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## Game Changer: Unlocking Enterprise Value Through CSR in the Digital Gaming Industry - A Stakeholder-Driven Quest

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Doctor of Management

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ISCTE University Institute of Lisbon

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UESTC - University of Electronic Science and Technology of China

April, 2025



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BUSINESS  
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Marketing, Operations and General Management Department

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## Abstract

With the rapid advancement of digital and AI technologies, the relationship between corporate social responsibility (CSR) practices and enterprise value in the game industry has become an urgent subject of study. Focusing on CSR practices in the game industry, this thesis examines Chinese game companies. Based on stakeholder theory, a theoretical model is constructed, research hypotheses are proposed, and empirical analyses are conducted using secondary data from Chinese A-shares listed game companies, as well as primary data from questionnaire surveys of three types of game companies: multinational game companies, Chinese domestic game companies and indie game studios. The research findings indicate that CSR practices towards technological development, regulators, creditors, and employees all show significant enhancement of enterprise value. In contrast, the enhancing effect of CSR practices towards suppliers and customers on enterprise value is non-significant. Survey analysis highlights that multinational game companies, such as Tencent and NetEase, excel in cross-cultural communication and environmental protection, yet need to improve supply chain supervision. Despite certain progress in environment protection and employee rights, medium- and small- sized domestic companies, like G-bits and OurPalm, perform poorly in data protection and internationalization. Small indie studios, like TeamTiger, show unique strengths in innovation and community building. This thesis elucidates the influence of game companies' CSR practices on enterprise value and identifies challenges existing in CSR practices across the three types of game companies from the perspective of various stakeholders. The findings provide a reference for company CSR strategy formulation and offer insights for different stakeholders in the game industry.

**Keywords:** Game industry; CSR practices; enterprise value; stakeholder theory

**JEL:** M14, L82

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## Resumo

Com o rápido avanço das tecnologias digitais e de IA, a relação entre as práticas de responsabilidade social corporativa (RSC) e o valor empresarial na indústria dos jogos tornou-se um tema urgente de estudo. Centrando-se nas práticas de RSC na indústria dos jogos, esta tese analisa as empresas chinesas de jogos. Com base na teoria das partes interessadas, é construído um modelo teórico, são propostas hipóteses de investigação e são realizadas análises empíricas utilizando dados secundários de empresas de jogos chinesas cotadas na bolsa A, bem como dados primários de inquéritos a três tipos de empresas de jogos: empresas multinacionais de jogos, empresas chinesas de jogos e estúdios independentes de jogos. Os resultados da investigação indicam que as práticas de RSC em relação ao desenvolvimento tecnológico, aos reguladores, aos credores e aos funcionários mostram todas um aumento significativo do valor empresarial. Em contrapartida, o efeito de melhoria das práticas de RSC em relação aos fornecedores e clientes no valor empresarial não é significativo. A análise do inquérito destaca que as empresas multinacionais de jogos, como a Tencent e a NetEase, se destacam na comunicação intercultural e na proteção ambiental, mas precisam de melhorar a supervisão da cadeia de abastecimento. Apesar de alguns progressos na proteção ambiental e nos direitos dos funcionários, as empresas nacionais de média e pequena dimensão, como a G-bits e a OurPalm, apresentam um desempenho fraco em matéria de proteção de dados e internacionalização. Pequenos estúdios independentes, como TeamTiger, mostram pontos fortes únicos em inovação e construção de comunidades. Esta tese elucida a influência das práticas de RSC das empresas de jogos no valor empresarial e identifica os desafios existentes nas práticas de RSC nos três tipos de empresas de jogos, da perspetiva de várias partes interessadas. As conclusões fornecem uma referência para a formulação da estratégia de RSC da empresa e oferecem insights para diferentes partes interessadas na indústria dos jogos.

**Palavras-chave:** Indústria de jogos; práticas de responsabilidade social corporativa; valor empresarial; partes interessadas

**JEL:** M14, L82

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## 摘要

在数字技术与人工智能迅猛发展的背景下，游戏行业的社会责任实践与企业价值的关系亟待研究。本文聚焦游戏行业的社会责任实践，以中国游戏企业为研究对象，基于利益相关者理论构建理论模型、提出研究假设，并对中国沪深 A 股游戏板块上市公司的二手数据和对跨国游戏企业、本土游戏企业、独立游戏工作室三类游戏企业的问卷调查一手数据进行实证分析。研究发现，对技术发展事业、监管者、债权人和员工的社会责任履行均显著提升企业价值；对供应商、客户的责任的社会责任履行对企业价值的提升效应不显著。调查分析显示，腾讯控股、网易游戏等跨国游戏企业在跨文化交流、环境保护上表现优异，供应链监督需提升；厦门吉比特、掌趣科技等中小型本土公司在环境保护、员工权益上有进展，数据保护、国际化较弱；独立游戏工作室如 TeamTiger 在创新、玩家社群建设上有优势。本文揭示了不同利益相关者视角下游戏企业社会责任实践对企业价值的影响以及三类游戏企业社会责任实践存在的问题，为企业制定社会责任战略提供了参考，为游戏行业的不同利益相关者提供了启示。

**关键词：**游戏行业；企业社会责任实践；企业价值；利益相关者理论

**JEL:** M14, L82

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## **List of Abbreviations**

CSR	Corporate Social Responsibility
ROA	Return on Assets
SEM	Structural Equation Modeling
TPB	Theory of Planned Behavior
RRT	Regret Regulation Theory
RGPT	Responsible Gaming Practices Theory

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## Chapter 1: Introduction

### 1.1 Research background

#### 1.1.1 Industrial background

With the development of digital technology, the game industry has gradually become a crucial industry of the information era, acquiring a larger and larger market scale, developing abundant derivatives such as cultural, educational and competitive sports products, and gaining recognition from all walks of life. Regulators of different countries also treat the game industry as a future-oriented high-tech industry. China has caught up with the high-speed development of the game industry in the 21st century. Domestic game companies keep springing up and rapidly developing, bringing Chinese game industry to an international advanced level. According to the 51st *Statistical Report on China's Internet Development* released by China Internet Network Information Center (CNNIC), the number of domestic Internet users reached 1.067 billion by January 2023, and the Internet penetration rate reached 75.6%. With the connection of Chinese e-sports to the world, the expansion of smartphone games, the rise of the live streaming industry, and the increasing attention paid to the game industry by the Chinese government, the concept of game has been gradually accepted by the public, and gained consumers of all ages.

According to the “2022 *China Game Industry Report*” released by China Audio-video and Digital Publishing Association in February, 2023, the actual sales revenue of Chinese game market in 2022 was 265.884 billion RMB, a 10.33% year-on-year decrease; and the number of game users was 664 million, a 0.33% year-on-year decrease. Following the obvious slowdown in 2021, the first decline of scale in the past eight years occurred in 2022, indicating that the industry had entered the stage of market saturation. In 2022, the actual sales revenue of independently developed games in the domestic market was 222.377 billion RMB, a 13.07% year-on-year decrease. Both the industry maturity and the saturated market competition provide the possibility for integrative development. Game, which is called the “ninth art”, is the embodiment of “culture + technology”, which functions as a media of domestic and foreign culture exchange, revealing the interdisciplinary innovation potential of “game +”, such as “game + medical care”, “game + education”, and “game + culture and

tourism". According to the *Ecology Report of Game Industry Public Opinion 2022* released by the Game Publishing Working Committee (GPWC), in 2022, while enhancing their core competitiveness, game companies continued to explore and deepen their path of transformation and development by promoting e-sports, planning in meta-universe, strengthening on interdisciplinary development, exploring oversea market, and creating more economic, cultural and technological value for social development. Game companies have also contributed a lot in social benefits such as earthquake relief, cultural digitization and platform value, which provides more dimensions for observing and evaluating the social responsibility fulfillment of game companies.

In the 2022 National People's Congress (NPC), several NPC deputies and CPPCC members put forward proposals on mandatory face recognition, banning celebrity endorsement of game advertising, completely banning minors from playing online games, and accelerating online game legislation. This shows that the game industry is getting more and more attention from all walks of life. From the National People's Congress, political trends and public opinion, it can be learned that in the aspect of undertaking social responsibility, game companies are gradually making efforts in certain directions: minor protection, benign competition, and demonstration of the social dynamics of the game industry. The expectations for game companies to fulfill their social responsibilities are continually increasing.

Currently, there are diverse forms of corporate social responsibility (CSR) fulfillment by game companies; however, as to whether the CSR fulfillment can bring positive influences on enterprise value, the conclusion varies. Some think the influences are positive, while some think there is no influence at all. And currently, there has been little empirical analysis on whether CSR fulfillment of game companies can bring positive enterprise value. This thesis aims to fill this research gap, dig out whether CSR fulfillment of game companies has any influence on enterprise value, and understand the mechanism of its influence. Hopefully, this thesis may help Chinese game companies better fulfill their CSR, so as to enhance their enterprise value and achieve healthy and sustainable development.

### **1.1.2 Theoretical background**

The development of the game industry, an important part of digital entertainment, is driven not only by the technology development, but also the social economic environment (Smith, 2019). From the arcade games and game consoles in early stage, to the current mobile games and online games, the game industry has shown a strong vitality and innovation power (Brown & Tschang, 2010). In recent years, with the popularity of mobile Internet and the

improvement of technology, like cloud computing and artificial intelligence, the game industry has stepped into a new development stage (S. Lee & Lee, 2020). Nowadays, the game industry is no longer just a part of the entertainment industry, but has been integrated into numerous fields such as education, medical care, military, and business, becoming a cultural form with wide social influence (Mäyrä, 2017). Especially in the field of teenager education, games have become an effective tool of edutainment (Gee, 2007). This development trend is not only reflected in the innovation of game content, but also in the innovation of game forms and game interaction methods (Koster, 2013). With the rapid development of the game industry, CSR of game companies has become increasingly prominent (Zagal, 2017). In the early days, CSR of game companies mainly focused on product and service quality, such as ensuring the safety, fairness and entertainment of games (Williams, 2002). However, with growing social awareness as well as requirements for CSR, that of game companies has been undergoing profound changes (Bartlett & Bubb, 2024). Currently, game companies should not only focus on quality of their products and services, but also on the influence of their products on society (Zagal, 2017). This includes censorship of game content to prevent the spread of unhealthy content such as violence and pornography, as well as concern about the influence of games on youth, such as preventing addiction to games (Griffiths, 2010). Besides, more and more game companies begin to actively fulfill CSR to contribute to society by developing public welfare games and educational games (Hera, 2019).

Meanwhile, the relationship between CSR fulfillment and enterprise value has acquired attention from scholars and economic observers. CSR is defined as a self-regulatory mechanism by which companies take responsibility for their social and environmental influences, which encompasses not only legal and ethical compliance but also active contributions to social welfare (Carroll, 1999). Along with rising social awareness of CSR, more and more companies are recognizing the potential benefits of fulfilling CSR to enterprise value. As pointed out by Porter and Kramer (2006), a company can achieve both commercial success and social progress by creating “shared value”, which means the success of a company runs parallel with the improvement of social welfare.

The rapid development of the game industry has transformed games from a simple entertainment tool to a cultural form with wide social influences, which has improved the innovation of game content and forms, and made CSR of game companies an unavoidable topic for research. Besides guaranteeing the quality of products and services, CSR of game companies is reflected in a far-reaching influence on youth, on social welfare, and on cultural

dissemination. Although a large number of studies have revealed the relationship between CSR and enterprise value, there is a relatively lack of specific research on game companies, possibly owing to the virtual nature of the game industry, the youthfulness of customers, and the rapid changes of the market. This thesis aims to reveal the relationship between CSR and enterprise value in the game industry through an in-depth analysis of CSR connotation and performance of game companies, so as to provide theoretical support for business management and policy making.

## 1.2 Research problem

### 1.2.1 Theoretical problem

Existing research has following four theoretical deficiencies:

(1) Insufficient analysis of the logic between the CSR of modern game companies and value enhancement

With the rapid development of modern digital technology and AI technology, the design concept and value delivery tendency of games have changed greatly, and the development cost of games keeps increasing. However, existing research focuses less on the effect of proactive CSR practices in the game industry as well as the influences of CSR on stakeholders of game companies.

First, lack of technological application. Most of the existing research concerns little about the combination of CSR of game companies and the potential of digital and AI technologies, yet it usually focuses on traditional perspectives including company management and marketing (W. B. Dai et al., 2020; Olšanová et al., 2018), financial and management effectiveness (Cheng et al., 2018; Huang & To, 2018; T. J. Zhao et al., 2018), innovation and enterprise value (Han et al., 2020; Servaes & Tamayo, 2013; Z. G. Zhang & Jin, 2013). Although technology development provides unprecedented possibilities for CSR practices, research on how to effectively apply these advanced technologies to enhance enterprise value and social benefits is insufficient.

Second, insufficient value-orientated analysis. A majority of the existing research focuses on customer relationship maintenance and satisfaction improvement (Sun & Han, 2023; J. M. Zhang & Tang, 2022) and analysis of national policy orientation (L. X. Zhang & Xue, 2021; Zhong & Yi, 2023), which neither explores changes in game design concepts and value delivery tendency, nor studies how these changes match or conflict with CSR.

Third, low correlation between development cost and social responsibility. Although development cost of games continues to increase, existing research fails to adequately demonstrate how this increase influences resource allocation, responsibility focus, and strategic direction of companies (Jensen & Meckling, 1979; Van Rooij & Schoenmakers, 2013).

(2) Narrow vision of stakeholder study on the macro level

Under the new development state of the game industry, existing research of CSR mainly focuses on “providing good experience for game players (customers) and building benign game community” (Hera, 2019; Koster, 2013; L. X. Zhang & Xue, 2021).

First, neglection of other stakeholders. In existing research, attention paid to the needs and interests of other stakeholders, such as suppliers, technological development, regulators, and employees, is insufficient, resulting in limited research comprehensiveness and depth.

Second, insufficient analysis of the influences on enterprise value. Although the relationship between CSR and enterprise value has received a certain amount of attention (Bai et al., 2023; Sun & Han, 2023; W. Y. Xiao, 2017), yet the specific mechanism and path analysis on how to enhance enterprise value by fulfilling social responsibility is still vague.

(3) Insufficient empirical research on CSR practices and corresponding value analysis of companies in the game industry

Among the existing research on CSR practices and corresponding value analysis, there is a lack of a comprehensive exploration on CSR in the game industry and multiple relevant entities.

First, although there have been abundant studies on CSR, most of them focus on listed companies (W. B. Dai et al., 2020; Y. J. Hua et al., 2020; Shan et al., 2014), e-commerce retail platform (G. P. Chen et al., 2022), the manufacturing industry (S. F. Liu & Ren, 2015; Z. G. Qin & Chen, 2020; A. D. Wang et al., 2023) and the food industry (X. F. Chen, 2014), which means the in-depth empirical analysis towards the game industry needs further supplement. The lack of empirical research in this area contrasts sharply with the emergence as well as potential social influences of the gaming industry.

Second, in empirical analyses, a large number of studies over-focus on the perspective of consumers (G. P. Chen et al., 2022; J. H. Liu, 2023; S. Zhang & Wang, 2018), while ignoring other stakeholders like suppliers, regulators, creditors and employees. This bias has the possibility of leading to a one-sided or misleading understanding of the overall CSR performance in the game industry.

(4) Disequilibrium of research depth on the micro level

Existing research mainly focuses on CSR survey and analysis of specific multinational game companies, while neglecting targeted study of indie game studios or game companies in specific technology areas.

First, biased selection of research subjects. When selecting specific multinational game companies for research (Van Rooij & Schoenmakers, 2013; L. X. Zhang & Xue, 2021), there is a high possibility that the situation and needs of small to medium-sized companies and emerging companies are ignored, resulting in limited universality and typicality of the research.

Second, limited combination of macro and micro perspectives. To effectively combine the macro industrial perspective with the micro company perspective is the key to understand the relationship between CSR of game companies and enterprise value enhancement. However, in most cases, such correlation is neglected. To be specific, from a macro industry perspective, most scholars use large databases, company financial reports and social responsibility report data; Some survey studies are also applied into a larger analytical framework while ignoring the micro perspective of individual companies. Currently, most studies on game companies have overlooked suppliers and creditors (Deng & Tu, 2021; Shen et al., 2021; T. J. Zhao et al., 2018). Under such circumstances, the analysis results may be biased or superficial. This is also one of the reasons this thesis includes suppliers and creditors within the scope of stakeholders. On the one hand, it is to ensure the integrity of the analysis framework of stakeholder and the entities involved. On the other hand, it responses to the continuous development of digital design outsourcing in Chinese game industry, the improvement of internet-based shared design platforms, and the establishment of third-party material library websites.

### **1.2.2 Realistic problem**

In game industry, companies encounter multiple structural challenges in balancing CSR practices with the achievement of commercial value. Amid intense competition, the industry heavily depends on user engagement and conversion rates. Consequently, companies tend to allocate resources towards product design and market promotion, driven by short-term profitability, while neglecting long-term institutional improvements related to CSR and ethical risk prevention (Cheng et al., 2018; Huang & To, 2018; T. J. Zhao et al., 2018). Particularly in areas such as the treatment of minor users, anti-addiction mechanism, and virtual economy operation, game companies face dual pressures from regulatory and ethical demands. These pressures often compel companies to adopt the minimal compliance

strategies rather than proactive and innovative CSR initiatives. Furthermore, capital market valuations of game companies remain predominantly focused on financial indicators such as user growth and profitability. Investments in CSR rarely yield short-term valuation returns, and the absence of external incentive mechanisms or standardized measurement standards criteria fundamentally weakens the intrinsic strategic motivation for companies to fulfill their responsibilities (Han et al., 2020; Servaes & Tamayo, 2013).

In the current game industry, small and medium-sized developers and indie studios lack effective pathways and resource support for fulfilling CSR (Van Rooij & Schoenmakers, 2013; L. X. Zhang & Xue, 2021). On the one hand, these companies typically face practical challenges such as limited research and development funding, high employee turnover, and inadequate compliance capabilities. Under the circumstances of accelerating technological iteration cycles and increasing platform competition pressure, they struggle to systematically plan their social responsibility strategies. On the other hand, the industry has yet to establish a diversified stakeholder-participated ecosystem for CSR. Institutional guidance and support from industry associations, platform providers, and regulators remain insufficient. Particularly concerning key issues such as data ethics, algorithm transparency, and healthy game content, unified standards and regulatory mechanisms are absent. This results in highly fragmented implementation paths of CSR, with significant deficiencies in the sustainability and measurability of CSR performance.

In general, the deficiencies of existing research in the fields of modern technology integration, stakeholder vision, as well as research scope and depth restrict the comprehensive and in-depth understanding of the relationship between CSR of game companies and enterprise value enhancement. Meanwhile, the practical challenges faced by game companies in balancing CSR practices with commercial value achievement highlight both the necessity and urgency of further research into their relationship. According to above-mentioned research problems, this thesis takes “Game Changer: Unlocking Enterprise Value Through CSR in the Digital Gaming Industry – A Stakeholder-Driven Quest” as the research title, upon sufficient macro research of the industry and micro survey and analysis of companies, to focus on the influences of CSR fulfillment of game companies on enterprise value enhancement from the perspective of stakeholders.

### 1.3 Research questions

Based on the theme of “on the basis of fulfilling social responsibility and transmitting positive

social values, can game companies gain better enterprise value?”, the core questions to be probed are as follows:

(1) How can game companies enhance enterprise value while fulfilling CSR? In the context of the game industry, this thesis probes into relationship between CSR practices and enterprise value enhancement, and tries to reveal the interaction mechanism between the two through theoretical and empirical analyses.

(2) From a macro perspective, what are the influences of CSR fulfillment of game companies on each stakeholder (suppliers, technological development, regulators, game customers, creditors, and employees)? From the perspective of stakeholders, this thesis analyzes how CSR practices of game companies towards various stakeholders influence their enterprise value respectively.

(3) How to verify the theoretical model about the relationship between CSR and enterprise value in the game industry through empirical research? In this thesis, model testing, correlation analysis and regression analysis are carried out by using data obtained from the online game sector of A-shares listed companies of Shanghai and Shenzhen Stock Exchanges, to empirically verify the validity of the research theories, hypotheses and model.

(4) From a micro perspective, how do game companies undertake CSR in their operation, and what are the influences on their enterprise value? Using “Leading geese” multinational game companies, “Backbone” Chinese domestic game companies, and “Vitality” indie game studios for micro survey and analysis, this thesis explores in depth the conditions of different companies’ CSR practices and corresponding influences on enterprise value, and further compares the analysis result to the overall game industry.

## 1.4 Research objectives

The goal of this thesis is to understand how CSR practices can effectively assume social responsibility while enhancing enterprise value in the game industry through exploring CSR practices of game companies. The research objectives mainly include:

(1) To explore and then understand how game companies can enhance enterprise value while fulfilling CSR. This thesis will probe into CSR implementation methods and its relationship with enterprise value enhancement, so as to reveal the interaction mechanism between the two.

(2) To analyze how CSR practices of game companies towards each stakeholder (suppliers, technological development, regulators, customers, creditors, and employees)

influence enterprise value from a macro perspective. This research objective will reveal the influences of CSR practices from the perspectives of various stakeholders.

(3) To verify the theoretical model about the relationship between CSR and enterprise value in the game industry through empirical research. It will carry out model testing, correlation analysis and regression analysis by using data obtained from A-shares listed companies of online game sector of Shanghai and Shenzhen Stock Exchanges, therefore to empirically verify the validity of the research theories, hypotheses, and model.

(4) To explore how game companies undertake CSR in operation and the influences of this action on their enterprise value from a micro perspective. This study conducts in-depth survey on “Leading geese” multinational game companies, “Backbone” Chinese domestic game companies, and “Vitality” indie game studios to learn the conditions of the ‘companies’ CSR fulfillment and corresponding influences on enterprise value. The case study result will ultimately be compared with the analysis result to the overall game industry.

## 1.5 Research significance

The significance of this thesis lies in two aspects: understanding of industry development, and guidance for social responsibility practices.

On the one hand, this thesis helps to deepen the understanding of the development trends and challenges of the game industry. With the rapid development of digital technology and AI technology, the changes of game design concepts, value delivery tendency, and development costs have led to a new development state of the game industry. However, there is a gap in the existing research on the effects of game companies taking the initiative to fulfill CSR towards various stakeholders. This thesis will, on the basis of CSR, fill in this gap by exploring the development trend and CSR practices of the game industry. By deeply understanding the influences of CSR on the game industry development, a new perspective can be provided for policy makers, business decision makers and scholars.

On the other hand, this thesis helps to provide a guidance for social responsibility practices of game companies. CSR fulfillment can not only improve the reputation and public image of a company, but also lead to enhancement of enterprise value. However, for many game companies, the measurement standards of enterprise value are still daily active users and business turnover. They lack in understanding of how to undertake social responsibility and achieve long-term healthy development, and even ignore CSR. Such phenomenon conveys the lack of CSR awareness among decision-makers. Therefore, game companies are

in need of systematic theoretical research for guiding their operating and management practice. Through theoretical analysis and empirical research, this thesis will reveal the interaction and influence mechanism between the CSR and enterprise value of game companies, so as to provide theoretical basis and practical guidance for CSR practices. This thesis will also conduct survey of multinational game companies, domestic game companies, and indie game studios to dig into the company's CSR performance as well as its influences on enterprise value, so as to provide referential experience and enlightenment for other game companies.

## 1.6 Research innovation

### (1) Comprehensive analysis of the multi-dimensional influences of CSR practices

The first innovative point of this thesis is the comprehensive analysis of the multi-dimensional influences of CSR practices. Previous studies tend to focus on influences on one specific aspect, such as liability to shareholders, employees or gamers. This thesis takes multiple company stakeholders, including suppliers, technological development, regulators, game customers, creditors, and employees, into consideration comprehensively, leading to an in-depth exploration of the challenges and opportunities faced by game companies during CSR fulfillment from different aspects, thus to provide enlightenment for theoretical research and practical application.

### (2) Focus on the combined effects of internal management and industrial characteristics

The second innovative point of this thesis is the focus on the combined effects of internal management and industry characteristics on the relationship between CSR fulfillment and enterprise value. Most studies generally focus on the influences of external environment on companies, and less attention is paid to the role of internal management in CSR fulfillment. This thesis takes factors such as internal resource integration and management strategies into consideration, so as to reveal the influences of internal management on the relationship between CSR and enterprise value. It also pays attention to factors such as the unique law of development, market environment and regulatory policy of the game industry to further improve the theoretical exploration.

### (3) Macro and micro research with a variety of methods

A variety of research methods are adopted for comprehensive exploration, such as empirical analysis and survey analysis. Macro empirical analysis of the game industry and micro survey of certain game companies are combined for comprehensive study. At the macro

level, the thesis focuses on factors of the overall game industry, such as the development trend, market environment, competition and policy, and explores how these factors influence the relationship between CSR fulfillment and enterprise value. Through empirical analysis of the entire industry, this thesis tries to reveal the universal laws of the game industry and its influences on game companies, and providing macro-level insights for theoretical research and practical application. At the micro level, this thesis selects specific game companies for survey and analysis, so as to explore in depth their CSR fulfillment practices and related influences on their enterprise value. Such kind of micro-level analysis can reveal how internal factors of a company, such as unique resource allocation and management strategies, influence relationship between CSR and enterprise value.

## 1.7 Research framework

This thesis can be divided into seven chapters:

Chapter 1: Introduction. This chapter introduces the industrial background and theoretical background of the thesis, analyzes the existing research problems, and puts forward the research questions. The research objectives, research significance and research innovation, as well as the research framework are also elaborated in this chapter.

Chapter 2: Literature Review and Theoretical Framework. This chapter focuses on CSR, company stakeholders, company business model, and the relationship between social responsibility fulfillment and enterprise value. In this part, the game industry related studies, including theoretical studies, measuring methods, and development suggestions, are straightened out. At the same time, the theories used in this study, such as the multi-stakeholder corporate governance theory based on the contractual agent model of, theory of planned behavior, regret regulation theory, stakeholder theory, and responsible gaming practices theory, are analyzed in depth to provide theoretical support for future research.

Chapter 3: Research Model and Hypotheses. Based on the literature review and theoretical framework presented in Chapter 2, this chapter introduces the research hypotheses and theoretical model. Based on stakeholder theory, the chapter examines the influence of game companies' CSR practices on their enterprise value and explores how CSR practices toward various stakeholders (suppliers, technological development, regulators, customers, creditors, and employees) influence enterprise value.

Chapter 4: Research Design. This chapter establishes a comprehensive research design framework by addressing three key aspects: research methods, variables definition, and data

sources. The research methods section systematically integrates data analysis and questionnaire methods, forming an integrated research model that combines theoretical foundations with empirical approaches. In the variables definition section, return on assets (ROA) is defined as the indicator for enterprise value. CSR practices are subdivided into CSR to suppliers, to technological development, to regulators, to customers, to creditors, to employees, and to shareholders. All these practices are measured using both financial and non-financial indicators, with additional robustness tests conducted to ensure indicator reliability. The chapter also details the sources of the sample data used in this thesis.

**Chapter 5: Data Analysis and Results.** In this chapter, Chinese A-shares listed companies from online game sector of Shanghai and Shenzhen Stock Exchanges are selected as research subjects, relevant data such as financial indicators are obtained for hypothesis testing, and correlation analysis and regression analysis are carried out to verify the validity of the proposed hypotheses and model.

**Chapter 6: Survey and Analysis of the game industry.** Using “Leading geese” multinational game companies, “Backbone” domestic game companies, and “Vitality” indie game studios for micro survey, within the framework of macro theoretical analysis, this chapter explores influences of CSR fulfillment on enterprise value of game companies of different types. Through in-depth analysis of the operation background, CSR fulfillment conditions, and how CSR influences enterprise value of these companies by questionnaire and interview, then comparing the analysis result to the overall game industry, it seeks answers to the development of game companies.

**Chapter 7: Conclusions and Discussions.** This chapter first summarizes the research conclusions and discusses them in combination with relevant theories. Then, based on the research conclusions, it puts forward targeted suggestions for game companies and their various stakeholders. Finally, this chapter explores the limitations of this study and potential directions for development and improvement in the future.

The research framework is shown in Figure 1.1.

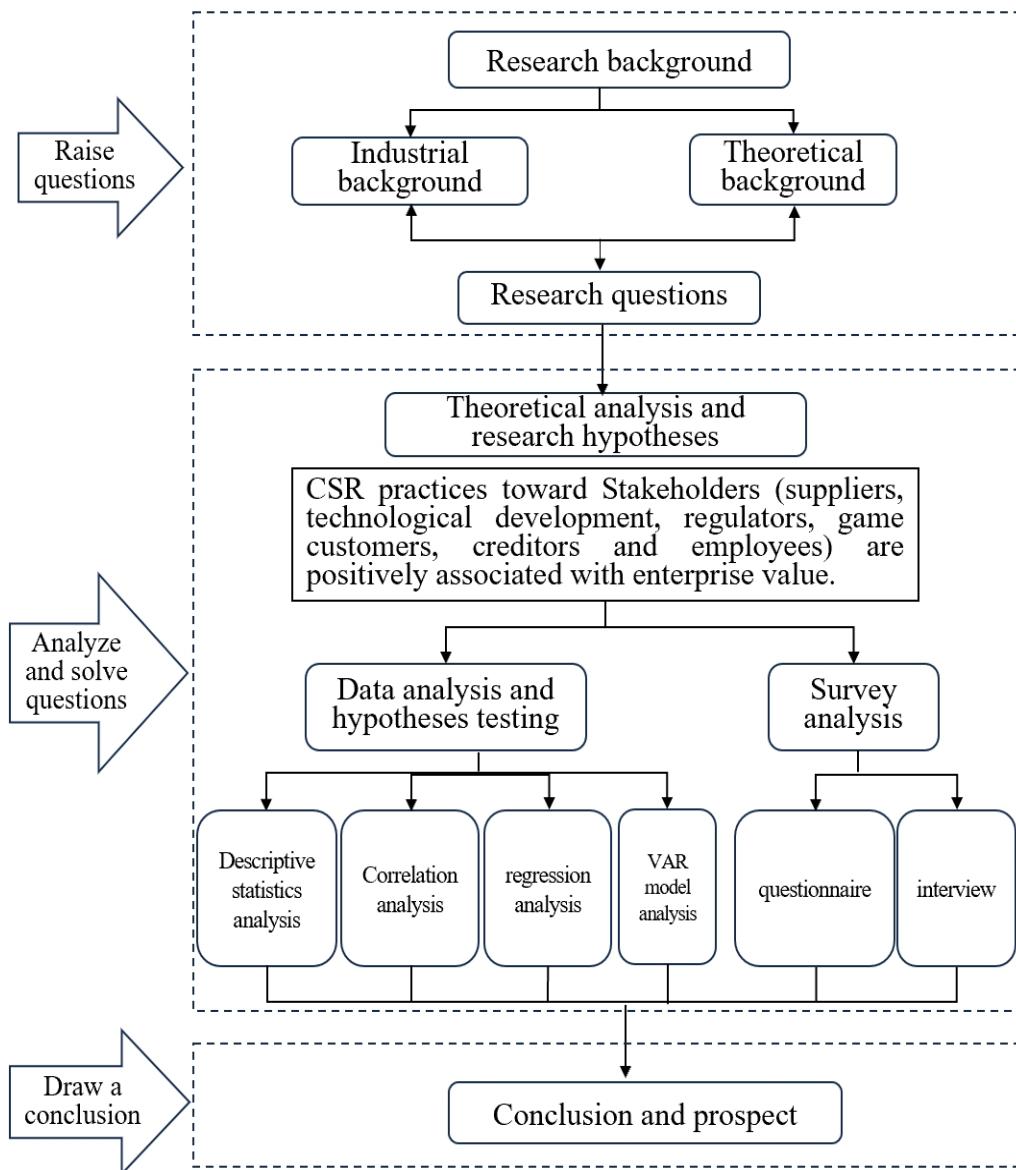


Figure 1.1 Research framework

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## Chapter 2: Literature Review and Theoretical Framework

This chapter of literature review is structured around the four research questions outlined in the Introduction, aiming to provide a focused overview of existing studies.

