP, ADP, OJ each on the turnover intention. As previous studies showed, the firm ownership has been found a

moderating role in the research of the human resource systems' impact on employee creativity (Liu et al., 2017); and the diversity management effect in specific HRM functions may link to the HR diversity management in a particular national context (Shen et al., 2010). The effect of the OJ on employees' trust in organization is in the different extent based on their organization's ownership type (Wong et al., 2006).

However, the ownership research results in this study attract our attention. Contrary to our hypotheses, SOEs rather than non-SOEs showed significant stronger moderated effect on the direct relationships between HPHRP and turnover intention, ADP and turnover intention, OJ and turnover intention. For this significant moderation of SOEs on these three direct relationships in contrast to non-SOE, we propose that it is possibly related with our empirical context (i.e., the Chinese pharmaceutical industry).

1) In the Chinese pharmaceutical industry, the State itself has placed much emphasis on reformation and urged SOE managers to develop modern management capability. In order to accelerate the reform of the system and mechanism in the areas of medical product production, circulation and sales, promote the intellectualization and ecology of the pharmaceutical industry, realize the medium-high speed development of the industry and the transformation to the medium-high level, the Guiding Opinions of The China General Office of the State Council launched the Guidelines for promoting the healthy development of pharmaceutical industry (General Office of The Council, 2016). Since then, the sustained and healthy development of the pharmaceutical industry especially in SOEs are being seen.

2) SOEs experienced the reconstruction, which is a critical part of economic reform in China (Hassard et al., 2010; Lee, 2001). At 1990s, the programs for promoting the corporatization of SOEs were launched and designed (Hassard & Sheehan, 1997). These programs were intended to adopt certain western-like company organizational structures, such as boards of directors and shareholders-consequent to making SOEs under more entrepreneurial management, reducing government interference and state reliance (Hassard et al., 2007). SOEs are pushed to open to financial market and guided by the market mechanism to make investment or production decisions, which is the core way to change the organization form and improve the entire management system of enterprises to increase the competitive market place. SOEs are applying more and more market□oriented strategic objectives and HRM practices focusing on the aspects of recruitment, selection, training, performance appraisal and compensation (Liang et al., 2012). SOEs tend to transit from meet the social need at the cost of less profit to the profit as first consideration and gradually consider the economic index as SOEs' important organizational goal. The effectiveness and professionality of management have become more

and more salient.

3) In the Chinese pharmaceutical industry, SOEs companies mostly are the large and mature enterprises that have survived and developed for several years. However, non-SOE enterprise (private companies mainly) are the relatively new ones considering their founded time is after the economic reform policy mentioned by China government since 1990s (Research Group of Da Cheng Enterprise Institute, 2015). Especially in pharmaceutical industry, enterprises need more money and other resources relatively to other industries to invest to new drug R&D, to develop market and to promote sales. Contrary to SOEs, non-SOEs have less and less steady resources support from government, which make them very hard to exist and in high risk to close in market. So many non-SOEs are the new and small ones. Most non-SOEs' life is not so long as SOEs. These means non-SOEs are too young to not yet has time and energy to focus on the studying and using the modern management in their companies or before non-SOEs found a set of mature management practice, they have been in bankruptcy risk. From this point, pharmaceutical SOEs have relatively founded more comprehensive and advanced management system, and forming enterprise culture, which has been well known by employees. The employee perception and understanding of HPHRP, ADP, OJ in SOEs are stronger than in non-SOEs. In this sense, the difference in the moderation effect in this study between pharmaceutical SOEs and non-SOEs is likely reasonable.

Given the reform developments, it is no longer possible to characterize China's pharmaceutical SOEs in the simple traditional stereotype terms of decades past. Given the progressive ability of SOEs to attract managerial talent and develop innovative products and processes, factors perhaps reflective of a step change in state-enterprise competitiveness and reform (Hassard et al., 2010). Zhang's (2020) recently study also support this opinion. Using data collected in 168 firms in China, his study examines whether the HR change-agent role influences employee behavioral flexibility. Based on the social exchange relationship between organization and employees, the moderating role of state ownership on the HR change-agent role and employee behavioral flexibility relationship is tested. Results suggest a positive influence of that role on employee behavioral flexibility is stronger in SOEs than in non-SOEs in the Chinese setting.

Through the regression analysis of the moderated mediation models from the final data of Chinese pharmaceutical industry employees, we could find HPHRP, ADP, OJ have the significant negative effect on the employees' intention to leave directly and in directly. AC and NC, other than CC partly mediate the process of these three factors affecting the turnover intention respectively. Age as a moderator, could moderate the direct effect of HPHRP, ADP,

OJ on the worker's remain intention. As shown in the above results, the younger workforce is generally easier to be affected by HPHRP, ADP, OJ applied in the organizations than the older workforce to want to stay in their employers. The interesting find is when the action path of the ADP on the turnover intention is partly mediated by the AC, the older employees showed more loyalty to their employers, and less intention to leave. Our thesis also proved that the ownership could be another moderator that affect the process of HPHRP, ADP, OJ acting on the turnover intention directly. To our surprise, SOE presents more obvious moderating role on the direct effects of HPHRP, ADP, OJ on the employees' leave intention than non-SOE did, so that these HPHRP, ADP, OJ applied in SOE would more helpful to the employees' retention. These findings enriched the literature of what kind of factors affecting the turnover intention, and how these factors work from the mechanism level. It also helped us to understand the employee-organization social exchange relationship and the detail process of the HPHRP, ADP, OJ, OC affecting the employees' turnover intention under the different ages or from the organizations with different ownership in context of Chinese pharmaceutical sector.

5.2 Theoretical contributes

The present study contributes to the HRM literature by revealing how organizations can motivate their workers and keep them in the context of pharmaceutical industry in China. We developed a theoretical comprehensive framework for explaining the relationships among HPHRP, ADP, OJ, age, ownership and turnover intention. In response of calling for considering specific industries, different countries background to get more generalized results in HRM model study (Sousa et al., 2019), we narrowed the research sample into the workers in the pharmaceutical organization located in China. The results showed that, in this specific context, workers' turnover intention could be affected by HPHRP, ADP and OJ. Affective and NC could partially mediate these effects, but not the continuous commitment. Both age and ownership have a moderating role in the direct effects on decreasing levels of turnover intention through the perception to HPHRP, ADP, OJ. However, no moderation was found in the indirect effect between HPHRP, ADP, OJ on the turnover intention via OC.

In our study, we apply the social exchange theory derived from the western context to the case of Chinese enterprises. We extend the earlier research on HPHRP and turnover intention by confirming that HPHRP affects the Chinese pharmaceutical industry workers' leave thought. HPHRP is a set of systematic HR management practices and could produce obviously synergetic effects on the employee management. Along with the giant technological changes

and increasingly talents competition in the pharmaceutical sector, organizational HRM capability has become one of critical factors for enterprises to gain competitive advantage. And we discuss the role of HPHRP from the perspective of employee perception, which is consistent with the research trend of HRM theory. Previous researches mainly examine the impact of the implemented HRM system on the organization and employees. However, these studies did not yield consensual findings on its impact on the employees. The implemented HRM system does not equal employee perception and experience about the HPHRP. Due to individual or team differences, employees often lack a unified perception of HPHRP. There are gaps between the HPHRP designed, communicated and implemented by organizations or leaders and the perceived HPHRP that are closely related to employees. More critically, compared with the implemented HRM, the HPHRP experienced by employees have a greater impact on employee psychology and mental health (Khilji & Wang, 2006; Nishii et al., 2008). Through investigating the perception of the employees, and analyzing the relation between perceived practices and turnover intention, this research contributes to clear this effect of perceived HPHRP which is different from implemented one on the intended behavior.

We also make some valuable academic contribution to the diversity at work, especially ADP, OC and turnover intention literatures. Age can be expected to become one of the most relevant diversity categories in the very near future. It has been proved that increasing levels of age diversity are having deep positive influence on both organization and employees (Li et al., 2021; Riach, 2009). Given the ongoing demographic change (growing aging population) in most countries nowadays, it is significant to design, validate, empirically testing ADP in the organizations to allow for more detailed insights into their effect to the employees' behavior. For organizations or practitioners, this might provide the advantage of having a toolkit on hand to help effectively manage an age diversity team. This will also be a good solution to the problem of the aging of the company's employees and to beat the coming shortage trend of skills and talent all over the world. We discuss that along with the different work lifespan stage, the key point of a resource for a worker tends not to be absolute but relative, and will change as time goes on. Based on this direction, the function developed by the recognition of the meaning of work and organizations' management practices varies for different age groups. ADP has confirmed by our study that could directly influence the employees' turnover intention or indirectly through AC and NC in our research context. What is more, our results uncover that older workers are more motivated through the affection and normative related mechanism of ADP effect than younger workers, who tend to be more motivated by other mechanism of ADP influence. This also provides a direction for further research.

