STUDY ON THE IMPACT OF CEOs GENDER ON FIRM RISK-TAKING

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This Independent Study has been Approved as a Partial Fulfillment of the Requirement of International Master of Business Administration in International Business Management

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ABSTRACT

This study explored the impact of gender differences in chief executives on their risk taking in innovation decision-making. The research objective of this article is paper were: (1) To analyze the current situation of respondents in investment risk variables; (2) To analyze the current situation of respondents in terms of financial risk variables; (3) To analyze the gender differences in the risk taking variables of enterprises among respondents of different genders.

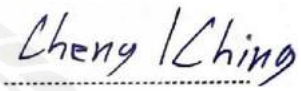
This paper adopted quantitative research methods and a questionnaire survey to conduct a sampling survey on the CEO of small and medium-sized high-tech enterprises from Beijing, China. The distribution of this questionnaire was 422 copies, and 418 valid questionnaires were collected and analyzed to verify the research hypothesis of this article.

The research results found that: (1) respondents have a medium to high level of investment risk bearing towards the enterprise; (2) The respondents have a moderate to high level of financial risk exposure to the company; (3) There are significant differences in the variables of corporate risk taking among CEOs of different genders. By comparing the means, it can be seen that female CEOs of small and medium-sized high-tech enterprises are more inclined to avoid corporate risk than male CEOs. By explored the level of enterprise risk taking in the innovation decision-making process of CEOs of different genders, further reference suggestions are provided for enterprises to choose suitable enterprise managers and decision-makers for current development.

Keywords: CEO, gender difference, corporate risk-taking, Investment risk-taking, financial risk-taking

DECLARATION

I, CHENG I CHING, hereby declare that the research contained in this independent study, " Study on the Impact of CEOs Gender on Firm Risk- taking " is original and has not been submitted to any other university or institution for a higher degree.



CHENG I CHING
September 8, 2023

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I am not writing an independent study thesis; I am pursuing my dreams. Life is about constantly making choices. In order to get closer to my dream, I chose to attend the Siam University Graduate School of Business Administration, embarking on a road that was both anticipated and unfamiliar. During the research process, several important benefactors appeared, making me feel less alone in choosing to pursue my dreams.

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CHENG I CHING
September 8, 2023

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Chapter 1 Introduction

1.1 Background of the Study

In recent years, with economic globalization and the rapid development of network technology, market competition has become increasingly fierce. The new era of China's economic transformation and upgrading and high-quality development has put forward higher requirements for the sustainable and stable development and growth of enterprises. If enterprises want to occupy a place and be in the leading position, they must formulate a strategy that meets the development of the enterprise, and the formulation and decision-making of the enterprise strategy is related to the future survival and development of the enterprise (Xia, 2017). Hambrick and Mason in 1984 put forward the theory of higher-order management that the personal traits of the executives have a direct impact on the strategic choices of the enterprise and thus on the enterprise value or enterprise performance. From this theory, it can be seen that the CEO, as a core member of the executive team, plays a key role in making decisions about corporate strategy (Bandiera, 2015). Khan and Vieito (2013) found that firms executed by female CEOs have lower levels of risk than their male counterparts. However, the correlation between CEO gender and firm risk-taking remains a topic of debate. Berger (2014) found that firms with more female executives tend to have higher bank portfolio risk. A large body of scholarly research suggests that gender-based behavioral differences make women less inclined to compete with others and more cautious in risk control than men (Hogarth, Karelaia, & Trujillo, 2012). As women continue to break through the "glass ceiling" and occupy executive positions, scholars are highly interested in examining the topic of how gender differences affect business decisions.

As the highest executive officer in the enterprise, the different traits of the CEO will directly affect the company's risk decision-making to a large extent; and according to the gender identity theory and gender role theory, the CEO's cognition, culture, and gender will be the determining factors affecting the company's risk decision-making, and a large number of scholars' studies have shown that there is a significant difference in the decision-making process of the female CEOs and the male CEOs, which leads to the fact that the different gender CEOs will also show different characteristics when making decisions involving company investment, management innovation and other risks. (Dong, 2014) found that when the enterprise's willingness to take risks is low, it is not conducive to enterprise performance improvement and operation; but excessive risk-taking also reduces enterprise performance, which leads to the conclusion that enterprise risk-taking and performance have an inverted U-shaped relationship.

Whether there is a difference between the decisions made by female managers after taking charge of the enterprise and male managers, and whether the gender of the

CEO has an impact on the risk-taking ability of the enterprise will be an important topic worthy of research. However, due to the different research purposes and inquiry perspectives, this paper chooses CEOs of small and medium-sized high-tech enterprises in Beijing, China, as the object of this research, but unlike previous scholars' studies, the perspective of this paper is not based on the financial indicators under the financial risk-taking to measure the variables in this paper, but rather, it is the innovative decision-making behaviors of CEOs' individuals in their decision-making as an important indicator to measure the risk-taking of the enterprises. Therefore, this paper further explores the impact of CEO gender on the risk-taking level of enterprises through empirical research by analyzing the two dimensions of investment risk and financial risk in the decision-making behavior of CEOs of different genders.

1.2 Problems of the Study

In recent years, a growing body of literature has focused on the impact of CEO gender on corporate risk-taking. Previous studies have shown that women are more risk-averse than men, which may affect their decision-making within the firm (Schubert, Brown, & Brachinger, 2000). Scholars such as Faccio (2016), through their research, have confirmed the conclusion that the level of corporate risk-taking decreases when the CEO of the firm is a woman, thus it can be shown that gender can affect the risk-taking level of enterprises, and women are more inclined to avoid risks. The research results of different scholars on this issue are different, but most of them are based on the financial indicators of corporate risk-taking ability, and few scholars have explored this issue based on the behavior of CEOs in decision-making and the future development of the enterprise's innovativeness. In order to make up for the lack of research in this field, this paper will further explore how the risk-taking level of CEOs of different genders in small and medium-sized high-tech enterprises in the process of decision-making innovation based on the perspective of corporate decision-making innovation.

1.3 Objectives of the Study

1. To analyze the current status of the respondents on investment risk variables.

2. To analyze the current status of the respondents on financial risk variables.

3. To analyze the differences in corporate risk-taking variables by gender of the respondents.

1.4 Scope of the Study

The total population of this study was drawn from a group of 28,750 CEOs of small and medium-sized high-tech companies in Beijing, China. The designated sample

was used in this study, and the minimum designated sample was calculated as 395 samples through the sampling method of whole cluster random sampling and the sample size formula of Yamane (1973). Due to the specificity of this respondent group, and only 1 CEO of each company to fill out the questionnaire, and through friends, colleagues at work and the work context in which I am directed to distribute, but in the process of collection will inevitably be wrong or refused to fill out the situation. Therefore, the distribution of this sample will be enlarged to 422, and after the recovery of its pre-processing, after excluding invalid questionnaires, a total of 418 valid questionnaires were obtained.