First, the corporate social responsibility (CSR) and enterprise value. This section overviews theories and studies on the relationship between CSR and enterprise value. It mainly focuses on reviewing relevant studies on how CSR influences the performance, reputation and long-term success of companies.

Second, the influences of CSR on stakeholders. With regard to the second research question, it concentrates on the influences of CSR on a variety of stakeholders, including shareholders, consumers, and employees. A review of the literature on the influences of CSR on shareholder value, consumer behaviour, employee satisfaction and loyalty has been conducted.

Third, the application of empirical research in CSR study. With regard to the third research question, a review of the literature was conducted, including studies that employed empirical research, such as model testing, correlation analysis and regression analysis, in order to investigate the relationship between CSR and enterprise value. This helps determine the design and research methods of this thesis.

Fourth, CSR practices and related influences in the game industry. Regarding the fourth research question, it focuses on the CSR practices in the game industry and surveys conducted on how game companies fulfill their social responsibilities and how these practices influence enterprise value. A review of the literature was conducted on the topics of how game companies address issues such as gaming addiction, data privacy, and online safety, and the influences of these issues on enterprise value.

### 2.1 CSR and enterprise value

#### 2.1.1 CSR and business performance

Recent research has revealed a complex relationship between CSR and business performance. On the one hand, some research shows that CSR can improve financial performance. For example, a meta-analysis by Orlitzky et al. (2003) finds a positive correlation between CSR

and financial performance. The finding verifies that investment in CSR can be converted into better economic benefit, which is largely attributed to improved company reputation, increased employee satisfaction and loyalty, and higher consumer and investor recognition. Using A-shares listed companies in Shanghai and Shenzhen Stock Exchanges as the research population, Shen et al. (2021) indicate that better CSR performance leads to higher stock yield, financial performance, earning quality and investment efficiency. Similarly, Waddock and Graves (1997) also find a positive correlation between CSR and financial performance. Fanti and Buccella (2018) take the online industry as the target of study and assume that “firms may obtain higher profits engaging in both cooperatively and non-cooperatively CSR activities, showing that firms’ social concerns may be motivated by the owners’ selfish behaviour”. On the other hand, some studies put forward different perspectives. Margolis and Walsh (2003) argue that the relationship between CSR and financial performance is rather weak in general. This is either because the resource input required by CSR initiatives has a negative influence on financial performance, or because CSR activities are inconsistent with the company’s core business. Brammer et al. (2006) point out that CSR does not improve economic benefit all the time. Some studies focus on the relationship between CSR and the market performance of companies. McWilliams and Siegel (2001) put forward an idea called “CSR strategy”, that is, companies can improve their market status by CSR. Servaes and Tamayo (2013) consider that CSR activities could enhance market value only when company stakeholders attach importance to CSR. To sum up, research in recent years demonstrates the intricate and multifaceted nature of the relationship between CSR and market performance. CSR can facilitate consumers identification and loyalty through the improvement it brings to company reputation and brand image. In the stock market, companies with superior CSR performance are more favoured by investors since they are deemed to have lower risk and higher long-term stability. On the other hand, CSR activities require a great amount of resource investment, which may have a negative influence on the short-term financial performance. In case that CSR does not match the core business, it is more likely to distract resources and management attention, which is a disadvantage to market performance. Industry characteristics, market environments and expectations of stakeholders jointly determine the market effect of CSR. When formulating CSR strategies, companies must consider all these factors in order to achieve sustainable development.

### **2.1.2 CSR and company reputation**

A large amount of research regarding the relationship between CSR and company reputation

reveals the close connection between the two. Much research confirms that CSR activities can effectively improve the reputation and brand image of companies, thereby bringing companies an advantage in market competition. Fombrun and Shanley (1990) find in their study that the social behavior of a company is the key factor in constructing its reputation. CSR performance can have a significant influence on company public image and investment decision. Research by Branco and Rodrigues (2006) also emphasizes that a company's CSR practices can increase its transparency and credibility, thereby enhancing its reputation. Porter and Kramer (2006) put forward the theory of "shared value", which assumes that a company's CSR practices can not only enhance its reputation, but also create competition advantages. Bice (2015) takes CSR and social impact assessment (SIA) as research subjects, demonstrating that through CSR practices, a company can effectively enhance its social influences. Guan et al. (2023) take the CSR response of Macau casinos after Typhoon as research subject, pointing out that "most of the 'casinos' CSR activities take the form of donations, rebuilding the community, supporting staff and calling for volunteer work", and these activities help improve reputation. Truscott et al. (2009) analyze "the early stage of CSR industry in Australia, holding that "increased internal cooperation is needed for developing a strong reputation". Y. B. Liu and Geng (2021) take the Chinese manufacturing industry as the research subject, assuming that increasing marketing input can significantly improve company reputation, and that both CSR and environmental uncertainty have significant positive moderating effects on the relationship between marketing input and company reputation. Deng and Tu (2021) comprehensively sort out and evaluate the relationship among CSR, company reputation and company brand. W. B. Dai et al. (2020) explore the differentiated influences of different CSR communication strategies on consumers' purchase intention. Ma (2020) analyzes the correlation of CSR and reputation capital in the logistics industry, emphasizing the importance of strengthening CSR awareness. Cai et al. (2020) analyze the heterogeneity effect of CSR reputation under product harm crisis. The study reveals the complex relationship between commercial responsibility reputation and consumer forgiveness. Based on the diversity of board members, H. L. Yang et al. (2019) put forward that CSR is the medium through which diversity of board members have a positive effect on company reputation. However, some studies challenge the common positive effects of CSR. For example, Luo and Bhattacharya (2006) find that when a company's CSR activities are not aligned with its core business or the values of target market, its CSR activities will negatively influence company reputation. Further, Du et al. (2010) find that the influences of CSR on company reputation lies on consumers' perception. A company's CSR activities can only be

effective in enhancing its reputation when consumers deem them to be sincere and consistent with company values.

There exists a complex and tight relationship between CSR and company reputation. In general, CSR is acknowledged as an important means for improving company reputation. By actively engaging in CSR activities such as environmental protection, community contribution and employee welfare, companies can enhance transparency and public trust, shape brand image, and form an intangible asset and an important competitive advantage. Concurrently, CSR can be employed as a competitive strategy tool to help companies differentiate themselves from their competitors while enhancing brand loyalty and customer stickiness. Consumers and investors are more inclined to support companies that excel in social responsibility. The effects of CSR on reputation depend on its consistency with business strategy, integration with company core values, and the expectations and feedback of stakeholders.

### **2.1.3 CSR and long-term business success**

CSR has a profound influence on long-term business success. Extensive research shows that CSR can enhance company reputation, economic value, and social value, thereby helping companies to achieve sustainable growth. Porter and Kramer (2006) put forward the concept of “shared value.” They propose that companies can create economic value by solving social problems. By meta-analysis, Orlitzky et al. (2003) find a positive relationship between CSR and business performance in their empirical study. CSR activities help improve business efficiency, increase customer satisfaction and enhance employee morale, all of which contribute to long-term business performance. Mialon and McCambridge (2018) argue that “there is no robust evidence that CSR initiatives in the alcohol industry reduce harmful drinking”, however, “CSR initiatives are used to influence the framing of the nature of alcohol-related issues in line with industry interests”. The study advocates the necessity of public health policies. Huang and To (2018) take the comments of Macao’s casino employees on CSR as the research subject, demonstrating the importance of seven factors such as “Labor Practices”, “the Environment”, and “Community Involvement”. The study helps companies refine their CSR initiatives to improve employee recognition. Klein and Dawar (2004) find that when faced with negative public relation issues, companies with a good CSR record are more able to deal with and recover from the issues for they have already established good image and reputation. Y. J. Hua et al. (2020) and Y. H. Liu et al. (2020) demonstrate the influences of CSR on financing constraints, efficiency of capital allocation, and financial

performance. In their study, CSR has “accumulative effect” and “insurance effect”, whose influence on non-state-owned companies is more significant under economic uncertainty. T. J. Zhao et al. (2018) empirically testify the dynamic influences of CSR on company capital allocation efficiency. They find that CSR information disclosure has a hysteresis effect on capital allocation efficiency, which means it will increase the efficiency from a long-term perspective. Aguinis and Glavas (2012) point out the relationship is influenced by internal factors, including company strategy, leadership characteristics and corporate culture, as well as external factors, such as industry environment and consumer expectations.

There is a significant positive correlation between CSR and long-term business success. CSR is regarded as a strategic tool that generates economic value by addressing social issues, thereby achieving sustainable growth in the long run. CSR enhances customer satisfaction and employee loyalty by improving a company’s social capital and reputation, which can subsequently translate into company operating efficiency and financial performance. Empirical studies have shown that CSR can improve employee satisfaction, attract high-quality talents, and thereby enhance productivity and competitiveness. Good CSR performance enhances companies’ image among consumers and investors, increases market share and shareholder value, and safeguards reputation maintenance and public trust in the face of crises. Furthermore, CSR has been found to have a “cumulative effect” and an “insurance effect”, which can significantly mitigate the risks and challenges brought by economic uncertainty and constrained financing. In addition, CSR exerts a positive influence on capital allocation efficiency and long-term financial performance. Especially in the context of complex market environment, long-term CSR practices can enhance a company’s risk-resistance ability. Nevertheless, the influences of CSR can be shaped by a range of internal factors, including company strategy, leadership traits and company culture. External factors, such as the industry environment and consumer expectations, can also exert influences. Consequently, when formulating CSR strategies, it is vital that companies integrate all these factors into account to ensure that CSR activities are genuine and effective, in order to maximize the contribution of CSR to long-term success.

## **2.2 The influence of CSR on stakeholders**

### **2.2.1 The influence of CSR on shareholder value**

The influence of CSR on shareholder value is a keyword in studies of company finance and

social responsibility. On the one hand, CSR enhances companies' market value and shareholder value by enhancing company reputation, customer and employee loyalty and operational efficiency (Porter & Kramer, 2006); on the other hand, CSR investment will result in dispersion of company resources and increase of operating costs, which will negatively influence shareholder value (Friedman, 1970). Much empirical research has found a positive relationship between CSR and shareholder value. Margolis et al. (2007) find companies with good CSR performance tend to have higher stock price and dividend return. Mason and Simmons (2014) find companies which invest more in CSR are more likely to apportion high dividends in order to reward shareholders because they have stronger cash flow. Hossain et al. (2020) take CSR in the banking industry in Bangladesh (BIB) as the research subject. By collecting data from BIB stakeholders, effect of CSR pyramid on the satisfaction of stakeholders is studied with "the intermediary role of CSR in education development". The study result of W. Y. Xiao (2017) shows that when the proportion of financial assets rises, the level a company fulfilling its responsibilities to employees and creditors will decline. Meanwhile, the proportion of financial benefit has a positive relationship with CSR performance of a company. The conclusion is that financialization of companies may be harmful their CSR. Through event study, Shan et al. (2014) find that failure of CSR fulfillment may lead to public relations crisis of the company, thus affecting shareholder value. Qu (2012) stresses the importance of synergy between CSR and financial objectives, pointing out that if a company's financial objective overemphasizes on the interests of shareholders, it may lead to the imbalance of the overall development as well as lead to business risks. Dhaliwal et al. (2011) find adequate CSR information disclosure helps to reduce information asymmetry and increase shareholder trust. In addition, Flammer (2015) finds market environment will influence the degree of CSR's influence on shareholder value, and the better the economy, the higher the positive influence.

By sorting through the above research findings, it can be seen that the influences of CSR on shareholder value are complex and multi-dimensional. The specific effects depend on the interaction of multiple factors. By enhancing company reputation, strengthening customer and employee loyalty, and improving operational efficiency, CSR can increase companies' market share, shareholder value, employee satisfaction, productivity and innovation, thereby promoting stock prices and dividend returns. Companies with positive CSR practices tend to have stronger cash flows and distribute high dividends. Nevertheless, in the event that a company's CSR activities are not closely aligned with its core business activities, or fail to be recognized by the market and stakeholders, it may be perceived as a waste of resources and

result in increase of operational cost and harm to shareholder interests. The influences of CSR are also contingent upon the market environment and economic cycles. In periods of economic prosperity, the positive influences of CSR investments on shareholder value will be significant. Conversely, such influences will be weakened during periods of economic downturn. When formulating CSR strategies, companies must consider their resources, market environment, stakeholder expectations and information disclosure in order to maximize the positive effect of CSR on shareholder value and to realize a win-win result of both economic and social benefits.

### **2.2.2 Influence of CSR on consumer behavior**

The influence of CSR on consumer behavior is one of the important topics in marketing and consumer behavior research. Research over the past few decades shows that CSR greatly influences how consumers perceive a company, how they make purchasing decisions, and how strong their brand loyalty is (Bhattacharya & Sen, 2004).

In terms of purchasing decisions, CSR is deemed as an important factor for consumers to evaluate products and services. In the research of Mohr et al. (2001), CSR can enhance consumer trust and product attractiveness, for consumers are more likely to choose a company's products when the company has a good CSR performance. Besides, Auger et al. (2003) find through behavioral experiments that consumers are willing to pay the premium for products with good CSR records. T. Liu and Huang (2023) build a theoretical mode based on study of digital product consumers. Their research result shows that different types of CSR perception- “supportive type”, “tolerant type” and “resistant type”- have different influences on the purchase intention of different consumers of digital products. Olšanová et al. (2018) take influences of CSR on customer purchase intention in the luxury industry as the research subject. Their study suggests that “purchase intention in the luxury segment is dependent on the luxury values, individual sustainable dimension and awareness of the brand’s CSR”. Kim and Lee (2019) study into residents perceived benefits of company’s CSR and responsible gambling (RG) strategies from two gaming communities of South Korea. It is found that “economic CSR had the strongest positive impact on residents’ perceived benefits”. “These factors also had significant indirect effects on residents’ quality of life (QOL) via perceived benefits”. H. Zhang and Wang (2022) take CSR as the research subject and demonstrate that the repair strategy and stability attribution can influence the consumers’ trust in brands. F. Li and Cui (2022) take the internationalization of Chinese brands as the research subject and find that different CSR behaviors have significant differences in influencing consumer attitude

towards brands and future purchase intentions in different countries. Based on empirical research, M. Zeng and Wei (2018) demonstrate the influences of consumer satisfaction of CSR in four dimensions of purchasing behaviors- loyalty, premium, converting tendency and consumer response. The study shows that there is a significant positive correlation between consumers' satisfaction of CSR and these behaviors. Upon this finding, they propose that companies should incorporate CSR into their business strategies, strengthen the interaction with consumers, and dynamically adjust CSR strategies to fit the demand of consumers.

CSR also has a significant influence on consumers' brand loyalty. Lichtenstein et al. (2004) find CSR practices can enhance brand loyalty of consumers. The loyalty manifests itself not only in repeated purchases, but also in word-of-mouth promotion of the brand. Jiddi (2021) "seeks to explore the path that links corporate social responsibility (CSR) to customer loyalty". The research proposed a new research frame through "a newly proposed CSR conceptualization, customer loyalty dimensions, customer loyalty antecedents, and the relationship between them". "The new research framework proposed contributes to advance the existing knowledge of CSR and customer loyalty". J. L. Qin (2022) takes the influences of word-of-mouth recommendation on tourist destinations as the research subject. The study finally concludes that the influences of brand attachment and place attachment depend on brand and CSR images. S. Zhang (2021) uses quantitative questionnaire survey and qualitative content analysis to prove that CSR can have a positive influence on perceived value of consumers, thereby influencing consumer loyalty. S. F. Liu and Ren (2015) find that customer loyalty plays an important role in promoting the strategic performance through the empirical test of data from 63 listed manufacturing companies. Based on the consumer data from the dairy industry, X. F. Chen (2014) uses brand trust as an intermediary variable to verify that CSR has a significant positive correlation with degree of customer loyalty. He therefore concludes that companies should pay more attention to build consumer trust and loyalty to the brand. Y. Xie et al. (2013) test their proposed hypothesis through structural equation model (SEM), and the result shows that, in the electronics industry, active fulfillment of CSR will improve customer satisfaction, and enhance customer trust and emotional commitment to the company. Moreover, the degree of product involvement can enhance the positive influences of CSR on the quality of such relationship, which means the degree of product involvement is the key variable of the effectiveness of CSR influences.

The influences of CSR on word-of-mouth promotion of consumers also get empirically supported. Du et al. (2007) find that consumers would not only preferentially buy products from companies with prominent CSR performance, but also actively recommend these

companies to others. This kind of word-of-mouth promotion is valuable for companies to attract new customers and retain existing customer loyalty. G. P. Chen et al. (2022) use questionnaire survey to demonstrate that the CSR practices of online retail companies have positive influences on consumers' perceived warmth and response. However, different CSR behaviors lead to differentiated influences.

By sorting through the above research results, it can be learned that the influences of CSR on consumer behaviour have been extensively investigated and validated, underscoring the pivotal role of CSR in the modern business environment. CSR not only enhances company image and reputation but also exerts a profound influence on consumers' purchase decisions, brand loyalty, and word-of-mouth promotion. Empirical evidences indicate that favourable CSR practices enhance consumer trust and recognition on companies, increase their inclination to purchase related products, and even to pay a premium. CSR exerts a positive influence on consumer brand loyalty. When consumers hold a positive perception of a company's CSR activities, they are more likely to express loyalty. This loyalty manifests in repeated purchasing behaviour and positive brand promotion. Furthermore, CSR enhances brand trust, and reinforces consumer reliance to the brand. Consumers will actively spread CSR practices of companies, facilitating the expansion of market influence. In addition, the influences of CSR on consumer behaviour are also constrained by a variety of factors, for instance, different market conditions, economic cycles and the degree of CSR information disclosure. During periods of economic prosperity, CSR can significantly influence purchasing decisions and brand loyalty. Conversely, during periods of economic recession, the influences of CSR will be weakened. Further, adequate information disclosure can reduce information asymmetry and increase consumer trust. Generally speaking, the influences of CSR on consumer behaviour are multi-dimensional and complex. Actual and transparent CSR practice has great strategic value as it can lead to a notable enhancement of consumer trust and loyalty, as well as the promotion of positive purchase decisions and word-of-mouth promotion.

### **2.2.3 The influence of CSR on employee satisfaction and loyalty**

The influence of CSR on employee satisfaction and loyalty has been thoroughly studied in the literature about management and organizational behavior of human resources. Many research results show that CSR influences not only the perception of consumers and shareholders, but also the attitude and behavior of employees.

### **2.2.3.1 Influence on employee satisfaction**

The influence of CSR on employee satisfaction is an important research topic within the field of contemporary management. A synthesis of existing research findings reveals that CSR serves as a vital motivational mechanism, markedly enhancing employee satisfaction from multi aspects and positively influencing the overall performance and sustainable development of companies. In terms of employee satisfaction, CSR is regarded as an important motivation trigger. The research of Valentine and Fleischman (2008) shows that employees' perception of CSR can have a significant influence on their job satisfaction. It can be posited that employees who believe their employers to be more responsible and ethical than other companies will experience greater job satisfaction. Similarly, Turker (2009) puts forward that employees' positive perception of CSR performance is highly correlated with their job satisfaction. Yan et al. (2023) take the influences of intrinsic attribution of CSR on employees' constructive deviant behavior as the research subject. Through the empirical analysis of 295 employee data collected from a two-wave time lagged survey, they find that the intrinsic attribution of CSR has a significant positive influence on constructive deviant behavior. The intermediary effect of moral identity and regulatory effect of idealism ethical ideology are verified in this study.

It can be stated that CSR has the effect of enhancing employees' sense of identification and belonging to the company, as well as job satisfaction. Employees' perception of CSR practices of their company directly influences their satisfaction and loyalty. Employees who perceive that their company is performing well in the field of CSR tend to believe that their company is more ethical and responsible, their identification is thereby enhanced. Such identification inspires higher levels of work enthusiasm and motivation, consequently leading to performance improvement. Concurrently, CSR has been demonstrated to directly enhance employee satisfaction by improving the working environment, prioritizing employee welfare, and defining career development path. A comfortable working environment and a well-developed welfare system convey to employees that the company values and cares for them. This will lead to an improvement of teamwork and harmonious working atmosphere, as well as development of sense of belonging and accomplishment. Furthermore, CSR indirectly influences employee satisfaction by enhancing the company's image and reputation. A company that demonstrates excellence in social responsibility will find its image and reputation enhanced in society. Employees will be proud of the company's positive reputation, which in turn enhances their job satisfaction and loyalty. This virtuous cycle facilitates

companies to attract and retain high-quality talents as well as strengthen their competitiveness. On the other side, the intrinsic attribution and moral identity employees hold towards CSR practices also play a pivotal role. When they perceive their employer as sincere and proactive in CSR practices, their sense of moral identity will become stronger. Such moral identity serves to enhance employees' trust and support for the company, also motivates higher sense of responsibility and innovation in work. The moderating effect of idealistic ethical standards indicates that the degree to which employees' personal values align with the company's CSR practices has a considerable influence on their satisfaction and behaviour. It is recommended that companies focus on their intrinsic value and employee perception when formulating and implementing CSR strategies to ensure the authenticity and effectiveness of CSR activities. By creating a corporate culture that is centered on social responsibility, a company can enhance employees' sense of identification, belonging, and satisfaction, thereby driving itself to better performance and stronger competitiveness.

#### **2.2.3.2 Influence on employee loyalty**

The influence of CSR on employee loyalty is an important research topic within the field of business management and organizational behaviour. Existing research has demonstrated that through a range of mechanisms, CSR has a significant influence on employee loyalty towards their employers. This, in turn, contributes to the development of a robust workforce within the company, as well as enhancing the company's overall performance and long-term competitiveness. Gond et al. (2010) find that employees' perceptions of CSR activities are highly correlated with their commitment to the company. In particular, the internal dimensions of CSR, such as employee welfare and work environment improvement, have a remarkable positive influence on employee commitment. This indicates that CSR has a direct influence on employees' organizational commitment and loyalty, as it improves the working environment and employee welfare. When fulfilling CSR, companies typically prioritize the improvement of the working environment and welfare for employees. This encompasses the provision of a safe and healthy working environment, reasonable salaries and benefits, and career development opportunities. Such initiatives not only improve the quality of life of employees but also convey the concern and care from the company, which in turn enhances employees' sense of belonging and loyalty to the company. When working in a company that places emphasis on social responsibility, employees are more likely to perceive the value and significance of the work undertaken by them. This value recognition further reinforces their commitment and loyalty to the company. The research of Brammer et al. (2007) lends further

support to this proposition by revealing that employees are more inclined to maintain loyalty and reduce the intention of resignation when they consider the company has excellent CSR performance. This indicates that CSR exerts an indirect influence on employee loyalty by forming a positive corporate culture and strengthening psychological contract of employees. A company that actively fulfills its social responsibilities is more likely to have a more open, transparent and ethical corporate culture. Such a cultural environment not only helps to build an internal atmosphere of trust, but also enhances employees' trust and reliance on the company. When employees sense the company to be genuinely engaged in CSR activities, they will perceive the company as ethically trustworthy, resulting in their willingness to remain with the company on a long-term basis as well as reluctance to resign. Furthermore, CSR practices of companies can also enhance employees' commitment and loyalty to their jobs by increasing their sense of mission. When employees find their company making a positive contribution to society, they are more inclined to align themselves with the company's values and missions, thereby creating a deeper psychological connection with the company. Building upon the social embedding model of thriving at work, Yan et al. (2022) conduct a two-wave time lagged survey gathering data from 331 employee to study how employees' perceive CSR promote *thriving at work*. They find that "perceived CSR has significant positive influence on *thriving at work*, job calling intermediates the relationship between perceived CSR and *thriving at work*". Further, "trust climate moderates the relationship between perceived CSR and job calling" as well as "the indirect effective between perceived CSR and *thriving at work* via job calling". It can be learned that CSR exerts a significant mediating influence on employee loyalty, namely the sense of *thriving at work*. The study reveals that CSR, as perceived by employees, enhances their sense of *thriving at work*, which is defined as the sense of happiness, meaningfulness and achievement that employees feel at work. *Thriving at work* represents one of the most significant factors in employee loyalty. When employees consider their work as a means of self-value fulfillment in addition to a means of livelihood, they are more likely to remain with the company over a long-term and contribute to its development. The atmosphere of trust plays a pivotal moderating role in this, amplifying the positive influences of CSR on the sense of *thriving at work* and employee loyalty. Y. Hua et al. (2014) empirically analyze the influences of CSR on employee loyalty. They find that all dimensions of CSR behaviors own significant influences on internal employee loyalty, nevertheless the influence degree of each dimension varies. Company ethical responsibility has the greatest influence on employee loyalty, followed by legal responsibility, charitable responsibility and economic responsibility. When companies

adopt fair, just and transparent management practices in the fulfillment of ethical responsibilities, they can effectively enhance employees' trust and loyalty to the company. In addition, legal and charitable responsibilities have been found to enhance employees' organizational commitment and loyalty to some extent by ensuring compliance and active participation in the community.

To sum up, CSR has a significant influence on employee loyalty by improving the work environment, shaping a positive corporate culture, enhancing employees' sense of work mission and *thriving at work*, and fulfilling different dimensions of social responsibility. When developing and implementing CSR strategies, companies should prioritize the comprehensiveness and effectiveness of the strategy so as to optimize the positive influences of CSR on employee loyalty to the greatest extent. This not only assists companies in developing a stable and efficient workforce, but also strengthens their long-term competitiveness and sustainable development. By adopting a scientific and rational CSR approach, companies can gain external social reputation while simultaneously establishing a robust foundation of internal employee loyalty, which, in turn, provides a powerful support for the long-term development of the companies.

#### **2.2.3.2 Influence on employee engagement–result of satisfaction and loyalty**

Existing research indicates that CSR exerts a considerable influence on employee engagement. To be specific, CSR can enhance employees' enthusiasm, motivation and overall performance through a variety of mechanisms, thereby bringing long-term benefits to the company. CSR can enhance employees' sense of pride and identity.

Glavas and Piderit (2009) find CSR activities of a company can improve employees' engagement and performance for they would feel proud of the company and be more motivated to work when they hold the concept that their company cares about social and environmental issues. When employees perceive themselves to be working for a socially responsible and ethical company, their job satisfaction will be increased by the sense of pride brought by this perception, also a higher level of engagement will be inspired. Employees will identify with their company when the company demonstrates commitment to social responsibility. The identification will be reflected in higher work enthusiasm and more efforts. Concurrently, CSR directly influences employee engagement by improving working environment and employee welfare. When fulfilling CSR, companies tend to attach greater importance on the health, safety, and welfare of employees. Their measures in these fields not only improve the quality of life of employees but also convey the concern and care from the

company, which in turn drive employees to more actively devote themselves into work. A favourable working environment, a reasonable salary and benefits mechanism, and abundant career development opportunities can markedly improve employees' satisfaction and engagement. These factors collectively contribute to higher sense of motivation and responsibility among employees. Using cross-hierarchy analysis, L. Zhao et al. (2022) combine social cognitive theory and self-determination theory to study the influences of CSR-oriented human resource management on employees' proactive behaviors. By analyzing 408 leader-employee pairing data, they find that CSR-oriented human resource management significantly and positively influences employees' proactive behaviors. Meanwhile employee role-breadth self-efficacy plays an important intermediary role in the relationship between the two, and performance-salary expectation negatively adjust the positive influence of role-breadth self-efficacy on employee proactive behaviors. Therefore, it can be learned that CSR also indirectly improve job involvement by strengthening employee role-breadth self-efficacy. Research finds that when companies investing more in social responsibility-oriented human resource management, employees will have the feeling that their abilities and values are recognized and cherished. Such perception strengthens role-breadth self-efficacy of employees, which means that employees will hold the belief that they are capable of performing tasks with larger load and higher complexity. Self-efficacy can further improve initiative and innovation of employees, driving them to demonstrate higher level commitment and superior performance at work. Furthermore, CSR practices can help to create a positive atmosphere of internal trust, which in turn improves engagement. When a company performs excellently in CSR, employees tend to regard the company as trustworthy and the management as honest and fair. This trusting relationship helps to reduce employees' psychological stress and insecurity at work, make them more focused on and actively engaged in work. The atmosphere of trust facilitates harmonious teamwork and efficient communication, allowing employees to reach their full potential in a harmonious working environment. Finally, effective CSR practices can build up a good company reputation both inside and outside the company, thereby indirectly improving job involvement of employees. Positive external evaluation of the company and social recognition will increase employees' pride and sense of achievement, thereby motivating them to show greater initiative and loyalty. Employees will have the faith that their work not only benefits the company but also makes a positive contribution to society. This faith will further strengthen their job involvement.

A combination of the above two sections of research findings reveals that employee

satisfaction and loyalty exert a significant influence on employee engagement. Employees who are highly satisfied with the company are usually content with their working environment, salary, welfare, and career development opportunities. Consequently, they demonstrate a higher level of enthusiasm and motivation in their work. Satisfaction can not only improve employees' productivity, but also increase their creativity and initiative. Similarly, employees with high level of loyalty are more willing to remain with the company on a long-term basis and to fully devote themselves into work. This is due to their strong sense of belonging and identification with the company. These employees are more likely to demonstrate a heightened sense of responsibility and dedication at work, resulting in low turnover rate, thereby ensuring the stability and sustainable development of the company. CSR plays a pivotal role in enhancing employee satisfaction and loyalty. Through CSR practices, such as improving the working environment, improving employee welfare, and participating in community activities, companies can improve the quality of life of employees and strengthen their trust and identification with the company. Trust and identification of employees will subsequently translate into higher levels of job involvement, because employees will be more willing to devote their talent and efforts into work if they perceive the company's social responsibility and ethical commitment. Consequently, effective CSR practices not only facilitate the enhancement of employee satisfaction and loyalty, but also contributes to the overall performance and sustainable development of company through higher job involvement.

To sum up, existing research supports the positive influences of CSR on employee satisfaction, loyalty and engagement. CSR plays a pivotal role in improving employee engagement by enhancing their sense of pride, identity, self-efficacy, and trust in the company. When formulating and implementing CSR strategies, companies should prioritize the comprehensiveness and effectiveness of the strategy to optimize the positive influences of CSR on engagement to the greatest extent. This can not only enhance employee satisfaction and improve employee performance, but also create a positive, harmonious, and efficient working environment for the company, thereby promoting sustainable development of the company.