We demonstrated that human resource practice considering the age diversity will benefit all of the employees, which is also an important contribution to the research on age and work. Differ from the phenotype thought of Chinese companies before that the age-sensitive human resource practices will be only related with how to keep older workers; the results showed us the ADP will be effective to keep young employees also. For a long time research has focused on the older workers and how to retain them. We go beyond that (considering all ages), and our research shows that we can retain also younger workers with similar strategies (ADP). And so, this is a way to assure the resources in the future which is very important in a context of competition for talent.

Our empirical evidence on OJ becomes even more important in a modern market economic era in China, in which workers have relatively more sense of their individual rights and more focus on the equal distribution on workload, work time, promotion, treatment, resources then their parents who were working in the planned economic era when almost everything were distributed by country. Our findings confirm that OJ have negative effect on the turnover intention and positive effect on OC in China context. Through the mediating effect of OC and the moderating effect of age and ownership, it fully explains the mechanism of OJ affecting employee turnover intention. Previous studies have mainly explored the relationship between OJ and employees' individual turnover intentions. We extend previous research by examining the impact of OJ on employees' individual turnover intentions in a specific sector and in a specific country, and broad the research area of the relationship between OJ and employees' turnover intentions through AC, NC, CC mediating effects. Finally, this is an active exploration of using age and ownership as moderator variables to study the effect between OJ and employee turnover intention. It provides a new perspective for further explaining the mechanism of OJ's effect on employees' leave intention.

Another important finding is that OJ has a more negative effect on the turnover intention and more positive effects on OC than other factors (HPHRP, ADP). Similar findings have never been published by other scholars as far as we know. The context might play an important role in the explanation of these findings. The Chinese economic reform destination of wealth share and new era stage goal of Chinese socialism about achieving common rich might be related with these results. People are more sensitive to equality. Some people who have a significant concern for injustice are more prone to view social or workplace circumstances through the lens of justice, feel strongly unpleasant emotions when injustice is present, and ruminate on the subject for a longer period of time. It frequently comes up in their social interactions. It has been demonstrated that sensitivity to injustice affects how and when people will react to

perceived or real injustice (Baumert & Schmitt, 2009; Gollwitzer et al., 2009). Additionally, workers can view circumstances involving justice from many angles (such as from the perspective of the victims), which are connected to attitudes associated to justice (Maltese et al., 2016).That give us the hint that the organization focus more on how to guarantee the justice of resource distribution (e.g., salaries, remunerations, training chance, promotion chance), the employees will more likely to show commitment to the organizations and to retain for a long time. The perception of justice in organizations from employees could be more effective than other HR practices to increase the workforce's sense of identity with the organization, improve their affection commitment and NC and keep them to stay. The process of the distribution needs to be perfect. A series of scientific decision-making mechanisms, such as the performance evaluation system of the employees, that are modern and aligned the organizational strategy are necessary to ensure the objectivity and fairness of the evaluation that the organization use to distribute resources accordingly. Employees' involvement in the policy-making also could enhance their trust on the organizations. At the meantime, the respect and care for from the leaders and superiors will be very powerful tools to won the employees' commitment. The organization's willingness to communicate with their employees, and let the information transparent will promote the integration of organizations and individuals, which finally will stimulate employees to produce a high degree sense of belonging and identity to the organization.

The study encompassed all three dimensions of OC. This is especially advantageous as an overwhelming number of studies have only included one of the three dimensions (mostly AC) or only focused on the OC as a whole, and a need emerged to design research models that incorporate all three dimensions to fully grasp the construct. AC has got considerable research attention, while less attention has been paid to the role of NC and CC in organization and workers relationship (Meyer et al., 2002; Meyer & Parfyonova, 2010).We shed light on the different effects of three dimensions on the turnover intention and each role in the mediating the relation between HPHRP, ADP and OJ with turnover intention. In our findings NC is regarded as a mechanism of employee-organization exchange also contribute to the existing literature on OC. NC, as a kind of mindset obligation, is largely related to the social exchange between employee and their companies. Our study gives the support that NC plays the role of a norm underlying the organizational social exchange and employees' turnover intention. It also replies to the call for exploring the development of NC and its' predict function of attitudes and behavior (Meyer et al., 2002; Vandenberghe et al., 2015). OC is about the behavioral attitude. It is one of the intrinsic reasons why a behavior occurs. OC could prompt individuals to engage

in work and pursue relentlessly the work goals due to their love and identification with their organizations. Our thesis verifies that AC and NC are more conducive to improve the employees retain intention. They are important intermediary mechanism of the process that the organizations' HR related practices influence employees' turnover intention. OC provides a channel to the organizations through limited resources supplied to cultivate the deep recognition from the employees, which benefits the organizations' team stability.

Furthermore, based on the specific Chinese contextual, this research has shown that cultural values of individuals may affect the different mediation effects of AC, NC and CC between the predictors and turnover intention. We also found that the age could moderate the relation between ADP and AC, but do not have the moderation effect between the ADP and NC, ADP and CC. These findings under non-Western cultures contribute to clarify and understand comprehensively the distinction among the three dimensions of OC, which answers to the before researches (Bergman, 2006; Mueller et al., 2012).

We explore the application of the social exchange theory on the research of the relation between employee and organization. Social exchange theory is a useful and popular theory in helping to explain phenomenon in the aspects of such as HR management, organizational behavior, social psychology, anthropology, among other social sciences. Chinese relationship-based culture places particular emphasis on reciprocity and the exchange of benefits. This is in line with social exchange theory's point of view about the resources that people obtain from their social relationships following the principle of reciprocity. Employees use perceived employer investment and perceived organizational support as a criterion for balancing their responsibilities and rewards. Thus, the perspectives sourcing from social exchange theory in organizations are essential to deep understanding employee behavior in the Chinese organization context. Although it has been noticed that employees mostly establish the relation with the employers based on the social exchange ways (Shore et al., 2006), the knowledge about how this social exchange process run still need to be focused on. The social exchange articles assume that the relationship between workers and their organizations is mostly underlying on the rules of reciprocity and the future exchange of benefits between the two parties. In particular, employees tend to repay organizational preferential treatment with increased AC, which in turn reduces their willingness to leave (Atrizka et al., 2020; Loi et al., 2009). However, this opinion of reciprocity ignores another potential mechanism in which employees may feel morally obligated to stay in their organization. The results of the study show that in addition to reduce turnover intentions through AC, workers also turn their social exchange relationship with the organization into strong NC, thereby reducing their leave intentions. Workers may internalize

organizational norms and moral obligations during the interaction with their enterprise, which then guide their attitudes and behaviors at work (Wiener, 1982). Our research supplements the theory in explaining the mechanisms that HPHRP, ADP, OJ's effects on the OC or turnover intention interactions with age and ownership. And it produces specific effects based on specific environmental characteristics in China and in pharmaceutical sector. This do not change the social exchange theory, but it develops new application based on different country or industry backgrounds.

Our study highlights the importance of considering age in the conception and implementation of HRM practices by showing the moderating role of age in the proposed model. As expected in line with social exchange, age significantly influences the relationship between HPHRP, ADP and OJ with turnover intention. Also, age could moderate the ADP' s effect on turnover intention through AC. This finding explores the existing articles of age as moderators' mechanism on how to affect the relation with employee-organization. Through examining the moderating effect of workforce age on the connection between perception of HR related practices and outcomes, the study enriches literature in terms of the various turnover affected factors applied based on diverse demographic characteristics (i.e., age). Our results show that age is an important explanatory variable of employees' perceptions to their organizations' management practices in our research context. The identification that age is a differentiator in the link between HPHPR, ADP, OJ with OC or turnover intention is key in the Chinese pharmaceutical sector with a constitution of a growth of aging workforce and a large number of younger employees at the meantime. Our research demonstrates empirically that age could be a functional factor that affect the influence of HR related practices perception on the AC, NC and turnover intention based on social exchange theory. Therefore, helpfully practical related goals, as connected with younger workforce, and emotionally meaningful goals, as connected with older workforce, might differently form employees' positive or not recognition of organizations' HR related practices and their give back at work in the context of Chinese pharmaceutical industry. This study also answers the call for developing more refined models that take into account firm contextual characteristics such as ownership when studying the HR systems (Liu et al., 2017). Although the effect of ownership nature of listed companies in China has been valued in many studies, such as in the capital market (Wang, 2016), the relationship between HPHRP, ADP, OJ and turnover intention is still not clear. We demonstrated the moderating role of the ownership of enterprise in China in the human resources system research.