The content of this study is based on the resource dependence theory and the top echelon theory, and combined with the level of risk taken by CEOs of different genders in the decision-making process in small and medium-sized high-tech enterprises as the content of the study. The independent variable of this study is the gender of CEOs, and the dependent variable is corporate risk-taking (which includes the dimensions of investment risk-taking and financial risk-taking).

1.5 Significant of the Study

Due to the importance of changes in corporate CEO characteristics on corporate strategy development and decision making, and combined with the increasing number of female CEOs, and the fact that female CEOs are significantly different from male CEOs in areas such as corporate management or decision making (Malmendier & Tate, 2008). This paper further analyzes the sample of respondents in this study to understand the current role of CEOs of different genders in small and medium-sized enterprises (SMEs) in influencing the level of risk-taking in the day-to-day decision-making of the firm. Therefore, exploring CEOs of different genders in the decision-making process and corporate risk taking has the following implications.

(1) Theoretical significance

Through the relevant literature on the role of managers' personal traits in influencing corporate decision-making, the research on managers' personal traits mainly focuses on the managers' age, education, tenure, economic and social status and other factors. However, with the increase in the number of female executives in recent years, the gender of the CEO has gradually become an important characteristic that affects corporate decision-making, and a large number of scholars have found that executives of different genders are differentiated in their corporate decision-making and corporate risk-taking (Malmendier & Tate, 2005).

Second, through the review of university scholars' research, it is found that most scholars' research data for this issue mainly focus on the financial reports of listed companies, and few scholars have conducted research on the level of corporate risk-

taking in decision-making by CEOs of different genders in small and medium-sized enterprises (Farag & Mallin, 2018). Due to the different research purposes and perspectives, most of the scholars' measurement indicators for this issue are mainly derived from financial report data, and academics have not reached a consensus on the quantitative relationship between CEO's gender and corporate risk-taking, and few scholars have further measured the level of corporate risk-taking with respect to CEO's decision-making in daily management (Hutton, Jiang, & Kumar, 2014). In order to fill the gap of this research, this study further explores whether CEO gender can affect corporate risk-taking based on decision-making in the management process, to fill the gap of research in this area and to provide a reference for related theories.

(2) Practical significance

By incorporating CEO gender into executive characteristics and analyzing its impact on corporate decision-making, this paper enriches the research on the impact of executives' personal traits on corporate decision-making, which is of great significance for understanding corporate governance issues in China. Secondly, by studying the impact of different gender CEO decisions on the level of corporate risk-taking, this paper helps enterprises rationally configure executive gender in their future corporate governance structure and build a workplace environment with gender diversity at the management level, which is instructive for the improvement of corporate governance structure.

1.6 Limitation of the Study

Although this study has adopted a new measurement index different from the financial report data according to the research purpose in the study of the decision-making process and corporate risk-taking of CEOs of different genders in small and medium-sized enterprises, which further remedies the shortcomings of the research in this field. However, there are still some limitations in the research process of this paper, as shown below:

(1) Sample collection

Due to the lack of personal cognition, knowledge, and resources, the questionnaire was distributed through coworkers, friends, and the corresponding circle of contacts on the one hand. Since the respondents were CEOs of small and medium-sized high-tech enterprises in Zhong Guancun Science and Technology Industrial Park in Beijing, China, the questionnaire was filled out mainly through the self-reporting and self-assessment of the CEOs, and the sample data collected was subjective in nature, and the respondents may have avoided issues harmful to themselves or generated social convergence psychology in the process of filling out the questionnaire. So that the questionnaire cannot reflect the real situation of the respondents, which leads to the

authenticity and accuracy of the sample data of the survey is biased. Secondly, the questionnaire is mainly distributed in the form of a link to the Questionnaire Star platform. There is still a certain degree of one-sidedness in the completion and collection of questionnaires.

(2) Depth and Breadth of the Study

This study through the research on the different genders of CEOs of small and medium-sized high-tech enterprises in two places in Beijing, China on risk taking in decision-making, this study only selects the genders of different CEOs as the focus of the analysis, and ignores the corporate executives' qualities in factors such as age, education, and cognition, so it has a certain limitation. Secondly, unlike the previous financial indicators for each research variable, this paper explores the impact of different genders on risk-taking in their decision-making process in enterprises by using questionnaires and through CEO self-assessment, the study is the current state of a certain group at a certain time, and lacks a long period of tracking research.

Chapter 2 Literatures Review

2.1 Introduction

In this paper, through the literature review of international scholars on the personal traits of CEOs and risk-taking level, we further understand the current research status of each variable as well as the shortcomings, and through a large number of literature review, we found that although some scholars have made fruitful results in this field of research, with the development of the society and economy, the external environment of each variable has been changing, especially in the recent rapid development of high-tech enterprises, whether different gender CEOs have different levels of risk-taking in the process of decision-making and innovation will be the focus of this paper. changes, especially in the rapid development of high-tech enterprises in recent years, for different genders of CEOs in the process of decision-making innovation whether they have different levels of risk-taking, will be the focus of this paper's research and discussion. Secondly, through reading and organizing a large amount of literature, resource dependence theory and top echelon theory are chosen as the research basis of this paper, and the research framework of this paper is constructed according to this theory.

2.2 Literature Reviews

2.2.1 Enterprise risk-taking

Early most scholars for "risk taking" research is mainly focused on the study of individual risk taking level, but after the financial crisis broke out in 2008, scholars for the study of risk taking perspective gradually shifted to the company as the representative of the organizational form, as the basic bearer of the whole society and economy, the study of enterprise risk taking and management has more general significance. As the basic bearer of the whole social economy, the study of enterprise's risk taking and management is of more general significance. Risk taking of enterprises can be defined as the attitude of enterprises towards risk (Boubakri, Cosset, & Saffar, 2013). A firm's risk-taking ability and awareness of risk-taking largely determines the decisions it makes in its day-to-day business activities.

The essence of management's behavior in decision-making and risk-taking level selection is the game between management's own interests and enterprise value, especially based on the agency mechanism, the role of managers is set to determine the level of risk-taking in the enterprise. There is a principal-agent problem between the operator and the owner of the enterprise, so it is difficult to avoid the occurrence of information asymmetry, etc. When the enterprise is in the principal-agent mechanism, the separation of ownership and management, at this time, based on the assumption of the rational man, the CEO shareholders and the two interests do not converge, so when

the CEO makes an investment decision, the main goal is not necessarily to maximize the wealth of the company, which can be interpreted as that the management's personal risk appetite or other personal characteristics, to a certain extent, affects the company's risk-taking level (Huang & Kisgen, 2013). There are many decisions and various types of risks that companies face in their daily management and operations. Innovative decision-making and awareness of innovation is also one of these risks. innovative decision-making in the process of enterprise operation largely determines the future direction of development and profitability of the enterprise, but innovative decision-making at the same time to face the capital investment and the operation of the enterprise with a variety of risks exist. des found in 1996 through a study that the level of risk-taking in the process of enterprise operation can be used to evaluate the development potential of an enterprise in the future period of time. enterprise's development potential in the future period of time, the essence of which is that the greater the risk faced by the enterprise, the higher the economic benefits pursued by the enterprise (Yang, 2019). Bargeron (2010) argues that major decisions made by an enterprise in the process of operation are often accompanied by a certain degree of risk, but the magnitude of the risk is related to the benefits pursued by the enterprise. When firms tend to make low-risk decisions, it indicates that they do not pursue high-risk, high-revenue projects, but such decisions also mean that firms follow fewer capital expenditures. Secondly, Hambrick and Mason suggest, based on the micro perspective, that the level of corporate risk-taking by the executive team in the decision-making process is affected by the risk preferences of the individual making the decision.