## **2.3 Application of empirical study methods in CSR research**

### **2.3.1 Model testing in CSR research**

Model testing is a statistical method which is mainly used to test whether the theoretical prediction matches with the actual data. It is widely used in CSR related research. Somaratna et al. (2020) take the CSR performance of construction organizations in Sri Lanka as the research subject. They adopt a comprehensive literature review, quantitative questionnaire survey and the technology Analytical Hierarchy Process (AHP) and find that, in the construction industry, “CSR holds three main dimensions as economic responsibility, social responsibility and environmental responsibility”. Finally, they develop a CSR performance evaluation framework for construction organizations in Sri Lanka. The research has the significance in guiding the CSR cognition and practice in the construction industry and promoting the sustainable growth of construction organizations.

First, regression analysis is one of the most commonly used model test methods. In many studies, CSR acts as an independent variable, while enterprise value as a dependent variable to test the model. A study by Margolis and Walsh (2003) use a linear regression model to find a positive relationship between CSR and company financial performance. Their research demonstrates that CSR practices can enhance enterprise value. Waddock and Graves (1997) also use the linear regression model to verify that CSR has a strong positive correlation to the business performance of companies.

Secondly, the panel data model is another common model testing method. This approach is particularly useful in CSR research because it considers both time and individual factors. Brammer et al. (2006) use the panel data model to study the influences of CSR on company financial performance. The research shows that CSR activities have a significant positive correlation with long-term financial performance rather than short-term financial performance. The study demonstrates the long-term influence of CSR on enterprise value. Orlitzky et al. (2003) use the panel data model to explore the relationship between CSR and business performance. The research shows that the influences of CSR activities on business performance vary among different companies, which further verifies the individual influence of CSR on enterprise value. Mishra and Suar (2010) also use the panel data model to study the influences of CSR on company risks. The research shows that high quality CSR practices can reduce risks and further enhance enterprise value. On the other hand, JoMaretno and Harjoto (2012) use the panel data model to study the influences of CSR on company agency problem.

The research shows that CSR activities can effectively reduce agency problems and enhance enterprise value. At the same time, the panel data model is also used in theoretical literature to explain or evaluate the model itself. For example, the study of Hsiao (2003) introduces the advantages and limitations of the panel data model in detail, which is of great help to understand the application of this approach in CSR research.

Thirdly, the structural equation model (SEM) is a complex method for model test. It is widely used in CSR research for it can not only deal with the relationship between multiple variables, but also deal with latent variables. Hull and Rothenberg (2008) use SEM to explore the relationship between CSR practices and enterprise value, and find that CSR activities can enhance the value of a company by increasing reputation and brand loyalty. This study not only reveals the relationship between CSR and enterprise value, but also shows how this relationship is realized through other variables. Aguinis and Glavas (2012) use SEM to study the influences of CSR on employee satisfaction and organizational commitment. Their research shows that CSR activities can indirectly enhance enterprise value by enhancing employee satisfaction and commitment. Du et al. (2010) also use SEM to study the influences of CSR on consumer behavior. The research shows that, by influencing consumers' perception and evaluation of a brand, and then influencing their purchasing behaviors, CSR can ultimately enhance enterprise value. SEM is also used in theoretical literature to explain and evaluate methods in detail. For example, Byrne (2013) and Bollen (1989) introduce the advantages and limitations of SEM in detail. As they point out, though SEM can reveal complex cause-and-effect relationships, it needs to be careful in setting it up and interpreting the results. The wide application of SEM in CSR research has also been confirmed by empirical research. For example, Luo and Bhattacharya (2009), as well as H. Wang et al. (2016) use SEM to study the influences of CSR on enterprise value.

Based on above research findings, first we can learn that regression analysis is the most commonly employed research method in CSR research, specifically for the purpose of evaluating the influences of CSR on financial performance. The specific steps include data collection, variable definition, model construction, and result analysis. By taking CSR activities as the independent variable and company financial performance as the dependent variable, scholars can assess the direct influences of CSR on business performance through regression analysis. A linear regression model can assist scholars in quantifying the relationship between CSR and the market value of a company, which helps to reveal how CSR activities strengthen a company's market competitiveness by improving its image and reputation. Second, the panel data model is a statistical method that can consider both time

series and cross-sectional data, and is particularly suitable for analyzing company behaviour and performance with a time dimension. In the field of CSR research, the panel data model enables scholars to assess the dynamic influences of CSR activities while controlling individual heterogeneity and time effects. The specific steps include data reduction, model selection, variables setting, and result interpretation. With the panel data model, scholars can observe the sustained influences of CSR activities on business performance at different points in time, as well as the heterogeneous effects across different companies. Through fixed effects or random effects models, scholars can analyze in detail the differential effects of CSR on long-term and short-term financial performances, thereby revealing the important role of CSR in sustainable development of companies. Third, SEM is a sophisticated and efficacious method for multivariate analysis. SEM is well-suited to the examination of the interrelationships between multiple variables and the measurement of latent variables. In the field of CSR research, SEM can not only be used to analyze the direct effects but also to explore the indirect effects and mediating effects. The specific steps include theoretical model construction, data collection, data processing, model fitting, model adjustment, and result analysis. The application of SEM enables scholars to test multiple causal paths simultaneously, thereby revealing how CSR activities indirectly influence on financial performance and market value through the enhancement of employee satisfaction, brand loyalty, and consumer behaviour. This approach is particularly suitable for revelation of complex causal relationships and multi-level mechanisms, which can provide a comprehensive insight of the strategic value of CSR.

Model testing is of great application value in the field of CSR research. Regression analysis reveals the direct influences of CSR on business performance through simple linear relationships. The panel data model provides a dynamic view of CSR activities by taking into account time and individual differences. SEM reveals the indirect influences and multi-level mechanisms of CSR on indirect effects of performance through complex causal path analysis. Together, these methods provide powerful tools for CSR scholars to systematically understand and assess the multidimensional influences of CSR on business performance. This, in turn, provides a solid theoretical foundation and empirical support for companies to develop effective CSR strategies.

### **2.3.2 Correlation analysis in CSR research**

In the field of CSR research, correlation analysis is a commonly used statistical tool to quantify the relationship between CSR and enterprise value. This approach can detect the

linear relationships of two or more variables to help scholars understand how CSR influences enterprise value, thereby providing a solid foundation for the theory construction and empirical analysis.

For the descriptive correlation analysis, Orlitzky et al. (2003) use correlation analysis in their meta-analysis to study the relationship between CSR and business performance. Their research shows that there is a small-to-medium degree positive correlation between CSR and business performance, which provides a proof for the viewpoint that CSR can enhance enterprise value. Correlation analysis is also widely used in multivariate correlation analysis. Margolis et al. (2009) use correlation analysis to detect the relationship between CSR and multiple enterprise value indicators such as stock returns, operating income, and profitability. The research shows that there is a remarkable positive correlation between CSR and the indicators. Some scholars use correlation analysis to explore a more complex relationship between CSR and enterprise value. Servaes and Tamayo (2013) use correlation analysis to detect the nonlinear relationship between CSR and enterprise value. The research shows that the relationship between CSR and enterprise value is curvilinear to some extent, which means investment in CSR may have a negative influence on enterprise value to some extent. Correlation analysis has also been widely discussed in theoretical literature. Cohen et al. (2013) introduce the theoretical background and application of correlation analysis in detail, pointing out the problems to be noticed of this approach, such as causality-misunderstanding and correlation over-interpreting. Brammer and Millington (2008), Godfrey et al. (2009) and many other scholars also use correlation analysis to study the relationship between CSR and enterprise value in empirical research. Their research all shows that a significant correlation between CSR and enterprise value exists.

On the one hand, descriptive correlation analysis plays a foundational role in CSR research. This method is employed primarily to tentatively explore the relationship between CSR and business performance for identifying potential correlations. By calculating the correlation coefficients between CSR indicators and business performance indicators, such as financial income and market performance, scholars can make a preliminary judgement on the correlation between CSR activities and business performance (Orlitzky et al., 2003). Numerous studies have found through correlation analysis that there is a positive correlation between CSR and business performance. This implies that companies tend to achieve better financial performance and market returns by fulfilling their social responsibilities. This positive correlation provides support for further in-depth research, suggesting that CSR may have a positive influence on business performance. In terms of multivariate correlation

analysis, scholars further extend the application of correlation analysis to comprehensively assess the influences of CSR by introducing multiple business performance indicators. This approach not only considers the influence of CSR on a single indicator basis, but also analyzes the interaction of CSR practices across different performance indicators. For instance, correlation analysis can simultaneously test the relationship between CSR and multiple financial indicators, such as stock returns, operating income, and profitability. This approach allows for the comprehensive examination of the influences of CSR on overall business performance. Multivariate correlation analysis enables scholars to gain a more comprehensive understanding of the multidimensional effects of CSR, providing data support for companies to develop comprehensive CSR strategies. On the other hand, correlation analysis is also employed to investigate more intricate relationships between CSR and enterprise value, for example, non-linear relationship. Research indicates that the relationship between CSR and enterprise value may not be a simple linear relationship, but rather possess certain non-linear characteristics. Correlation analysis can assist in the identification of this complex relationship structure. For instance, it has been demonstrated that CSR investment exerts a positive influence on enterprise value at specific levels; however, this influence may become marginal or even negative once the investment exceeds a certain threshold. By identifying non-linear correlations between CSR and business performance, scholars can provide more accurate guidance to companies on optimal CSR investment, prevention of resource waste, and maximization of the strategic value of CSR. In theoretical discussion, the application of correlation analysis has also attracted extensive discussions and attention. Scholars have comprehensively discussed the theoretical background, application scenarios, and limitations of correlation analysis, as well as highlighted the considerations that should be taken into account when applying this analytical method. For instance, results of correlation analysis can only reflect the correlation between variables, but cannot directly prove the causal relationship. Scholars must be prudent when interpreting correlation results, in order to avoid misinterpretation of causality and over-interpretation of correlations. Furthermore, to ensure the reliability and validity of the results, it is essential to consider the potential multicollinearity among variables when conducting correlation analysis.

Correlation analysis has been employed extensively in empirical studies to investigate the relationship between CSR and enterprise value (Godfrey et al., 2009). This further validates the universality and importance of its application. These studies have generally found a significant correlation between CSR and enterprise value through extensive data analysis and validation, providing strong empirical support for companies' active participation in CSR. By

systematic correlation analysis, scholars are able to provide companies with a scientific basis for decision-making, and help them in achieving sustainable financial growth and market competitiveness enhancement while fulfilling their social responsibilities.

In summary, the application of correlation analysis in CSR research provides a significant method as well as empirical basis for comprehending the multi-dimensional influences of CSR on business performance through descriptive analysis, multivariate analysis and complex relationship analysis. These research results not only deepen the academic comprehension of the strategic value of CSR, but also scientifically guide companies' practice to facilitate the efficient implementation and optimization of CSR in actual operations.

### **2.3.3 Regression analysis in CSR research**

In research on the relationship between CSR and enterprise value, regression analysis is frequently used, as a core statistical method, to assess and explain the influences of CSR on business performance. Various types of regression analysis, such as linear regression, multiple regression and logistic regression, have been applied respectively to different research scenes so as to provide a deep understanding of the complex relationship. Linear regression is the most common method to elucidate the linear relationship between CSR activities and business performance. This method reveals the direct influences of CSR on business performance by establishing a linear relationship between CSR activities (an independent variable) and economic performance (a dependent variable). In the regression model, scholars typically ensure the independent effect of CSR by controlling other variables that may influence business performance, such as the company scale and the industry type. This method can quantify the influences of CSR activities on market value, financial performance and other specific indicators, so as to provide clear guidance for management. With linear regression analysis, scholars can affirm the marginal benefit of CSR investment, thereby assisting companies in making more rational decisions in social responsibility investments. Waddock and Graves (1997) use linear regression in their research and find that CSR is positively correlated with business performance, and this correlation remains significant even under the restriction of other variables which influences business performance. Multiple regression analysis is also widely used for it further extends the application scope of regression analysis, offering a more comprehensive understanding of the relationship between CSR and business performance. This is achieved by simultaneous consideration of the combined effects of multiple independent variables on the dependent variable. In a multiple regression model, CSR is included as a major independent variable, along with other potential influence factors

for analysis. Scholars may simultaneously evaluate factors such as market size, market structure, and company governance structure in order to assess the collective effect of these variables on business performance. The application of multiple regression analysis can reveal the relative importance and influences of CSR in complex economic environment, thereby assisting companies in understanding the effects of CSR activities under different contexts. Orlitzky et al. (2003) use multiple regression analysis to probe into various factors, such as CSR, market size and market structure, and find that CSR plays a significant role to explain business performance in the multivariate model. For binary or categorical dependent variables, for example, a company participates in CSR activities or not, logistic regression analysis is an applicable regression method. It is commonly used to study the influences of whether a company engages in CSR activities or not on economic performance. In this type of analysis, the dependent variable is typically a binary variable, for instance, whether a company engages in CSR activities or not; while the independent variables encompass the level of CSR activities and other control variables. Logistic regression enables scholars to gain insight into the influences of various factors on a company's decision to engage in CSR activities. This is achieved by calculating the probabilistic influence of each independent variable on the dependent variable. With employing logistic regression, scholars are able to identify factors which exert the greatest influence on companies' decisions of CSR participation, thereby offering targeted suggestions for policymakers and company management. Hull and Rothenberg (2008) use logistic regression to analyze the relationship between CSR and financial performance, and find that the level of CSR activities will influence financial performance of companies. In addition to the above-mentioned specific regression methods, the application of regression analysis in CSR research also involves the exploration and evaluation of the research method itself. The theoretical foundations of regression analysis, model setting, variable selection and result interpretation have been extensively discussed in the academic literature. Key issues that must be attached great importance to during the application of regression analysis have been highlighted. To increase the credibility and explanatory power of the analysis results, scholars are required to ensure the fitness and robustness of the model to avoid problems such as multicollinearity and model misspecification. Gujarati (2003) introduces in his book the theoretical basis and application of regression analysis, providing a valuable assistance for CSR research. Margolis and Walsh (2003), Gardberg and Fombrun (2006) also use regression analysis in their empirical studies. They further reveal the complex relationship between CSR and enterprise value, and provide a basis for understanding how CSR influences enterprise value. The extensive application of

regression analysis in the field of CSR research not only reveals the direct and indirect interrelationship between CSR and business performance, but also offers a more profound comprehension of this intricate relationship. By employing regression analysis, scholars are able to quantify the multidimensional influences of CSR on financial performance, market value and risk management. As a result, the strategic value of CSR in enhancing company competitiveness and achieving sustainable development can be demonstrated. These research findings provide a scientific basis for companies in formulating CSR strategies and empirical support for policy makers in promoting CSR practices.

In summary, regression analysis, as a key statistical method, plays an important role in CSR research through various forms including linear regression, multiple regression, and logistic regression. Regression analysis provides a systematic approach to assess and explain the multidimensional influences of CSR on business performance. It also offers a solid theoretical foundation and empirical evidence for company practice and policy formulation. Along with the continuous upgrade of research methods and data analysis techniques, the application of regression analysis in CSR research will deepen, providing a more refined and comprehensive perspective for understanding and increasing the strategic value of CSR.

## **2.4 CSR practices and influence in the game industry**

### **2.4.1 Game addiction and CSR of game companies**

The growing problem of game addiction has become a common concern in society, which raises new challenges and requirements for CSR practices of game companies. Existing literature indicates that game companies may mitigate the negative effects of game addiction through a range of CSR practices, including but not limited to setting time limits for gaming, providing education and resources to prevent addiction, and cooperating with mental health experts. So far, scholars have found that the majority of game companies prefer to implement limited game time as one of the strategies to address the gaming addiction issue. Limited game time can effectively reduce the playtime of game users, in particular teenagers, thus reducing their dependency on games. The approach can not only enhance the quality of life as well as the academic performance of players, but also improve their social adaptability. Kuss and Griffiths (2012) study into the implementation of limited game time policy and the result shows such policy can effectively reduce the risk of addiction. In addition, research by Schimmenti et al. (2017) also reveals that setting limits on game time can significantly

improve life quality of adolescents. Another approach of game companies' CSR practices to prevent addiction is to provide education and resources. By offering players with educational information about game addiction and offering corresponding self-management resources, game companies can efficiently help players in developing a correct concept of game. King et al. (2013) find that educational information can help players improve their self-management ability, and reduce the risk of addiction. In addition, the collaboration between game companies and mental health experts is also regarded as an effective CSR approach. The collaboration enables game companies to better identify and address game addiction issues, then provide players in need with professional treatment and rehabilitation services. This will not only strengthen the company's professional competence and reputation, but also help the company in designing more humanized game products. As Griffiths and Pontes (2014) observe, collaboration between game companies and mental health experts can facilitate more precise monitoring and prevention of gaming addiction, while providing more effective addiction treatment and rehabilitation services. By undertaking these CSR practices, a company may experience economic pressure in the short term due to decreased playing time and consumption, but from a long term perspective, CSR practices are helpful to its market reputation and long-term sustainable development. Research by Van Rooij and Schoenmakers (2013) suggests that though CSR practices may reduce short-term profits, it will result in a positive influence on enterprise value in the long run.

In summary, game companies are proactively addressing the issue of game addiction through a range of CSR practices, including limitation of playtime, provision of education and resources of addiction prevention, and collaboration with mental health experts. Through these measures, game companies actively fulfill their social responsibilities. The measures can not only mitigate the adverse effects of gaming addiction on individuals and society, but also enhance the company's social image and long-term value. Although there may be pressure on profits in the short term, from a perspective of sustainable development, CSR practices provide a healthy and responsible growth path for game companies and promote the harmonious development of both business and society.

#### **2.4.2 Data privacy and CSR of game companies**

With the booming development of big data and cloud computing, the issue of data privacy has become a key topic in the game industry, putting forwards new requirements for CSR practices of game companies. Existing research results show that the provision of explicit data privacy policies is a fundamental requirement for CSR practices of game companies. The core

of such policies is to clarify the specific measures of data collection, data usage and data protection to users. This can enhance user trust, user satisfaction and user loyalty. Such policies should specify the manners in which the company collects, stores, utilizes and shares user data, so as to ensure users' consent to the utilization of their data on a fully informed basis. In addition, explicit data privacy policies can assist in dispelling user misunderstandings about data usage, reducing legal risks, and maintaining companies' legal compliance. Debatin et al. (2009) find that making clear and understandable data privacy policies can increase customer satisfaction and loyalty. Similarly, the research of Smith et al. (2011) shows that explicit data privacy policies can not only increase customer satisfaction, but also avoid their misunderstanding of how the company uses data, thereby reducing legal risks. Research has also revealed that the implementation of secure data management and protection measures is another crucial CSR approach. Technical measures such as data encryption, authentication and access control are essential for protecting user data from unauthorized access and leakage. The application of advanced technologies enables game companies to guarantee the security of user data throughout transmission and storage, thus preventing data leakage and misuse. Powerful data protection measures prevent potential financial losses and enhances the reputation of the company. Research by Gordon et al. (2008) shows that by implementing technical means such as data encryption and authentication, game companies can effectively protect user data and enhance user trust. However, despite strict data management and protection measures, data breaches still occur. In this case, the response of game companies also significantly influences their CSR practices. Actively responding to data breaches, including timely disclosing incident information, offering compensation to involved users, and taking remedial measures, is a key CSR fulfillment action of game companies. According to the research of Kwon and Johnson (2014), game companies can reduce the negative influences and maintain user trust by timely disclosing information, providing compensation and carrying out remedial measures. Furthermore, game companies should conduct comprehensive investigations into the incident to locate vulnerabilities in the system and carry out solutions accordingly to further strengthen data security strategies.

In summary, when dealing with data privacy issues, game companies can demonstrate their high sense of responsibility in CSR practices by making explicit data privacy policies, implementing secure data management and protection measures, and proactively responding to data breaches. Explicit data privacy policies enhance user trust in the company, secure data management measures, and ensure the protection of user data, while a proactive response to

data breach incidents demonstrates the company's care to user rights and commitment to data security. The implementation of all these measures enables game companies to fulfil their social responsibility, strengthen their market competitiveness, and enhance their brand value.

#### **2.4.3 Online security and CSR of game companies**

In the contemporary digital era, online security is a severe CSR challenge for game companies. Through content censorship, monitoring mechanisms, creation of a secure online environment, and education for users of how to protect themselves from cyber bullying and cyber harassment, game companies can make their CSR practices more effective from multiple dimensions. A review of existing research findings indicates that these measures not only assist in protecting user security and privacy, but also enhance users' trust and loyalty towards game companies, which as a result, contributes to long-term company development.

Content censorship and monitoring mechanisms play a crucial role in reducing undesirable content and behaviour in games. A study conducted by Sonia and Smith (2014) shows that by establishing effective content censorship and monitoring mechanisms, game companies can effectively reduce the amount of harmful content and delinquent behavior in their game products, thereby improving user experience and feeling of safety. Meanwhile, such mechanisms can increase 'customers' loyalty to and trust in the company. In terms of creating a secure online environment, research shows that a strict but effective content censorship system can significantly diminish the negative experience users may encounter in games. By monitoring and filtering undesirable content in real time, game companies are able to identify and address potential risks without delay, thereby preventing the spread of inappropriate behaviour and speech. The mechanisms not only protect minors but also promote the online experience and sense of security for all users. Furthermore, through transparent and fair content management policies, game companies can enhance the trust from users, thereby increasing user loyalty and stickiness.

One of the core missions in game companies' CSR practices is to provide a secure online environment. Broll et al. (2019) find that by strengthening data protection and network security technologies, game companies can avoid user data from being stolen or abused, therefore ensuring user information safety in game products. This can not only improve customer satisfaction, but also help the company to build a good brand image and enhance enterprise value. This indicates that intensifying data protection and network security technologies is crucial for safeguarding user information from interception or abuse. The implementation of advanced data encryption technology and rigorous access control by game

companies can effectively protect users' data security. This not only helps to avoid data breach, but also enhances users' trust and satisfaction with the platform. J. M. Zhang and Tang (2022) study the communication process of virtual corporate social responsibility (VCSR) co-creation, and use experimental research method to explore the boundary conditions and mechanism of gamification influencing consumers' participation intention in VCSR communication. Concurrently, the establishment of a secure and dependable online environment serves to reinforce the positive brand image of the company and to strengthen its competitiveness in the market.

Educating users on how to protect themselves from cyber bullying and cyber harassment is also an important measure of dealing with online security issues. The study of Mishna et al. (2010) shows that by conducting online safety education activities, game companies can help users to establish self-protection awareness and improve their ability to effectively deal with cyber bullying and cyber harassment. By this means, potential customer risks can be reduced, online experience of customers can be improved, and customers trust and loyalty to the company can be enhanced. By conducting online safety education activities, game companies can help users enhance their self-protection awareness and abilities, and as a result, users will be able to effectively deal with various threats on the Internet. Research indicates that when users possess the knowledge and skills of online security, risk they may face in the online environment can be markedly reduced, and their sense of security and satisfaction will be increased when using the platform. The education not only reduces the risk of cyber bullying and cyber harassment, but also further enhances users' trust and loyalty to game companies.

On the whole, the field of online safety requires for high attention from game companies in their process of social responsibility fulfillment. By establishment of effective content censorship and monitoring mechanisms, creation of a safe and dependable online environment, and emphasis on user online safety education, game companies can protect the interests of their users while enhancing their social responsibility image and market competitiveness. Therefore, game companies must pay high attention to online security issues in their CSR practices. Various practices of game companies, such as setting up appropriate content censorship and monitoring mechanisms, creating a safe online environment, educating users to protect themselves from cyber bullying and cyber harassment, help to increase online user safety and customer satisfaction, improve brand image and enhance enterprise value. All these sufficiently prove the important role of CSR in coping with online security issues.

#### **2.4.4 Overall review of CSR practices in the game industry**

The rapid development of global game industry has not only brought significant economic benefits, but also triggered extensive attention on CSR in this industry. Scholars have conducted in-depth studies on the CSR practices of game companies in dealing with game addiction issue, data privacy protection, and online security issue. The studies primarily concentrate on CSR fulfillment of game companies, selection of CSR strategies, the effect of implementation, and corresponding influence on the long-term growth of companies. In terms of addressing the issue of game addiction, existing research has demonstrated that game companies employ a range of CSR strategies to mitigate the negative effects of game addiction. These strategies include limiting playtime, providing education and resources to prevent addiction, and collaborating with mental health experts. Though these measures may impose disadvantages on the profits of game companies in the short term, they will ultimately contribute to the long-term enhancement of their social reputation and brand image, thereby facilitating sustainable development. In terms of data privacy issues, research finds that game companies demonstrate a high sense of social responsibility, strengthen market competitiveness and enhance brand value by making explicit data privacy policies, taking secure data management and protection measures, and actively responding to data breach incidents. In terms of online safety issues, by setting up content censorship and monitoring mechanisms, creating a safe online environment, and educating users to prevent cyber bullying and cyber harassment, game companies can effectively improve the effects of CSR practices, protect users' rights and interests, and enhance social responsibility image and market competitiveness.

Existing research provides a comprehensive account of the multi-dimensional efforts and effects of game companies in CSR practices. Game companies fulfill their social responsibilities through a series of targeted CSR strategies, while laying a solid foundation for sustainable development. The research findings offer valuable practical guidance for game companies, and provide an abundant theoretical foundation for academic circles to further probe into the relationship between CSR and company development.

## 2.5 Research evaluation

### 2.5.1 Existing research and its guiding significance

#### 2.5.1.1 Summary and induction of relevant research

In recent years, the number of research on the relationship between CSR and enterprise value keeps increasing in the academic circle, and many scholars have explored this topic by using empirical analysis. According to the existing research, which usually takes high-quality development of Chinese companies as the analysis background, most studies on the relationship between CSR and enterprise value of Chinese companies focus on A-shares listed companies in Shanghai and Shenzhen Stock Exchanges. S. Wu and Zou (2022) take companies that have been punished for violations as the research subject, and through text analysis technology and difference-in-differences model, propose that negative influences force companies to significantly improve information disclosure quality of social responsibility, thereby creating a protective effect on enterprise value. S. Li and Huang (2022) study the evolution from CSR to ESG, proposing the differences between CSR and ESG through literature review and theoretical analysis, and predicting the future research trend. M. Yang and Chen (2022) take Chinese A-shares listed companies in Shanghai and Shenzhen Stock Exchanges from 2009 to 2018 as the research population. Through empirical research, they propose that the quality of CSR information disclosure is conducive to enhancing the enterprise value, and significantly negatively correlated with inefficient investment. Based on the theory of cognitive psychology, through empirical analysis of customer groups, Mao et al. (2021) study the relationship between digital environmental experience and the co-creation of customer-company social value, as well as the moderating effect of social responsibility on this relationship. Xue (2021) studies the influences of mandatory CSR information disclosure on risk-taking. Through empirical analysis, she proposes that mandatory disclosure enhances risk-taking as well as enterprise value of companies. After empirically testing the data of A-shares listed companies, Teng and Li (2021) demonstrate that corporate culture has a positive influence on brand value, while entrepreneurship and CSR play moderating roles in this relationship. From the perspective of social media, H. T. Guo (2020) proposes the role and influencing factors of social media in the value creation process of CSR through normative analysis and theoretical model construction. Feng et al. (2020) empirically test the influences of the ownership structure of multiple major shareholders on CSR performance and propose that the multi-shareholder ownership structure has a positive effect on the long-term

enterprise value, and can significantly improve CSR performance. Based on the perspective of strategic interaction, Hu et al. (2020) empirically analyze China's listed tourism companies and propose that CSR is negatively correlated with company's market value, but marketing strategy has a positive moderating effect on this relationship. Based on A-shares listed companies in Shanghai and Shenzhen Stock Exchanges, X. Y. Chen et al. (2020) use empirical analysis to demonstrate that CSR has a promoting effect on enterprise value, and organizational inertia and industry sensitivity have a moderating effect on this relationship. He et al. (2020), taking A-shares listed companies as the research population, propose through model building and empirical analysis that CSR is positively correlated with enterprise value. Moreover, marketing competitiveness plays an intermediary role while customer awareness plays a positive moderating role in this relationship. Y. H. Xie et al. (2019) analyze the relationship between internal-external CSR gaps and enterprise value through the fixed effect model, and propose that the two are significantly negatively correlated. The two own different characteristics under different stages of life cycle and gap types. Based on the upper echelons theory and empirical research, J. Q. Liu and Zhu (2019) propose that the actual controllers' right of residence abroad is positively correlated with CSR, and CSR has a masking effect between the right of residence abroad and enterprise value. X. Zhang et al. (2019) analyze Chinese listed companies through event studies and multivariate regression analysis, and demonstrate that CSR has a positive effect on the market value of companies, especially for companies that voluntarily release CSR reports.

In addition, relevant scholars take specific industries as the research subjects to explore the influences of CSR on enterprise value.

1) The Internet platform industry: Research by M. L. Xu et al. (2023) explores in depth the influence of Internet recycling platforms' CSR fulfillment on value co-creation and reverse supply chain decision-making. For the Internet platform industry, especially in the field of recycling platform, CSR fulfillment is not only a response to environmental and social responsibility, but also an important approach to shape enterprise value. The research uses Stackelberg's game theory to reveal that the Internet recycling platform can significantly improve consumers' recycling experience through value co-creation with consumers, which not only increases the platform's profits and consumers' benefit, but also improves the total social welfare. During this process, CSR fulfillment plays a positive role in raising the recycling price and promoting the recycling of used products. Moreover, with the improvement of CSR level, the total benefit of the platform, consumer benefit and total social welfare all show a growth trend. Internet recycling platforms' undertaking of CSR can

effectively accelerate the participation of consumers in value co-creation, so as to make up for the profit loss caused by CSR practice under certain conditions. In addition, the combination of CSR practices and value co-creation can not only improve the recycling enthusiasm of consumers, but also effectively promote the recycling of products. From a comprehensive view, through CSR fulfillment and value co-creation strategy, the Internet recycling platform industry can not only achieve goals of environmental protection and social responsibility, but also enhance the long-term enterprise value and strengthen market competitiveness. Such strategic integration provides a new path of sustainable development for the Internet platform industry, demonstrating the harmonious coexistence of social responsibility and commercial interests.

2) The construction industry: The study of Shu et al. (2021) deeply probes into the efficiency improvement model of large construction companies during CSR fulfillment, and reveals the action mechanism of CSR for the enterprise value enhancement of the construction industry. This study uses SBM-DEA method to analyze the social responsibility efficiency of A-shares listed construction companies in Shanghai and Shenzhen Stock Exchanges, divides the life cycle of companies by cash flow method, and further uses fuzzy set qualitative comparative analysis (fsQCA) to construct a path of improving the social responsibility efficiency in different stages of life cycle for construction companies. The research results show that the action mechanism of CSR for the value creation of construction companies is embodied in a unique way, by which construction companies achieve high social responsibility efficiency in different stages of their life cycle. This means that construction companies will face different challenges and opportunities at different development stages, and their strategies and efficiency in fulfilling social responsibilities will spontaneously be different. Construction companies in the growth stage may focus more on environmental protection and sustainable construction, while mature companies may focus more on social welfare activities and improvement of employee welfare. By effectively fulfilling social responsibilities, construction companies can not only enhance their brand image and social reputation, but also improve market competitiveness and enterprise value in the long run. Therefore, the application of CSR in the construction industry is the embodiment of company ethics and social responsibility, and also an important part of company strategic management and value creation process.