Another contribution of our study is the introduction of ownership as a condition for the outcomes of social exchange between employees and their organization. Understanding the

ownership role is important for improving the development of organizations especially in emerging markets like China. The results may not be generalized to developed or Western contexts, where the governments often play different roles on the industries management. However, our findings should also fit for organizations in other emerging markets sharing similar traits with China. The moderating role of ownership, as revealed in our study, sheds new light on the dynamics of social exchange process between individuals and organization. In such process, individuals' cultural values and work ethics, which are affected by the type of ownership, could be more or less depended on (Meyer & Parfyonova, 2010). Our findings support such argument by showing the moderating effect of ownership on the process of the variables effecting on the turnover intention.

For the significant moderation of SOEs ownership on the effect between factors and turnover intention, we conjecture that this might been related with our empirical context (i.e., the Chinese pharmaceutical industry). As we argued, the moderation effects are stronger in SOEs partly because the state emphasis more and more on the healthy development of the pharmaceutical industry and has given several policies support in recent years to urge the improvement of pharmaceutical SOEs' management. In this sense, the difference in the moderation effects between SOEs and non-SOEs could be explained and also could give rise to the explored research.

We contribute to the research in the pharmaceutical industry that has analyzed how to improve employee OC as well as retain the best talents. This is meaningful because of the urgent need for employers to have psychologically attached employees as well as people working who commit themselves to their firms due to the direct impact of variables on OC as well as on turnover intention. It may could help Chinese pharmaceutical industry to improve the HRM to be more effective in motivating and keeping the workers.

In total, our result of moderated mediation enriches our understanding of the processes of perceived practices from the organization that can change the employees' intention to leave with age or ownership as boundary conditions. It is a comprehensive study to better understand employee-organization relationship. Our study shows that younger employees or in the SOEs would be more positive respond to the HPHRP, ADP and OJ from their organization than those with older age or in the non-SOEs, as indicated by their decreased turnover intention. Further analysis showed that the direct effect of ADP on AC increases as the age increases, that is ADP tend to make older workers pay more AC on their employers than youngers. Despite not being a hypothesis in this thesis, this is an important result because it calls our attention that the effects of direct processes that ADP effects on the employees' turnover intention and on AC can be

different when considering different mediation mechanisms. The mechanisms of these processes could be further studied to enrich the knowledge of ADP and OC effect in the workplace.

5.3 Implications for practice

Our empirical findings reveal important practical implications, especially in a context of Chinese pharmaceutical industry. It supplies reference for leaders and HR departments to set out viable strategies in time to promote employee retention and guarantee the sustainable and effective development of pharmaceutical enterprises. It had been proved that HPHRP practices could be a key point to influence employees' attitudes to build OC to avoid the bad results of turnover (Wijnmaalen et al., 2016). The input of HPHRP is associated with lower employee turnover and greater productivity and corporate financial performance (Huselid, 1995). It is substantial magnitude of the returns for investments in HPHRP. A relative 7.05 percent decrease in turnover is seen after the increase in such practices (Huselid, 1995). By providing intensive training and development, job security, employee participation and contingent rewards organizations could improve the employees' perceptions of HPHRP and later positively contribute to the organizations' productivity which reverse affect the implementation of the HPHRP (Shin & Konrad, 2017).

The employees' perceptions of HPHRP are proved to be positively related to their AC and NC, and negatively associated with the employee's desire to leave. This finding gives us the hint that if pharmaceutical companies in China want to keep their employees for longer employment, they should underscore the application of the HPHRP in their HRM system could be precepted by the employees and to satisfy their needs.

HPHRP has been showed as an organizational social exchange instrument to inspire their workers in an effective way and provide them socio-economic and emotional resources (Cropanzano & Mitchell, 2005). And in our study, it has been found that with the perception of HPHRP, the employees could be more obliged and committed toward their organizations in a kind of repayment.

These give the implication to the organizations about the implementation of the HPHRP's basic role. Considering the employees' perceptions about the management of their job group likely affect individual-level attitudinal and behavioral outcomes (Kehoe & Wright, 2013), organizations need to include an emphasis on communication about the implementation of the HR practice besides the focus on the inviting the professionals to design or selecting of the HR

practice. Employers should implement the HPHRP consistently around the whole company and make sure that all workers could perceive the HPHRP are in use. Leaders should know that HPHRP is a set of comprehensive practices that need all managers participate in. They are not simply carried out by professionals in the HR departments. HPHRP involves every part of the organizations. Leaders, senior and middle managers, including managers of various departments and direct supervisors, ordinary employee representatives as well as professionals specializing in HR management are all the key roles in conducting the HPHRP. They need to participate in the design and implement of the content and operation mode of HPHPR. Also, HPHRP should be incorporated in the whole process of management in the organizations. HPHRP emphasizes the systematization and comprehensive of each management function. A series of management contents such as work position analysis, planning, recruitment, selection, training and development, performance evaluation, compensation, motivation, communication, career management are throughout the entire organizations' business to be effective based on purpose of seeking talents, using talents, cultivating talents, motivating talents and retaining talents. The positive effects of HPHRP were maximized following employee perception and arousal of a sense of obligation to reciprocate.

At the same time, although organizations could make use of HPHRP to show their expectations, support, and rewards to employee, the way that leaders or superiors who directly implement these practices treat their subordinates, the characteristics of employees (e.g., age, education) and the specific social and work environment in which they live may all affect employees' perception and interpretation of HPHRP. Therefore, organizations need to actively communicate with employees and learn their understanding of organizational systems in order to better ensure that HPHRP play their due role.

This study highlights the organizational role in promoting committed and stable working lives through the application of age-supportive HR practices. Especially in the context of an aging workforce in the Chinese pharmaceutical industry, our results implicate the importance to focus on the ADP. Organization could implement the human resources specific on the different age practices to facilitate both younger and older workers to be more adapted to their job and workplace, with higher commitment and less leave. HR could periodically conduct surveys to evaluate workers' satisfaction or workplace climate with the purpose of identifying the strategies applied effect on the different ages. Measure the workforce commitment and turnover intention of all ages termly (e.g., every two years) to give the organization the feedback about the employees' different needs and to facilitate the HR to utilize the different ADP targeted to meet worker' needs. Through these measures, the organization could evaluate which

age groups would be less committed or even consider in which department, the older or the younger workers tend to leave. Therefore, the employer could implement the necessary initiatives for retaining talents.

Age-inclusive management (Wang & Fang, 2020) needs to ensure that both older and younger workers in an organization are welcomed, accepted, and fairly treated, and not being excluded as a result of age-related stereotypes, prejudice, or discrimination (Parker & Andrei, 2020). These efforts should be perceived by workers. For example, HR should consider discreetly about if it has to set age limit in the job advertisements. Nowadays, in China, it is common to encounter recruitment advertisements containing age limit (e.g., under 30 or 35). The scientific or logic basement of age limit set has been challenged. At the meantime, no matter the workers inside or outside of the companies will be hinted by the age discrimination in the organization culture through these advertisements. Based on the SOE, this is not a good way to let both young and old workers to perceive the employers' authentically care about them, and then to pay back their commitment to the employers. Organization should endeavor to create an age diverse and inclusive workplace to benefit for all age workforces' psychological safety. Age diversity workforce could be an asset rather than a burden to fulfill the organization goals. Therefore, organizations would be better to try for age diversity climate in their employee management. Adopting the ADP especially effective for the high-tech enterprises like pharmaceutical companies that need a lot of professional talents who usually diverse in age. These high-tech organizations may rely heavily on age diversity to achieve their targets like R&D programs completing or sales increasing. These tasks' accomplishment involves both older workers' experience and knowledge, and younger ones' passion and energy. Older employees often have less advantage in hiring procedures (Fasbender & Wang, 2017), acquire relatively less support (Armstrong-Stassen & Ursel, 2009), and may feel dissatisfied, which lead to retire early finally (Feldman, 1994). On the other hand, the younger workforce often feel burnout (Brewer & Shapard, 2004) due to lack of skills and experience to perform the job. These age dependent effects of job features on job satisfaction reveal important practical implications. Thus, organizations may consider using the age inclusive basic principle guide the related management practices. The application of ADP will help the companies to attract and retain workers of different ages. Different physical and psychological characteristics and needs of the job should be concerned in the consideration of proper HRP. For instance, the pharmaceutical industry contains production departments, in which quality control or assembly line positions may ask for more physical demanding tasks, while for those in the R&D or administrative departments, the demands are more related with cognitive work and visual

display terminal exposition. So that the older workers in the first departments might feel the organizations' investment to them through some optimizing practices applied such as humanized working arrangements (e.g., exemption from night shifts, investments in more ergonomic workspace arrangements), increasing benefits (e.g., lift the health insurance, increase the physical examination times), among others. The employees from the second group of departments might benefit from the hardware and software condition improving such as applying a set of physical exercising facilities, building indoor and outdoor spaces for coffee, tea, games playing, chatting and other measures. Also, coordinating the room's brightness to match the window's glare reducing, updating the screens of the official computers to the eye protection function included, launching the series training about eye using health to prevent visual discomfort with long working time in front of the computer and how to maintain healthy life could be important strategies for employees who are more exposed to visual demands.