In summary, the level of corporate risk taking is affected by the decision-making nature of managers in the firm in their daily business activities, and is likewise a reflection of managers' attitudes towards risk when making decisions. Harjoto (2017) found that the diversity of the board of directors is able to be more rational in making decisions that analyze innovative decisions and increase the value of the firm. Therefore, this study focuses on the variability of risk preferences in the decision-making process of CEOs with different gender personal traits.

2.2.2 Mechanisms of CEO Gender Influence on Firm Risk Taking

In recent years, academics have gradually realized that with the development of the economy and the growing proportion of female executives in enterprises increasing year by year, scholars' research on the issue of corporate risk-taking has begun to shift to how the individual characteristics of corporate CEOs affect the level of risk-taking of enterprises in the process of day-to-day management of the enterprise and investment decision-making (Bertrand, 2009). Traditional theories of corporate decision-making tend to ignore the impact of CEO characteristics and assume that managers are rational. However, empirical studies by a large number of scholars in recent years have shown

that CEO-specific characteristics are crucial in explaining corporate decisions (Bertrand & Schoar, 2003).

Farag and Mallin (2018) collected data from 892 IPOs in the Chinese market to study the impact of CEO personal traits on firms' risk-taking levels, which include CEO age, CEO board experience, career experience, education, and CEO gender factors, and found that all of these CEO personal trait factors have a significant impact on firms' risk-taking behavior The study found that all of these CEO personal attribute factors have a significant impact on corporate risk-taking behavior. In addition, in recent years, with the increasing number of female executives, scholars from various international parties have paid high attention to the research on the decision-making ability and risk-taking level of executives of different genders in the firms. Miller and Triana found that gender diversity in the board of directors can give firms to improve the corporate reputation and to the innovation of the firms (Huang & Kisgen, 2013). And Sila pointed out in her 2016 study that female directors inhibit firms from carrying out innovative activities due to risk aversion, and through empirical research Zhou and Wang scholars proved that female boards inhibit firms from investing in innovation (Yi, 2018). An increasing number of scholars have found that the gender of the CEO has a significant impact on the level of corporate risk-taking. Previous studies have shown that women generally exhibit higher risk aversion tendencies compared to men, which may affect their decision-making within the firm (Schubert, 2000).

In summary, although a large number of scholars have empirically concluded that female executives are more risk-averse compared to male executives, few scholars have followed up further to see whether this finding has changed with the development of the economic times or whether it has changed accordingly depending on the hierarchy of the firm. Therefore, in order to fill the gaps in this research topic in different fields and to increase the empirical basis of the study, this study bridges the gap in this research by exploring in depth the relationship between CEO gender's decision-making and risk appetite in small and medium-sized enterprises.

2.3 Theory of Reviews

2.3.1 Resource Dependency Theory

Jeffrey Pfeffer and Gerald Salancik published External Control of Organizations in 1978, and in doing so, proposed the resource dependence theory. Resource Dependence Theory believes that caring for survival is the most important thing for the organization, and the prerequisite for survival is that the organization needs a certain amount of resources, and the organization needs to maintain its survival by acquiring resources, due to the uncertainty of the environment and the scarcity of the resources, in order to obtain a sustainable competitive advantage, the enterprise may pursue more

resources in order to reduce the impact of the changes in the external environment, and this sustainable competitive advantage comes from rational management and rational allocation of resources. At the same time, enterprises' decisions on the selection and accumulation of resources are subject to limited information, uncertainty and cognitive bias, etc. Therefore, only rational and effective utilization and rational identification of those valuable, difficult to copy and imitate, and scarce resources will enable enterprises to have more room for development and profitability (Fang, 2020).

In addition, the resource dependence theory also believes that the resources among enterprises have great differences, Jeffrey Pfeffer, by analyzing the power problem within the organization, suggests that the members of the organization who are able to provide more resources to the organization are more important than other members. For CEOs, the more resources they have, the less dependent their firms are on the external environment, and the less risky their decision-making processes are, the more beneficial they are to innovation and development.

2.3.2 Top echelon theory

The top echelon theory was put forward by Hambrick and Mason in 1984, which believes that managers cannot have a comprehensive understanding of all aspects of the internal and external environments due to the complexity of these environments, and that seeing is not the same as seeing, and that even phenomena within a manager's line of sight cannot be fully noticed and incorporated into the decision-making information to be utilized, and thus, the manager's existing cognitive structure and values determine their ability to utilize information. In this way, the manager's existing cognitive structure and values determine his or her ability to utilize information. In other words, the characteristics of managers affect their strategic choices and thus influence corporate decisions (Yang, 2019).

Therefore, the top echelon theory suggests that the psychological factors such as values, cognitive ability and perceptual ability of the executive team determine the decision-making process, the risk level of the firm, and performance outcomes (Hogarth, 2012). However, most scholars believe that the psychological factors of executives are difficult to measure and that demographic characteristics (e.g., gender, age, education, and occupation) are closely related to these psycho-structural factors of managers; therefore, the top echelon theory assumes that demographic characteristics are central and that executive behaviors are based on their individualized representations of the strategic situations they face, and that these individualized representations are a function of the executives' experiences, values, and personalities. Executive teams differ in their cognitive base, values, insights and the processes by which these traits work, which in turn can affect the firm's performance and corporate risk-taking (Shah SZA, 2017).

2.4 Research Relevant

Recent empirical research has found the importance of CEO-specific characteristics in explaining differences in firm decision-making (Bertrand, 2009). In particular, a growing body of literature focuses on the gender of the CEO in terms of risk-taking in the decision-making process. For example, women tend to be more risk-averse than men (Schubert, 2000). In addition, empirical research suggests that men tend to exhibit greater overconfidence than women in finance and investment (Barber, 2001). Furthermore, Barber and Odean (2001) found through their study of gender differences in corporate financial decision making and risk-taking levels that men tend to exhibit overconfidence compared to women. Halko (2012), by examining the relationship between stock holdings and gender in Finland, a country known for its gender, found that women tend to invest less in risky firms, suggesting that they are more averse to financial risk, and that the effect of gender on risk-taking is not only limited to individual investment decisions, but also permeates into managerial positions. Elsaid and Ursel (2011) examined the factors associated with the successful appointment of female CEOs using a CEO succession framework, which found that when the CEO changed from male to female, various indicators of firm risk-taking declined accordingly. Specifically, scholars have argued that female executives are more risk-averse than male executives, making choices that minimize financial risk to the firm (Faccio, 2016). Berger (2014) found that firms with more female executives tended to have higher bank portfolio risk. This shows that the current academic research in this area has not yet reached a uniform standard.