3) Listed tourism companies: Chai et al. (2021) reveal the relationship between CSR and enterprise value enhancement of tourism companies through an empirical analysis of 26 listed tourism companies in China from 2016 to 2018. By Qualitative Comparative Analysis (QCA)

method, the research finds that the multi-dimensional linkage of social responsibility is of significant help to the value improvement of tourism companies. This finding points out the action mechanism of CSR for listed tourism companies, that is companies can effectively enhance comprehensive enterprise value by balanced investment in different dimensions of social responsibility. Specifically, there are three ways to enhance value by CSR in the tourism industry: The first is to be centered on employee responsibility and community responsibility, while reducing the input on shareholders, customers, partners and political responsibility; the second is to be centered on customer responsibility, supplemented by the fulfillment of community responsibility; and the third is to reduce the investment in company partner responsibility, meanwhile focus on political responsibility, customer responsibility and shareholder responsibility, or employee responsibility, customer responsibility and political responsibility, supplemented by community responsibility. This reveals that when fulfilling CSR, tourism companies need to choose appropriate dimensions of social responsibility according to their own characteristics and market position, so as to realize maximization of enterprise value. In the process of enhancing enterprise value, listed tourism companies should not only pay attention to the crosswise linkage of CSR practices, but also flexibly carry out CSR activities according to the actual company conditions. At the same time, in order to better accelerate CSR fulfillment of tourism companies and enhance enterprise value, it is suggested to strengthen the establishment and standardization of CSR disclosure policies and system at the company and even national levels, and strengthen relevant supervision input. This comprehensive strategy can more effectively drive tourism companies to fulfill their social responsibilities and realize long-term enterprise value enhancement.

4) The shared platform industry: H. J. Xiao (2020) deeply examines and exceeds CSR with the form of “creating shared value”, and reveals its action mechanism for enterprise value in sharing platform industry. CSR with form of “creating shared value” aims to solve the conflict between business interests and social interests within the relationship between companies and society. Although this kind of CSR is favored by many companies, it is also criticized for theoretical and practical defects. H. J. Xiao (2020) believes that “creating shared value CSR” is an evolved high-level corporate social responsibility (CSR3.5), and deconstructs its evolutionary logic chain from three dimensions, that is logical origin, logical intermediary and logical end-result. H. J. Xiao (2020) summarizes the operation logic and core process as “searching-embedding-measuring”. In the shared platform industry, the action mechanism of “shared value CSR” is reflected in that companies embed social responsibility

into their operations by seeking business opportunities related to social interests, and measure the effectiveness of the social responsibility practices.

However, in practice, this kind of CSR may lead to some problems, including exquisite egoism, dominance of market logic, tendency of de-ethicization, risk of legitimacy paradox and conflict recurrence, break of the “means-end” chain, measurement failure and endogenous pseudo-sharing risk. These problems indicate that when fulfilling “creating shared value CSR”, the shared platform industry needs to be more than just a single value unit, but convert to a more comprehensive form of “balanced shared-benefit CSR (CSR4.0)”. This requires companies to carry out four-dimensional construction of social responsibility: cognition, behavior, content, and system, and turn from pure economic organizations to symbiotic and shared-benefit companies with balanced company mission and integration of multiple layers of systems and logic.

### **2.5.1.2 Summary of research topics and industrial analysis**

From the above mentioned content, it can be learned that in recent years, there are rich and diversified research on the relationship between CSR and enterprise value, reflecting the deep concern and continuous exploration of academic circle into this topic. Research focuses mainly on A-shares listed companies in Shanghai and Shenzhen Stock Exchanges in China, and the content covers from information disclosure under negative impacts to the complex links between CSR and enterprise value. Various research methods, including text analysis, difference-in-differences model, empirical analysis, event studies and multiple regression analysis, show the innovation and progress of research methods in the academic circle. According to the research conclusion, most scholars believe that there is a positive correlation between CSR and enterprise value. For example, CSR activities can significantly improve the quality of information disclosure, show a protective effect on enterprise value in case of negative incidents, and even enhance a company's level of risk-taking and market value under some circumstances. In addition, the multi-dimensional practice of CSR (such as responsibility to employees, customers, communities and shareholders) is proven to effectively enhance companies' brand value and market competitiveness. However, other studies have found that CSR activities have different influences on enterprise value at different stages of company life cycle and different management characteristics. On the whole, the research has enriched the theoretical foundation in CSR field and provided valuable guidance for company practice. It reveals that CSR is not only the performance of how a company fulfills social responsibility, but also an important way to enhance enterprise value

and promote sustainable development. This shows that in the context of the rapid development of global economy, CSR has become an indispensable part of company development strategy. Management and relevant stakeholders of companies should attach great importance to the positive influences of CSR on the long-term enterprise value.

In research of different industries, aiming at the relationship between CSR and enterprise value in specific industries, scholars have conducted in-depth discussions on CSR practices in specific industry contexts and their influences on enterprise value through diversified methods and theoretical frameworks. The Internet platform industry, the construction industry, listed tourism companies, and the shared platform industry have become the focus of these studies. On the whole, these studies reveal the positive influences of CSR on enterprise value across different industries. For the Internet platform industry, CSR not only promotes environmental protection and social responsibility, but also helps to enhance long-term enterprise value and market competitiveness. For the construction industry, effective CSR practices are deemed as a crucial path to enhance a company's brand image, market competitiveness and value. For the tourism industry, CSR significantly enhances enterprise value through multi-dimensional linkage. For the shared platform industry, research focuses more on examination and transcendence of CSR with the form of "creating shared value", and discusses the necessity of integrating social responsibility into company strategy and operation at a deeper level. The common feature of these studies is that they highlight the multiple roles of CSR in enhancing enterprise value, including financial performance improvement, brand image enhancement, customer satisfaction improvement and social environment improvement. These studies also show the specificity and heterogeneity of CSR practices in different industries, suggesting that companies need to take industry characteristics and their own specific conditions into consideration when implementing CSR strategy. From these studies, it can be seen that CSR has become an indispensable part of modern company strategy, for it is of great significance to enhance long-term enterprise value and social well-being.

However, research on the relationship between CSR and enterprise value in Chinese game industry is relatively deficient. As an important part of the digital economy, companies of the game industry own unique characteristics in CSR fulfillment. For example, as to responsible content creation, game companies need to ensure that their game content is healthy and educational, avoiding spread of violence and unhealthy information. as to strengthened protection of minors, game companies need to implement an effective age-grading system and anti-addiction mechanism. As for active participation in social welfare, game companies need to publicize positive social value through game platforms. And for attention to environmental

protection, game companies need to carry out green office and low-carbon operation. In addition, the research on enterprise value based on multi-stakeholder perspective of CSR needs to be further improved. As a result, we are in need of more academic research to explore how CSR practices in the game industry influence enterprise value, and whether these influences differ significantly from those in other industries. In-depth research on the relationship between CSR and enterprise value in Chinese game industry can not only enrich the existing field of CSR research, but also have important significance for understanding the sustainable development of the game industry. Through such kind of research, we can provide companies in the game industry a more-targeted guidance of CSR practices and strategies to help them achieve value enhancement while fulfilling CSR. At the same time, it can also provide a more comprehensive perspective for policy makers to better formulate relevant policies, thereby promoting healthy and sustainable development of the game industry. In general, research on the relationship between CSR practice and enterprise value in the game industry is still a blank to be filled, calling for more attention and input from scholars and practitioners.

### **2.5.1.3 Guiding significance**

Above research has a great guiding significance in exploring the relationship between CSR practices and enterprise value in the game industry. First, through empirical analysis, the research has deeply discussed the internal connection between CSR fulfillment and enterprise value, and provided a feasible research path for the game industry. Particularly in terms of the research method, by model building and data analyzing, the research demonstrates the interaction and influence mechanism of complex variables, therefore providing methodological guidance for understanding the possible complex relationship between CSR practices and enterprise value in the game industry. Second, in-depth discussion on different industries in the research reveals the diversity and differentiation of CSR practice with different industry characteristics, which suggests that when studying the game industry, the distinctiveness of the industry should be thoroughly considered. For example, discussions could be conducted from the perspective of multiple stakeholders. Besides, existing research has explored the relationship between CSR practices and external factors, such as policy uncertainty and major shareholder governance structure. This is an enlightenment for analyzing the influences of external environment on CSR practices in the game industry. We can conclude that above research not only provides theoretical and methodological guidance for studying the relationship between CSR practices and enterprise value in the game industry,

but also brings new studying perspectives and directions to this research field, that is, it has deepened and expanded academic circle's research into this field.

## 2.5.2 Research prospects on different topics

In the process of research, we have conducted an in-depth literature review of the relationship between CSR and enterprise value, as well as the influences of CSR on various stakeholders. In particular, we focus on the CSR practice and related influences in the game industry. Table 2.1 summarizes the future lines of research under different topics raised in the above-mentioned literature. These research results and deeper thinking focus on various influences caused by CSR, including companies' business performance, reputation, long-term success, shareholder value, consumer behavior, and employee satisfaction and loyalty.

Table 2.1 Future research orientations proposed by scholars of different themes

Author	Topic	Future Lines of Research
Shen et al. (2021)	Relationship between CSR and business performance	Influence mechanism of CSR towards business performance (stock indicators).
Cai et al. (2020)	Relationship between CSR and company reputation	Influence mechanism towards reputation based on expectation, industry chain and multi-stakeholder game coupling.
Y. H. Liu et al. (2020)	Relationship between CSR and long term success of companies	Multi-stage influences of CSR. In different stages, there will be different leading interest bodies and different core goals of development. The balanced development between CSR strategy and performance strategy needs to be explored.
Shan et al. (2014)	Influence of CSR on shareholder value	Focus on the influences of certain incidents, meanwhile taking the short-term influence and long-term cumulative influence of incidents into consideration.
M. Zeng and Wei (2018)	Influence of CSR on consumer behaviors	Enrich the research dimensions of consumer satisfaction under CSR condition. Attention should be paid into the heterogeneity analysis of consumer behavior in different industries and different channels (online and offline).
Yan et al. (2022)	Influence of CSR on employee satisfaction and loyalty	The research perspective can be switched: instead of digging into a certain time point, the research should be carried out in parallel with the employee career cycle research.
Byrne (2013) Bollen (1989)	The empirical application of CSR research	To construct a more appropriate model and interpret the empirical result.
Van Rooij and Schoenmakers (2013)	Fame addiction and CSR of game companies	Different time duration should be taken into consideration when analyzing CSR of game companies. Short - to medium-term and long-term influences may be quite different.
Kwon and Johnson (2014)	Data privacy and CSR of game companies	By combining the constraints of the company, such as competitive position in the industry and the existing brand image, conduct heterogeneity analysis of the influences of the company's treatment of negative incidents.

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(2022)

Online security and CSR  
of game companies

The way to construct a virtual community, consumer's willingness of community participation, the way to construct ecological environment of the community, and the definition of security boundaries of the community.

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It can be learned that CSR has gained extensive attention in academic research and practical application. A large number of scholars have investigated the influences of CSR on various aspects of company performance from diverse perspectives, and proposed directions for future research. In general, the existing CSR research outcomes provide a substantial theoretical foundation and practical guidance for companies to implement and evaluate CSR strategies across different dimensions. Based on the above research prospect, as well as the abundant literature on CSR research, also with the research theme “on the basis of fulfilling social responsibility and transmitting positive social values, can game companies gain better enterprise value?” This thesis expands and deepens the exploration in this field. Previous research has revealed the multi-dimensional influences of CSR on company financial performance, reputation, employee satisfaction, and consumer behaviour, proposing that future research should focus on directions such as expectations of different stakeholders, multi-stage influences of CSR activities, and construction of dynamic empirical methods. Nevertheless, aiming at specific industries, for instance, the game industry, existing research lacks systematic and targeted analyses. This thesis therefore focuses on game companies to explore how they can achieve enterprise value enhancement through fulfillment of social responsibility.

### **2.5.3 Overall literature review outcomes and research direction of this thesis**

For the relationship between CSR and enterprise value, a large amount of literature supports the positive relationship between the two. First, the influences of CSR on business performance are mainly reflected in improving company reputation, enhancing consumer trust and loyalty, and ultimately increase company profitability (2.1.1). Second, CSR improves company reputation by creating a good company image and increase social cognition (2.1.2). Third, CSR is a key factor for the long-term success of a company because it helps establish long lasting competitive advantage, reduce operational risk, and strengthen the innovation capacity of the company (2.1.3). The influences of CSR on various stakeholders have also attracted extensive attention. The influence of CSR on shareholder value is mainly reflected in improving company governance, reducing capital cost, and increasing company performance (2.2.1). CSR influences consumer behavior by enhancing consumer satisfaction and loyalty

(2.2.2), and improves business efficiency by increasing employee satisfaction and loyalty (2.2.3). Empirical research methods have been widely used in CSR research, such as model testing, correlation analysis and regression analysis (2.3).

The CSR practices and related influences in games industry are gaining concern gradually. The most significant issues are gaming addiction (2.4.1), data privacy (2.4.2), and online security (2.4.3). However, current research in these fields has some limitations: few studies take the whole game industry into consideration, research on the influences of CSR on game companies' stakeholders is insufficient, and research which combines the macro industry perspective and the micro company perspective is insufficient.

First, in context of the rapid development of modern digital technology and AI technology, the change of game design concepts and value delivery tendency, and the increasing development cost, there is a lack of argumentation about the effect of fulfilling CSR in the game industry and related influences on game companies' stakeholders.

Second, under the new developing status of the game industry, existing research has not yet made a breakthrough in the research direction of CSR, that is “providing good experience for game players (customers) and building good game community”, not yet fully explored the influences of CSR implementation on stakeholders (such as suppliers, technological development, and regulators), not yet adequately clarified how these influences, in turn, affect enterprise value of game companies;

Third, most of the existing research selects specific multinational companies for case studies of CSR; however, the situation of the entire game industry is neglected. There is limitation in the target audience of a single game company. Only by combining the macro-industry perspective and the micro-company perspective could a better understanding of the relationship between CSR fulfillment and enterprise value enhancement in the game industry be obtained.

Therefore, based on the above-mentioned insufficiency in existing research, this thesis takes “Game Changer: Unlocking Enterprise Value Through CSR in the Digital Gaming Industry - A Stakeholder-Driven Quest” as the research topic, through a combination of macro-industry research and micro-company survey, explores the CSR fulfillment of game companies, corresponding influences on stakeholders, and enterprise value enhancement. To be specific, first, this thesis probes into the relationship between the implementation of CSR and enhancement of enterprise value under the context of the game industry. Theoretical and empirical analyses are employed to reveal the interaction and influence mechanism of CSR implementation on game companies and their enterprise value. This research direction not

only addresses the research gap in this specific industry, but also provides theoretical support for game companies to implement CSR strategies. Second, from a macro perspective, this thesis analyzes the influences of game companies' CSR practices on various stakeholders, such as suppliers, technological development, regulators, customers, creditors and employees, as well as how these influences, in turn, affect enterprise value. Study in this field combines the stakeholder theory with the actual conditions of game companies to explore in depth the interaction of the interests of all parties in CSR practices, thereby enriching the theoretical framework of existing CSR literature. Furthermore, through empirical research, the study uses relevant data from online game sectors of A-shares listed companies in Shanghai and Shenzhen Stock Exchanges for model testing, correlation analysis and regression analysis, therefore to empirically validate the theoretical model of the relationship between CSR practices and enterprise value enhancement in the game industry. This rigorous empirical method serves to enhance the scientificity and reliability of the research conclusions. Finally, from the micro perspective, this study conducts survey on “leading geese” multinational game companies, the “backbone” Chinese domestic game companies, and the “vitality” indie game studios, to explore the social responsibility fulfillment status of various types of game companies and the corresponding influences on enterprise value. The study provides a comprehensive understanding of the CSR practices of different types of game companies and offers insights and reference for the overall development of the industry.

## 2.6 Theoretical framework

### 2.6.1 Multi-stakeholder corporate governance theory based on contractual agent model

The multi-stakeholder corporate governance theory based on the contractual agent model derives from the theoretical basis of political philosophy and company ethics. This theory is regarded as a concept of modern company governance, which regards the company as not only a property right entity of shareholders, but also a contractual relationship of multi-stakeholders, including shareholders, employees, customers, suppliers, communities, and regulators. Each stakeholder has its own specific rights and obligations in this contractual relationship. A typical study is from Frooman (1999), who proposes the angle of contractual agent model, and applies non-cooperative game theory to explain the behavior of stakeholders. In the non-cooperative game, each party acts independently to maximize its own interests, while taking into account the possible actions of others. This model explains that in reality,

companies constantly have to make trade-offs, so as to meet the requirements and expectation of different stakeholders.

From existing literature, it can be found that the multi-stakeholder corporate governance theory based on the contractual agent model has a strong theoretical advantage in explaining the CSR action of companies, especially in explaining how a company handles its relationship with different stakeholders. For example, T. M. Jones and Wicks (1999) point out that while pursuing their own interests, companies also need to pay attention to the interests of other stakeholders. This requires a company to seek a balance between all parties when making decisions.

## **2.6.2 Theory of planned behavior**

The Theory of Planned Behavior (TPB) was proposed by social psychologist Ajzen (1985), which is widely used in health, environmental protection, education, business and other fields to predict and explain human/individual behavior and behavioral intention under certain circumstances.

According to TPB, an individual behavior is determined by his/her behavioral intentions, which are jointly influenced by Attitude, Subjective Norms, and Perceived Behavioral Control.

- (1) Attitude: value judgment of an individual for a specific behavior, in other words, a weighted aggregate indicator of an individual's expectation of the result of a specific behavior and the importance of the result to the individual.
- (2) Subjective Norm: the opinions of others whom an individual considers important about an individual's specific behavior, and whether they are willing to act on those opinions.
- (3) Perceived Behavioral Control: an individual's self-evaluation of whether he/she can successfully perform a certain behavior, including evaluation of own ability and judgment of external obstacles.

The three factors interact with each other, form the behavioral intention of an individual, ultimately lead to the occurrence of specific behaviors. In the study on preventive behavior, Montano and Kasprzyk (2015) use TPB as a predictive model and find that Attitude, Subjective Norms and Perceived Behavioral Control could effectively predict the occurrence of preventive behavior.

### **2.6.3 Regret regulation theory**

The Regret Regulation Theory was proposed by Zeelenberg (1999), which mainly studies how to regulate the regret caused by improper choices or decisions. This psychological theory proposes that people, when faced with a choice, will predict the regret that may be caused by different options, and then adjust their choice behavior to reduce the possibility of regret based on such prediction.

The Regret Regulation Theory mainly includes two parts: regret prediction and regret regulation. Regret prediction usually refers to compare the possible results of different choices and predict how strong the regret will be. Regret regulation usually refers to avoid choices that can lead to feeling of great regret, or reduce actual regret feeling after an already-made choice through various means, such as seeking new information, reevaluating the choice result. There are many studies supporting the Regret Regulation Theory. It is found that when faced with choices, people indeed predict the regret that different choices may lead to, and adjust their behavior based on this prediction. For example, Connolly and Butler (2006) find that people tend to choose the option which will lead to less regret, as they predict. Zeelenberg et al. (2002) find that after making a choice, people tend to reduce their actual regret through various means.

### **2.6.4 Stakeholder theory**

The stakeholder theory originated in the field of business management and was first proposed by Freeman (1984) in *Strategic Management: A Stakeholder Approach*. The theory advocates that companies should not only consider the interests of shareholders, but also take into account all stakeholders who have either direct or indirect relationships with the company. The stakeholders include employees, customers, suppliers, regulators, and communities. Freeman (1984) believes that the success of a company depends on balancing and satisfying the interests of all stakeholders. This viewpoint broke the traditional shareholder primacy theory for regarding a company as a socio-economic network, emphasizing the interactive relationship between the company and its stakeholders.

### **2.6.5 Responsible gaming practices theory**

The core of the responsible gaming practices theory is that, when designing, developing, selling and promoting products, game companies should take into account various factors which may influence users and society, and try best to ensure these influences are positive.

The factors include but not limited to preventing inducing and addiction, setting fair game rule, protecting users' privacy and data security, avoiding dissemination of harmful or misleading information, and complying with applicable laws and regulations. The theory has been widely used in research. Griffiths (2010) suggests that game companies should design and develop games responsibly to avoid inducing and addiction. Further, game companies should provide resources and support to help over-addicted players. In the study of King et al. (2013), it is found that game companies that follow the theory of responsible gaming practices tend to achieve higher degree of user satisfaction and loyalty, which is critical to the long-term success of the company.

## **2.6.6 Discussion on the application of theories**

This section discusses the theoretical supporting roles of the multi-stakeholder corporate governance theory based on the contractual agent model, the theory of planned behaviour, the regret regulation theory, Stakeholder theory, and the responsible gaming practices theory. The potential conflicts which may exist in these theories are also included in the discussion.

The multi-stakeholder corporate governance theory based on the contractual agent model provides an important system analysis framework for this thesis. The CSR practices in the game industry involve the distribution of benefits to multiple stakeholders, including the complex interaction among game companies, customers, suppliers, employees, creditors, regulators and other subjects. The multi-stakeholder corporate governance theory based on the contractual agent model holds that a company is not a tool to maximize the interests of a single shareholder, but rather a cooperative body composed of multiple contractual relations. This means that different stakeholders form a cooperative structure with the company through the form of contracts. The multi-stakeholder CSR fulfillment model constructed in the third chapter helps to understand the responsibility of different stakeholders from a contract perspective. Empirical findings in the fifth chapter show that in the contractual relationship, technological development, regulators, creditors and employees have strong constraints of rights and obligations, CSR fulfillment towards these subjects significantly enhances enterprise value for it has clear contract attributes and legal system foundation. The multi-stakeholder corporate governance theory based on the contractual agent model provides a comprehensive explanation of the mechanisms through which companies achieve win-win results among multiple stakeholders by means of interest contracting and interest coordination. The governance logic of this thesis is effectively supported.

The theory of planned behavior provides a micro-theoretical basis for the decision-

making motivation behind CSR fulfillment. According to the theory, the CSR behavior of an individual or organization is influenced by attitude, subjective norm and perceived behavior control. The sixth chapter of this thesis utilizes a combination of questionnaires and in-depth interviews with diverse game companies to elucidate the psychological factors and subjective motivations that underpin their engagement in CSR practices. Specifically, interviews with “backbone” domestic game companies and “vitality” indie game studios reveals that the attitudes and subjective norms of company decision-makers, that is, their propensity to proactively assume social responsibility, along with the behavioral expectations of the industry and society, serve as predominant motivations for a company to fulfil its CSR obligations. Based on the theory of planned behavior, the thesis aims to analyze the formation mechanism of behavioral intention of game company managers. Furthermore, it seeks to provide a comprehensive explanation of the relationship between initiative differences in CSR practices and the realization of enterprise value.

The regret regulation theory provides a valuable addition to the perspective of psychological decision-making mechanisms in the context of CSR fulfillment. The theory posits that when making decisions, company managers may experience emotions such as worry or regret regarding potential negative consequences that could occur in the future. In response to these emotions, managers are likely to make adjustments to their behaviour decisions to mitigate the likelihood of adverse results. The results of interviews and questionnaires conducted in Chapter 6 demonstrate that certain companies exhibit a psychology of avoidance in their CSR practices, particularly in the context of sensitive issues such as responsibility fulfillment towards regulators or the protection of user data and privacy. This tendency is driven by a concern for potential negative influences and the pressure of public opinion, which leads to more cautious behavior. This CSR motivation, predicated on regret expectation, elucidates the propensity of game companies to proactively assume responsibility in sensitive fields. This regulatory behaviour is orientated towards avoiding or mitigating negative consequences. The regret regulation theory supports the analysis and understanding of companies’ risk control behaviors in this thesis.

The stakeholder theory provides an analytical framework for interest subjects throughout the entire study. The theory posits that company operation and management should prioritize not only the interests of shareholders, but also the demands of consumers, employees, suppliers and other subjects. This is highly consistent with the research logic of this thesis. In the third chapter, the research hypotheses are proposed regarding the fulfillment of CSR towards different stakeholders. In the empirical analysis of the fifth chapter, the differentiated

influences of game companies' CSR fulfillment towards different stakeholders on enterprise value are verified. CSR fulfillment to key internal or institutional stakeholders, including regulators, employees and creditors, has been found to significantly enhance enterprise value, indicating that the establishment of stable cooperative relations in an institutional environment plays an important role in resource acquisition and organizational survival. The influence of customers and suppliers, as market-based stakeholders, is primarily reflected in transaction efficiency and trust relationships. In the absence of institutional incentives and market constraint mechanisms, the strategic value of CSR fulfillment towards these two subjects is limited, and a stable practice path for CSR is not formed for either of them. The sixth chapter is an in-depth analysis of multinational companies, domestic companies and indie developers, revealing that different types of game companies have different modes of stakeholder management. These analyses leverage the stakeholder theory, thereby enriching the interest structure and systematically unveiling the internal interaction mechanism between CSR fulfillment and enterprise value.

Responsible gaming practices theory provides a theoretical foundation for the industry's practices. The theory posits that game companies should prioritize the prevention and control of game addiction, data privacy protection, cyber security and other core issues in order to achieve effective CSR fulfillment. The second and sixth chapters of the thesis focus on the practical analysis of the unique CSR content correlated to the game industry, highlighting the inadequate CSR practices of different types of companies in these specific fields. For instance, in the sixth chapter, it is found that the CSR practices of "Leading geese" multinational companies are relatively complete, while there is a significant gap in data privacy protection and game addiction prevention of domestic companies and indie game studios. Responsible gaming practices theory provides this thesis with support in the industry reality dimension, clarifies the fields of CSR practices to be studied, and ensures the in-depth response and effective guidance to realistic industrial problems.

However, the interactive support of the aforementioned theories may also be in conflict with one another in certain aspects. For instance, the conflict between the multi-stakeholder corporate governance theory based on the contractual agent model and the Theory of Planned Behaviour is relatively significant. The contractual agent model places particular emphasis on the rational distribution of interests, stressing that contractual governance between companies and stakeholders should be based on interest demands, and advocating clear and rational contract relationship. In contrast, the Theory of Planned Behavior highlights the role of subjective motivation and psychological tendencies in business entity decision-making. It

suggests that CSR practices of business entities is not only dominated by rational contracts, but also deeply influenced by subjective factors, such as the attitudes and subjective norms of decision-makers. This conflict means that excessive emphasis on the contract governance perspective according to the contractual agent model may lead to neglect of the subjective psychological motivation of individual game developers, for the game industry is an innovative and entrepreneurial industry. Consequently, the phenomenon, that companies are still willing to take the initiative to fulfill CSR in the absence of clear contract constraints, will fail to be fully explained.

This thesis reconciles the contradiction between the multi-stakeholder corporate governance theory based on the contractual agent model and the theory of planned behaviour through a combination of macro governance structure analysis and micro psychological mechanism analysis. In terms of the research design, the empirical analysis of the model in the fifth chapter reveals the logic of contractual governance. Based on objective financial data, it verifies the relationship between enterprise value and the rational behaviour of CSR fulfillment towards multiple stakeholders. The objective constraints of the institutional and contractual environment are therefore emphasized. In the sixth chapter, questionnaire surveys and in-depth interviews are conducted to explore the subjective factors and situational motivations behind CSR practices of companies. The exploration is carried out from the perspectives of subjective psychological and behavioral motivation of individual managers, for instance, managers' attitudes, subjective norms and expectations of possible regrets. Through this comprehensive “quantitative + qualitative” research paradigm, this thesis organically combines rational governance and subjective motivation, avoids a single or fragmented research perspective, and enables the analysis of CSR practices take into account both institutional rational constraints and subjective psychological drives. A compatible and complementary research framework is thereby formed.

## 2.7 Summary

Regarding the correlation between CSR and enterprise value, this chapter undertakes a comprehensive review of extant literature on the multi-dimensional influences of CSR. The extant literature indicates that CSR practices have the capacity to directly or indirectly enhance the financial performance, reputation and long-term competitive advantage of companies. Through the stakeholder theory, the multiple influences of CSR on shareholder value, customer behavior and employee satisfaction and loyalty get further analyzed. From

the perspective of empirical research methods, this chapter reviews and evaluates the extensive application of empirical analysis methods such as model testing, correlation analysis and regression analysis in CSR research, providing a methodological basis for the subsequent empirical analysis. This chapter also particularly focuses on the specific CSR practices in the game industry, including industrial hot issues in the such as game addiction, data privacy protection and online security. The chapter then goes on to evaluate and analyze the main fields and practical achievements of current CSR practices of game companies. A detailed and in-depth review of the existing literature is conducted, highlighting the strengths and limitations of existing studies. On this basis, the research perspectives, key points and future research direction in this thesis are clarified. That is to explore how CSR practices specifically influence enterprise value in the context of Chinese game industry, so as to fill in the blank in related research fields. Subsequently, focusing on the theoretical framework of this thesis, this chapter teases out the multi-stakeholder corporate governance theory based on the contractual agent model, the theory of planned behavior, the regulation theory, the stakeholder theory and Responsible gaming practices theory. It elaborates theoretical supporting role of these theories, possible conflicts among them, and how to reconcile the conflicts.

## Chapter 3: Research Model and Hypotheses

### 3.1 Research model

Based on the stakeholder theory, the theoretical model in this thesis is constructed, trying to reveal the acting paths and internal mechanisms of CSR practices of Chinese game companies on enterprise value. It specifically includes CSR practices towards six stakeholders, suppliers, technological development, regulators, customers, creditors and employees. Among them, CSR practices to suppliers influences the management efficiency during a business cycle; CSR practices to technological development directly influences the efficiency of capital investment; CSR practices to regulators mainly influences tax, employment and human resource efficiency; CSR practices to customers is the investment in product costs and subsequent effect; CSR practices to creditors is embodied in the improvement of debt paying ability of a company; and CSR practices to employees promotes the efficiency of human capital through remuneration incentives. All these paths jointly constitute a systematic framework for CSR practices and enterprise value enhancement. Based on the research hypotheses and variables design, the model of this thesis is here proposed in Figure 3.1.