Another notable practical implication from this study is the importance of utilizing OJ in the workplace to have an effect on workplace attitudes and behaviors. The OJ could directly or via OC partially to affect the turnover intention. It may help the organization to understand well about the justice paradigm based on the relation between the OJ, commitment and turnover intention. The employers will be informed by the necessity of creating an organizational atmosphere that not only focuses on the aspects of distributive justice, which traditional companies in China mainly concern, namely guaranteeing equal salary, benefits, and promotions chance, but also optimizes the procedural justice such as the fair systems and procedures instilling, and pay attention on the interpersonal justice. This means that leaders need to transform their way to treat subordinates, preferring dignity and respect instead of traditional authority way, and seeks a breakthrough on information justice via building honest communication pipelines, which could provide explanations and justifications on time when needed.

OJ enlightens valuable attitudes stressing the importance of improving the delivery of justice at the organization (Suifan, 2019). Based on the social exchange theory, justice is regarded as a fundamental norm of exchange, treatment equally by the employers is benefit for the workers to invest more efforts into their companies and cultivate belongings sense to the organization (Huang et al., 2019). This especially gives pharmaceutical firms' leaders a new inspiration that equal circumstances around the whole organization could improve the employees' attitude to the job and elevate their commitment to the company, with the less intention to leave. Considering the tremendous effecting role of the OJ on the OC raising and turnover intention reducing founded in our study, the employers should consider and address

the organizational OJ as one of the key measures developed by the HR department to ameliorate the skilled workers' commitment and retention.

As a power source to enhance the centripetal and cohesion force within the organization, the justice climate has its inherent uniqueness and reversibility. Employers could improve mutual communication with their employees, win their trust and cohesion through the creation of a fair atmosphere, and maximize the degree of their willingness to stay. Therefore, as organizations' leaders or superiors, they should realize that the creation of OJ climate is a continuous and long-term involving process. What is more, enterprise leaders or managers are advised to focus on the cultivation and role of both external and internal justice of the organizations, that is, to represent the organizations' high vision about OJ through fulfilling their responsibilities to external and internal stakeholders, to improve the resources distribution results of employees internally, to form employees involvement policy-making mechanism, to establish an effective information sharing platform, and to express the leaders superiors' care for their subordinates by carrying out charitable donations for some employees with financial problems, remembering every employee's birthday and sending postcard and presents to them, helping the harmonious development of community by holding and attending the sports games or other entertainment activities for the employees. Organizations fundamentally build a justice and responsible image, which can make employees deeply perception of the organizations' respect them, and decrease employees' negative feeling and distrust on organizations' unfairness and firm willingness to work hard and long enough for their organizations. OC has been proven, in this model and in a specific context, the important mediator role in the paths of the factors partially affecting on the turnover intention. Social exchange relationships emerge when the series of organizational antecedents connect the workers with enterprises (Cropanzano et al., 2001). Social exchange relationships develop when employers do concern about the employees, which hence leads to favorable results (Cropanzano & Mitchell, 2005). In our study, OC enables employees to have a better feeling towards their organizations and to produce a perception of reciprocation that encourage them to keep the job and perform better. Thereby, the managers should engage in building an effective social exchange relationship to enhance employee commitment. For example, the firms could create an atmosphere of respecting all of employees by showing the concern and understand of workers' personal needs, supplying workers the platform online or offline to express their inner voice and involving workers in the decision-making process to make the employees perceive the close link with the enterprise. Organizations are advised to pay attention to the employees' participation in the processes of the related organizations' policy making and decision. The degree of the employees'

involvement could reflect the integration of employees and the organizations that could affect their OC. Some Chinese traditional enterprises are still under the low level of management or family management, which is manifested in the lack of democratic, scientific, and systematic HR practices. These enterprises with simple arbitrary performance evaluation system and other management systems without employees' participation and expression their real needs will inevitably lead to serious brain drain.

Organizations could infuse moral duty sense to the employees through specific practices. As we noted above, employees' obligation to stay with the organization relates to the employee–organization exchange relationship, and it helps to reduce their turnover intention. The processes of the constructs affecting the turnover intention are partly through the AC/NC mediation. Accordingly, employers could improve the employees' commitment by using social exchange rules. Employing a reciprocal investment-based employment relationship could enhance employees' commitment to the organizations. Under this relationship, in addition to compulsively requiring employees to complete their job responsibilities and giving them salary, organizations should try their best to utilize practices that could encourage employees to do other things that are beneficial to the organizations' development. These contributions that employees make will also help themselves to better understand the meaning of their careers and gain a sense of professional achievement. This achievement sense will enhance their love to the work and cohesion with their organizations. Furthermore, the leaders and HR departments should pay attention to the types of rewards for employees that should include material rewards and developmental rewards, especially career development, promotion opportunities, or more autonomy. These rewards perceived as the pay back from organizations can not only in exchange for employees' hard work continuously. Moreover, the developmental rewards outside the salary could provide impetus for employees' career development and strengthen employees' awareness of professional investment, improve employee satisfaction of their job and organizations. In addition, involving employees in the decision-making of the key policies of the organizations, empowering them to perform work tasks could be benefit on building employee self-esteem which is an important way to develop employee professional commitment. Organizations should also build a series of training courses, internship projects and other activities to cultivate the employees' sense of value as members of the organizations. The vision and mission of organizations could fully express the respect and support to employees to allow them to perceive the organizations' sincerity to them within this social exchange relationship.

Supervisors in organizations could put the communication with their employees on the

important place by which let the workers perceive their obligations. Managers should express their concern on employees through such as listening to what employees say or having the best interests of employees in mind. This will be imperceptible influence on the employees and then inspire their intrinsic motivation. Such ideological motivation could make the workers in a positive working state (Thompson & Bunderson, 2003). Organization might be more likely to create an ideological employer-employee relationship underlying the mutual caring and concern when the employers could supply a helpful environment in which the employees are encouraged to largely include to the enterprise's vision. Moreover, the vision, mission and valuable objectives of enterprise could be provided and emphasized through the employee booklet or tutorial manual which will inspire employees' moral duty sense. This sense could motivate employees produce a strong identification with their organization and make efforts to fulfill their moral obligation to their work. HR managers need to tailor the HPHRP, ADP, OJ process and outcomes to the expectations of the different age workers. In this study, age have been identified as a moderator between these three constructs and turnover intention. Younger workers would be relatively more affected by the HPHRP, ADP, and OJ to lower their leave intention. This means that it will be beneficial to focus on strategies that are specifically targeting younger workers like personal developmental initiatives, management training plan and other such practices to make the younger employees feel supported by organizations. The perceived supportive feeling at the workplace will help the younger workers to clear their work role and construct a positive identity at the workplace who are usually still tentative on during the beginning of their work life, while older employees' stay intention are found to be significantly influenced indirectly by the ADP through AC. It gives the hint to the leaders that focusing on the application of the ADP, and guarantee the practice could meet and handle the real needs such as initiate the program of family work balance to the older workers, will sustain the AC among the older employees and encourage them to stay more likely. Another implication is that the ownership should be considered when implementing HR systems in the organization. Our study demonstrated that the ownership could moderate the relationship between HPHRP, ADP, OJ and turnover intention separately. The findings reveal that these HR practices could directly affect the turnover intention more effectively in SOEs than non-SOEs. Non-SOEs especially lots of POEs managers should pay more attention to their human resources and invest more on the effective and specific strategies and management system research that fit for the firms' traits. At the meantime, the government could give the large resources support to the POEs and assist the middle and small POEs to use scientific management practices to help the firms' systematic management effectively. The government could help the POEs, especially the

middle and small ones, to exist and grow smoothly through policies making to regulate the market order to create more opportunities for the POEs' business. Enterprise incubation centers could be set up by the state to breed the startup POEs companies and talent subsidies could be supplied to the POEs for excellent talents attraction. Research also spotlights the critical role of the HPHRP, ADP and OJ in the HR systems of SOEs. Accordingly, SOEs leaders and investors should encourage the managers to focus more on their internal HR systems and promote firm structure transformation, improve the corporation governance level, and enhance management practices to keep the development of the SOEs. It would be important that HR managers try to build an exchange relationship between employees and the enterprise. The function of the HR department will be greatly expanded if leaders know what resources their company is fitful to provide to inspire employees' perception of being supported, and what shared value they can express to improve employees' esteem and retention.