2.5 Research Framework

By reviewing and analyzing the research results of a large number of scholars in this field, the literature review found that scholars in the existing research on the different genders of CEOs in the day-to-day management or investment and other aspects of decision-making on the level of risk-taking for the enterprise is different, but with the recent years of female executives in the status of the enterprise is gradually increased, its decision-making rights in the enterprise is also gradually increased. So for small and medium-sized high-tech enterprises, it is worth exploring whether the CEO's risk-taking level (investment risk-taking, financial risk-taking) in the corporate decision-making process is affected by gender. Therefore, through the combing of related literature, this paper selects the gender of CEOs of small and medium-sized high-tech enterprises as the independent variable, and the enterprise's risk-taking level (including investment risk-taking and financial risk-taking dimensions) as the dependent variable, to further construct the theoretical framework of this paper, which is shown in Figure 2.1:

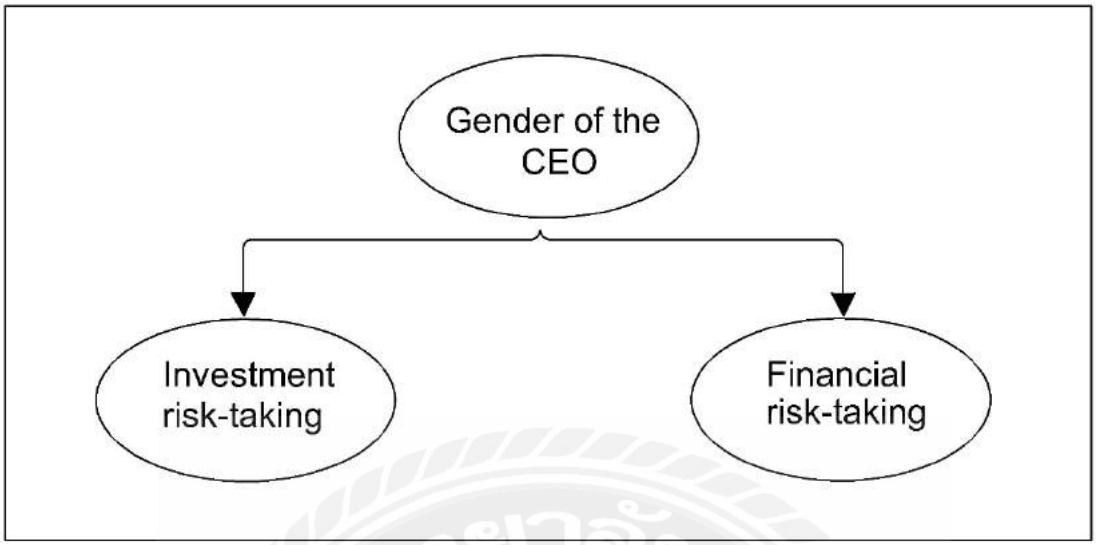

Figure 2.1 Research Framework

2.6 Terms and Definition Used in This Study

2.6.1 Zhong Guancun

Zhong Guancun is known as "China's Silicon Valley" and has been exploring science and innovation finance for many years. As early as September 2016, the State Council issued the "Overall Plan for Beijing to Strengthen the Construction of the National Science and Technology Innovation Center", which pointed out that the Zhong Guancun National Innovation Demonstration Zone is the main carrier, and called for accelerating the construction of the National Science and Technology Financial Innovation Center. Zhong Guancun Science City, as one of the three major science cities in Beijing, mainly relies on relevant institutes of the Chinese Academy of Sciences, institutions of higher learning and centralized enterprises to gather global high-end innovation elements, achieve major breakthroughs in basic frontier research, and form a number of original achievements with world influence. Zhong Guancun is home to a large number of science and technology enterprises, with a strong atmosphere of science and technology innovation and a strong demand for financial services and capital support. Zhong Guancun Science and Technology Industrial Park (ZSTIP) is the demonstration zone of China's independent innovation development in science and technology and the first national high-tech industrial development zone in China, characterized by a strong atmosphere of science and technology entrepreneurship, rich resources of science and technology enterprises, and a complete system of policies, parks, talents and services for science and technology innovation enterprises (Li, 2023).

2.6.2 Characteristics of high-tech enterprises

The definition of the name high-tech enterprise varies from country to country internationally due to the different requirements for high-tech standards. China, according to Baidu Encyclopedia, the name of high-tech enterprises was officially released in 2016 based on the management of science and technology terms. The concept of high-tech enterprise is defined as a knowledge-intensive and technology-intensive economic entity, where scientific researchers within the science and technology enterprise account for about 10% of the total number of employees of the enterprise and are mainly engaged in the research and development of high-tech products (Zhao, 2023).

High-tech enterprises cover many industries, such as electronic computers, biotechnology, communications and aerospace. Therefore, we can consider high-tech firms to be engaged in the development and sale of high-tech products and services with science and technology as their core competitiveness and driven by R&D and innovativeness. These enterprises usually have advanced R&D and production facilities and employ highly qualified scientists, technicians and engineers. As high-tech enterprises usually exhibit high-risk and high-return characteristics. The pace of technological development and product renewal in the industry as a whole is very rapid, and continuous reforms and upgrades are needed to keep pace with market demand and fierce competition (Li & Huang, 2022).

It can be seen that the CEO of an enterprise will face numerous decisions in daily management and production activities, and the CEO's decision-making and risk-taking behavior can bring high returns to the enterprise on the one hand, and considerable risks to the enterprise on the other hand. This paper further investigates the risk-taking situation of the CEO's gender on the decision-making process of hi-tech enterprises, which on the one hand can further understand the current risk-taking level of the CEOs of small and medium sized hi-tech enterprises and on the other hand can further understand the risk-taking level of the CEOs. This paper further investigates the risk-taking situation of CEOs in the decision-making process by analyzing the gender of CEOs in high-tech enterprises, on the one hand, it can further understand the current situation of CEOs in the risk-taking level in small and medium-sized high-tech enterprises, on the other hand, it can also analyze CEOs with different genders to provide reference opinions for enterprises to choose CEOs suitable for the current development of the enterprise, or to provide theoretical references in high-tech enterprise human resources management.

Chapter 3 Research Methodology

3.1 Introduction

This study adopts a quantitative research methodology to investigate the risk-taking level of CEOs of 28,750 SMEs from Zhong Guancun Science and Technology Industrial Park in Beijing, China, with different genders in their decision-making process. Through the sample data obtained from the sample survey, we further analyze the level of risk-taking of CEOs of small and medium-sized high-tech enterprises in terms of investment risk and financial risk, and put forward the research hypotheses of this paper. Secondly, the scale design is based on the mature scales developed and used by international scholars. The reliability of the collected sample data is also verified.