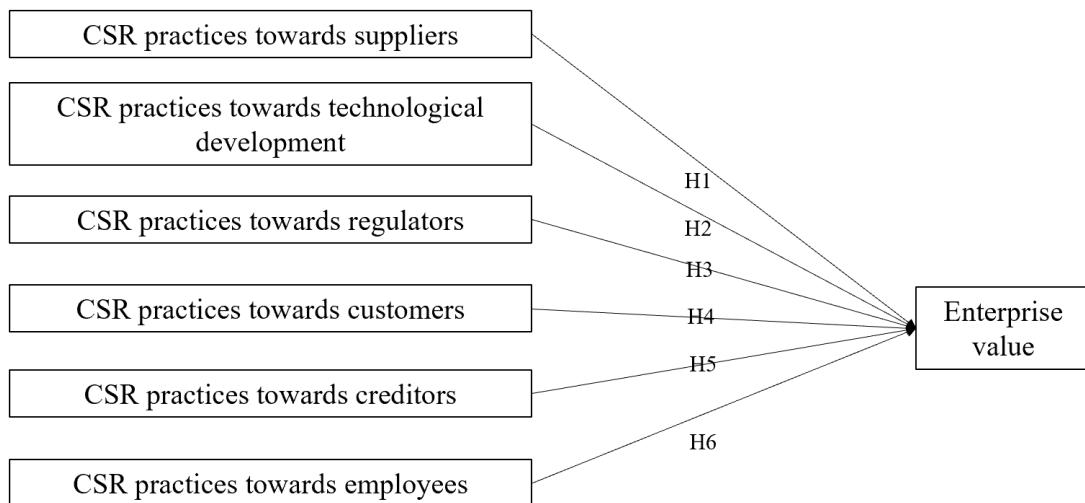


Figure 3.1 Research model

### **3.2 Research hypotheses**

#### **3.2.1 CSR practices towards suppliers**

The active CSR practices of game companies towards suppliers are conducive to building a stable industrial chain relationship and reinforcing the overall collaborative efficiency of the supply chain. From the perspective of the stakeholder theory, relationship management with suppliers, who are key external stakeholders, can directly influence the sustainable competitiveness of companies. When game companies take the initiative to assume social responsibilities in their cooperation with suppliers, such as ensuring fair trade, making timely payments, and providing technical support, they can improve the loyalty and satisfaction of suppliers, and encourage them to more actively participate in collaborative innovation and quality improvement activities. As a result, the quality of the companies' products and services will be enhanced (B. Li et al., 2025; Long, 2025; Y. Xiao et al., 2025; X. Y. Zhang et al., 2023). According to the theory of corporate social responsibility, the ethical and compliance characteristics demonstrated by companies in fulfilling supply chain responsibilities will significantly reduce the level of risk in the supply chain, avoid public crises or legal risks caused by failure to meet obligations to suppliers, enhance the company reputation and market trust, and thereby strengthen the brand influence and market competitive advantage of companies (Bai et al., 2023; Bhattacharya & Sen, 2004). Meanwhile, according to the theory of planned behavior, CSR practices towards suppliers reflect the positive attitude and value orientation of company management. Such strategic behavior will strengthen internal culture construction, optimize the efficiency of resource allocation, and achieve the goals of reducing operating costs and increasing benefits, thereby significantly and positively enhancing enterprise value (Zhuang & Li, 2025).

Therefore, this thesis assumes that active CSR practices of game companies towards suppliers play a significant role in enhancing enterprise value.

*Hypothesis 1: CSR practices towards suppliers are positively correlated to enterprise value.*

#### **3.2.2 CSR practices towards technological development**

The active CSR practices of game companies towards technological development are conducive to the enhancement of enterprise value. According to the stakeholder theory, companies can gain wide recognition and support from external stakeholders by investing in

technological research and development, and supporting the formulation and promotion of industrial technical standards (Peloza & Shang, 2011; Sun & Han, 2023). Thereby, a good industrial ecosystem can be formed. Specifically, when game companies actively carry out research on cutting-edge technologies and apply the research results to product development, the technological leadership and innovation competitiveness of the companies can be significantly enhanced, and their dominant position in the market can be effectively consolidated (B. R. Yang et al., 2024; W. Zhao & Ma, 2025). From the perspective of the resource-based theory, the positive contributions of companies in the field of technology can significantly enhance the knowledge accumulation and technological resource integration capabilities within the organization, thereby building a sustainable core competitive advantage (Y. L. Guo & Liu, 2025; Q. L. Wang et al., 2021). According to the signal transmission theory (Spence, 1973), companies' active participation in technological standardization, open-source projects and the construction of public technological platforms will convey strong signals of technological innovation to the market and capital, thereby improving the external image of companies and enhancing brand reputation as well as the value of intangible assets. According to the theory of planned behavior, when a company clearly expresses and practices its commitment to technological development, it can positively influence the sense of identity and mission of the technical personnel, stimulate the innovation motivation and work enthusiasm of employees, and thereby enhance the overall human resources efficiency and value creation ability (Gao & Tang, 2023). Based on responsible gaming practices theory, when game companies actively fulfill CSR towards technological development, they can also improve product security and user experience through technological progress, avoid reputation risks and legal risks caused by lagging technology or product quality defects, and thereby improve the stability and sustainability of business operations (King et al., 2013). In conclusion, by active CSR practices to technological development, game companies can significantly enhance their enterprise value from multiple dimensions such as innovation competitiveness, brand image, internal resource capabilities, and risk control.

Therefore, this thesis assumes that active CSR practices of game companies towards technological development can enhance enterprise value from different dimensions.

*Hypothesis 2: CSR practices towards technological development are positively correlated to enterprise value.*

### **3.2.3 CSR practices towards regulators**

Game companies' CSR practices towards regulators mainly include responsibility to tax and

responsibility to social employment. Regulators, as key stakeholders, have a significant influence on the operational performance and enterprise value of game companies through policy decision-making (J. T. Wang & Wang, 2025). From the perspective of company-regulator interaction, clearly distinguishing the tax responsibility and employment responsibility of companies towards regulators has theoretical and practical significance.

In terms of responsibility to tax, game companies can establish a law-abiding and compliant company image in the eyes of regulators by paying taxes in accordance with the law and actively responding to government tax policies. Companies that proactively fulfill their tax obligations and respond to tax incentive policies or industry support policies advocated by regulators may receive further policy support, such as tax relief, special research and development funding support, and priority rights in public tenders (Xu et al., 2024). The above-mentioned policy support can lower company costs, enhance competitive advantages, and contribute to enhancing enterprise value. At the same time, a good record of fulfilling responsibilities to tax can enhance regulators' trust in companies, increase the space and bargaining power for company-regulator communication and negotiation, and obtain more policy flexibility in the process of product approval, market access, and overseas business expansion (J. Tang et al., 2023; B. Wang & Rong, 2024).

In terms of responsibility to social employment, game companies that address social employment, improve human capital efficiency, and enhance the overall social employment environment and production efficiency in response to regulators' policies and requirements for promoting employment and social productive force development can strengthen their relationship with regulators and reduce the risk of being subject to strict regulatory measures. By expanding employment and improving labor efficiency, companies fulfill their responsibility to promote stable, healthy, and high-quality social employment, which is beneficial for gaining recognition from regulators and reducing the severity of regulatory scrutiny. A good record of responsibility to employment can further increase the participation of companies in labor policy formulation and enhance the policy inclusiveness of regulators towards business operations.

Therefore, the following hypotheses are proposed based on the above analysis:

*Hypothesis 3: CSR practices towards regulators are positively correlated to enterprise value.*

*Hypothesis 3a: CSR practices towards regulators in terms of tax revenue are positively correlated to enterprise value.*

*Hypothesis 3b: CSR practices towards regulators in terms of employment are positively*

*correlated to enterprise value.*

### **3.2.4 CSR practices towards customers**

When a game company actively fulfills social responsibility to customers (namely game users), its enterprise value can be greatly enhanced.

CSR practices towards customers on a game company's own initiative can strengthen the trust from customers. According to the social exchange theory (Blau, 1964), when purchasing products or experiencing services, customers not only care about the quality of the products or services, but also pay close attention to whether the company behaviors conform to moral and ethical standards (B. Wang & Rong, 2024). Customers may be more inclined to trust the company and to continue using the company's products or services when a company shows concern and respect for customer interests, such as user privacy protection, game fairness assurance, and excessive consumption limitation (Bhattacharya & Sen, 2004; Sun & Han, 2023). Such kind of trust can enhance customer loyalty, which leads to increase of revenue and profit, thereby enhancing the enterprise value.

Active fulfillment of CSR can improve the brand image and make the company stand out in the fierce market competition. According to brand equity theory (Aaker, 1991), companies with active CSR practices can build a more attractive brand image to obtain more customers, promote sales volume and increase market share, thereby enhancing financial performance and enterprise value.

Therefore, this thesis assumes that through active CSR practices towards customers, game companies can enhance enterprise value from multiple aspects.

*Hypothesis 4: CSR practices towards customers are positively correlated to enterprise value.*

### **3.2.5 CSR practices towards creditors**

When a game company actively fulfills social responsibility to creditors, its enterprise value can be significantly enhanced. According to the agency theory (Jensen & Meckling, 1979), there is a significant information asymmetry between business managers and creditors, resulting in creditors' worry of lending risks. Active CSR fulfillment to creditors, such as disclosing transparent financial reports and abiding by debt payment agreements, can mitigate the credit risks which creditors may face with and strengthen their trust in the company, thereby reducing debt financing costs and enhancing enterprise value (Shi et al., 2023).

According to the signaling theory (Spence, 1973), CSR practices of a company can be deemed as a positive signal to convey its good operating conditions and risk management ability to the outside world. Active CSR fulfillment to creditors can help game companies establish a good reputation in the debt market, improve debt financing ability, expand financing channels, and thus enhance the enterprise value (X. X. Liu & Li, 2023).

Therefore, this thesis assumes that through active CSR practices towards creditors, game companies can not only enhance the trust from creditors and reduce financing cost, but also improve financing capacity and stabilize financing structure, and consequently enhance enterprise value.

*Hypothesis 5: CSR practices towards creditors are positively correlated to enterprise value.*

### **3.2.6 CSR practices towards employees**

When a game company actively fulfills social responsibility to employees, its enterprise value can be significantly enhanced. The human capital theory (Becker, 1993) points out that employees are important resources for companies to create value. CSR fulfillment towards employees includes providing a good working environment, satisfying employees' work and life needs, and ensuring employees' rights and interests, all of which can help game companies improve employees' work efficiency and innovation ability, and thereby increase economic benefit (Zheng et al., 2025) and enterprise value. According to the social exchange theory (Blau, 1968; Cook et al., 2013), employees will respond to CSR practices of their companies. The more active a company's CSR to employees is, the higher the employees' loyalty and satisfaction to the company will be. Employees are more willing to make extra efforts and perform beyond their duty for such a company, and this phenomenon will directly reflect in the productivity and quality of the company (Y. L. Li, 2024), thereby enhancing enterprise value. The stakeholder theory (Freeman et al., 2010) points out that companies need to maintain the relationship with all stakeholders. Employees are a company's internal stakeholders, whose satisfaction, morale and innovation ability directly influence the operation and development of the company. When a company actively fulfills CSR to employees, employee morale will be encouraged, employee turnover rate will be reduced, more talents will be attracted and retained, and ultimately enterprise value will be enhanced (X. X. Tang et al., 2025).

Therefore, this thesis assumes that through active CSR practices towards employees, game companies can not only improve the work efficiency and satisfaction of employees, but

also reduce employee turnover rate and retain talents, all of which are beneficial to enhancing enterprise value.

*Hypothesis 6: CSR practices towards employees are positively correlated to enterprise value.*

### **3.3 Summary**

Based on the literature review and theoretical framework presented in Chapter 2, this chapter elaborates on the construction logic of the empirical model and the relationships among variables, clearly formulating six research hypotheses. These hypotheses specifically examine how game companies' CSR practices toward six stakeholders-suppliers, technological development, regulators, customers, creditors, and employees-on enterprise value, thereby establishing a theoretical and analytical framework.

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## Chapter 4: Research Design

### 4.1 Research method

This study employs a combination of data analysis method and questionnaire method to systematically explore the complex relationship between CSR practices of game companies and their enterprise value.

#### 4.1.1 Data analysis methods

The empirical research methods primarily employed in this study are as follows:

First, the descriptive statistical analysis method. This study starts with Z-standardization of 286 sample data points spanning 11 years from 2013 to 2023 to eliminate the influence of dimensional differences on the analysis (Hanafiah et al., 2017). Subsequently, by analyzing the minimum value, maximum value, mean, median, and standard deviation of the variables, the overall distribution characteristics of the data and its skewness are revealed, providing a preliminary foundation for subsequent quantitative analysis.

Second, the correlation analysis method. This study adopts Pearson correlation analysis to examine the linear relationships among variables, clarifying the strength and direction of the correlation between the dependent variable (ROA) and the independent variables (Sup, Tech, Taxr, Cus, Cre, Sta, and Sto). This analysis method provides initial insights into the potential influencing mechanisms and directional relationships among the variables, offering necessary empirical support for model validation.

Third, the vector auto-regression (VAR) model analysis method. This study further utilizes the VAR model to examine the dynamic interactions among multiple variables. The model's optimal lag order is determined according to four criteria: the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), Final Prediction Error (FPE), and Hannan-Quinn Information Criterion (HQIC) (Liew, 2021). The AIC evaluates the trade-off between model fit and complexity, while the BIC, derived from the Bayesian framework, imposes a stricter penalty on the number of model parameters. The FPE measures the model's prediction error, and the HQIC strikes a balance between the AIC and BIC by considering both model complexity and goodness of fit. The reason for selecting these criteria is that they

collectively address the trade-off between model fit and complexity, thereby mitigating the risks of overfitting or oversimplification (Chamalwaa et al., 2021). Each criterion has distinct emphases: the AIC prioritizes model fit and tends to select more complex models; the BIC emphasizes number of penalty parameters, tending to select simpler models; the HQIC is between the AIC and BIC; and the FPE relies directly on prediction accuracy. By employing all four criteria, this study ensures a comprehensive evaluation of the model from multiple perspectives, enhancing the robustness and reliability of the final selected model. In empirical research, when selecting lag order, combining multiple criteria is a common practice to avoid the limitations of a single indicator, thereby improving the scientific rigor and validity of model selection. The optimal lag order is determined as 1 based on the strictest criterion, the BIC (Aho et al., 2014). During the VAR model analysis, this study conducts VAR model estimation, AR characteristic root analysis, and orthogonal impulse response analysis. All these steps collectively reveal the short-term dynamic interactions among variables and the dynamic influencing process of CSR indicators on enterprise value.

Fourth, the linear regression analysis method. Based on the VAR model, multivariate linear regression analysis is further conducted to examine CSR practices towards different stakeholders, including suppliers, technological development, regulators, customers, creditors, employees, and shareholders. The regression analysis constructs multiple regression equations by combining different variable indicators. Through coefficient estimates, t-test statistics,  $R^2$  and adjusted  $R^2$  values, model significance test (F-test), and comparisons of regression equations before and after introducing control variables, the significance and direction of the relationship between each stakeholder's CSR indicators and enterprise value are determined, thereby verifying the research hypotheses.

Fifth, the robustness test method. In this study, alternative indicators are introduced into regression analysis for robustness tests, thereby verifying the stability of the primary empirical findings. For example, in the analyses of CSR towards technological development, return on human resources investment, and shareholder responsibility, alternative indicators are employed for robustness tests to ensure the validity and stability of the empirical findings.

#### **4.1.2 Questionnaire method**

To address the limitations of singularity and static nature of financial data, this study employs questionnaire method in Chapter 6. By expanding the scope of research subjects and conducting subjective evaluation, this approach aims to facilitate a more explanatory and practice-oriented analysis of CSR practices. The questionnaire is structured and designed to

include basic information, assessment of multidimensional CSR practices, and open-ended feedback. When designing the questionnaire, quantitative evaluation is conducted using a 5-point Likert scale, while qualitative opinions are gathered through open-ended questions. The questionnaire content is based on established CSR theories and adapted to the unique characteristics of the game industry, ensuring both theoretical rigor and industry relevance. Data are collected via the WJX.CN online platform. Aiming at practitioners and stakeholders in the game industry, the questionnaire is distributed through targeted channels such as WeChat and Maimai job market platform to maximize respondent diversity and representativeness. After collecting the questionnaires, reliability test is conducted to the questionnaire scale to ensure the internal consistency of the scale, thereby strengthening the validity of subsequent analyses.

## 4.2 Definition of variables

### 4.2.1 CSR of game company

Focusing on the CSR practices of Chinese game companies, and the corresponding influences on enterprise value, the thesis identifies independent variables by selecting indicators from seven dimensions: CSR to Suppliers (Sup), CSR to Technological Development (Tech), CSR to Regulators (Taxr), CSR to Customers (Cus), CSR to Creditors (Cre), CSR to Employees (Sta), and CSR to Shareholders (Sto). Both financial and non-financial indicators are selected to systematically measure the influences of CSR practices on enterprise value.

For CSR to suppliers (Sup), the measurement adopts indicator analysis of net operating cycle (J. Xu et al., 2023; Z. Zeng & Tang, 2023). The net operating cycle is calculated by adding accounts receivable turnover days plus inventory turnover days and subtracting accounts payable turnover days., which is used to reflect the pressure level of the supply chain's capital turnover during business operation. The longer the net operating cycle, the more pressure a company faces in terms of financial liquidity, reflecting changes in its ability to fulfill its responsibilities to upstream suppliers.

The measurement of CSR to technological development (Tech) consists of two indicators: the positive indicator is the return on invested capital (Tech\_1) and the negative indicator (used for robustness test) is cash flow adequacy ratio (Tech\_2) (Fatimah, 2022; H. M. Liu et al., 2022; X. Y. Wu & Liu, 2023). The return on invested capital (ROIC) represents the operating profitability of a company's total invested capitals. No matter deriving from debt or

equity, all capitals are incorporated in the calculation. As the indicator for robustness test, the cash flow adequacy ratio can demonstrate the capability of operating cash flow to cover capital expenditures, inventories changes and dividend payments. Therefore, it can reflect the sustainability and robustness of a company's investment activities, such as technology research and development.

CSR to regulators (Taxr) is measured by three indicators: the ratio of tax payable to total assets (Taxr\_1) (Fuadah & Kalsum, 2021), the total number of employees in the company (Taxr\_2) (Diao et al., 2025), and the return on human investment (Taxr\_3, a robustness test indicator) (K. Z. Dai, 2011). Among them, the ratio of tax payable to total assets reflects the degree of tax compliance and obligation fulfillment under the supervision of regulators; the total number of employees reflects the external effect of CSR from the perspective of contribution to social employment; and the return on human investment (ROP) is dedicated to the robustness test, which measures the efficiency of human resource investment through the ratio of earnings before interest and tax (EBIT) to total payroll. ROP is applicable to human capital-intensive industries. It is suitable for industries of intensive human capital, especially game software service companies.

CSR to customers (Cus) is measured by the ratio of main business cost (L. Li & Yuan, 2020), which reflects the ability of a company to control the cost of products and services, as well as its level of pricing strategy (Z. Z. Li & Zhang, 2018). Lower Cus indicator reflects that a company has the ability to create higher value at a reasonable cost, which means it can meet customer needs and enhance customer satisfaction effectively.

CSR to creditors (Cre) is measured by cash-to-short-term-debt ratio, that is, the ratio of monetary funds to current liabilities. It is an effective indicator for measuring the ability of game companies to fulfill responsibilities to creditors. Wijayanti (2022) points out that short-term asset liquidity directly reflects a company's short-term debt-paying ability, and the cash-to-short-term debt ratio can more accurately demonstrate a company's ability to cover short-term debts with highly liquid assets. The higher this ratio is, the lower the company's debt repayment risk is, and the higher the protection degree for creditors' interests. Sardo et al. (2022) further point out that the ratio of short-term debt of a company is closely related to its risk of financial distress. Companies with a higher cash-to-short-term debt ratio usually have a lower probability of financial distress and are more likely to gain the trust of creditors. When a company has sufficient liquid assets to meet the payment needs of short-term debts upon maturity, it means the company has a strong ability to fulfill debt obligations. Furthermore, Serrasqueiro et al. (2025) find that when small and medium-sized companies are confronted

with financial distress of relatively high costs, they tend to optimize their short-term and long-term debt structures. In this process, the cash-to-short-term debt ratio serves as an important reference indicator, reflecting the stability of the company's capital structure and the reliability of debt performance. Therefore, the indicator of cash-to-short-term debt ratio can effectively reveal a company's performance of fulfilling financial obligations. The higher the indicator, the lower the risk companies will face when fulfilling debt repayment obligations, and the higher the protection of creditor rights and interests. The indicator has important reference significance for evaluating the financial soundness and debt risk control of companies.

CSR to employees (Sta) is measured by the ratio of payroll payable. It is the ratio of payroll payable to total operating cost. It can effectively measure the fulfillment of responsibilities by game companies towards their employees. Chia-Chi (2024) points out that there is a significant positive correlation between employee compensation policies and company operating performance. The compensation level directly reflects the degree to which a company recognizes the labor value of employees. A higher proportion of compensation indicates that in terms of financial resources, a company attaches greater importance to motivating and safeguarding employees. This not only improves employee satisfaction and loyalty to their organization but also significantly promotes the company's operational performance. Sitopu et al. (2021) further confirm that companies improve the work enthusiasm and sense of discipline of employees through an effective compensation system. Compensation plays an important incentive role in improving the employee performance. A higher ratio of payroll payable to operating costs indicates that the company is willing to invest more resources to ensure employee welfare, and its degree of fulfilling CSR towards employees is higher. Istanti and Negoro (2021) point out that compensation not only influences the individual performance of employees but also indirectly enhances the overall performance of the organization by reducing work pressure and improving organizational citizenship behavior (OCB). Companies with a high ratio of payroll payable usually perform more actively in terms of responsibility fulfillment towards employees, thereby generating higher organizational cohesion and employee satisfaction. Therefore, it is rational and sufficiently theoretically supported to take the ratio of payroll payable as a specific financial indicator to measure game companies' CSR practices towards employees. This ratio is the relative size of the investment in employee compensation in the overall operating expenses of a company, which can effectively reflect the degree of implementation of the company policies on employee welfare guarantee and employee incentives. A higher ratio of employee

compensation usually indicates that a company holds a higher CSR awareness in employee incentives as well as employee rights and interest protection.

As the most central stakeholder under the traditional enterprise value orientation, shareholders' correlation with enterprise value has been widely tested in the existing literature, and a relatively solid theoretical and empirical consensus has been formed. In this thesis, the responsibility of game companies to shareholders is included in the variable system. Parallel comparison of shareholders with other stakeholders in the research hypotheses will be conducted so as to enhance the systematical and complete analysis. CSR to shareholders (Sto) is measured by two indicators: basic earnings per share (Sto\_1, abbreviate to EPS) and free cash flow per share (Sto\_2). The indicators - basic earnings per share (EPS) and free cash flow per share - can effectively measure the responsibility fulfillment by game companies towards shareholders. Gharaibeh et al. (2022) point out that EPS is an important financial indicator for measuring a company's profitability and value creation for shareholders. EPS directly reflects the ability of a company to transform operating results into shareholders' interests. A higher EPS indicates that the company effectively guarantees and returns to shareholders' interests. Therefore, EPS is widely used to evaluate the quality of company management in fulfilling responsibilities to shareholders. Furthermore, Roqijah et al. (2022) emphasize that a company's cash flow condition, especially the free cash flow per share, has a significant positive correlation with stock returns. High free cash flow per share of a company means it owns abundant cash resources for dividend distribution or reinvestment. Free cash flow per share directly reflects a company's actual contribution to shareholder returns and long-term wealth accumulation. The research of Damodaran (2024) indicates that free cash flow per share is one of the core indicators for measuring the value creation ability of a company, and it can intuitively reflect the cash returns created by the company for its shareholders and its future growth potential. Therefore, basic EPS directly reflects the value-creating ability of business operating results for shareholders. Free cash flow per share accurately reflects the extent to which shareholders obtain real economic benefits through the comparison between the actual free cash flow of the company and the equity scale. Adoption of the two indicators can comprehensively reveal the mechanism by which the state of business operating influences the return to shareholders.

#### **4.2.2 Enterprise value**

Referring to the research of M. H. Liu and Zhang (2020), Lu and Xu (2019), and other scholars, the return on assets (ROA) is selected as an dependent variable to measure the

enterprise value. ROA is the ratio of the operating income available for distribution by investors to the average value of company total assets during the reporting period ( $ROA = \text{net profit} \times 2 / (\text{total assets at the beginning of the period} + \text{total assets at the end of the period}) \times 100\%$ ). ROA can comprehensively reflect the efficiency and effectiveness of the profit generated by utilizing all assets, which can also demonstrate the extent to which the overall business operating results contribute to the value of investors. This indicator incorporates two core elements of net profit and asset size, and is able to explicitly assess the influences of CSR practices on company financial performance from the perspective of asset management efficiency. ROA has been widely used in empirical research related to enterprise value.

#### 4.2.3 Control variables

Through comprehensive consideration to the macro economy and social development characteristics of the provinces and regions where the listed game companies are located, seven indicators are selected as control variables, including the level of economic development (Ecdl, natural logarithm of GDP per capita), infrastructure development (Infra, natural logarithm of road area per capita), the degree of informationization (Info, natural logarithm of the number of Internet broadband access users), the level of human capital (HuCap, natural logarithm of university students per million), labor cost (Laborc, natural logarithm of per capita wage), industrial structure (Indstru, ratio of total output value of tertiary and secondary industries), and openness to the outside world (Open, natural logarithm of the actual amount of foreign investment usage). The model also incorporates fixed effects for year (Year) and individual security (No.) to control the disturbances of inter-annual macroeconomic fluctuations and individual company differences. Among the indicators, GDP per capita represents the level of regional economic development, and companies in developed regions usually have higher access to resources and have a competitive advantage in the market. The level of infrastructure construction and the degree of informationization reflect the basic conditions of regional development, and influences the operational efficiency and transaction costs of the companies. The level of human capital and labor costs directly influence the reserve of talents, innovation capacity and operating costs of companies. The industrial structure reflects the transformation and upgrading degree of regional economy, and regions with developed service industries are more conducive to the development of game companies. The degree of openness determines the opportunities and competitive pressures for regional companies to integrate into the global market. The inclusion of the above control variables can effectively avoid the potential interference on the research conclusions which

may be caused by differences in regional economy and social development. Consequently, the robustness of the judgement on the relationship between social CSR and enterprise value can get ensured.

Based on the research results summarized in literature review, the definition and calculation methods of variables in this thesis are as shown in Table 4.1.

Table 4.1 Definitions and calculation methods of variables

Variable type	Variable symbol	Variable	Meaning of measurement indicator	Data sources
Dependent variable	ROA	Return on assets	Return on assets (ROA) is the percentage of the operating income available for distribution by investors to the total assets within company reporting period, reflecting the ability of investors (including minority shareholder interests) to make profits from all assets. ROA= Net profit *2 / (Total assets at beginning + Total assets at end of period)*100%	Wind financial database
		Sup	CSR towards suppliers	
	Tech	CSR towards technological development	Net operating cycle, reflecting the pressure of working capital turnover of goods. Net operating period = Accounts receivable turnover days + inventory turnover days - accounts payable turnover days	
			(Positive indicator) return on invested capital (ROIC) is the rate of return earned on all invested capital in manufacturing and operating activities, regardless of whether the invested capital is called debt or equity. The numerator refers to the after-tax profit that a company should report if it is financed entirely on equity financing, and the denominator is the sum of all the cash sources which demand a return. ROIC = EBIT *(1- effective tax rate)*2 / (all invested capital at beginning + all invested capital at end of period)	
			When the income tax >0, the effective tax rate = income tax/total profit, otherwise effective tax rate = 0 (Negative indicator) cash to investment ratio.	
	Taxr	CSR towards regulators	It reflects the ability of the cash generated by company operation to meet the demand of capital expenditure, inventory increase and cash dividend payment. Cash to investment ratio = Net cash flows generated from operation/(cash paid for the purchase and construction of fixed assets, intangible assets and other long-term assets - reduction in inventories + cash paid for dividends, profits or interest payments).	
			Taxes payable/total assets	
			Total number of employees, it is for measuring the handling of employment problems. The number of employees disclosed in a company's most recent announcement on a specified date.	
	Taxr	CSR towards regulators	ROP, return on human investment (human resource efficiency).	
			ROP is the profit rate of return on human resource input, which reflects the value of the company compared with the value of the employees. P refers to employee value and R refers to the enterprise value. This indicator is appropriate for companies where the main cost is human input, such as software services. ROP = EBIT (TTM)/Total payroll (TTM) *100%	

				Where EBIT = total profit + financial expenses.
	Cus	CSR towards customers		Ratio of main business cost = Main business cost/revenue
	Cre	CSR towards creditors		Cash-to-short-term-debt ratio is the ratio of monetary funds to current liabilities. Cash-to-short-term-debt ratio = monetary funds / (non-current liabilities due within one year + short-term borrowings)
	Sta	CSR towards employees		Ratio of payroll payable = Payroll payable/total operating cost
	Sto	CSR towards shareholders (Comparative analysis)	Sto_1 (for robustness test)	Basic EPS (earnings per share) Free cash flow per share is the ratio of shareholder free cash flow (Wind calculation) during a specific reporting period to total equity at the end of the reporting period. Free cash flow per share = shareholder free cash flow/total equity at end of period Where shareholder free cash flow = Company free cash flow - Cash repayments of amounts borrowed + Cash received from borrowings + Cash received from issuing bonds = Earnings before interest and after tax + depreciation and amortization - increase in working capital - capital expenditure = EBIT*(1 - income tax rate) + depreciation of fixed assets + amortization of intangible assets + amortization of long-term prepaid expenses - increase in working capital - Cash paid for the purchase and construction of fixed intangible and long-term assets] - Cash repayments of amounts borrowed + Cash received from borrowings + Cash received from issuing bonds Income tax rate = Income tax/total profit
Control variable	Ecodl	Economic development level		The natural logarithm of GDP per capita
	Infra	Infrastructure construction		The natural logarithm of road area per capita
	Info	Informationization degree		The natural logarithm of Internet broadband access users
	HuCap	Human capital level		The natural logarithm of college students per million people
	Laborc	Labor cost		The natural logarithm of per capita wage
	Indstru	Industrial structure		The ratio of total output value of tertiary and secondary industries
	Open	Degree of opening up		The natural logarithm of actual amount of foreign capital usage
Fixed effect control	Year	Year	Control of year effects	Wind Economic Database
	No.	Stock code	Control of individual effects	

## 4.3 Research subject selection and data source

### 4.3.1 Research subject selection

Research in this thesis can be divided into secondary data research and primary data research.

(1) Subject of secondary data research: Listed Chinese companies from the online game sector of Shanghai and Shenzhen Stock Exchanges (A-shares) are selected as the subject for survey.

Consideration of time in the selection: The rapid development period of Chinese game industry was from 2014 to 2015, with the acceleration of network speed led by the burst of 4G network bringing mobile games to the outbreak period. Mobile games such as “Honor of Kings”, “Fantasy Westward Journey” and “Infinite Borders” were all launched during this period. Also, 2014 was the first year of the era of Chinese H5 (Html 5) mini games, in which many listed companies began to add game section into their business layout. This thesis selects listed companies under the “Shenyin Wanguo industry category - 2021 - SW mass media - SW game II” in Wind Financial Database as the research subjects. Considering the scale of the data and frequency of CSR performance disclosure in the game industry, also in accordance to the research method of Yi et al. (2023), relevant data of the company are all based on publicly available annual data..