Based on the results, we could expect that organizations can reduce turnover intention by adjusting policies, practices and activities. Directing those responsible for human management to attract and retain talents. Voluntary turnover rate should be treated and emphasized as one of the management indicators and a thermometer of all human capital management that is relevant greatly with the continuous development of organizations. According to this indicator, organizations should timely coordinate resources to improve the employees' perception of HPHRP, ADP, OJ and enhance their OC. For example, AstraZeneca, a Fortune 500 pharmaceutical company, has its own special practices in reducing the rate of brain drain. This enterprise believes that it is necessary to use creative and flexible management methods to reduce the rate of employee turnover (Armstrong & Taylor, 2023). Employee Turnover Rate is a performance indicator set by AstraZeneca to evaluate the management capability of managers. Besides the career development planning, compensation and benefits, working environment and other aspects are considered for satisfying the needs and interests of employees, AstraZeneca even included Employee Turnover Rate into the key strategy objectives of the enterprise. Through incorporated into the company's balanced scorecard management system, Employee Turnover Rate are regarded as an important performance indicator to each department. AstraZeneca was also selected as the one of Top Employers in China by a third-party independent appraisal agency. AstraZeneca's practices in keeping talents could be worth to reference by other pharmaceutical companies.

Employers could pay attention to establish the affection link with the employees. This is a long period which need long term encouragements by organizations. These encouragements include considering the challenge, growth and variability in the work design and assignments.

The work itself is the most direct and effective incentive for employees, and the cost to the organizations is relatively low. Especially with the rise of the position and the increasing of the salary gradually, employees are not more sensitive to the incentives of material rewards, and the promotion of the higher position is harder to achieve. At this situation, the challenge and variability of the work tasks can be enhanced for such employees to keep motivating them. The implementation of this measure should be considered comprehensively. For example, when designing work positions, HR departments need to allocate the tasks and set responsibilities of each position reasonably. At the same time, improving the flexibility of the positions is also should be involved. It is possible to appropriately adopt the method of job rotation in the organizations to enhance the employees' satisfaction feeling and achievement sense that it is a good way to accumulate work experience and improve work capability, so as to prevent employees from getting burnout and wanting to leave. Furthermore, employees may find job crafting can help them become more motivated at work and achieve other desirable results (Tims & Bakker, 2010). Job crafting can be thought of as a particular type of proactive behavior in which the employee takes the initiative to adjust the amounts of resources and expectations on the job. Job and individual features may make it easier for employees to build their occupations so that they are tailored to their unique knowledge, skills, and abilities as well as their preferences and requirements. Employees could be urged to have more control over the requirements of their jobs.

HPHRP, ADP, OJ, OC, age, ownership could be the key factors combined into the organizations' dynamic HR management models to anticipate turnover intention. Under the severe competition status of the talents attraction between so many organizations now in Chinese pharmaceutical sector, the employees' flow is inevitable. But a targeted dynamic HR management system could be established and implemented as an early warning mechanism for the organizations to retain employees. As we know, the perception of employees to the factors like HPHRP, ADP, OJ, OC are the first-hand sources that could reflect directly their satisfaction or not about the job or employer. Thus, the dynamic HR management models must contain and emphasize the employees' feedback evaluation mechanism. This mechanism will be activated through timely communication and allows workforce to give feedback on the reasons for their intention to departure. Furthermore, these feedbacks, including the dissatisfaction raised by employees in detail, should be the target of leaders' concern and used as the important reference for setting short-term, medium-long term adjustment and improvement goals to adapt to changes in employees' different need. Individuals in the stage of intention to leave are still just hesitate and considering the leaving and have not made decision to leave yet. If the

communications between the employer and these individuals are effective and timely, if the feedback evaluation mechanism could quickly acquire the real and critical reasons that compel the employees to generate the resignation intention, and if the decision-making level of the enterprises could quickly makes adjustments on the management practices based on the feedback and suggestions, then the employees' dissatisfaction might be effectively be eased and their intention to leave will disappear.

Organizations should also conduct an analysis and application of feedback evaluation mechanisms fit for employees in different age or other demographic characteristics. The validity of feedback evaluation mechanisms should be tested regularly. The content of communication is mainly to guide employees to speak out about the rules and regulations of the enterprises through inspiring them to use their unscrupulous psychology to evaluate the work of the enterprise and express the real reasons for leaving intention. After the information is collected and analyzed, the real opinions are summarized, and supplied to the leaders to timely consider the correct and improve the discovered management related problems.

For the social implication, it is necessary for government to monitor the employment and unemployment levels. This is a part of the public policy agenda for generating employment and income, and it is closely linked to the social and economic stability. The government needs to introduce practical laws and policies to protect the basic rights and interests of employees in the organizations, supply the legal counsel or lawyer support for the employees who have the conflicts or dispute with their employers about the salary or other rewards, and restructure the organizations' trade union. The trade union need to be founded and operated by employees themselves, and independent from the organizations to better promote the reasonable treatment to employees from the enterprises. Public policies should also provide non-profit vocational skills training and career planning courses for different age employees to help them navigate to work well. Meanwhile, the government should also support the industries' healthy and continuous development. Through reducing taxes on key industries like pharmacy sector and providing subsidies for talent introduction and R&D expenses, the government could promote the enterprises to continuously grow and be competitive to attract the talents. Through investing and establishing high-tech industrial zone or incubation platform, the government could promote the cooperation of the enterprises and universities to help the organizations especially the new enterprises to improve their management capability, R&D level and workplace condition to offer employees an inspiring environment for working.

5.4 Research limitations and future directions

As any empirical research, our study has limitations that may point to some future research directions.

First, it cannot be inferred a certain cause and effect relationship in our results considering we use the cross-sectional research design in this study, even though this is the most common and important method in examining employees' attitude and behavior differences at work (Costanza et al., 2017) and in providing a contemporary full view of various workers at work. It is still desirable to use a longitudinal research method to supply deeper understanding of causality.

Second, although the questionnaires were designed and sent in two waves, all of the responses to the study variables were self-reported, which might cause the issue of common method variance (Podsakoff et al., 2012). Apart from the two-wave design, we applied other procedural remedies, such as ensuring our respondents' confidentiality and anonymity, setting the reverse items, separating the measurement of the predictor and the criterion variables, and rearranging their order (Podsakoff et al., 2012). The results of CFA also showed that our respondents could clearly distinguish the constructs. Future research is recommended to be designed with additional measures to minimize common method variance, such as adding the subjective ratings from multiple levels work positions (e.g., leaders, senior or middle managers) and using objective data (e.g., actual turnover, financial performance). A multilevel perspective can illuminate the effects of different HR practices on the employees and organizations.

The third limitation concerns the nature of the sample used in this study. Participants were recruited using a non-probabilistic sampling process, and the sample size is relatively not so large considering the respondents only in the pharmaceutical industry of China. It represents a limitation to the generalization of the results. Our respondents from POEs enterprise, the Chinese private companies' workers (137 persons) are far beyond the foreign enterprises (27 persons), so it limits us to test the difference between the foreign and other enterprises in China. Further research could be conducted to subdivide the ownership in Chinese pharmaceutical organizations as state owner, private owner, foreign owner to distinguish the different ownership effects in detail.

Fourth, it is expected that the literature would benefit from a more comprehensive understanding of the different HR practices effects on the intention and actual turnover if future

study could explore possible differences across professional industries, especially those that also have high turnover rates (e.g., nurses, hotel staff, programmers).

Fifth, pharmaceutical industry has different positions with various characteristics and job requirements. For example, R&D department's job and marketing job have different job duties and pressures. Therefore, if the HR practices' implementation in different department or positions leads to the same effect on the employees' turnover intention is deserved to be dig into.

Last but not least, the attitude and value research of the employees is always affected by the politics, social, local culture and economic background. Future research should examine the studied framework by using data from other developed or developing countries with mature or emerging markets and explore a multi-country comparative study.

5.5 Conclusion

With the fast growing of the Chinese pharmaceutical market, and more and more attention paid by the Chinese government to the fields of medical health and innovation of medical science and technology, pharmaceutical sector is under booming development and showing the globalization tendency. However, the high turnover rate, increasingly severe ageing problem, and intense competition for qualified personnel, make the talents attraction and retention a key concern to the HR sector. especially in the modern pharmaceutical enterprises, where the strengthen of the R&D and innovation are almost depending on highly skillful talents. It is full of significance to analyze the psychological process of the employees' turnover intention and the application of the initiatives to reduce the leave intention rate of workers and inspire their outcome continuously. Previous studies of the western scholars have shown us a lot of research achievements related with the employee turnover. However, there are still less relatively research on the localized empirical study of relevant theories, especially the systematic research on turnover intention in specific enterprises in context of pharmaceutical sector in China.

In order to explain the factors that influence the turnover intention of pharmaceutical employees in China through the empirical research of employees in Chinese pharmaceutical enterprises and the interactive relationships between these variables, we developed six models to forecasting the employee turnover intention based on the social exchange theory, which fits for the different ownership companies in China to improve the human resource practices to keep talents. Through investigating the employees from Chinese pharmaceutical sector by two waves questionnaires, a final sample of 283 survey responses were collected and processed to

quantitatively measure our research models and hypotheses.