3.2 Research Design

In the process of designing the scale items for each research variable in this paper, we refer to the research perspectives and research results of international scholars and extract the relevant measurement items that meet the purpose of this study. The scales used in this study are all from mature scales that have been widely used by international scholars and have been verified to have good reliability and validity. Since the purpose of this research is to explore the study of corporate risk-taking in the decision-making process of different CEOs of small and medium-sized high-tech enterprises by gender, this paper is based on the scale used by Xia (2017), and this questionnaire design is divided into two parts, the first part is the basic information about the individual: it consists of gender. The second part is composed of a two-part measurement scale of investment risk-taking and financial risk-taking in the CEO's decision-making process, which was selected from Shane and Venkataraman (2000), consisting of 14 question items. All question items in the second three parts of this study were measured on a five-point Likert scale. The total number of questions in this questionnaire is 15, with 1 indicating "very inconsistent", 2 indicating "relatively inconsistent", 3 indicating "average", 4 indicating "relatively consistent", and 5 indicating "very consistent".

3.3 Hypothesis

H1: Female CEOs have a significantly lower level of investment risk-taking than male CEOs in their decision-making process.

H2: Female CEOs have significantly lower level of financial risk taking than male CEOs in their decision making process.

H3: There is a significant difference between respondents of different genders on the risk-taking variables of the business.

3.4 Sampling and Sample Size

The subjects of this study come from the CEO group of 28,750 small and medium-sized high-tech enterprises in Beijing, China, which is mainly concentrated in Zhong Guancun Science and Technology Industrial Park in Beijing, China, and the sample data of this study was obtained by launching a sampling survey on the whole. Sampling was conducted according to the sampling table proposed by Yamane in 1967, and the slovin formula n = N/(1+Ne2) was used to select the 95% confidence interval level. According to the formula, the calculation of 28,750 people shows that the minimum sample size for this sampling is 395 people. Due to the specificity of this respondent group, and each enterprise only 1 CEO to fill out the questionnaire, and through friends, colleagues at work and the background of the work I am in the targeted distribution, but in the process of collection will inevitably be wrong, omitted or refused to fill out the situation. Therefore, the distribution of this sample will be expanded to 422, after the recovery of its pre-processing, after excluding invalid questionnaires, a total of 418 valid questionnaires were obtained.

$$N = \frac{N}{1+(Ne2)}$$

$$N = \frac{28750}{1+\left(28750(0.05)^2\right)}$$

$$N = \frac{28750}{1+71.87}$$

$$N = 395$$

(Equation 3-1)

3.5 Data Collection

After determining the scope of the survey sample, due to personal time and energy limitations, and secondly, because the research object for each small and medium-sized enterprise CEO in the daily work are relatively busy, so the distribution and collection of this questionnaire are carried out through the "questionnaire star" platform (www.wjx.cn) in the form of QR code or link. The questionnaires were distributed in a targeted form to the CEOs of their companies through friends, colleagues and people in the same industry. At the beginning of the questionnaire filling, the cover will clearly inform the respondents of the purpose of this study, the specific requirements for filling out the form and so on. After about 30 days of patience, all the questionnaires will be collected. After the sample data collection was completed, the collected sample

questionnaires were screened and a total of 418 questionnaires were obtained after excluding invalid questionnaires, and the effective recovery rate of the questionnaires was 99%.

3.6 Data Analysis

Descriptive statistical analysis is an important element of the data analysis process. Descriptive statistics is the process of organizing, analyzing and describing the sample data collected during the research process. It is a method of describing the basic situation and distribution characteristics of sample data graphically or mathematically. In general, descriptive statistics include three main points: centralized trends, discrete trends, and data distribution characteristics. For example, descriptive statistics can be used to analyze data using mean, frequency, standard deviation and variance, kurtosis and skewness.

In this study, SPSS statistical software was used to analyze the sample data collected by its questionnaire in order of descriptive statistics, reliability and validity analysis, centralized and discrete trend analysis, independent samples t-test and other related steps to verify the research hypotheses proposed in this paper and to draw final conclusions.

3.7 Reliability and validity analysis of the scale

3.7.1 Reliability analysis

Reliability analysis refers to the analysis of the reliability of the scales in the study with the aim of ensuring the accuracy and stability of the scales used in this study. It can be understood that the higher the reliability coefficient, the lower the error of the study (Zhang, 2010). Most international scholars use Cronbach's alpha coefficient for reliability analysis. In this paper, Cronbach's alpha coefficient is used to analyze the reliability of investment risk-taking and financial risk-taking scales presented by CEOs of different genders in the decision-making process. When the Cronbach's α coefficient is less than 0.6, it means that the questionnaire needs to be re-compiled and redesigned; Cronbach's α coefficient between 0.7-0.8 indicates that the reliability of this part of the questionnaire is good; Cronbach's α coefficient, if it is higher than 0.8, indicates that this part of the questionnaire has a high reliability. The results of the reliability test are shown in Table 3.1.

Table 3.1 Results of questionnaire reliability test

Factor	N	Cronbach's alpha
Overall Scale	14	0.880
Investment risk-taking	7	0.866
Financial risk-taking	7	0.870

From the results of the reliability test of the questionnaire in Table 3.1 above, it can be seen that the overall scale has a total of 14 items with a Cronbach's alpha coefficient of 0.880, the investment risk-taking scale has a total of 7 items with a Cronbach's alpha coefficient of 0.866, the financial risk-taking scale has a total of 7 items with a Cronbach's alpha coefficient of 0.870, which shows that the overall scale and each of the scales are all above 0.8, indicating that the questionnaire used in this research activity has good reliability. The Cronbach's alpha coefficient of both the overall scale and the various scales is higher than 0.8, which can indicate that the questionnaire used in this research activity has good reliability.

3.7.2 Validity analysis

Since this paper selects a well-established scale that is widely used by international scholars, the theoretical parts of its content validity and correlational validity have been validated. Therefore, this paper focuses on testing the structural validity of the scale. Structural validity refers to the extent to which a scale can validate the content structure of a variable and the theoretical conceptualization of the test.

Based on the above, this study conducted KMO and Bartlett's Spherical Test (Zhang, 2010) for each subscale. Normally, the KMO value ranges from 0 to 1, and the closer the value is to 1, the better the fit validity is. When the KM0 value reaches 0.6 or above indicates acceptable validity, the significance of Bartlett's sphericity test statistic is below 0.05, which indicates that the validity of this part of the scale is good. The results of the validity test about this questionnaire are shown in Table 3.2.