Consideration of market characteristics in the selection: When researching on the CSR practices and enterprise value orientation of Chinese game companies, A-shares (Shanghai and Shenzhen Stock Exchanges) listed game companies have the unique advantage to be the research subjects. First, compared to Hongkong Stock and American Stock Exchanges, A-shares of the Chinese mainland market face more direct and specific impact from regulatory policies. That is to say, the regulatory environment of the industry is severe, and permission for game issuance is strictly restricted. Regulatory measures directly influence the product development, market access, and marketing strategies of game companies, which in turn affect the method and degree of companies' CSR practices. Second, A-shares listed companies are required to strictly abide by laws and regulations of information disclosure and company governance, which provides the research with data support of high transparency and reliability. By studying how these companies operate under the particular regulatory framework, we can more accurately grasp the status quo and trends of CSR practices in Chinese game industry, and therefore propose more targeted and effective development

suggestions. Therefore, to select secondary data of game companies from A-shares (Wind Financial Database, and category SW mass media - SW game II of Shenyin Wanguo industry category 2021 version) will strengthen the relevance and depth of the research in both theoretical and practical levels. The companies are shown in Table 3.2. Through data collection and screening, the total of data span of 11 years from 2013 to 2023 has been obtained, the total number of data points is 286.

Table 3.2 Chinese listed game companies (category *SW mass media - SW game II* of Shenyin Wanguo industry category 2021 version)

Code	Name	Scale	Found date	Province
002174.SZ	Yoozoo Interactive	Large	22-09-1995	Fujian
002425.SZ	Kaiser (China) Culture	Large	29-12-1994	Guangdong
002517.SZ	Kingnet Network	Large	03-01-2000	Fujian
002555.SZ	37 Interactive Entertainment Network Technology Group	Large	26-05-1995	Anhui
002558.SZ	Giant Network Group	Large	22-07-1997	Chongqing
002602.SZ	Zhejiang Century Huatong Group	Large	31-10-2005	Zhejiang
002605.SZ	Shanghai Yaoji Technology	Large	13-09-1989	Shanghai
002624.SZ	Perfect World	Large	27-08-1999	Zhejiang
002919.SZ	Guangdong Mingchen	Large	14-12-1994	Guangdong
300002.SZ	Beijing Ultrapower Software	Large	18-05-2001	Beijing
300031.SZ	Wuxi Boton Technology	Large	27-12-2000	Jiangsu
300043.SZ	Rastar Group	Large	31-05-2000	Guangdong
300052.SZ	Shenzhen Zqgame	Large	22-07-2003	Guangdong
300113.SZ	Hangzhou Shunwang Technology	Large	11-07-2005	Zhejiang
300299.SZ	Fuchun Communications	Large	02-03-2001	Fujian
300315.SZ	OURPALM	Large	02-08-2004	Beijing
300418.SZ	Kunlun Tech	Large	27-03-2008	Beijing
300459.SZ	Zhejiang Jinke Tom Culture Industry	Large	12-06-2007	Zhejiang
300467.SZ	Sichuan Xunyou Network Technology	Large	07-08-2008	Sichuan
300494.SZ	Hubei Century Network Technology	Large	24-11-2009	Hubei
300533.SZ	Shenzhen Bingchuan Network	Large	21-01-2008	Guangdong
600633.SH	Zhejiang Daily Digital Culture Group	Large	01-07-1992	Zhejiang
600715.SH	Cultural Investment Holdings	Large	16-04-1993	Beijing
600892.SH	Dasheng Times Cultural Investment	Medium	01-09-1993	Guangdong
603258.SH	Hangzhou Electronic Soul Network Technology	Large	01-09-2008	Zhejiang
603444.SH	G-bits Network Technology (Xiamen)	Large	26-03-2004	Fujian

(2) Subject of primary data research: “Leading geese” multinational game companies, “Backbone” domestic game companies, and “Vitality” indie game studios.

In order to further explore CSR as well as the social value of game companies, “Leading geese” multinational game companies, “Backbone” domestic game companies, and “Vitality” indie game studios are selected as selected for primary data collection. Through questionnaire survey, the overall picture of the company’s social responsibility and enterprise value will be illustrated, and the cognition and implementation of the company’s social responsibility from different stakeholders will be deeply dug, so as to achieve targeted micro-analysis of the

empirical research.

#### 4.3.2 Data source

The data in Chapter 5 are collected from the Wind Financial Database, while combining data from the China Stock Market & Accounting Research Database (CSMAR) and the Choice database of Eastmoney.com. In 2008, the Shanghai Stock Exchange issued *the Notice on Strengthening the Social Responsibility Work of Listed Companies and the Guidelines on Environmental Information Disclosure of Listed Companies of the Shanghai Stock Exchange*, which put forward regulations for the social responsibility work of Chinese listed companies. With a view to ensuring the integrity and usability of the CSR data, the source and time range of the data were appropriately subjected to appropriate screening and limitation in this thesis (From 2013 to 2023, after CSR notice and disclosure guidelines being issued by Shanghai Stock Exchange, and then gradually penetrating into the market). We have also examined the annual reports of each sampled companies (A-shares of the Shanghai and Shenzhen Stock Exchanges) to identify any tax data that may be absent from the databases.

### 4.4 Summary

This chapter establishes a comprehensive research design framework by addressing three key components: research methods, variables definition, and data sources. The method section systematically integrates both data analysis and questionnaire methods, developing a comprehensive research model that incorporates both secondary and primary data. The data analysis method employs descriptive statistics, Pearson correlation analysis, VAR model analysis, linear regression, and robustness tests to reveal the multidimensional dynamic correlations and causal mechanisms among variables. The questionnaire survey further broadens sample diversity and strengthens the practical applicability of this study.

Regarding definition of variable, enterprise value is measured using return on assets (ROA), while CSR practices are subdivided into CSR towards suppliers, technological development, regulators, customers, creditors, employees, and shareholders. These practices are measured using both financial and non-financial indicators, with supplementary robustness tests conducted to ensure indicator reliability. Additionally, to control the influence of regional macro factors, a set of control variables accounting for regional heterogeneity is implemented, encompassing economic development, informatization degree, human capital level, and degree of opening up.

The data in this study are primarily collected from the Wind Financial Database, the China Stock Market & Accounting Research Database (CSMAR), and the Choice database of Eastmoney.com. A total of 286 data points encompassing the SW game II category of Chinese A-shares (Shanghai and Shenzhen Stock Exchanges) from 2013 to 2023 are collected, ensuring industry representativeness and temporal stability. This dataset is supplemented by questionnaire surveys conducted among different types of game companies, including multinational game companies, Chinese domestic game companies and indie game studios, thereby enhancing the study's ability to explain realistic complexity and heterogeneity. These integrated approaches constitute a systematic and sound research design in terms of theoretical logic, empirical strategy, and comprehensive data support, providing a robust basis for subsequent empirical analysis.

## Chapter 5: Data Analysis and Results

### 5.1 Descriptive statistical analysis

This section starts with Z-standardization of 286 research data points spanning 11 years from 2013 to 2023, and then followed by descriptive statistical analysis. The analysis results, presented in Table 5.1 below, are as follows: the mean values of the variables approach zero and the standard deviation is 1. This indicates that the standardization of variables effectively eliminates the influences of differences in units and dimensions on empirical analysis. From the range of variable distributions, it is evident that there are significant differences between the minimum and maximum values of each variable. For example, the standardized range of CSR to Suppliers (Sup) variable is -3.210 to 10.891, while the maximum value for Robustness Indicator of CSR to Technological Development (Tech\_2) is 16.844, and the maximum value for Indicator of CSR to Regulators (Taxr\_1) is 14.862. The majority of variables have a median less than zero, indicating a slight left-skewed distribution of the overall data. This suggests that most surveyed companies have performance indicators slightly below the mean.

Table 5.1 Descriptive statistics analysis

Indicator	n	Min value	Max value	Average value	Standard deviation	Median
ROA	286	-3.905	5.061	-0.000	1.000	-0.036
Sup	286	-3.210	10.891	-0.000	1.000	-0.233
Tech_1	286	-7.236	5.121	-0.000	1.000	-0.052
Tech_2	286	-0.151	16.844	-0.000	1.000	-0.063
Taxr_1	286	-0.578	14.862	0.000	1.000	-0.173
Taxr_2	286	-1.132	4.135	0.000	1.000	-0.312
Taxr_3	286	-6.184	6.156	0.000	1.000	0.049
Cus	286	-0.943	8.796	-0.000	1.000	-0.196
Cre	286	-0.244	9.484	-0.000	1.000	-0.226
Sta	286	-1.014	5.409	-0.000	1.000	-0.315
Sto_1	286	-2.282	7.648	-0.000	1.000	-0.296
Sto_2	286	-3.376	8.980	0.000	1.000	-0.215

Note: ROA denotes return on assets; Sup denotes CSR towards suppliers; Tech denotes CSR towards technological development; Taxr denotes CSR towards regulators; Cus denotes CSR towards customers; Cre denotes CSR towards creditors; Sta denotes CSR towards employees; Sto denotes CSR towards shareholders.

## 5.2 Correlation analysis

The correlation analysis in Table 5.2 shows that the Return on Assets (ROA) of dependent variable is significantly correlated with most of the independent variables. Specifically, the Return on Capital Investment (Tech\_1,  $r=0.945$ ,  $p<0.01$ ) and the Return on Human Resource Investment (Taxr\_3,  $r=0.761$ ,  $p<0.01$ ) are highly positively correlated with ROA. This suggests that technology investment and efficiency in human resource utilization have a significant positive influence on enterprise value. On the other hand, the Cash-to-Short-Term-Debt ratio (Cre,  $r=-0.688$ ,  $p<0.01$ ) and the Net Operating Cycle (Sup,  $r=-0.278$ ,  $p<0.01$ ) are significantly negatively correlated with ROA, indicating that debt risk control and pressure on supply chain funds have a negative influence on profit generation. Earnings per Share (Sto\_1,  $r=0.455$ ,  $p<0.01$ ) and the Ratio of the main business cost (Cus,  $r=0.306$ ,  $p<0.01$ ) show a relatively significant positive relationship with ROA. However, the Ratio of payroll payable (Sta,  $r=0.091$ ,  $p>0.05$ ) is weak and not statistically significant, indicating that this indicator has limited direct influence on enterprise value. Overall, the correlation strength among variables varies, but no extreme correlations are observed, which supports the validity of subsequent regression analysis.

Table 5.2 Pearson correlation result

	Average value before adjustment	Variance before adjustment	1	2	3	4	5	6	7	8	9	10	11	12
1 ROA	7.584	16.284	1											
2 Sup	0	1	-0.278**	1										
3 Tech_1	9.259	24.357	0.945**	-0.242**	1									
4 Tech_2	10.308	147.333	-0.233**	0.358**	-0.202**	1								
5 Taxr_1	0.043	0.126	-0.188**	0.051	-0.326**	0.015	1							
6 Taxr_2	1593.332	1387.376	0.002	0.043	0.023	-0.053	-0.102	1						
7 Taxr_3	89.699	269.688	0.761**	-0.205**	0.737**	-0.130*	-0.256**	0.027	1					
8 Cus	1.008	0.75	0.306**	-0.222**	0.275**	0.014	0.024	-0.097	0.122*	1				
9 Cre	27.056	110.711	-0.688**	0.443**	-0.690**	0.164**	0.431**	-0.084	-0.777**	-0.243**	1			
10 Sta	0.053	0.052	0.091	-0.111	0.077	-0.014	-0.005	-0.064	0.028	0.255**	-0.071	1		
11 Sto_1	0.745	2.518	0.455**	-0.118*	0.408**	-0.043	-0.005	-0.081	0.324**	0.561**	-0.287**	0.478**	1	
12 Sto_2	0.748	3.48	0.229**	-0.060	0.207**	-0.012	0.031	-0.039	0.097	0.359**	-0.108	0.503**	0.774**	1

Note: \* p<0.05, \*\* p<0.01; ROA denotes return on assets; Sup denotes CSR towards suppliers; Tech denotes CSR towards technological development; Taxr denotes CSR towards regulators; Cus denotes CSR towards customers; Cre denotes CSR towards creditors; Sta denotes CSR towards employees; Sto denotes CSR towards shareholders.

### 5.3 VAR model analysis

To supplement the correlation analysis among variables, this study employs the Vector Auto-regression (VAR) model to examine dynamic interrelationships and interactions among multiple variables. Before fitting a VAR model, determining the optimal lag order is essential. The lag order selection is primarily guided by the information criteria used in the VAR model construction process, including indicators such as AIC, BIC, FPE and HQIC.

Table 5.3 shows that the AIC, BIC, FPE, and HQIC criteria are used in this study to determine the optimal lag order of the model. Ultimately, based on the strictest BIC criterion, a lag order of 1 was chosen for the VAR model, and impulse response analysis is conducted based on this 1st-order VAR model.

Table 5.3 VAR Model building, model selection (Automatic lag order selection)

Order	AIC	BIC	FPE	HQIC
0	-5.847	-5.714	0.003	-5.794
1	-10.217	-8.751*	0.000	-9.628
2	-10.428	-7.630	0.000	-9.304
3	-11.443	-7.311	0.000	-9.784
4	-11.693	-6.228	0.000	-9.499
5	-11.989	-5.192	0.000	-9.260
6	-13.467	-5.338	0.000	-10.203
7	-14.585	-5.123	0.000	-10.785
8	-14.927	-4.131	0.000	-10.592
9	-15.865	-3.737	0.000	-10.994
10	-16.700	-3.239	0.000	-11.295*
11	-16.908	-2.115	0.000	-10.968
12	-17.072	-0.945	0.000	-10.596
13	-17.080	0.379	0.000	-10.069
14	-17.763	1.029	0.000	-10.217
15	-17.968	2.157	0.000	-9.887
16	-19.073*	2.384	0.000*	-10.457

Note: \* represents the selected lag order of the item

The estimation results of the VAR model in Table 5.4 shows that the dependent variable ROA is significantly influenced by its own lag of one period (coefficient of 0.609,  $p<0.01$ ). This indicates that a company's profitability exhibits short-term persistence or inertia. CSR to Suppliers Indicator (Sup) has a significant negative influence on ROA (coefficient of -0.228,  $p<0.01$ ), suggesting that increased pressure on supply chain fund turnover significantly reduces enterprise value. On the other hand, the Cash-to-Investment ratio (Tech\_2) shows a positive influence on ROA (coefficient of 0.163,  $p<0.01$ ), indicating that sufficient cash flow can effectively enhance enterprise value. Although the coefficients of Return on Invest Capital (Tech\_1) and the CSR to Regulators (Taxr\_1, Taxr\_2, Taxr\_3), Customers (Cus),

Creditors (Cre), and Employees (Sta) have different directions, they do not reach statistical significance. This indicates that these variables have limited or unstable immediate influences on enterprise value within the short-term dynamic analysis framework of VAR.

Table 5.4 VAR model result

	ROA	Sup	Tech_1	Tech_2	Taxr_1	Taxr_2	Taxr_3	Cu1	Cre_1	Sta_2
Constant	0.006 (0.121)	-0.001 (-0.022)	0.006 (0.104)	-0.001 (-0.019)	0.002 (0.038)	0.003 (0.059)	-0.002 (-0.033)	0.010 (0.198)	0.012 (0.334)	0.022 (0.900)
ROA	0.609** (3.208)	-0.254 (-1.602)	0.477* (2.443)	-0.154 (-1.113)	-0.078 (-0.369)	0.504* (2.444)	-0.383 (-1.844)	-0.103 (-0.549)	-0.168 (-1.302)	-0.055 (-0.606)
Sup	-0.228** (-3.484)	0.780** (14.241)	-0.205** (-3.050)	0.591** (12.404)	0.027 (0.371)	-0.112 (-1.574)	0.182* (2.545)	-0.073 (-1.120)	-0.037 (-0.825)	-0.039 (-1.244)
Tech_1	-0.149 (-0.833)	0.172 (1.149)	-0.069 (-0.375)	0.180 (1.378)	-0.024 (-0.118)	-0.385* (-1.974)	0.223 (1.136)	-0.008 (-0.045)	0.130 (1.068)	0.008 (0.091)
Tech_2	0.163** (2.842)	-0.244** (-5.101)	0.155** (2.633)	-0.287** (-6.906)	-0.034 (-0.532)	0.085 (1.361)	-0.119 (-1.893)	0.003 (0.048)	0.038 (0.971)	0.004 (0.130)
Taxr_1	-0.098 (-1.476)	0.148** (2.675)	-0.105 (-1.541)	-0.162** (-3.365)	0.274** (3.701)	-0.060 (-0.828)	0.149* (2.055)	-0.025 (-0.382)	-0.108* (-2.399)	-0.050 (-1.576)
Taxr_2	-0.049 (-0.481)	0.073 (0.852)	-0.004 (-0.042)	0.268** (3.589)	-0.138 (-1.204)	0.292** (2.624)	-0.090 (-0.804)	-0.025 (-0.250)	0.019 (0.267)	-0.062 (-1.269)
Taxr_3	0.106 (0.989)	-0.179* (-2.006)	0.104 (0.944)	0.609** (7.839)	-0.190 (-1.587)	0.157 (1.357)	-0.080 (-0.688)	0.000 (0.002)	0.136 (1.875)	0.068 (1.329)
Cus	0.008 (0.126)	0.006 (0.111)	0.008 (0.125)	0.067 (1.510)	-0.054 (-0.797)	-0.015 (-0.235)	-0.008 (-0.118)	0.279** (4.633)	-0.040 (-0.976)	-0.041 (-1.421)
Cre	0.023 (0.343)	-0.025 (-0.446)	0.010 (0.148)	0.251** (5.160)	-0.065 (-0.870)	-0.026 (-0.362)	-0.059 (-0.809)	0.037 (0.557)	0.796** (17.586)	0.119** (3.724)
Sta	0.092 (1.113)	-0.010 (-0.144)	0.081 (0.955)	-0.104 (-1.738)	0.108 (1.171)	0.056 (0.628)	-0.025 (-0.276)	0.359** (4.406)	0.114* (2.038)	0.976** (24.875)
nobs	285									
llf	-2456.462									
AIC value	18.010									
SC value	19.420									
HQIC value	18.575									

Note: \* p<0.05, \*\* p<0.01; Figures in parentheses denote t –values; ROA denotes return on assets; Sup denotes CSR towards suppliers; Tech denotes CSR towards technological development; Taxr denotes CSR towards regulators; Cus denotes CSR towards customers; Cre denotes CSR towards creditors; Sta denotes CSR towards employees; Sto denotes CSR towards shareholders.

The results of the AR characteristic root analysis (Figure 5.1) show that all the characteristic roots of the VAR model are within the unit circle, indicating that the model satisfies the stability requirement, further confirming the suitability of the constructed VAR model for subsequent impulse response analysis.

Inverse Roots of AR Characteristic Polynomial

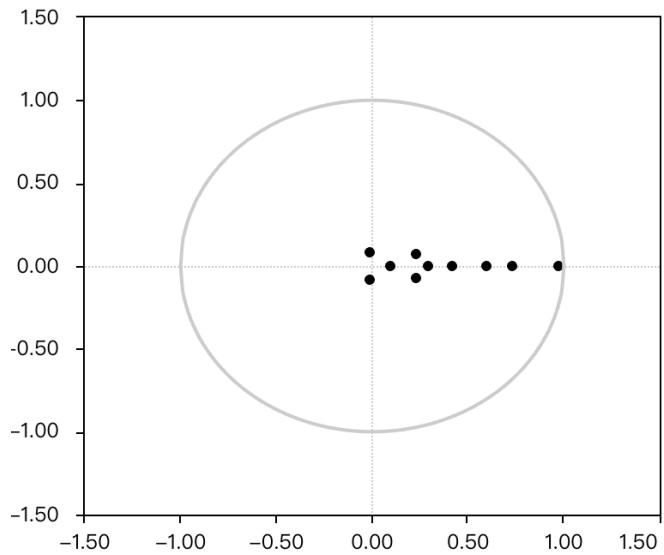


Figure 5.1 AR characteristic root analysis

From the orthogonal impulse response graph of ROA (Figure 5.2), it can be seen that when ROA is shocked by impulses from other variables, its response gradually weakens over time and stabilizes after several periods. This suggests that the impulse of CSR practices to enterprise value exhibits short-term fluctuations and tends to converge in the long term. This indicates that after a short-term impact on enterprise value by social responsibility indicators, there is a gradual adjustment and reaction mechanism, displaying typical short-term dynamic characteristics. Overall, the VAR model and impulse response analysis effectively determine the dynamic effects of CSR indicators on enterprise value in the short term.

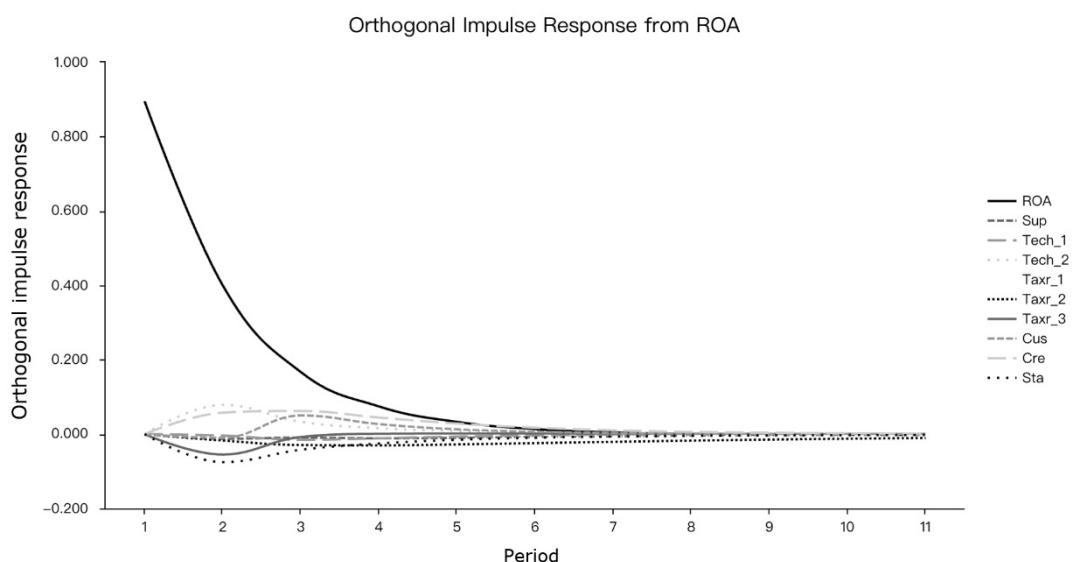


Figure 5.2 Orthogonal impulse response graph of ROA

## 5.4 Analysis of game companies' CSR practices towards different stakeholders

### 5.4.1 CSR practices towards suppliers

Based on the previous theoretical model, regression analyses are conducted. According to the regression results presented in Table 5.5, the impact of CSR indicator towards suppliers (Sup, Net Operating Cycle) on the dependent variable enterprise value (ROA) is consistently significant and negative across all three regression equations (regression equation 2:  $\beta=-0.308$ ,  $t=-5.607$ ,  $p<0.01$ ; regression equation 3:  $\beta=-0.313$ ,  $t=-5.577$ ,  $p<0.01$ ). This indicates that a significant increase in the net operating cycle of the company leads to a decrease in enterprise value. The negative relationship between the above CSR to suppliers and enterprise value reflects the operational dilemma and resource allocation issues faced by listed game companies in China when fulfilling their responsibility towards suppliers. In order to maintain supply chain relationships, companies may adopt more lenient payment terms for accounts payable. However, this reduces the efficiency of managing inventory and accounts receivable, resulting in an extended net operating cycle. As a result, the cost of capital occupation increases, the efficiency of using operating funds decreases, and ultimately has a negative influence on company profitability. This phenomenon indicates a trade-off between resource investment in fulfilling CSR to suppliers and financial performance for game companies. The short-term costs of fulfilling CSR to suppliers outweigh the strategic benefits, which in turn fail to effectively translate into enhanced enterprise value. Contrary to the expected relationship proposed in Hypothesis 1 that “CSR practices towards suppliers are positively correlated to enterprise value” the data do not support Hypothesis 1.

Table 5.5 Regression analysis of CSR to suppliers

	Regression equation (1)	Regression equation (2)	Regression equation (3)
Constant	-0.000 (-0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Sup - Net operating cycle</b>	<b>-0.278** (-4.882)</b>	<b>-0.308** (-5.607)</b>	<b>-0.313** (-5.577)</b>
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.077	0.245	0.245
adj.R <sup>2</sup>	0.074	0.223	0.218

	Regression equation (1)	Regression equation (2)	Regression equation (3)
F	F (1,284)=23.835, p=0.000	F (8,277)=11.215, p=0.000	F (10,275)=8.939, p=0.000
$\Delta R^2$	0.077	0.167	0.001
$\Delta F$	F (1,284)=23.835, p=0.000	F (7,277)=8.761, p=0.000	F (2,275)=0.121, p=0.886

Note: \* p<0.05, \*\* p<0.01; Figures in parentheses denote t –values; Dependent variable = Return on assets (ROA); Sup denotes CSR towards suppliers; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

#### 5.4.2 CSR practices towards technological development

##### (1) Analysis based on return on invested capital (ROIC)

According to the regression analysis results in Table 5.6 and Table 5.7, the positive indicator of CSR to technological development, ROIC (Tech\_1), has a significant positive influence on enterprise value (ROA) (regression equation 5:  $\beta=0.932$ ,  $t=45.702$ ,  $p<0.01$ ; regression equation 6:  $\beta=0.932$ ,  $t=45.815$ ,  $p<0.01$ ). This indicates that game companies that actively undertake CSR to technological development significantly improve their profitability.

Table 5.6 Regression analysis of CSR to technological development

	Regression equation (4)	Regression equation (5)	Regression equation (6)
Constant	-0.000 (-0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Tech_1 -</b>			
<b>Return on invested capital</b>	<b>0.945** (48.706)</b>	<b>0.932** (45.702)</b>	<b>0.932** (45.815)</b>
<b>ROIC</b>			
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
$R^2$	0.893	0.902	0.903
adj. $R^2$	0.893	0.899	0.899
F	F (1,284)=2372.241, p=0.000	F (8,277)=316.964, p=0.000	F (10,275)=255.103, p=0.000
$\Delta R^2$	0.893	0.008	0.001
$\Delta F$	F (1,284)=2372.241, p=0.000	F (7,277)=3.390, p=0.002	F (2,275)=1.656, p=0.193

Note: \* p<0.05, \*\* p<0.01; Figures in parentheses denote t –values; Dependent variable = Return on assets (ROA); Tech denotes CSR towards technological development; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

##### (2) Discussion of the robustness of cash-to-investment ratio

In terms of robustness tests, as shown in Table 5.7, the Cash-to-investment ratio (Tech\_2) is significantly negatively correlated with ROA (regression equation 8:  $\beta=-0.209$ ,  $t=-3.879$ ,  $p<0.01$ ; regression equation 9:  $\beta=-0.215$ ,  $t=-3.956$ ,  $p<0.01$ ), reflecting that excessive cash reserves in game companies can inhibit their value creation capabilities. These two indicators combined demonstrate that companies with higher efficiency in technology innovation

investment and appropriate cash reserves tend to have better market performance.

Table 5.7 Robust regression analysis results based on cash to investment ratio

	Regression equation (7)	Regression equation (8)	Regression equation (9)
Constant	-0.000 (-0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Tech_2 -</b> <b>Cash to</b> <b>investment</b> <b>ratio</b>	<b>-0.233**</b> <b>(-4.041)</b>	<b>-0.209**</b> <b>(-3.879)</b>	<b>-0.215**</b> <b>(-3.956)</b>
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.054	0.202	0.205
adj.R <sup>2</sup>	0.051	0.179	0.176
F	F (1,284)=16.329, p=0.000	F (8,277)=8.779, p=0.000	F (10,275)=7.099, p=0.000
ΔR <sup>2</sup>	0.054	0.148	0.003
ΔF	F (1,284)=16.329, p=0.000	F (7,277)=7.336, p=0.000	F (2,275)=0.507, p=0.603

Note: \* p<0.05 \*\* p<0.01; Figures in parentheses denote t-values; Dependent variable = Return on assets (ROA); Tech denotes CSR towards technological development; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

Based on the above analysis, Hypothesis 2, “CSR practices towards technological development are positively correlated to enterprise value,” is supported by the empirical data. This suggests that listed game companies in China, through effective management of technological innovation and R&D investment, can significantly enhance their competitiveness and market position, thereby achieving dual enhancement in economic benefits and enterprise value. This phenomenon indicates that in the technology-intensive game industry, investment and efficiency in activities such as R&D and innovation not only constitute the core competitive advantage of companies but also serve as important drivers for their long-term development.

From the analysis of the actual situation in the game industry, the above results reveal the core challenges and opportunities that game companies face in their development. By effectively utilizing capital to achieve high input-output efficiency, companies can gain a competitive advantage through a technology leadership strategy. At the same time, companies with inefficient cash management and excessive funds may encounter resource idleness and inefficiency. During the process of fulfilling CSR to technological development, game companies should avoid blindly pursuing the scale of cash reserves. Instead, they should strengthen the efficiency of technology innovation and the return on R&D investment to more effectively enhance the long-term enterprise value.

### 5.4.3 CSR practices towards regulators

#### (1) Analysis based on the ratio of taxes payable to total assets

According to the regression analysis results in Table 5.8, the indicator of CSR towards regulators (Taxr\_1, ratio of taxes payable to total assets) shows a significant negative relationship with enterprise value (ROA) across all three regression equations (regression equation 11:  $\beta = -0.190$ ,  $t = -3.448$ ,  $p < 0.01$ ; regression equation 12:  $\beta = -0.203$ ,  $t = -3.603$ ,  $p < 0.01$ ). This result indicates that an increase in taxes and fees as a proportion of total assets significantly reduces the overall profitability of game companies, reflecting that companies with higher tax burdens experience pronounced suppression of their profitability. From the perspective of the actual situation in the game industry, this phenomenon reveals the economic pressure faced by game companies in fulfilling their CSR to regulators and paying taxes in accordance with the law. The heavier the tax burden, the greater the proportion of operating funds occupied by taxes, which may reduce the efficiency of capital utilization, squeeze resources for core business development, and decrease liquidity in operating activities, further inhibiting profit growth. Especially in the current context of stricter regulation, game companies face more rigorous tax audits and regulatory requirements, and the strengthening of tax obligations increases the hidden costs of business operations to some extent. At the same time, high tax costs may guide companies to adjust their business structures or seek regional layouts with tax incentives to reduce capital occupation and enhance profitability.

Table 5.8 Regression analysis of tax contribution to society

	Regression equation (10)	Regression equation (11)	Regression equation (12)
Constant	-0.000 (-0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Taxr_1 - Ratio of taxes payable to total assets</b>	<b>-0.188** (-3.219)</b>	<b>-0.190** (-3.448)</b>	<b>-0.203** (-3.603)</b>
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.035	0.194	0.198
adj.R <sup>2</sup>	0.032	0.170	0.169
F	F (1,284)=10.362, p=0.001	F (8,277)=8.309, p=0.000	F (10,275)=6.782, p=0.000
ΔR <sup>2</sup>	0.035	0.158	0.004
ΔF	F (1,284)=10.362, p=0.001	F (7,277)=7.768, p=0.000	F (2,275)=0.737, p=0.479

Note: \*  $p<0.05$ , \*\*  $p<0.01$ ; Figures in parentheses denote t –values; Dependent variable = Return on assets (ROA); Taxr denotes CSR towards regulators; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

The research results indicate that Hypothesis 3a, “CSR practices towards regulators in terms of tax revenue are positively correlated to enterprise value” is not supported.