The results have shown that in the context of the Chinese pharmaceutical sector: 1) HPHRP, ADP, OJ have negative effects on turnover intention directly and indirectly; 2) AC, NC partially mediate the relationship between HPHRP and turnover intention, ADP and turnover intention, OJ and turnover intention, respectively; 3) OJ have a stronger effect on affective and NC than HPHRP and ADP; 4) Age moderates the direct relationship between HPHRP and turnover intention, ADP and turnover intention, OJ and turnover intention respectively, such that the relationships are stronger for younger workers than for older workers; 5) The different ownership nature of the enterprise moderates the direct relationship between HPHRP and turnover intention, ADP and turnover intention, OJ and turnover intention, respectively, such that the relationships are stronger in the SOEs than in the non-SOEs.

These findings are consistent with the principles of social exchange theory. HPHRP, ADP, OJ could be used by organizations as different social exchange tools. It means that these factors are the ones of the important initiatives in reducing the employee turnover intention in the China's pharmaceutical industry context. At the meantime, they could be the key point to influence employees' attitudes to build the commitment to their organizations to avoid the intention to leave. Also, the thesis highlights the importance of considering age in the conception and implementation of HRM practices. The moderating effect of ownership, as showed in our study, sheds new light on the dynamics of social exchange process between individuals and organization.

These results of moderated mediation effects not only theoretically enrich our understanding of the processes of perceived practices from the organization that alters the employees' intention to leave with age or ownership as boundary conditions, but also give the implication practically to the manager or HR departments to promote staff stability and ensure the healthy and sustainable development of pharmaceutical enterprises. Communication between the employees and employers before the implementation of HR practices are underscored to guarantee the positive perception of the employees. Focusing on the different age-sensitive practices to facilitate both younger and older workers to be more adjusted to their job and workplace could be helpful to improve the loyalty of the employees to their organizations. The ownership should be considered when the organizations make the HR practices plan or the government establish the scheme for the developing of the pharmaceutical sector. Above all, when employers and policy makers truly put the needs of employees first other than, for example, the profit, and make them feel it, miracles can happen. The results are

important both for pharmaceutical organizations and for all stakeholders interested in the subject as the public power.

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Annex A: High Performance Human Resource Practice Scale

High Performance Human Resource Practice was assessed through ten questions that correspond to three dimensions: Development practices, Maintenance practices, Flexible practices (Boon, Den Hartog, Boselie, & Paauwe, 2011)

Development practices

1. The opportunity to follow training, courses and workshops
2. The opportunity to develop new skills and knowledge for my current job or for possible jobs in the future
3. Support in planning my future development
4. Good career prospects

Maintenance practices

1. Periodic evaluation of my performance
2. Fair appraisal of my performance
3. Performance-related pay

Flexible practices

1. Flexible working hours
2. The opportunity to work part-time if I needed to
3. The opportunity to arrange my work schedule so I can meet family obligations

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Annex B: ADP Scale

ADP were measured using a seven-item scale that assesses the extent to which workers perceive an inclusive and non-discriminatory treatment of workers of all ages regarding age-sensitive HR practices (Sousa, Ramos, & Carvalho, 2019).

The specific items include:

In my organization…

1. Employees are developed (i.e., training) and advanced without regard to the age of the individual.
2. Managers in my organization demonstrate through their actions that they want to hire and retain an age-diverse workforce.
3. I feel that my immediate manager/supervisor does a good job managing people of different ages.
4. It is easy for people from diverse age groups to fit in and be accepted.
5. All workers have the same opportunities to get an adequate evaluation, regardless their age.
6. The work is adjusted to workers' needs over time.
7. Experience, skills and knowledge of workers are recognized, irrespective of their age.

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Annex C: OJ Scale

OJ was measured by the scale that contains four subscales which were Distributive Justice (four items), Procedural Justice (seven items), Interpersonal justice (four items), and Informational justice (five items) (Colquitt, 2001).

The specific items include:

Distributive Justice

1. Does your salary reflect the effort you have put into your work?
2. Is your salary appropriate for the work you have completed?
3. Does your salary reflect what you have contributed to the organization?
4. Is your salary justified, given your performance?

Procedural Justice

1. Are you able to express your views during those procedures?
2. Can you influence the decisions arrived at by those procedures?
3. Are those procedures applied consistently?
4. Are those procedures free of bias?
5. Are those procedures based on accurate information?
6. Are you able to appeal the decisions arrived at by those procedures?
7. Do those procedures uphold ethical and moral standards?

Interpersonal justice

1. Has your supervisor treated you in a polite manner?
2. Has your supervisor treated you with dignity?
3. Has your supervisor treated you with respect?
4. Has your supervisor refrained from improper remarks or comments?

Informational justice

1. Has your supervisor been candid when communicating with you?
2. Has your supervisor explained decision-making procedures thoroughly?
3. Were your supervisor's explanations regarding the procedures reasonable?
4. Has your supervisor communicated details in a timely manner?
5. Has your supervisor tailored communications to meet individuals' needs?

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Annex D: OC Scale

In this study, the three subscales of the OC scale developed by Meyer and Allen in 1993 were used: AC, CC, NC in the OC, which has been widely accepted in the academic scope. The revised version contains six items for each subscale.

Affective commitment

1. I would be very happy to spend the rest of my career with this organization.
2. I really feel as if this organization's problems are my own.
3. I do not feel a strong sense of "belonging" to my organization. (R)
4. I do not feel "emotionally attached" to this organization. (R)
5. I do not feel like "part of the family" at my organization. (R)
6. This organization has a great deal of personal meaning for me.

Continuance commitment

1. Right now, staying with my organization is a matter of necessity as much as desire.
2. It would be very hard for me to leave my organization right now, even if I wanted to.
3. Too much of my life would be disrupted if decided I wanted to leave my organization now.
4. I feel that I have too few options to consider leaving this organization.
5. If I had not already put so much of myself into this organization, I might consider working elsewhere.
6. One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.

Normative commitment

1. I do not feel any obligation to remain with my current employer. (R)
2. Even if it were to my advantage, I do not feel it would be right to leave my organization now.
3. I would feel guilty if I left my organization now.
4. This organization deserves my loyalty.
5. I would not leave my organization right now because I have a sense of obligation to the people in it.
6. I owe a great deal to my organization.

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Annex E: Turnover Scale

Turnover was assessed by three items which was widely used by the other researchers (Rusbult, 1988).

The specific items include:

To what extent do you agree with the following statements?

1. I have recently spent some time looking for another job.
2. During the next year I will probably look for a new job outside this company.
3. I often think about quitting.

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Annex F: Harman's Single-factor Analysis

Model 1

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Sums of Rotating Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	18.304	31.559	31.559	18.304	31.559	31.559	5.443	9.385	9.385
2	4.267	7.356	38.915	4.267	7.356	38.915	4.682	8.073	17.458
3	3.128	5.393	44.308	3.128	5.393	44.308	4.535	7.819	25.277
4	2.358	4.065	48.373	2.358	4.065	48.373	4.526	7.803	33.080
5	1.899	3.273	51.647	1.899	3.273	51.647	4.224	7.283	40.363
6	1.737	2.995	54.642	1.737	2.995	54.642	4.157	7.168	47.530
7	1.384	2.386	57.027	1.384	2.386	57.027	2.664	4.593	52.123
8	1.253	2.161	59.188	1.253	2.161	59.188	2.257	3.892	56.015
9	1.205	2.077	61.265	1.205	2.077	61.265	1.898	3.273	59.288
10	1.097	1.891	63.156	1.097	1.891	63.156	1.858	3.203	62.491
11	1.022	1.762	64.918	1.022	1.762	64.918	1.395	2.404	64.896
12	0.956	1.648	66.567	-	-	-	-	-	-
13	0.922	1.590	68.156	-	-	-	-	-	-
14	0.885	1.526	69.682	-	-	-	-	-	-
15	0.865	1.492	71.174	-	-	-	-	-	-
16	0.828	1.428	72.601	-	-	-	-	-	-
17	0.797	1.374	73.975	-	-	-	-	-	-
18	0.757	1.306	75.280	-	-	-	-	-	-
19	0.707	1.219	76.499	-	-	-	-	-	-
20	0.669	1.153	77.652	-	-	-	-	-	-
21	0.660	1.137	78.790	-	-	-	-	-	-
22	0.632	1.090	79.880	-	-	-	-	-	-
23	0.625	1.078	80.958	-	-	-	-	-	-
24	0.610	1.052	82.010	-	-	-	-	-	-
25	0.554	0.956	82.966	-	-	-	-	-	-