Table 3.2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.920
Bartlett's Test of Sphericity	Approx. Chi-Square	2348.145
	df	91
	Sig.	0.000

As can be seen from the results of the validity analysis of the scale in Table 3.2 above, the KMO value of the questionnaire is 0.920, which is much greater than 0.6 or more. The Approx. Chi-Square of the Bartlett's test of sphericity is 2348.145, with a degree of freedom of 91, and the significance of 0.000, which can be seen to be less

than 0.05 (i.e., $P<0.05$). The result of this test can indicate that the questionnaire of this study has good validity.

Chapter 4 Result of the Study

4.1 Introduction

This chapter focuses on the descriptive analysis of the current situation of risk-taking (investment risk and financial risk) in the decision-making and innovation process of CEOs of different genders in small and medium-sized high-tech enterprises through the data obtained from the questionnaire survey. Secondly, the research hypotheses of this paper are tested by examining the differences in investment risk-taking and financial risk-taking of CEOs of different genders, and then verifying the research hypotheses of this paper.

4.2 Description of statistical variables

4.2.1 Analysis of the current status of CEOs of different genders on investment risk variables

Due to the need for the purpose of this study, the descriptive analysis of risk-taking level of CEOs of different genders in small and medium-sized high-tech enterprises in the decision-making innovation process is shown in Table 4.1:

Table 4.1 Descriptive statistical analysis of investment risk taking

	N	average value	standard deviation
Investment risk-taking	418	3.82	0.745
A1	418	3.6914	1.02859
A2	418	3.9593	0.96994
A3	418	3.6268	1.05004
A4	418	3.8230	1.00466
A5	418	3.7584	0.99952
A6	418	3.8900	0.98543
A7	418	3.9904	0.97691

The results of the mean and standard deviation of the investment risk taking of 418 CEOs of high-tech enterprises show that the mean value of CEOs in venture capital is 3.82, and the mean values of A1-A7 measurement items in investment risk are all above 3, and they are all greater than the moderate value of 3. This study adopts the Likert five-level scale assignment method to measure each item of the questionnaire, from "very much" to "not conform" to "fully conform". not conforming" to "fully conforming". Therefore, from the above mean results, it can be seen that CEOs of small and medium-sized high-tech enterprises are in the medium to high level of investment risk-taking.

Table 4.2 Investment Risk Taking Measurement Items and Percentages

	Not at all.	not in agreement with	general	fairly consistent	tallying with
A1	12(2.9%)	42(10%)	107(25.6%)	159(38.0%)	98(23.4%)
A2	4(1%)	29(6.9%)	94(22.5%)	144(34.4%)	147(35.2%)
A3	15(3.6%)	44(10.5%)	115(27.5%)	152(36.4%)	92(22%)
A4	7(1.7%)	37(8.9%)	101(24.2%)	151(36.1%)	122(29.2%)
A5	10(2.4%)	35(8.4%)	106(25.4%)	162(38.8%)	105(25.1%)
A6	8(1.9%)	29(6.9%)	93(22.2%)	159(38%)	129(30.9%)
A7	5(1.2%)	26(6.2%)	93(22.2%)	138(33%)	156(37.3%)

(Data source: SPSS collation)

According to Table 4.1, the lowest mean value of A3 in investment risk-taking is 3.6268.From Table 4.2 investment risk-taking measurement question items and percentages, 61.4% of CEOs among the respondents always consider introducing new products\services to the market; the highest mean value of A7 in investment risk-taking is 3.9904, and 70.3% of CEOs among the respondents are good at applying different resources by integrating them The mean value of A1, A2, A4, A5 and A6 is 3.6914, 3.9593, 3.8230, 3.7584 and 3.8900 respectively, and more than 50% of the respondents in the five measurement items, even some of them at 60%, agree with the viewpoints stated in the question. It can be seen that the investment risk-taking level of CEOs of small and medium-sized high-tech enterprises in the decision-making process is in the medium to high level. Since the main subjects of this study are from small and medium-sized high-tech enterprises in China, high-tech enterprises often face innovative decisions in the process of business management and external business expansion, and continuous industrial innovation and optimization is the key to the sustainable development of the enterprise. According to the current situation, although about 60% of the respondents have a high level of investment risk-taking, about 20% of the respondents are more inclined to avoid risky investments in the decision-making process, and about 10% of the respondents are not able to accept risky investments.

Table 4.3 Descriptive statistical analysis of financial risk taking

	N	average value	standard deviation
Financial risk-taking	418	3.8205	0.7542
B1	418	3.6938	1.0580
B2	418	3.9569	0.9586
B3	418	3.6244	1.0639
B4	418	3.8254	0.9894
B5	418	3.7584	1.0138
B6	418	3.8900	1.0094
B7	418	3.9952	0.9495

The results of the mean and standard deviation of the financial risk taking of 418 high-tech enterprises show that the mean value of CEOs on financial risk taking is 3.8205, and the mean values of the items of the B1-b7 measurement questions in the financial risk taking are also above 3, and they are all greater than the medium level of the value of 3. Therefore, from the results of the above mean values, it can be seen that the CEOs of small and medium-sized high-tech enterprises are in the medium level of the financial risk taking.

Table 4.4 Financial Risk-Taking Measurement Questions and Percentages

	Not at all.	not in agreement with	general	fairly consistent	tallying with
B1	13(3.1%)	47(11.2%)	98(23.4%)	157(37.6%)	103(24.6%)
B2	6(1.4%)	26(6.2%)	87(20.8%)	160(38.3%)	139(33.3%)
B3	12(2.9%)	52(12.4%)	116(27.8%)	139(33.3%)	99(23.7%)
B4	7(1.7%)	35(8.4%)	100(23.9%)	158(37.8%)	118(28.2%)
B5	11(2.6%)	34(8.1%)	109(26.1%)	155(37.1%)	109(26.1%)
B6	8(1.9%)	34(8.1%)	88(21.1%)	154 (36.8%)	134(32.1%)
B7	5(1.2%)	25(6%)	84(20.1%)	157(37.6%)	147(35.2%)

According to Table 4.3, the lowest mean value of B3 in financial risk taking is 3.6244.From Table 4.2 Financial Risk Taking Measurement Question Items and Percentages, 57% of the CEOs of the respondents will always do their best to take advantage of opportunities in the face of unpredictable futures; 27.8% of the respondents will generally do their best to take advantage of opportunities in the face of unpredictable futures; and 15% of the respondents generally tend to reduce risk when faced with an unpredictable future. The highest mean value of B7 in financial risk-taking is 3.9952, and 72.8% of the CEOs of the respondents can accept product hoarding\abandonment\losses; 20.1% of the respondents can generally accept product hoarding; and 7.2% of the respondents can't accept the risk of product hoarding\abandonment\losses at all. The mean values of B1, B2, B4, B5, and B6 are 3.6938 respectively, 3.9569, 3.8254, 3.7584 and 3.8900 respectively. 62.2% of the respondents in B1 are always optimistic to face the uncertainty faced by the enterprise, 23.4% of the respondents are generally able to face the uncertainty faced by the enterprise, and only 14.4% are not able to face the uncertainty faced by the enterprise. 71.6% of the respondents in B2 have a high degree of tolerance for future uncertainty, 20.8% of the respondents have average tolerance for future uncertainty, and 7.6% of the respondents are not able to tolerate future uncertainty. 57% of the respondents in B4 tend to take bold and positive actions to seize opportunities, 23.9% of the respondents are generally able to take bold and positive actions to seize opportunities, and 10.1% of the respondents are not able to take bold and positive actions to seize opportunities. B5 63.2% of the respondents tend to take bold and positive actions to achieve their goals, 26.1% generally take bold and positive actions to achieve their goals, and 10.7% do not

take bold and positive actions to achieve their goals. B6 68.9% of the respondents are willing to take higher risks for higher returns, 20.1% are generally willing to take higher risks for higher returns, and 20.1% are generally willing to take higher risks for higher returns. of the respondents would generally take higher risks for higher returns and only 7.2% of the respondents would not take higher risks for higher returns.