## (2) Analysis based on the total number of employees

According to the regression analysis results in Table 5.9, the relationship between the indicator of CSR towards regulators in terms of total number of company employees (Taxr\_2) and enterprise value (ROA) does not reach statistical significance in all regression equations (regression equation 14:  $\beta=0.044$ ,  $t=0.732$ ,  $p>0.05$ ; regression equation 15:  $\beta=0.073$ ,  $t=1.097$ ,  $p>0.05$ ). This suggests that changes in game companies’ contributions to social employment do not significantly influence their profitability. From the characteristics of game companies and the actual situation of the industry, this result may stem from the fact that game companies typically belong to knowledge and technology-intensive industries, where business activities primarily rely on intellectual inputs and technological innovation from a small number of highly skilled talents, rather than an increase in the quantity of ordinary labor force. The correlation between the number of employees in game companies and their value creation is weak. Companies focus more on the quality of human capital of core R&D personnel and key positions, rather than expanding the overall size of the workforce. The development model of the game industry is characterized by high technological drive, a high level of automation, and evident economies of scale. The profitability of companies depends more on the efficiency of technological innovation, the quality of content creation, and market competitiveness rather than direct expansion of the labor force. Therefore, changes in the degree of game companies’ fulfillment of social employment responsibilities do not significantly translate into a substantial improvement in their operational performance, aligning with the actual characteristics of the industry and the companies themselves.

Table 5.9 Regression analysis of game companies’ contribution to social employment

	Regression equation (13)	Regression equation (14)	Regression equation (15)
Constant	-0.000 (-0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Taxr_2 - Total employee number</b>	<b>0.002 (0.036)</b>	<b>0.044 (0.732)</b>	<b>0.073 (1.097)</b>
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.000	0.161	0.164

	Regression equation (13)	Regression equation (14)	Regression equation (15)
adj.R <sup>2</sup>	-0.004	0.136	0.133
F	F (1,284)=0.001, p=0.972	F (8,277)=6.622, p=0.000	F (10,275)=5.380, p=0.000
ΔR <sup>2</sup>	0.000	0.161	0.003
ΔF	F (1,284)=0.001, p=0.972	F (7,277)=7.568, p=0.000	F (2,275)=0.506, p=0.603

Note: \* p<0.05 \*\* p<0.01; Figures in parentheses denote t-values; Dependent variable = Return on assets (ROA); Taxr denotes CSR towards regulators; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

### (3) Robustness discussion using return on human investment

According to the results of the robustness regression analysis in Table 5.10, return on human resource investment (Taxr\_3) has a stable and significant positive influence on enterprise value (ROA) (regression equation 17:  $\beta=0.712$ ,  $t=18.730$ ,  $p<0.01$ ; regression equation 18:  $\beta=0.722$ ,  $t=19.084$ ,  $p<0.01$ ). This indicates that improvements in the efficiency of human resource utilization in game companies can significantly enhance their operational performance and market value. This result is consistent with the earlier finding that the number of employees does not significantly influence enterprise value. It reveals that the key to value enhancement in the game industry lies not in simply expanding the number of employees but in improving the efficiency of human resource utilization, that is, the economic return generated per unit of human resource input is more decisive. As knowledge-intensive companies, game companies place greater emphasis on the innovation advantage and productivity brought by high-quality and specialized talents. By optimizing the human resource structure and increasing the economic value of labor output per unit, they can enhance the overall level of enterprise value. This value creation model driven by human capital aligns well with the characteristics of the game industry, which is highly technological and relies heavily on creative talents. Therefore, game companies should focus more on the efficient utilization of core technical personnel and key positions, continuously improving the economic benefits of human resource inputs, rather than solely pursuing an increase in the scale of human resources.

Table 5.10 Robust regression analysis results of return on human investment

	Regression equation (16)	Regression equation (17)	Regression equation (18)
Constant	-0.000 (-0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Taxr_3 -</b>			
<b>Return on</b>	<b>0.761**</b>	<b>0.712**</b>	<b>0.722**</b>
<b>human</b>	<b>(19.739)</b>	<b>(18.730)</b>	<b>(19.084)</b>
<b>investment</b>			
Control variables (Control)	no	yes	yes
No. Year	no	no	yes
	no	no	yes

	Regression equation (16)	Regression equation (17)	Regression equation (18)
n	286	286	286
R <sup>2</sup>	0.578	0.629	0.639
adj.R <sup>2</sup>	0.577	0.618	0.625
F	F (1,284)=389.623, p=0.000	F (8,277)=58.679, p=0.000	F (10,275)=48.594, p=0.000
ΔR <sup>2</sup>	0.578	0.051	0.010
ΔF	F (1,284)=389.623, p=0.000	F (7,277)=5.385, p=0.000	F (2,275)=3.692, p=0.026

Note: \* p<0.05 \*\* p<0.01; Figures in parentheses denote t –values; Dependent variable = Return on assets (ROA); Taxr denotes CSR towards regulators; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

In summary, Hypothesis 3b, “CSR practices towards regulators in terms of employment are positively correlated to enterprise value” is supported by the empirical data.

#### 5.4.4 CSR practices towards customers

According to the regression analysis results in Table 5.11, the indicator of CSR towards customers (Cus, the ratio of main business costs to revenue) shows a significant negative correlation with enterprise value (ROA) (regression equation 20:  $\beta=-0.642$ ,  $t=-15.029$ ,  $p<0.01$ ; regression equation 21:  $\beta=-0.653$ ,  $t=-15.322$ ,  $p<0.01$ ). This indicates that as the proportion of main business costs to revenue increases, while the profitability of game companies significantly decreases. This result does not support Hypothesis 4, which suggests that “CSR practices towards customers are positively correlated to enterprise value” The possible reason is that the selected indicator of customer responsibility in this study, the ratio of main business costs to revenue, reflects the cost scale of game development. However, higher investment costs themselves do not necessarily correspond to higher market recognition and profitability. In the game industry, the success of a product highly depends on subjective recognition from the market in terms of creativity, quality, and user experience. Excessive development costs may not directly translate into market returns and could indicate lower efficiency in resource utilization or inadequate market acceptance. This situation suggests that game companies’ effective fulfillment of CSR towards customers should focus more on accurately meeting customer needs, improving the quality of product innovation, and market acceptance, rather than simply increasing cost expenditure. This also reflects the high uncertainty in the game industry market and the asymmetry between input and output in product development.

Table 5.11 Regression analysis of CSR to customers

	Regression equation (19)	Regression equation (20)	Regression equation (21)
Constant	-0.000 (-0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Cus - Ratio</b>			
<b>of Main business</b>	<b>-0.688** (-15.984)</b>	<b>-0.642** (-15.029)</b>	<b>-0.653** (-15.322)</b>
<b>cost</b>			
Control variables	no	yes	yes
(Control)			
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.474	0.537	0.547
adj.R <sup>2</sup>	0.472	0.523	0.530
F	F (1,284)=255.502, p=0.000	F (8,277)=40.111, p=0.000	F (10,275)=33.182, p=0.000
ΔR <sup>2</sup>	0.474	0.063	0.010
ΔF	F (1,284)=255.502, p=0.000	F (7,277)=5.391, p=0.000	F (2,275)=3.068, p=0.048

Note: \* p<0.05 \*\* p<0.01; Figures in parentheses denote t-values; Dependent variable = Return on assets (ROA); Taxr denotes CSR towards regulators; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

#### 5.4.5 CSR practices towards creditors

According to the regression analysis results in Table 5.12, the indicator of CSR towards creditors (Cre, cash-to-short-term-debt ratio) shows a significant positive correlation with enterprise value (ROA) (regression equation 23:  $\beta=0.119$ ,  $t=2.099$ ,  $p<0.05$ ; regression equation 24:  $\beta=0.118$ ,  $t=2.012$ ,  $p<0.05$ ). This provides support for Hypothesis 5, which suggests that “CSR practices towards creditors are positively correlated to enterprise value”. This result indicates that game companies maintaining a higher cash-to-short-term-debt ratio, indicating a stronger short-term debt repayment capacity, helps reduce financial risks, enhance capital market recognition, and significantly enhance enterprise value. From the perspective of actual operations, this phenomenon reflects the importance of maintaining a sound financial structure in the development of game companies. Sufficient cash reserves and a higher short-term debt repayment capacity enable companies to effectively cope with the operational risks unique to the game industry, such as short product life cycles, market volatility, and uncertain external policy and regulatory environments. Creditors tend to work with companies that have strong liquidity and a stable short-term debt repayment capacity. Therefore, the performance of fulfilling creditor responsibilities not only reflects the financial soundness of the company itself but also enhances the trust of external investors and creditors, creating a virtuous cycle of positive enterprise value enhancement.

Table 5.12 Regression analysis of CSR to creditors

	Regression equation (22)	Regression equation (23)	Regression equation (24)
Constant	0.000 (0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Cre - Cash short debt ratio</b>	<b>0.091 (1.533)</b>	<b>0.119* (2.099)</b>	<b>0.118* (2.012)</b>
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.008	0.172	0.172
adj.R <sup>2</sup>	0.005	0.148	0.142
F	F (1,284)=2.351, p=0.126	F (8,277)=7.197, p=0.000	F (10,275)=5.718, p=0.000
ΔR <sup>2</sup>	0.008	0.164	0.000
ΔF	F (1,284)=2.351, p=0.126	F (7,277)=7.833, p=0.000	F (2,275)=0.009, p=0.991

Note: \* p<0.05 \*\* p<0.01; Figures in parentheses denote t –values; Dependent variable = Return on assets (ROA); Cre denotes CSR towards creditors; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

#### 5.4.6 CSR practices towards employees

According to the regression analysis results in Table 5.13, the indicator of CSR towards employees (Sta, ratio of employee compensation to total operating costs) shows a significant positive relationship with enterprise value (ROA) across all three regression equations (regression equation 26:  $\beta=0.287$ ,  $t=5.285$ ,  $p<0.01$ ; regression equation 27:  $\beta=0.371$ ,  $t=5.870$ ,  $p<0.01$ ). This provides support for Hypothesis 6, which suggests that “CSR practices towards employees are positively correlated to enterprise value” This result indicates that game companies increasing investment in employee compensation as a proportion of total operating costs significantly enhances overall operational performance and market competitiveness. From an analysis of the actual operations of companies, this reflects the fact that the game industry, as a typical knowledge-intensive industry, heavily relies on core technical talents and innovative human capital. Higher levels of compensation effectively motivate employees, enhancing their work engagement, innovation capabilities, and organizational identification, thereby driving product innovation and quality improvement. On the other hand, actively fulfilling CSR towards employees, in the highly competitive and talent-agile game market environment, also helps attract and retain core talents, reducing the risk of human capital loss and thereby enhancing long-term competitive advantage and market value. This positive influence of fulfilling CSR towards employees on enterprise value further highlights the crucial role of human capital management in the competitive strategies of game companies.

Table 5.13 Regression analysis of CSR to employees

	Regression equation (25)	Regression equation (26)	Regression equation (27)
Constant	0.000 (0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Sta - Ratio of Payroll payable</b>	<b>0.306** (5.407)</b>	<b>0.287** (5.285)</b>	<b>0.371** (5.870)</b>
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.093	0.236	0.253
adj.R <sup>2</sup>	0.090	0.214	0.226
F	F (1,284)=29.236, p=0.000	F (8,277)=10.693, p=0.000	F (10,275)=9.338, p=0.000
ΔR <sup>2</sup>	0.093	0.143	0.018
ΔF	F (1,284)=29.236, p=0.000	F (7,277)=7.387, p=0.000	F (2,275)=3.230, p=0.041

Note: \* p<0.05, \*\* p<0.01; Figures in parentheses denote t –values; Dependent variable = Return on assets (ROA); Sta denotes CSR towards employees; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

#### 5.4.7 Comparative analysis: CSR practices towards shareholders

##### (1) Regression analysis based on earnings per share (EPS)

According to the regression results in Table 5.14, EPS (Sto\_1) shows a significant positive correlation with enterprise value (ROA) across all three regression equations (regression equation 29:  $\beta=0.419$ ,  $t=7.998$ ,  $p<0.01$ ; regression equation 30:  $\beta=0.472$ ,  $t=8.423$ ,  $p<0.01$ ). This indicates that increasing earnings per share significantly promotes overall profitability for game companies. This result reflects the focus of capital market investors on company profit indicators, and earnings per share is one of the core metrics for evaluating company performance in the capital market. Specifically in the game industry, this means that after achieving higher profits, companies can further enhance investor trust and market recognition by effectively distributing profits to shareholders through proper profit distribution mechanisms. This, in turn, enhances market value and brand competitiveness. Therefore, the significant influence of earnings per share on enterprise value fully demonstrates the importance and effectiveness of fulfilling CSR towards shareholders in the game industry.

Table 5.14 Regression analysis of CSR to shareholders

	Regression equation (28)	Regression equation (29)	Regression equation (30)
Constant	0.000 (0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Sto_1 - Basic earnings per share (EPS)</b>	<b>0.455** (8.604)</b>	<b>0.419** (7.998)</b>	<b>0.472** (8.423)</b>
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.207	0.317	0.332
adj.R <sup>2</sup>	0.204	0.297	0.308
F	F (1,284)=74.020, p=0.000	F (8,277)=16.050, p=0.000	F (10,275)=13.683, p=0.000
ΔR <sup>2</sup>	0.207	0.110	0.016
ΔF	F (1,284)=74.020, p=0.000	F (7,277)=6.369, p=0.000	F (2,275)=3.198, p=0.042

Note: \* p<0.05, \*\* p<0.01; Figures in parentheses denote t-values; Dependent variable = Return on assets (ROA); Sto denotes CSR towards shareholders; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

## (2) Robustness analysis based on shareholders' free cash flow per share

Table 5.15 further validates the above conclusions through a robustness analysis using Free Cash Flow per Share (Sto\_2). Free Cash Flow per Share also shows a significant positive influence on enterprise value (ROA) (regression equation 32:  $\beta=0.206$ ,  $t=3.683$ ,  $p<0.01$ ; regression equation 33:  $\beta=0.211$ ,  $t=3.640$ ,  $p<0.01$ ). However, the influence is significantly lower compared to EPS, indicating that investors pay more attention to profit levels than actual cash flow generation capabilities. Especially in the game industry, a company's profitability and the clarity of profit distribution directly influence shareholders' judgments on the company's operating ability and growth potential, which is more significant than cash flow indicator. The significance of the Free Cash Flow per Share implies that if game companies can improve their cash flow generation capabilities and actively reward shareholders, it can effectively enhance enterprise value as well. Therefore, the two indicators collectively indicate that game companies can enhance their enterprise value by actively fulfilling CSR towards shareholders, not only increasing recognition in the capital market but also promoting sustained enhancement in enterprise value.

Table 5.15 Robust regression analysis results based on Free cash flow per share

	Regression equation (31)	Regression equation (32)	Regression equation (33)
Constant	-0.000 (-0.000)	-0.000 (-0.000)	-0.000 (-0.000)
<b>Sto_2 - Free cash flow per share</b>	<b>0.229** (3.966)</b>	<b>0.206** (3.683)</b>	<b>0.211** (3.640)</b>
Control variables (Control)	no	yes	yes
No.	no	no	yes
Year	no	no	yes
n	286	286	286
R <sup>2</sup>	0.052	0.198	0.199
adj.R <sup>2</sup>	0.049	0.175	0.169
F	F (1,284)=15.730, p=0.000	F (8,277)=8.559, p=0.000	F (10,275)=6.814, p=0.000
ΔR <sup>2</sup>	0.052	0.146	0.000
ΔF	F (1,284)=15.730, p=0.000	F (7,277)=7.191, p=0.000	F (2,275)=0.066, p=0.936

Note: \* p<0.05, \*\* p<0.01; Figures in parentheses denote t –values; Dependent variable = Return on assets (ROA); Sto denotes CSR towards shareholders; Year denotes the fixed year effect; No. denotes stock codes (individual fixed effect).

## 5.5 Research results

This study systematically tests six research hypotheses regarding the relationship between CSR practices and enterprise value in listed game companies in China. The validity of the test results has been confirmed based on the assumptions of ordinary least squares (OLS) regression, including linearity and the normality of residuals (see the Appendix). Based on the hypothesis testing results, as shown in Table 5.16, the positive fulfillment of CSR towards technological development, regulators, creditors, and employees shows significant positive influences on enterprise value, supporting hypotheses 2, 3, 5, and 6, respectively. This indicates that in the game industry, supporting improved efficiency in technology investment, fulfilling regulatory obligations, enhancing financial stability, and increasing investment in employee compensation can significantly promote the enhancement of market value for game companies. On the contrary, the positive fulfillment of CSR towards suppliers and customers do not show a significant influence on enterprise value, indicating that hypotheses 1 and 4 are not supported. This result reflects the potential financial constraints faced by game companies in managing supply chains, and excessive investment costs in game development may not necessarily lead to corresponding increases in market recognition and returns. Therefore, when fulfilling CSR, game companies should focus on fields closely related to their own characteristics and the industry, such as technological innovation, investment in human capital, and debt risk control. In contrast, CSR towards the supply chain and customers require more

refined and differentiated management measures to avoid resource waste and inefficient use of funds. Overall, the hypothesis testing results of this study provide analytical directions and practical guidance for game companies to effectively practice CSR.

Table 5.16 Summary of hypothesis test results

Hypothesis statement	Result
Hypothesis 1: CSR practices towards suppliers are positively correlated to enterprise value.	Not Supported
Hypothesis 2: CSR practices towards technological development are positively correlated to enterprise value.	Supported
Hypothesis 3: CSR practices towards regulators are positively correlated to enterprise value.	Not Supported
Hypothesis 3a: CSR practices towards regulators in terms of tax revenue are positively correlated to enterprise value.	Supported
Hypothesis 3b: CSR practices towards regulators in terms of employment are positively correlated to enterprise value.	Supported
Hypothesis 4: CSR practices towards customers are positively correlated to enterprise value.	Not Supported
Hypothesis 5: CSR practices towards creditors are positively correlated to enterprise value.	Supported
Hypothesis 6: CSR practices towards employees are positively correlated to enterprise value.	Supported

## 5.6 Summary

The hypothesis testing results of this study reveal the inherent logic and practical challenges of the relationship between CSR practices and enterprise value in the current Chinese game industry. Looking at the supported hypotheses, the positive fulfillment of CSR towards technological development, regulators, creditors, and employees all shows a significant positive influence on enterprise value. This is highly related to the technological and knowledge-intensive characteristics of the game industry itself. With short product life cycles and frequent changes in user preferences, game companies must rely on continuous technological innovation and efficient R&D investment to gain market advantage. The high input-output efficiency of technological development naturally translates into direct enhancement in enterprise value. In the current context of stricter regulation on the cultural and creative industries, game companies actively improving the efficiency of human capital utilization not only demonstrate their proactive response to policies but also gain recognition from capital markets and stakeholders. The significance of CSR towards creditors reflects the reality of the game industry facing high market uncertainty and volatility risks. Sound cash flow management and a stable financial structure are not only beneficial for addressing short-term debt repayment risks but also enhance investor confidence, thereby enhancing overall

enterprise value. The positive support for CSR to employees indicates that in the technology-driven game industry, human capital is a core element in creating market competitiveness and long-term value. Improving compensation incentives can effectively stimulate the innovation enthusiasm of core employees and reduce the risk of high-quality talent turnover.

On the other hand, the lack of support for the hypotheses regarding CSR towards suppliers and customers reflects the challenges and bottlenecks faced by game companies in their business operations. The negative influence of CSR towards suppliers indicates efficiency issues in supply chain fund management for game companies. Lenient payment terms may be adopted to maintain stable relationships with upstream suppliers. This leads to an extended net operating cycle which increases the cost of capital and inhibits the improvement of profitability. The lack of significant enhancement in enterprise value through CSR towards customers reflects the unique product attributes of the game industry. Massive investment in game development and production does not necessarily guarantee market recognition. The success of game products depends more on the accurate understanding of creativity, user experience, and market preferences rather than simply increasing investment costs. This uncertainty in the input-output relationship leads to situations where companies invest significantly but ultimately receive low market returns, which in turn affects the enhancement of enterprise value.

Based on the above, the results of the hypothesis testing in this study suggest that currently, Chinese listed game companies need to have a clearer understanding of their own operations and industry characteristics. They should focus on enhancing their responsibility in fields such as technology innovation efficiency, human capital effectiveness, and financial stability. At the same time, strategic adjustments and optimization should be made in supply chain management and responsibility to customers. This dual approach will enable more efficient resource allocation and market responsiveness. This differentiated approach to responsibility fulfillment can help companies achieve sustainable growth amidst fierce market competition and complex regulatory environments, while continuously enhancing their market value.

## Chapter 6: Survey and Analysis

Based on objective data such as open financial indicators and statistics of A-shares listed game companies, Chapter 5 analyzes the influences of CSR practices to different stakeholders on enterprise value. Considering that the game industry is an emerging industry, many game companies have not yet met the A-shares listing requirements. Meanwhile, data used in Chapter 5 mostly reflect past business performance and financial results of companies, which lacks of concentration on creativity, technological innovation, and subjective preferences of user experiences. In order to expand the coverage of research subjects and deepen the research on CSR practices, this chapter conducts in-depth investigations targeting stakeholders from different sizes of game companies, including multinational game companies, Chinese domestic game companies, and indie game studios, paying special attention to subjective feedback and cognitive evaluations from suppliers and customers (game players) who reject the hypotheses in Chapter 5. Through these investigations, this thesis gains a real understanding of the actual situation, challenges, and coping strategies of CSR fulfillment in supply chain management and meeting customer demands. This will enable the effective integration of qualitative data with quantitative analysis results to more comprehensively and long-term reveal the influence mechanism of CSR practices on enterprise value in Chinese game companies.

### 6.1 Survey on CSR practices in the game industry

#### 6.1.1 Respondents

This study distributed questionnaires to the stakeholders of three types of game companies. Specifically, three-type of game companies are first selected based on their scales and market positioning to reflect the differentiated characteristics of CSR practices within the industry. Meanwhile, in order to accurately grasp the multi-dimensional feedback of CSR practices, stakeholders in the game industry ecosystem are also selected. These stakeholders respectively represent different links and perspectives of the industrial chain, covering external partners, regulatory assessment subjects, consumers, financial stakeholders, and internal human resource groups throughout the process of business operation. Such a selection

method can effectively enhance the diversity and representativeness of the respondents, making the survey results more universal and objective.

Game companies are divided into three categories according to sizes and market positions: multinational game companies, Chinese domestic game companies, and indie game studios (Goumagias et al., 2014). A multinational game company usually involves multinational business, and belongs to a group company which has a diverse range of business and meanwhile a huge influence. Companies in this category can provide rich data support and diversified survey results of CSR. Chinese domestic game companies are moderate scale companies mainly focusing on Chinese domestic market, which can reflect the social responsibility implementation and unique challenges in the local market. Indie game studios focus on mobile games or independently develop games on the Steam platform. Such kind of indie studios or individual developers, despite their small scales, have a unique perspective and special behaviors in CSR practices due to their innovative ability and flexibility.

Classification of stakeholders covers the supply chain and surrounding ecosystem of a game company, including suppliers, upstream and downstream technical partners, regulators, game users, creditors, and game company employees (Belyaeva et al., 2022). The survey on these stakeholders provides a comprehensive understanding of CSR performance of game companies at different aspects and links. Suppliers and upstream-downstream technical partners are important parts of the ecosystem of a game company, and their feedback can reflect how a company fulfills its responsibilities in supply chain management and technical cooperation. Regulators supervise and evaluate CSR implementation of companies from a policy and regulatory perspective (Carras et al., 2020). As the final consumers, the satisfaction and feedback of game users can directly reflect the influence of CSR practices of the companies. A creditors' view contributes to assess a company's performance in terms of financial transparency and long-term sustainability. The opinions of game company employees can fully reflect the company's internal responsibility practices such as employee welfare, career development and working environment construction (Carrillo Vera & Aguado Terrón, 2019).

Through the questionnaire and interview survey of the above-mentioned categorized respondents, this thesis aims to build a hierarchical and structured social responsibility assessment framework for game companies. The survey not only covers the practice differences of different types of game companies, but also includes multi-dimensional feedback from various stakeholders, striving to comprehensively and objectively reflect current situation and existing problems of CSR practices in the game industry, so as to

provide scientific basis and practical suggestions for relevant policy-making and CSR improvement.

The research perspective is extended to the whole industry to compile questionnaires and design interviews.

**Classified by company sizes:** Questionnaires and interviews are conducted according to classification of: multinational game companies (involving multinational business, and usually belonging to a group company), Chinese domestic game companies (focusing on the Chinese market), and indie game studios (Chinese studios/individuals who independently develop mobile games or Steam games).

**Classified by stakeholders:** Questionnaires are distributed to suppliers, upstream and downstream technical partners, regulators, game users, creditors, and employees of game companies. Meanwhile, corresponding interviews will be conducted to form hierarchical and structural investigation results on game companies' CSR.

### **6.1.2 Questionnaire design**

#### **(1) Design goals and concept of questionnaire**

The questionnaire aims to dig into the actual performance and influences of game companies in the field of social responsibility through systematic data collection, that is to assess the actual practices of game companies in fulfilling CSR and its potential influences on society. The respondents mainly include employees and relevant stakeholders from companies which engage in the development, distribution and operation of games. Considering the complexity and diversity of the game industry, special attention is paid to the characteristics of different respondent groups when designing the questionnaire, so as to ensure the comprehensiveness and accuracy of the data analysis.

The questionnaire design adopts a structured approach to ensure the systematization and consistency of data collection. The questionnaire is divided into several key parts: First, personal information of respondents, including age, type of company and engagement duration in related fields. This is helpful for group division by characteristics as well as correlation analysis in later stage. Second, the main part, a series of multi-dimensional evaluation questions are designed to learn the CSR practice of game companies. These questions follow the Likert Scale, allowing respondents to express different degrees of agreement or disagreement, thereby supporting quantitative analysis and cross-group comparison. Finally, open questions are designed to collect the specific opinions and suggestions from the respondents, which can provide qualitative support for quantitative data.

## (2) Questionnaire structure and content

The questionnaire consists of two parts: basic information of the respondents and CSR fulfillment of game companies.

First, basic information of respondents, including age, type of company, and engagement duration. The information can not only help to understand the basic background of the respondents, but also allow for group division in the stage of data analysis to ensure the accuracy and representativeness of the analysis results.

Second, main part of the questionnaire, CSR practices of game companies. It covers multiple aspects of CSR practices. The 5-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree) is used in each aspect to ensure that respondents could clearly express their views, also to ensure subsequent quantitative data analysis. For example, questions like “The company puts lots of efforts in environmental protection” and “The company shows excellent performance in data protection and user privacy protection” are designed to allow respondents to express their opinions by choosing different levels of agreement or disagreement.

The selection of questions in the questionnaire, as well as the survey, follows the principle of combining theoretical support with practical representativeness. Based on classic literature and the latest research results correlated to CSR, combined with the particularity and practical characteristics of the game industry, a comprehensive screening of the scope of social responsibility is conducted. By sorting out the theoretical perspectives of scholars such as Scholz (2012), Davis (2022), and P. Jones et al. (2014), classic dimensions such as *cross-cultural communication and understanding*, *environmental protection*, and *supply chain social responsibility and fair trade* were identified to comprehensively evaluate the CSR performance of game companies in the context of globalization. The latest research results of Kapustina and Martynova (2019), Weststar and Legault (2012), and Bulut (2020) regarding *employee career development*, *welfare*, and *workplace safety and health* help to accurately reflect game companies’ practical responsibility fulfillment towards employees. Considering the uniqueness of the game industry in terms of information technology and innovation, the study particularly refers to the viewpoints of scholars such as González López (2020) and Arakji and Lang (2007) and designs specific survey items with industry characteristics, for example, *data protection*, *user privacy*, *innovation*, and *original content*. Finally, combined with the studies on the broader social benefits of CSR by McKaughan et al. (2017), Srivastav et al. (2018) and Patterson and Barratt (2019), the survey scope involves secondary data, such as *advocacy and participation in public policy*, *technical and resource support to solve social*

*problems, and sustainable business practices and green technologies.*

Through the above-mentioned multi-dimensional theoretical integration, as well as the consideration of industry particularities, the study constructs a questionnaire with relatively sufficient theoretical support and clear practical significance, as shown in Table 6.1 below. The questionnaire helps to systematically measure the actual performance of game companies in various fields of CSR practices.

Table 6.1 Questions in questionnaire and corresponding survey scope

Questions	CSR scope	Detailed explanation
1. The company shows good performance in cross-cultural understanding and communication.	Cross-cultural understanding and communication (Scholz, 2012)	Company's performance in the aspect of cross-cultural understanding and communication
2. The company puts lots of efforts in environmental protection.	Environmental protection (Amadori, 2020; Davis, 2022)	Degree of implementing environmental protection measures
3. The company shows good performance in employee career development and welfare protection.	Employee career development and welfare (Kapustina & Martynova, 2019; Weststar & Legault, 2012)	Career development opportunities and welfare protection of employees
4. The company shows excellence in data protection and user privacy protection.	Data protection and user privacy (González López, 2020)	Data protection measures and performance of user privacy protection.
5. The company effectively protects social responsibility and fair trade in supply chain.	Supply chain social responsibility and fair trade (P. Jones et al., 2014)	Social responsibility maintenance and fair trading practices in supply chains.
6. The company actively promotes and protects local culture.	Promotion and protection of local culture (Šisler et al., 2017)	Promotion and protection measures of local culture
7. The company effectively handles user complaints and user feedback.	Handling of user feedback and complaints (Fu et al., 2013)	Effectiveness of handling user complaints and feedback.
8. The company plays an important role in formulating, promoting and complying with industry standards and ethical rules.	Industry standards and ethical rules (McKaughan et al., 2017)	Formulation and compliance of industry standards and ethical rules
9. The company shows excellence in promoting innovation and original content.	Innovation and original content (Arakji & Lang, 2007)	Efforts in promoting innovation and original content
10. The company actively participates in CSR projects and exerts good influence.	Participation and influence in social responsibility projects (P. Jones et al., 2014)	Degree of participation and influence in social responsibility projects
11. The company effectively promotes social and economic inclusion.	Social and economic inclusion (Bulut, 2020; Stewart et al., 2013)	Performance in promoting Social and economic inclusion
12. The company effectively ensures workplace safety and health.	Workplace safety and health	Measures for ensuring workplace safety and health

	(Bulut, 2020)	
13. The company actively promotes fair career development and employee growth.	Fair career development and individual growth (Bányai et al., 2020)	Efforts in promoting fair career development and individual growth
14. The company actively supports and contributes to the external community.	Support and contribution to the external community (Bosco et al., 2020)	Support and contribution to the external community
15. The company shows excellence in sustainable business practices and application of green technologies.	Sustainable business practices and green technologies (Kasurinen et al., 2017)	Performance in sustainable business practices and application of green technologies
16. The company is able to effectively cope with global or regional environmental issues.	Response to global or regional environmental issues (Chaminade et al., 2021)	Measure of handling global or regional environmental issues
17. The company actively supports education and training business.	Support for education and training (Marchand & Hennig-Thurau, 2013)	Measures of supporting education and training
18. The company shows good performance in safeguarding shareholders' interests and transparency.	Shareholder interest and transparency (McKaughan et al., 2017)	Performance of safeguarding shareholders' interests and transparency
19. The company actively advocates public policy.	Advocacy and participation in public policy (Srivastav et al., 2018)	Advocacy and participation in public policy
20. The company actively provides technical and resource support to solve social problems.	Technical and resource support to solve social problems (Patterson & Barratt, 2019)	Efforts in solving social problems by providing technology and resource support

### (3) Design method and reliability assurance of questionnaires

The questionnaire is designed through WJX.CN online platform. A link of the questionnaire is generated, and then be distributed and recycled through channels such as WeChat, company WeChat platform, Maimai Job market platform, financial information service platforms such as RoyalFlush. These channels have a wide coverage, can effectively get to game practitioners and relevant stakeholders of game companies, therefore the universality and representativeness of the collected questionnaires can be ensured. After recycling the questionnaires, reliability test is conducted, which assures the reliability of the questionnaire data and the validity of the analysis results, and provides a solid data foundation for subsequent research.