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Sums of Rotating Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
26	0.523	0.902	83.868	-	-	-	-	-	-
27	0.515	0.889	84.757	-	-	-	-	-	-
28	0.499	0.860	85.617	-	-	-	-	-	-
29	0.481	0.829	86.446	-	-	-	-	-	-
30	0.469	0.808	87.254	-	-	-	-	-	-
31	0.459	0.791	88.045	-	-	-	-	-	-
32	0.436	0.751	88.796	-	-	-	-	-	-
33	0.424	0.732	89.528	-	-	-	-	-	-
34	0.408	0.704	90.232	-	-	-	-	-	-
35	0.372	0.642	90.874	-	-	-	-	-	-
36	0.349	0.602	91.476	-	-	-	-	-	-
37	0.341	0.588	92.063	-	-	-	-	-	-
38	0.333	0.573	92.637	-	-	-	-	-	-
39	0.320	0.552	93.189	-	-	-	-	-	-
40	0.317	0.547	93.736	-	-	-	-	-	-
41	0.306	0.527	94.263	-	-	-	-	-	-
42	0.287	0.495	94.759	-	-	-	-	-	-
43	0.275	0.473	95.232	-	-	-	-	-	-
44	0.264	0.455	95.688	-	-	-	-	-	-
45	0.244	0.421	96.108	-	-	-	-	-	-
46	0.231	0.398	96.507	-	-	-	-	-	-
47	0.220	0.379	96.886	-	-	-	-	-	-
48	0.215	0.371	97.257	-	-	-	-	-	-
49	0.202	0.348	97.605	-	-	-	-	-	-
50	0.193	0.333	97.937	-	-	-	-	-	-
51	0.187	0.322	98.260	-	-	-	-	-	-
52	0.173	0.299	98.559	-	-	-	-	-	-
53	0.170	0.293	98.852	-	-	-	-	-	-
54	0.161	0.277	99.129	-	-	-	-	-	-
55	0.140	0.242	99.370	-	-	-	-	-	-
56	0.127	0.220	99.590	-	-	-	-	-	-
57	0.123	0.212	99.802	-	-	-	-	-	-
58	0.115	0.198	100.000	-	-	-	-	-	-

Model 2

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Sums of Rotating Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.521	30.712	30.712	9.521	30.712	30.712	4.404	14.207	14.207
2	3.229	10.417	41.129	3.229	10.417	41.129	4.110	13.257	27.463
3	2.693	8.689	49.818	2.693	8.689	49.818	3.174	10.238	37.702
4	1.426	4.601	54.419	1.426	4.601	54.419	3.025	9.758	47.459
5	1.222	3.941	58.360	1.222	3.941	58.360	2.492	8.040	55.499
6	1.041	3.359	61.719	1.041	3.359	61.719	1.928	6.219	61.718
7	0.934	3.012	64.731	-	-	-	-	-	-
8	0.881	2.842	67.573	-	-	-	-	-	-
9	0.818	2.638	70.211	-	-	-	-	-	-
10	0.752	2.426	72.637	-	-	-	-	-	-
11	0.715	2.307	74.944	-	-	-	-	-	-
12	0.698	2.253	77.196	-	-	-	-	-	-
13	0.581	1.875	79.071	-	-	-	-	-	-
14	0.574	1.852	80.923	-	-	-	-	-	-
15	0.535	1.724	82.647	-	-	-	-	-	-
16	0.480	1.548	84.195	-	-	-	-	-	-
17	0.471	1.520	85.715	-	-	-	-	-	-
18	0.439	1.416	87.131	-	-	-	-	-	-
19	0.433	1.396	88.527	-	-	-	-	-	-
20	0.400	1.289	89.816	-	-	-	-	-	-
21	0.397	1.280	91.096	-	-	-	-	-	-
22	0.368	1.187	92.283	-	-	-	-	-	-
23	0.345	1.114	93.397	-	-	-	-	-	-
24	0.324	1.045	94.442	-	-	-	-	-	-
25	0.315	1.018	95.460	-	-	-	-	-	-
26	0.294	0.950	96.409	-	-	-	-	-	-
27	0.261	0.842	97.252	-	-	-	-	-	-
28	0.247	0.798	98.050	-	-	-	-	-	-
29	0.213	0.687	98.737	-	-	-	-	-	-
30	0.200	0.645	99.382	-	-	-	-	-	-
31	0.192	0.618	100.000	-	-	-	-	-	-

Model 3

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Sums of Rotating Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.284	33.157	33.157	9.284	33.157	33.157	5.142	18.363	18.363
2	3.157	11.275	44.432	3.157	11.275	44.432	4.574	16.334	34.697
3	2.395	8.555	52.986	2.395	8.555	52.986	4.168	14.885	49.582
4	1.156	4.130	57.117	1.156	4.130	57.117	2.110	7.534	57.116
5	0.995	3.552	60.669	-	-	-	-	-	-
6	0.937	3.347	64.016	-	-	-	-	-	-
7	0.874	3.121	67.137	-	-	-	-	-	-
8	0.807	2.883	70.020	-	-	-	-	-	-
9	0.764	2.728	72.749	-	-	-	-	-	-
10	0.686	2.449	75.197	-	-	-	-	-	-
11	0.637	2.274	77.471	-	-	-	-	-	-
12	0.585	2.090	79.561	-	-	-	-	-	-
13	0.540	1.928	81.489	-	-	-	-	-	-
14	0.508	1.813	83.303	-	-	-	-	-	-
15	0.501	1.789	85.092	-	-	-	-	-	-
16	0.461	1.647	86.738	-	-	-	-	-	-
17	0.431	1.538	88.276	-	-	-	-	-	-
18	0.411	1.468	89.744	-	-	-	-	-	-
19	0.404	1.443	91.187	-	-	-	-	-	-
20	0.382	1.366	92.553	-	-	-	-	-	-
21	0.319	1.139	93.692	-	-	-	-	-	-
22	0.304	1.086	94.778	-	-	-	-	-	-
23	0.296	1.058	95.836	-	-	-	-	-	-
24	0.279	0.996	96.832	-	-	-	-	-	-
25	0.254	0.907	97.739	-	-	-	-	-	-
26	0.237	0.845	98.584	-	-	-	-	-	-
27	0.213	0.762	99.346	-	-	-	-	-	-
28	0.183	0.654	100.000	-	-	-	-	-	-

Model 4

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Sums of Rotating Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.819	31.266	31.266	12.819	31.266	31.266	5.286	12.892	12.892
2	3.564	8.692	39.958	3.564	8.692	39.958	4.865	11.865	24.757
3	3.027	7.382	47.340	3.027	7.382	47.340	4.825	11.769	36.526
4	2.285	5.574	52.914	2.285	5.574	52.914	4.514	11.011	47.537
5	1.359	3.314	56.228	1.359	3.314	56.228	2.597	6.334	53.870
6	1.164	2.840	59.068	1.164	2.840	59.068	1.744	4.254	58.124
7	1.084	2.644	61.712	1.084	2.644	61.712	1.470	3.586	61.711
8	0.984	2.400	64.112	-	-	-	-	-	-
9	0.960	2.340	66.452	-	-	-	-	-	-
10	0.909	2.217	68.669	-	-	-	-	-	-
11	0.840	2.049	70.719	-	-	-	-	-	-
12	0.832	2.030	72.749	-	-	-	-	-	-
13	0.759	1.851	74.600	-	-	-	-	-	-
14	0.711	1.734	76.334	-	-	-	-	-	-
15	0.686	1.673	78.007	-	-	-	-	-	-
16	0.635	1.550	79.557	-	-	-	-	-	-
17	0.591	1.442	80.999	-	-	-	-	-	-
18	0.575	1.403	82.402	-	-	-	-	-	-
19	0.546	1.331	83.734	-	-	-	-	-	-
20	0.509	1.241	84.975	-	-	-	-	-	-
21	0.490	1.194	86.169	-	-	-	-	-	-
22	0.471	1.149	87.318	-	-	-	-	-	-
23	0.431	1.052	88.370	-	-	-	-	-	-
24	0.414	1.009	89.379	-	-	-	-	-	-
25	0.403	0.982	90.361	-	-	-	-	-	-
26	0.391	0.954	91.315	-	-	-	-	-	-
27	0.347	0.846	92.161	-	-	-	-	-	-
28	0.336	0.818	92.979	-	-	-	-	-	-
29	0.304	0.741	93.721	-	-	-	-	-	-
30	0.290	0.707	94.428	-	-	-	-	-	-
31	0.264	0.645	95.072	-	-	-	-	-	-