Based on the above analysis of the respondents on financial risk taking, it can be seen that about 60% of the respondents are able to take a higher level of financial risk, about 20% of the respondents are generally able to take a higher level of financial risk, and only about 10 of the respondents have a lower level of financial risk taking. This can indicate that the level of financial risk taking of CEOs in small and medium-sized high-tech companies is in the middle to high level.

4.3 Results of the Study

4.3.1 Independent samples t-test

Table 4.5 Independent samples t-test on gender

variant	gender	average value	standard deviation	Independent samples t-test	
				t-value	P-value
Investment risk-taking	male	29.1062	4.38041	19.441	0.000
	female	21.2540	1.76606	26.106	0.000
Financial risk-taking	male	27.9075	4.56586	7.273	0.000
	female	24.0476	5.82938	6.609	0.000

According to the results of independent samples t-test on gender in Table 4.5, it can be seen that there is a significant difference in the level of risk-taking in the decision-making process of CEOs of different genders. Among them, the mean value of males in investment risk-taking is 29.1062 with a standard deviation of 4.38041, while the mean value of females is 21.2540 with a standard deviation of 1.76606. the mean value of males in financial risk-taking is 27.9075 with a standard deviation of 4.56586, for females is 24.0476 with a standard deviation of 5.82938. as it can be seen from the above comparison of the means. The mean value of females in the level of investment risk taking is significantly lower than that of males and the research hypothesis H1 is valid. The mean value of financial risk-taking level of females is significantly lower than that of males and the research hypothesis H2 is valid. As can be seen from the standard deviation, there is a large internal difference in investment risk taking among men, which means that some men tend to take risks when making investment decisions, and some tend to avoid investment risks. Whereas, the internal difference for females is relatively small, which shows that females tend to reduce risky investments in their businesses, which is consistent with the findings of Halko (2012). In the financial risk-taking male and female mean difference is not obvious, but from

the standard deviation change of the female financial risk-taking level of the internal difference is larger, which can be more illustrative of scholars believe that female executives are more able to avoid risk than male executives to make the choice of minimizing the financial risk of the enterprise This is consistent with the results of the study of Faccio (2016).

From the results of the independent samples t-test, it can be seen that the t-value of men and women in investment risk-taking is 19.441 and 26.106 respectively, with a P-value of 0.000, which is less than the 0.01 level of significance (i.e., $P<0.01$), which can be illustrated by the fact that the CEOs of different genders have a significant difference in the variable of investment risk-taking. The t-values for men and women in financial risk-taking are 7.273 and 6.609, respectively, with a P-value of 0.000, which is less than the 0.01 significance level (i.e., $P<0.01$), thus indicating that CEOs of different genders are significantly different in financial risk-taking variables. Thus, it can be concluded that the research hypothesis H3 is valid.

In summary, according to the results of the study, it can be seen that CEOs of different genders have different levels of risk-taking in the decision-making process, and males are higher than females in both investment risk-taking and financial risk-taking, and males tend to be more self-confident than females in small and medium-sized hi-tech enterprises in decision-making, and they are more capable of risk-taking in the face of the uncertainties and market opportunities of corporate investment. In small and medium-sized high-tech enterprises, men tend to be more confident than women in making decisions and are more capable of taking risks in the face of uncertainty and market opportunities. Women, on the other hand, are relatively poor in risk-taking, and they tend to avoid risks, which to a certain extent will curb the development speed of the enterprise and prevent it from seizing the opportunities of enterprise development quickly. However, the advantage of female CEOs is that they are more prudent and more comprehensive in weighing the risks in the face of corporate decision-making, which also has certain advantages for the operation and development of enterprises.

Chapter 5 Conclusion and Recommendation

5.1 Conclusion

The focus of this study is to explore whether the different genders of CEOs of small and medium-sized enterprises (SMEs) have a significant impact on the level of risk-taking in their firms. According to the analysis of a large number of international scholars on the gender-differentiated behavior of CEOs, it can be seen that female CEOs in more inclined to reduce the level of financial risk of their enterprises, tend to take smaller risks and avoid risky investments. Based on such a research perspective, this paper proposes two research hypotheses, H1 and H2, respectively, research hypothesis H1 that female CEOs in the decision-making process, the level of investment risk-taking is significantly lower than that of male CEOs; research hypothesis H2 that female CEOs in the decision-making process, the level of financial risk-taking is significantly lower than that of male CEOs. In order to verify whether the research hypotheses of this paper are valid or not, this paper uses a questionnaire survey to obtain the sample data of the study, and further validate the research hypotheses of this paper by analyzing the current situation of risk-taking of CEOs of different genders, as well as comparing the means and analyzing the standard deviation in terms of gender, etc. The specific conclusions of the study are as follows:

(1) The research hypothesis H1 female CEOs have significantly lower levels of investment risk-taking than male CEOs in the decision-making process, and the research hypothesis holds.

(2) The research hypothesis H2 female CEOs in the decision-making process, their financial risk-taking level is significantly lower than male CEOs, the research hypothesis holds.

(3) The research hypothesis H3 CEOs of different genders in small and medium-sized high-tech enterprises are significantly different in risk-taking variables. The research hypothesis is established.

5.2 Discussion

This paper is based on the theoretical foundation of resource dependence theory and high-order echelon theory, and the research direction of this paper is determined by reviewing and organizing the literature of international scholars. In the process of literature collation, it is understood that the gender of different CEOs has different levels of risk-taking for their enterprises, and in the previous research process of scholars, the measurement of risk-taking only uses financial data, and the risk-taking level of enterprises is not only reflected in the financial data, but also in the management process of innovation and investment decision-making, and most of the scholars'

research objects are the CEOs of listed enterprises, and very few scholars have paid attention to the decision-making process of CEOs of different genders in small and medium-sized hi-tech enterprises. Few scholars have paid attention to the impact of different genders of CEOs in small and medium-sized high-tech enterprises on the risk-taking level of enterprises in the decision-making process. Considering the current situation of the risk-taking level of CEOs of small and medium-sized enterprises in the decision-making process, this paper focuses on the impact of CEOs' gender on the risk-taking level of enterprises in order to fill the gaps of related research in this field.

The findings of this paper show that female CEOs are more inclined to make less risky decisions in the corporate decision-making process, reducing the level of corporate risk-taking in investment risk-taking and financial risk-taking, a finding that is consistent with the findings of scholars such as Faccio (2016). As a result, it is recommended that firms should consider the gender of executives when recruiting top management, especially if the corporate culture tends to be risk-averse. By considering gender diversity in CEO roles, firms can improve their ability to effectively manage risk and align decision-making processes with their desired risk profile.

5.3 Recommendation

With the increase in the number of years of education for female executives in recent years and the gradual encouragement of women's independence and equality in society, women are becoming more and more prominent in the workplace and are gradually playing an important role in the governance structure of enterprises. This paper investigates the gender of CEOs and the level of corporate risk-taking based on small and medium-sized high-tech enterprises in China, and further explores the impact of different genders of CEOs on the level of corporate risk-taking in high-tech enterprises. From the data analysis, it can be concluded that the investment risk and financial risk-taking level of firms headed by female CEOs is lower than that of firms with male CEOs. In response to these findings, the following recommendations are made:

(1) The gender study of CEOs of SMEs found that female CEOs exhibit characteristics that are sufficient to prove the high competence of women in risk management of the company, and therefore, for the purpose of maintaining the safety of the capital chain, reducing financial risks, creating awareness of investment risk prevention, reducing the risk-taking of the company, as well as improving the operating results and reducing the operating risks of the company. According to the development of the enterprise's governance structure system, the enterprise's own characteristics should be combined with the gradual introduction of female executives, and thus improve the enterprise's risk management system.

(2) As different industries show different CEO risk-taking characteristics, take small and medium-sized high-tech enterprises as an example, according to the scholars' own research results, high-tech enterprises have a high degree of innovation in both management and foreign investment decision-making, and the process of enterprise development and growth is the process of innovation and development. According to the conclusion of this paper, small and medium-sized high-tech enterprises can adjust the gender distribution of executives and even the gender of the CEO, improve the corporate governance mechanism, establish a scientific investment decision-making mechanism and risk control mechanism, and make it clear that their development focus is not to invest in high-risk markets but to devote themselves to the development of technological innovation and other aspects.

(3) This paper extends the research on gender-related risk differences documented in behavioral economics and psychology studies to small and medium-sized enterprise CEOs, which to a certain extent can reflect the common preference of female CEOs in risk-taking. Therefore, based on this finding, it is particularly appropriate to rationally distribute female executives in positions where their decision-making preferences can create more value for the firm, in order to realize the coordinating and mitigating effects of female executives' different preferences on firm risk. This paper finds that female CEOs tend to be more risk-averse than men when it comes to investment and financial decisions. Based on the differences in the impact of female executives on various aspects of business management, companies need to clarify the role that women play in one aspect when introducing female CEOs, and at the same time coordinate the impact on other aspects.

(4) Through the study of the gender of CEOs in small and medium-sized high-tech enterprises on the level of risk-taking, it can be found that enterprises should abandon the viewpoint of gender discrimination when appointing CEOs, and appoint CEOs who are suitable for the development of enterprises according to the needs of the development of the enterprise, and give equal promotion opportunities to the competition for managerial positions. With the diversification of the market economy and the universal application of knowledge and information, enterprises should also strengthen the cultivation of female high-level talents, build a multi-level education mechanism, create a more favorable environment for the balanced development of enterprises and talents suitable for the development of enterprises, so as to build a diversified workplace environment.

5.4 Further Study

At the beginning of this study, the main purpose of this study was to investigate the role of CEO gender on corporate risk taking in small and medium-sized enterprises (SMEs) by focusing on the two dimensions of investment risk taking and financial risk taking under the dimension of risk taking. Although this study provides a new research

perspective (management-based research) and obtains some valuable information in the research process. However, there are still some limitations in the research process, for example, the overall of this study comes from small and medium-sized high-tech enterprises in Beijing, China, which is characterized by the development and innovation of the enterprise's products, in which the CEO of the enterprise will face the possibility of numerous decision-making innovations, and due to the nature of the enterprise's innovativeness, then the enterprise is generally high in terms of the CEO's independent decision-making capability and the enterprise's Risk-taking ability is generally high. However, it is not known how CEOs of different genders in the enterprise industry affect the level of enterprise risk-taking, so in the future research, it is suggested that scholars can extend this issue to other areas of research, or further design a scale with strong applicability and relevance to this issue for measurement.

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Appendix

Dear Sir/Madam: Hello!

Thank you for taking part in our current research question on risk-taking in the corporate decision-making innovation process by CEOs of different genders in a busy schedule! The purpose of this survey is to study the effect of gender on risk taking in the decision making process of CEOs. The survey was completed by CEOs of various organizations. There is no 'right or wrong' or 'good or bad' way to answer the questionnaire, so please be objective and answer the questionnaire based on your personal perception of the actual situation. All information in the questionnaire is for scientific research only, and we guarantee that your answers will be kept strictly confidential and will not affect you or your company in any way, so please feel free to answer the questionnaire. Please give the completed questionnaire to the researcher or our staff directly.

Thank you for your support and cooperation in this survey!

Part I: Survey on the situation of questionnaire recipients

Please fill in:

1. Your gender is.

A. male B. female

Part 2: Please read the following items carefully and tick 1, 2, 3, 4, 5 according to the degree of compatibility with your own situation. 1 means "very inconsistent", 2 means "relatively inconsistent", 3 means "average", 4 means "relatively consistent", 5 means "very consistent".

Table A-1 Investment Risk Taking Questionnaire

		Rating Level				
		1	2	3	4	5
A1	Always considering introducing new products/services to the market	1	2	3	4	5
A2	Always considering pushing products/services to new markets	1	2	3	4	5
A3	Always consider new ways \ methods of doing business	1	2	3	4	5
A4	Likes to try new ways \ methods to achieve goals	1	2	3	4	5
A5	Likes to solve problems in innovative ways	1	2	3	4	5
A6	Often sees problems and changes as opportunities	1	2	3	4	5
A7	Good at integrating ideas\ problems\ resources from different sources and applying them to new areas	1	2	3	4	5

Table A-2 Financial Risk-Taking Questionnaire

		Rating Level				
		1	2	3	4	5
B1	Always adopts an optimistic attitude towards uncertainty	1	2	3	4	5
B2	Have a high degree of tolerance for future uncertainty	1	2	3	4	5
B3	Will always do their best to seize opportunities in the face of an unpredictable future	1	2	3	4	5
B4	Tend to take bold, positive action to capitalize on opportunities	1	2	3	4	5
B5	Tend to take bold, aggressive action to achieve goals	1	2	3	4	5
B6	Willing to take higher risks for higher returns	1	2	3	4	5
B7	Able to accept product hoarding\abandonment\losses	1	2	3	4	5