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Sums of Rotating Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
32	0.255	0.623	95.695	-	-	-	-	-	-
33	0.242	0.590	96.286	-	-	-	-	-	-
34	0.241	0.588	96.874	-	-	-	-	-	-
35	0.231	0.564	97.437	-	-	-	-	-	-
36	0.215	0.524	97.961	-	-	-	-	-	-
37	0.203	0.496	98.458	-	-	-	-	-	-
38	0.193	0.472	98.929	-	-	-	-	-	-
39	0.162	0.395	99.324	-	-	-	-	-	-
40	0.150	0.367	99.691	-	-	-	-	-	-
41	0.127	0.309	100.000	-	-	-	-	-	-

Annex G: Model Fitting Index of HPHRP

Common indicator	χ^2	*df*	*p*	χ^2 /*df*	GFI	RMSEA	RMR	CFI	NFI	NNFI
	73.815	33	0.000	2.237	0.906	0.094	0.127	0.936	0.892	0.913
Other indicators	TLI	AGFI	IFI	PGFI	PNFI	SRMR	RMSEA 90% CI			
	0.913	0.844	0.937	0.544	0.654	0.059	0.065 ~ 0.122			

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Annex H: Model Fitting Index of ADP

Common indicator	χ^2	*df*	*p*	χ^2/df	GFI	RMSEA	RMR	CFI	NFI	NNFI
	14.169	14	0.437	1.012	0.973	0.009	0.059	1.000	0.978	1.000
Other indicators	TLI	AGFI	IFI	PGFI	PNFI	SRMR	RMSEA 90% CI			
	1.000	0.945	1.000	0.486	0.652	0.029	0.008 ~ 0.082			

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Annex I: Model Fitting Index of OJ

Common indicator	χ^2	*df*	*p*	χ^2/df	GFI	RMSEA	RMR	CFI	NFI	NNFI
	266.022	112	0.000	2.375	0.825	0.099	0.140	0.904	0.847	0.883
Other indicators	TLI	AGFI	IFI	PGFI	PNFI	SRMR	RMSEA 90% CI			
	0.883	0.762	0.905	0.604	0.697	0.072	0.083 ~ 0.114			

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Annex J: Total Variance Explained and Rotation Factor Load Matrix of OC

Total Variance Explained of OC

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Sums of Rotating Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.253	34.737	34.737	6.253	34.737	34.737	3.678	20.434	20.434
2	2.589	14.381	49.118	2.589	14.381	49.118	2.776	15.422	35.855
3	1.184	6.577	55.695	1.184	6.577	55.695	2.489	13.830	49.686
4	1.036	5.757	61.452	1.036	5.757	61.452	2.118	11.766	61.452
5	0.921	5.117	66.569	-	-	-	-	-	-
6	0.809	4.495	71.064	-	-	-	-	-	-
7	0.714	3.966	75.031	-	-	-	-	-	-
8	0.670	3.724	78.754	-	-	-	-	-	-
9	0.624	3.469	82.223	-	-	-	-	-	-
10	0.518	2.876	85.100	-	-	-	-	-	-
11	0.493	2.737	87.836	-	-	-	-	-	-
12	0.472	2.620	90.456	-	-	-	-	-	-
13	0.391	2.174	92.630	-	-	-	-	-	-
14	0.329	1.826	94.456	-	-	-	-	-	-
15	0.314	1.742	96.198	-	-	-	-	-	-
16	0.269	1.492	97.689	-	-	-	-	-	-
17	0.231	1.281	98.971	-	-	-	-	-	-
18	0.185	1.029	100.000	-	-	-	-	-	-

Rotation factor load matrix

Item	Factor				Common Variance
	Factor 1	Factor 2	Factor 3	Factor 4	
AC1.I would be very happy to spend the rest of my career with this organization.	0.739	0.148	0.182	0.153	0.624
AC 2.I really feel as if this organization's problems are my own.	0.211	0.552	0.245	0.266	0.480
AC3.I do not feel a strong sense of "belonging" to my organization. (R)	0.494	0.277	0.565	-0.208	0.684
AC4.I do not feel "emotionally attached" to this organization. (R)	0.523	0.211	0.574	-0.233	0.703
AC.5.I do not feel like "part of the family" at my organization. (R)	0.285	-0.059	0.689	0.053	0.563
AC6.This organization has a great deal of personal meaning for me.	0.620	0.372	0.196	0.141	0.581
CC1.Right now, staying with my organization is a matter of necessity as much as desire.	0.719	-0.127	0.218	0.378	0.723
CC2.It would be very hard for me to leave my organization right now, even if I wanted to.	0.050	0.771	-0.075	0.204	0.644
CC3.Too much of my life would be disrupted if decided I wanted to leave my organization now.	0.143	0.291	0.049	0.678	0.568
CC4.I feel that I have too few options to consider leaving this organization.	-0.013	0.178	-0.072	0.795	0.669
CC5.If I had not already put so much of myself into this organization, I might consider working elsewhere.	0.172	-0.052	-0.664	0.124	0.489
CC6.One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.	0.161	0.165	-0.211	0.630	0.494
NC1.I do not feel any obligation to remain with my current employer. (R)	0.196	0.050	0.744	0.021	0.595
NC2.Even if it were to my advantage, I do not feel it would be right to leave my organization now.	0.531	0.518	0.013	0.094	0.559
NC3.I would feel guilty if I left my organization now.	0.226	0.684	0.125	0.336	0.648
NC4.This organization deserves my loyalty.	0.630	0.370	0.321	0.276	0.713
NC5.I would not leave my organization right now because I have a sense of obligation to the people in it.	0.487	0.633	0.077	0.097	0.653
NC6.I owe a great deal to my organization.	0.710	0.392	-0.088	-0.087	0.674

Blue numbers indicates that the absolute value of the load factor is greater than 0.4

Total Variance Explained of OC (after adjusted)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Sums of Rotating Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.207	38.249	38.249	4.207	38.249	38.249	2.809	25.540	25.540
2	2.093	19.024	57.273	2.093	19.024	57.273	2.246	20.422	45.962
3	0.964	8.767	66.040	0.964	8.767	66.040	2.209	20.078	66.040
4	0.760	6.910	72.950	-	-	-	-	-	-
5	0.636	5.781	78.731	-	-	-	-	-	-
6	0.592	5.379	84.110	-	-	-	-	-	-
7	0.530	4.819	88.929	-	-	-	-	-	-
8	0.435	3.959	92.888	-	-	-	-	-	-
9	0.298	2.708	95.596	-	-	-	-	-	-
10	0.275	2.500	98.096	-	-	-	-	-	-
11	0.209	1.904	100.000	-	-	-	-	-	-

Rotation factor load matrix (after adjusted)

Item	Factor			Common Variance
	Factor 1	Factor 2	Factor 3	
AC3.I do not feel a strong sense of “belonging” to my organization. (R)	0.419	0.724	-0.110	0.712
AC4.I do not feel “emotionally attached” to this organization. (R)	0.417	0.762	-0.141	0.774
AC.5.I do not feel like "part of the family" at my organization. (R)	-0.051	0.858	0.057	0.741
CC3.Too much of my life would be disrupted if decided I wanted to leave my organization now.	0.211	0.068	0.736	0.591
CC4.I feel that I have too few options to consider leaving this organization.	-0.040	-0.015	0.838	0.705
CC6.One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.	0.204	-0.205	0.641	0.495
NC2.Even if it were to my advantage, I do not feel it would be right to leave my organization now.	0.739	0.162	0.229	0.624
NC3.I would feel guilty if I left my organization now.	0.520	0.184	0.516	0.571

Item	Factor			Common Variance
	Factor 1	Factor 2	Factor 3	
NC4.This organization deserves my loyalty.	0.568	0.486	0.347	0.678
NC5.I would not leave my organization right now because I have a sense of obligation to the people in it.	0.734	0.243	0.279	0.675
NC6.I owe a great deal to my organization.	0.832	0.072	-0.015	0.698

Blue numbers indicates that the absolute value of the load factor is greater than 0.4

Annex K: Model Fitting Index of OC

Common indicator	χ^2	*df*	*p*	χ^2/df	GFI	RMSEA	RMR	CFI	NFI	NNFI
	72.113	38	0.001	1.898	0.918	0.080	0.173	0.939	0.882	0.912
Other indicators	TLI	AGFI	IFI	PGFI	PNFI	SRMR	RMSEA 90% CI			
	0.912	0.858	0.941	0.529	0.610	0.079	0.051 ~ 0.107			

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Annex L: AVE and CR of AC/NC/CC

Factor	AVE	CR
AC	0.546	0.781
CC	0.400	0.664
NC	0.502	0.834

Note: AC: Affective Commitment, CC: Continuance Commitment, NC: Normative Commitment, AVE: average variance extracted, CR: composite reliability

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Annex M: Pearson Correlation Between Constructs and AVE

	AC	CC	NC
AC	**0.739**		
CC	-0.110	**0.632**	
NC	0.424	0.465	**0.709**

Note: Diagonal bold font numbers are the square root values of AVE