#### 6.1.3 Interview design

The purpose of this survey is to explore the specific actions and achievements of CSR

practices of game companies. Through interviews, an insight is gained into the viewing angles of different stakeholders. The interviewees range from suppliers, upstream and downstream technical partners and regulators, to game users, creditors and game company employees. Selection of these interviewees is based on their close business ties and interactions with game companies, which enable them to provide multi-layered insights that reveal the complexity and diversity of the companies' CSR practices. The qualitative data collected from the interview will supplement the quantitative result of the questionnaire. Therefore, a more comprehensive and in-depth understanding is gained of CSR practices in the game industry, especially the key problems in CSR practices and corresponding improvement directions.

The interview is designed under rigorous academic norms, which contains three parts: introduction, main interview questions, and summary. In the introduction part, purpose and theme of the interview is clearly clarified to ensure that the interviewees have a full understanding of the background of the interview, so as to improve the pertinence and effectiveness of the answer. In the main question part, questions are designed based on different roles of stakeholders and types of companies, and social responsibility practices are discussed in detail. According to different interview outlines, specific questions on supply chain management, technical cooperation, regulatory compliance, user satisfaction, financial transparency, and employee benefits are designed respectively for multinational game companies, domestic game companies focusing on Chinese local market, and indie game studios. Through such detailed classification and targeted questions, we hope to acquire the commonalities and differences among different types of game companies in terms of CSR. The summary part provides the interviewees an opportunity to supplement and extend their views, ensuring the comprehensiveness and depth of the interview content. To improve the flexibility and participation of interviewees, online interview is adopted when implementing the interview. Specific methods include WeChat video call and voice call, and chat rooms on social platforms. Through such multi-layer and multi-dimensional interview design, the research hopes to collect abundant information about CSR practices of game companies, and provide strong support for the in-depth interpretation of quantitative questionnaire data while proposing countermeasures. The interview results can not only reveal the dilemmas and challenges faced by companies in actual operation, but also provide valuable references for policy makers and business managers, promote better CSR fulfillment in the game industry, and enhance the social image and sustainable development ability of the industry.

## 6.1.4 Survey implementation

### 6.1.4.1 Implementation of questionnaires and interview

The survey was conducted from May 21, 2024 to June 2, 2024. The questionnaire is compiled on WJX.CN online platform, and distributed and collected through channels such as WeChat, corporate WeChat platform, Maimai Job market platform, financial information service platforms such as RoyalFlush. A total of 354 questionnaires were sent out, and 327 were effectively collected, with an effective recovery rate of 92.37%. The interview was conducted simultaneously with the questionnaire.

### 6.1.4.2 Questionnaire reliability degree

In social science research, questionnaire reliability refers to whether a measurement tool can provide consistent and stable results at different time points or in different game companies. In this questionnaire about CSR practices of game companies, reliability analysis is crucial to ensure the credibility and reliability of the collected data, so as to provide a solid foundation for subsequent research. In this thesis, Cronbach's  $\alpha$  coefficient is used to assess the internal consistency of the questionnaire. Cronbach's  $\alpha$  is an important indicator to measure the consistency of each item in the questionnaire, and its value is between 0 and 1. In general, when the  $\alpha$  coefficient is higher than 0.7, the questionnaire has good internal consistency. As shown in Table 6.2, the overall Cronbach  $\alpha$  coefficient of this questionnaire is 0.952, showing high correlation and consistency among the questionnaire items. Further analyzing the reliability from each dimension, such as environmental protection, employee welfare, data protection and community support, the Cronbach  $\alpha$  coefficient of each dimension is between 0.6 and 0.8. This result shows that measurement items of different dimensions show high reliability in capturing corresponding CSR practices. The questionnaire is reasonable, and the measurement indicators are stable and reliable.

Table 6.2 Cronbach reliability analysis of questionnaire

Items of questionnaire	Corrected Item-Total Correlation (CITC)	$\alpha$ coefficient after deleting the item	Cronbach $\alpha$ coefficient
1. Cross-cultural understanding and communication	0.701	0.949	
2. Environmental protection	0.683	0.950	
3. Employee career development and welfare	0.703	0.949	
4. Data protection and user privacy	0.659	0.950	0.952
5. Supply chain social responsibility and fair trade	0.660	0.950	
6. Promotion and protection of local culture	0.700	0.949	

Items of questionnaire	Corrected Item-Total Correlation (CITC)	$\alpha$ coefficient after deleting the item	Cronbach $\alpha$ coefficient
7. Handling of user feedback and complaints	0.664	0.950	
8. Industry standards and ethic rules	0.668	0.950	
9. Innovation and original content	0.695	0.949	
10. Participation and influence in social responsibility projects	0.661	0.950	
11. Social and economic inclusion	0.731	0.949	
12. Workplace safety and health	0.671	0.950	
13. Fair career development and individual growth	0.647	0.950	
14. Support and contribution to the external community	0.684	0.950	
15. Sustainable business practices and green technologies	0.727	0.949	
16. Response to global or regional environmental issues	0.706	0.949	
17. Support for education and training	0.724	0.949	
18. Shareholders' interests and transparency	0.694	0.949	
19. Advocacy and participation in public policy	0.697	0.949	
20. Providing technical and resource support to solve social problems	0.679	0.950	

Standard Cronbach  $\alpha$  coefficient: 0.952

#### 6.1.4.3 Respondents' profile

The profile of respondents shows the diversity and broad representativeness of the respondents: diverse groups of different age, different game company types, different stakeholder categories, and different engagement durations with the companies, as shown in Table 6.3 Respondents profile

Item	Options	Frequency	Percentage (%)
1. Your age	18-24 years old	79	24.16
	25-34 years old	89	27.22
	35-44 years old	70	21.41
	45-54 years old	50	15.29
	55 years old and above	39	11.93
2. The type of company you refer to in this questionnaire	Multinational game companies (With multinational business)	159	48.62
	Chinese domestic game companies (game companies focuses on Chinese local market)	63	19.27
3. Stakeholder category you belong to.	Indie game studios (mobile games, small Chinese studios/individuals who develop games on steam independently)	105	32.11
	Suppliers of game companies	36	11.01
	Upstream and downstream technical party	56	17.13
	Regulators	56	17.13
	Game users	66	20.18
	Creditors	76	23.24

Item	Options	Frequency	Percentage (%)
4. Duration of employment/contact/cooperation with the company	Game company employees	37	11.31
	Less than 1 year	79	24.16
	1-3 years	45	13.76
	4-6 years	44	13.46
	More than 6 years	159	48.62
	Total	327	100.0

Regarding the age distribution, the majority of the respondents are between 18 and 34 years old, among which 24.16% are between 18 and 24 years old and 27.22% are between 25 and 34 years old, and the combined proportion of these two is more than half (51.38%). The proportion of respondents aged 35 to 44 is 21.41%, aged 45 to 54 is 15.29%, and aged 55 or above is 11.93%. Such age distribution reflects the age structure of the audience and practitioners in the game industry. Young people, especially young adults, occupy a dominant position in the game industry, indicating that the survey respondents have a high representativeness.

Regarding the types of game companies which the respondents belong to, multinational game companies (involving multinational business) account for the highest proportion, 48.62%; Indie game studios (small Chinese studios/individuals who develop mobile games or steam games independently) account for 32.11%; and Chinese domestic game companies (game companies focuses on Chinese local market) account for 19.27%. The results show that the survey covers a wide range of genres, from multinational game companies to indie game studios, therefore it can provide a comprehensive picture of the CSR practices of game companies of different sizes and types.

Regarding the stakeholder categories, the respondents' distribution is more balanced. Creditors account for 23.24%, game users 20.18%, regulators and upstream and downstream technical partners both 17.13%, suppliers 11.01%, and game company employees 11.31%. Such kind of diverse distribution of stakeholders can guarantee that the survey results reflect CSR practices of game companies from different perspectives, and take different concerns and expectations of stakeholders into consideration.

Regarding the employment, contact or cooperation duration between the respondents and the companies, data show that 48.62% of the respondents have more than 6 years of experience with their companies, 24.16% worked for or cooperated with the companies for less than 1 year, 13.76% 1-3 years, and 13.46% 4-6 years. This combination of long-and-short-term duration ensures that the survey data can fully reflect different observations and evaluations of the companies CSR practices from long-term and short-term cooperation.

To sum up, the survey respondents have high representativeness and diversity in terms of

age, company type, stakeholder category and engagement duration. Such a structure helps to comprehensively understand the status of game companies' CSR practices, and to provide a relatively solid data basis for further analysis.

### 6.1.5 Overview of CSR practices of different types of game companies

#### (1) Summarized mean value of CSR practices of different-type game companies

From the overall mean value of different-type game companies in terms of CSR practices, as shown in Table 6.4, it is obvious that multinational game companies (involving multinational business) generally perform well in all dimensions.

Table 6.4 Summarized mean value classified by types of game company

Item	Types of game companies			
	Multinational game companies (involve multinational business)	Chinese domestic game companies (game companies focuses on Chinese market)	Indie game studios (small Chinese studios/individuals who develop mobile games or games on Steam independently)	Overall mean value
1. Cross-cultural understanding and communication	4.245	3.794	3.752	4.000
2. Environmental protection	4.126	3.619	3.629	3.869
3. Employee career development and welfare	4.157	3.698	3.562	3.878
4. Data protection and user privacy	4.252	3.651	3.695	3.957
5. Supply chain social responsibility and fair trade	4.214	3.635	3.467	3.862
6. Promotion and protection of local culture	4.201	3.571	3.562	3.875
7. Handling of user feedback and complaints	4.233	3.508	3.600	3.890
8. Industry standards and ethic rules	4.088	3.524	3.390	3.755
9. Innovation and original content	4.270	3.635	3.676	3.957
10. Participation and influence in social responsibility projects	4.088	3.302	3.657	3.798
11. Social and economic inclusion	4.296	3.508	3.562	3.908
12. Workplace safety and health	4.245	3.619	3.743	3.963
13. Fair career development and individual growth	4.214	3.270	3.371	3.761
14. Support and contribution to the external community	4.075	3.540	3.438	3.768
15. Sustainable business practices and green technologies	4.277	3.619	3.695	3.963
16. Response to global or regional environmental issues	4.138	3.508	3.514	3.817
17. Support for education and training	4.164	3.571	3.571	3.859
18. Shareholder interest and transparency	4.138	3.397	3.429	3.768

19. Advocacy and participation in public policy	4.182	3.444	3.581	3.847
20. Technical and resource support to solve social problems	4.252	3.413	3.524	3.856

The average score between 4.088 and 4.296, which is higher than domestic Chinese game companies and indie game studios, showing that multinational game companies have invested more in cross-cultural communication, environmental protection, employee career development, data protection and other aspects, and the practical effect is more significant. In contrast, domestic game companies and indie game studios score lower. The overall performance gap is significant. Especially in the key fields of *cross-cultural communication and understanding, data protection and user privacy, and innovation and original content*, multinational game companies score significantly higher than the other two, which is probably due to their global operation and abundant resources. Compared with multinational game companies, the performance of domestic game companies and indie game studios in the fields of *participation and influence in social responsibility projects, fair career development and individual growth, and Shareholders interest and transparency* is relatively poor, suggesting that more investment and improvement are needed in these fields.

## (2) Difference analysis of CSR practices of different-type game companies

As shown in Annex Table 1, analysis of Variance (ANOVA) shows that there are significant differences in the performance of different-type game companies in various dimensions of CSR practices. In all of the 20 dimensions, all F values reach significant degree ( $p < 0.01$ ), indicating that the type of game company has a significant influence on its CSR practices. Specifically, multinational game companies (involving multinational business) score significantly higher on average across all dimensions than domestic Chinese game companies and indie game studios. In terms of *cross-cultural communication and understanding*, the average value of multinational game companies is 4.25, while the average values of domestic game companies and indie game studios are 3.79 and 3.75 respectively. This trend is also obvious in other dimensions, such as *environmental protection, employee career development and welfare, and data protection and user privacy*, the trend that the multinational game companies significantly outperform the other two company types occurs in all these dimensions.

Such difference can be partly attributed to the fact that multinational game companies own more resources and better management systems, which allows them to invest more in CSR practices and achieve more distinctive results. As shown in Annex Table 2, compared to multinational game companies, the relative lack of resources and management experience of

domestic game companies as well as indie game studios has led to their inferior performance in all dimensions of CSR. Indie game studios, due to their smaller sizes, may be more inclined to focus on their core business rather than overall CSR practices.

To sum up, the ANOVA results show that there are significant differences in the performance of different-type game companies in terms of CSR practices, and the performance of multinational game companies in all dimensions is remarkably superior to that of Chinese domestic game companies and indie game studios.

## 6.2 “Leading geese” multinational game companies

### 6.2.1 Measures and effects of CSR practices

CSR practices of well-known multinational game companies have a profound influence on their suppliers, upstream and downstream technical partners, regulators, game users, creditors, and employees. Taking Tencent Holdings and NetEase Games as examples, these two companies have demonstrated their specific measures and corresponding effect in environmental protection, employee care, public welfare and governance responsibility through multi-dimensional CSR practices, thereby having promoted the sustainable development of the companies.

From the perspectives of suppliers as well as upstream and downstream technical partners, the practices of multinational game companies in environmental protection and technological innovation can not only improve their own sustainable development capabilities, but also promote the green transformation of the entire industrial chain. With modular data center technology (T-Block) and AI energy-saving technology, Tencent has greatly reduced energy consumption and carbon emissions, driven the research, development and application of related technologies in the supply chain, and formed a good demonstration effect. Similarly, photovoltaic power generation and clean power procurement at the Hangzhou park of NetEase, as well as the low PUE (power usage efficiency) achieved at its Gui'an data center, demonstrate its leadership in green operations. All these measures have reduced the companies' environmental footprints, provided a benchmark for green technology application and innovation to suppliers and upstream and downstream technical partners, and promoted the sustainable development of the entire industry.

From the perspectives of regulators and game users, CSR practices of multinational game companies can help improve the industry standardization and user experience. Various

measures of Tencent and NetEase in the field of minor protection show their high awareness of CSR. By optimizing the “NetEase Parent Caring Platform” as well as launching the AI minor protection system, NetEase helps parents in managing minors’ gaming behaviors scientifically, so as to guarantee the physical and mental health as well as property safety of minor users. Tencent and NetEase also actively participate in the development of industry standards, for instance, drafting and implementing group standard “Management system of minors network protection of Internet companies”, which not only sets a good demonstration for other companies, but also improves the standardization level of the entire industry. For game users, these measures provide them with a safer and healthier gaming environment, strengthen their trust and satisfaction with the companies, and improve the user experience.

From the perspective of creditors and game company employees, the practices of multinational game companies in terms of governance responsibility and employee care directly influence the stability and internal cohesion of the companies. By establishing a comprehensive risk management and internal control system, Tencent and NetEase have ensured the healthy and sustainable development of business, improved the financial transparency and compliance, strengthened the confidence of creditors, and led to their outstanding performance in the capital market. Various initiatives in employee care of the two companies, such as providing professional training and promotion opportunities and emphasizing employee health management and psychological counseling, not only enhance the job satisfaction and sense of belonging of employees, but also strengthen company cohesion and innovation. Especially during the Covid-19 pandemic, the comprehensive anti-epidemic measures and remote work support provided by the two companies not only guaranteed employee health and work continuity, but also demonstrated the companies’ coping ability and sense of CSR when facing crises.

In a comprehensive perspective, through multi-dimensional CSR practices, well-known multinational game companies fully consider the needs and interest of multiple stakeholders such as suppliers, upstream and downstream technical partners, regulators, game users, creditors and employees. These practices not only demonstrate the companies’ leadership in the field of CSR, but also provide referential experience and model for other companies, thereby promoting the sustainable development of the entire industry.

### **6.2.2 Questionnaire results of CSR practices**

According to the survey results, multinational game companies (involving multinational business) show significant advantages in CSR practices. It can be found from the data that

these companies evenly score high in *cross-cultural communication and understanding, environmental protection, employee career development and welfare, data protection and user privacy, supply chain social responsibility and fair trade, promotion and protection of local culture, handling of user feedback and complaints, industry standards and ethic rules, innovation and original content, participation and influence in social responsibility projects, social and economic inclusion, workplace safety and health, fair career development and individual growth, support and contribution to the external community, sustainable business practices and green technologies, response to global or regional environmental issues, support for education and training, shareholder interest and transparency, advocacy and participation in public policy and technical and resource support to solve social problems.*

Specifically, as shown in Figure 5.1, in terms of *cross-cultural communication and understanding*, multinational game companies score 4.245, indicating that large companies attach great importance to cultural diversity and cross-cultural communication in multinational operations. In terms of *environmental protection*, these companies score 4.126, indicating significant efforts they have invested in environmental sustainability. A score of 4.157 in *employee career development and welfare*, and 4.252 in *data protection and user privacy*, show the leading position of multinational game companies in protecting employee rights and user data security. *Supply chain social responsibility and fair trade* scores of 4.214, *promotion and protection of local culture* scores 4.201, *handling of user feedback and complaints* scores 4.233, all these show the high importance multinational game companies have attached to CSR in different aspects. *Innovation and original content* get the highest score, 4.270, indicating a strong ability in developing innovative and original content, also a score of 4.252 for *technical and resource support to solve social problems*. A *social and economic inclusion* score of 4.296 and a *sustainable business practices and green technologies* score of 4.277, both showing the positives actions of multinational game companies in promoting social inclusion and sustainable development.

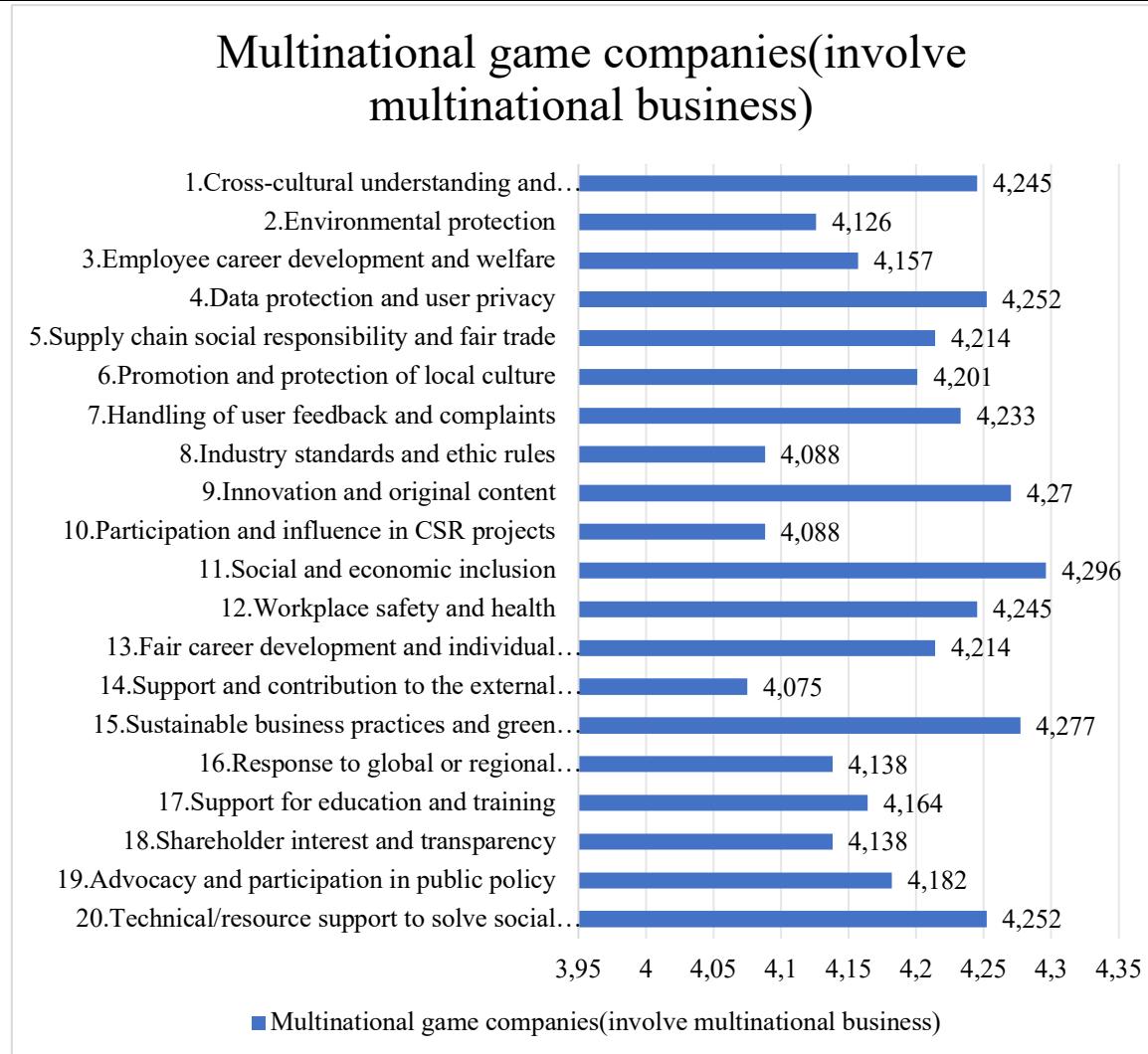


Figure 6.1 Average scores of CSR practices of multinational game companies

On the whole, multinational game companies perform well across all social responsibility indicators. The high scores reflect their strong ability and good performance of CSR in the context of multinational business. This not only has a positive effect on its brand image and market position, but also provides a good example for other companies regarding CSR practices.

### 6.2.3 Interviews and analysis of company stakeholders

When it comes to different stakeholder groups, the contributions and deficiencies of large game companies in CSR practices are both significant.

1) Multinational game companies always show a strong sense of social responsibility in supply chain management. “The experience of working with this game company has been very pleasant,” said one supplier. “They attach great importance to social responsibility in their supply chain management and raise strict environmental and social standards and

requirements.” Supplier interviews show that multinational game companies generally have a strong awareness of CSR in supply chain management. They have incorporated environmental and CSR standards into daily business cooperation processes and have clear requirements for suppliers. Suppliers interviewed expressed their recognition of the strict social responsibility standards set by multinational games companies. They emphasized that companies demonstrate the seriousness and standardization of supply chain management by setting environmental protection and social standards. However, feedback from suppliers at the specific implementation level indicates that companies still lack sufficient supervision and support in the implementation process, resulting in cases where the expected standards are unable to be fully met. This situation reflects the practical problems in CSR management of multinational game companies. Although companies have established comprehensive CSR goals and rules, at the level of supply chain practices, inadequate supervision measures and a lack of systematic ongoing evaluation and feedback mechanisms can weaken the overall effectiveness of supply chain social responsibility implementation and limit the effective contribution of CSR practices to supply chain stability and long-term enterprise value.

2) For upstream and downstream technical partners, large companies have greatly promoted the development of related business through wide range and in-depth technical cooperation. “Our technical cooperation with the company has improved our business ability. They are always emphasizing sustainability and ethical standards during the cooperation. We have set up several best practice cases,” said one technical partner. However, the complexity and high standards of technical cooperation also bring some challenges, such as the pressure of resource allocation and project management.

3) In the eyes of regulators, generally multinational game companies can comply with local and international laws and regulations, they have demonstrated a high level of transparency and cooperative attitude. One regulator pointed out, “This company has an excellent regulatory compliance record. It proactive cooperate with our work, and has many commendable social responsibility initiatives, such as regularly issuing sustainability report.” Nevertheless, in some regulators’ opinion, some compliance procedures of the company are too cumbersome, which may slow down the response speed.

4) Game users’ evaluation of multinational game companies also reflects the effects of their CSR practices. One user said, “My overall satisfaction with the company’s games is very high, they do a very good job in protecting user data and privacy. They can respond and deal with user feedback and complaints in time.” User interviews highlight the positive effects of multinational game companies’ user-oriented CSR practices. Users generally appreciate the

efforts made by multinational game companies in protecting user data privacy and specifically point out the excellent performance of these companies in guarding against data breach risks and ensuring personal privacy security. At the same time, the proactive attitude displayed by multinational game companies in handling user feedback further reinforces users' identification with their CSR practices. However, user feedback also indicates that companies have shortcomings in addressing user complaints, such as inadequate response speed and processing efficiency. This is manifested in the slow resolution of specific user issues, which influences the user experience. This phenomenon suggests that while companies have relatively well-established user feedback channels, there is still room for improvement in optimizing internal processes and coordination mechanisms for problem resolution. This would better achieve the comprehensiveness and effectiveness of user-oriented CSR practices.

5) Creditors generally acknowledge the company's financial stability and transparency. "Our financial relationship with the company has been very stable and they have demonstrated good financial transparency and responsibility. They are able to maintain their social responsibility even under economic stress," one creditor noted. Creditors also noticed that under economic pressure, sometimes the companies will make certain compromises in their investments in CSR projects, which may influence long-term CSR goals.

6) From the perspective of employees, these multinational game companies are often able to provide a good work experience and benefits for their employees. One employee shared, "The experience of working at the company is pleasant, they fulfill their duties in employee welfare and career development, and the culture and values of the company are very positive." However, some employees also pointed out that under a rapidly expanding and high-intensity work environment, employees are facing high pressure. Therefore, companies need to put more efforts in employee mental health maintenance and work-life balance.

To sum up, the multinational game companies have made many positive contributions to social responsibilities, especially in the fields of supply chain management, technical cooperation, compliance with regulations, user data protection, financial transparency, and employee welfare. However, there are still some deficiencies such as the executive force of supply chain supervision, management challenges in technical cooperation, efficiency of complaint handling and work pressure of employees, all these require further improvement in the future.

#### **6.2.4 Deficiencies in CSR practices of multinational game companies**

From the above analysis, it can be learned that, while multinational game companies show

positive performance in CSR practices, there are still notable deficiencies when examined at the micro-level of execution. One deficiency lies in the insufficient level of supervision and support in supply chain management. Although multinational game companies generally establish strict environmental and social responsibility standards and incorporate them into their daily business cooperation requirements, inadequate supervision measures and a lack of systematic evaluation and feedback mechanisms in the actual operational process result in some suppliers not strictly meeting the expected standards. As supply chain management is a critical aspect of the enterprise value chain, deficiencies in responsibility execution may give rise to supply chain risks, leading to frequent incidents related to product quality or environmental issues. This not only directly influences the company's economic benefits but also impairs its reputation and brand image, weakening its long-term competitive advantages. Another deficiency lies in the high pressure of resource allocation and project management in technical cooperation. While multinational game companies often emphasize the sustainability and ethical standards of technical cooperation, the high standards and complexity pose execution challenges for partners. This is reflected in insufficient allocation of project resources and increased management pressure, which could result in reduced project efficiency or even failure, influencing the continuity of technological innovation and sustained competitive advantage of the company. In addition, insufficient efficiency in handling user complaints is also a prominent issue. Although companies show a positive attitude in responding to complaints, the actual execution efficiency is low, resulting in the untimely and ineffective resolution of user problems. This may lead to a decrease in user satisfaction and loyalty, limiting long-term value enhancement for the company.

The deficiencies in the aforementioned CSR practices clearly have negative influences on enterprise value. Insufficient implementation of supply chain responsibilities increases environmental, social, and governance (ESG) risks. Mistakes or non-compliant behavior in the supply chain can result in direct economic losses and indirect brand damage, further increasing compliance and remediation costs, thereby reducing the company's financial performance. Management issues in technical cooperation hinder the optimization of the allocation of technological resources, thereby reducing technological innovation efficiency and market competitiveness. Failure to effectively manage the pressures and challenges brought by technical cooperation can lead to delays or even failures in the process of technological innovation. In the long run, this will limit the company's product competitiveness and market share growth. Inadequate mechanisms for resolving user complaints directly influence user experience and brand loyalty. In the long term, a decrease

in user satisfaction increases the risk of user churn and raises the cost of acquiring new users. High work pressure and inadequate mental health support for employees can also lead to increased employee turnover, adding to the company's labor costs and organizational instability, further influencing long-term operational efficiency and value creation. Therefore, multinational game companies need to systematically strengthen the execution and management of CSR at the micro-practice level to avoid potential risks and losses and achieve sustained value enhancement.

## 6.3 “Backbone” Chinese domestic game companies

### 6.3.1 Measures and effects of CSR practices

Taking G-bits Network Technology Xiamen Co., Ltd (hereinafter referred to as "G-bits") and OurPalm Technology Beijing Co., Ltd (hereinafter referred to as "OurPalm") as examples, Chinese domestic game companies actively practice CSR in the fields of *environmental protection, employee rights protection and employee development, and social welfare and community responsibility*.

First, environmental protection and sustainable development. Chinese domestic game companies have achieved remarkable results in the field, demonstrating a positive role of companies in green development. G-bits and OurPalm have adopted measures like green office, energy conservation and emission reduction in daily operations to reduce their influences on environment. The two companies carry out garbage sorting, paperless office and energy management in office area to reduce resource consumption and carbon emissions. These initiatives not only show their emphasis on environmental protection, but also strengthen employees' environmental awareness, and popularize the concept of green office. G-bits and OurPalm also actively participate in energy conservation and emission reduction projects, striving to reduce greenhouse gas emissions and promote sustainable development. All these measures show domestic game companies' sense and practices of CSR in the aspect of environmental protection, and gradually establish a benchmark image for the companies in the industry.

Second, employee rights protection and employee development. Chinese domestic game companies show a high sense of responsibility and humanistic care in this aspect. These companies generally strictly abide by *the Labor Law, the Labor Contract Law* and other relevant laws and regulations to ensure the legitimate rights and interests of employees.

Through a fair salary and welfare system, as well as diversified training and career development opportunities, companies have enhanced employees' sense of belonging and work enthusiasm. For example, besides statutory social insurance, G-bits and OurPalm buy supplementary commercial insurance and children's insurance for employees to effectively protect the health and safety of them and their families. They also pay attention to the career growth and mental health of employees, and arrange systematic training programs and rich cultural and recreational activities to improve the professional ability and life quality of employees. These measures not only help the companies attract and retain outstanding talents, but also increase their overall competitiveness and innovation ability.

Third, social welfare and community responsibility. Chinese domestic game companies actively practice CSR by extensively participating in public welfare activities and giving back to the society. Many companies contribute to social development by setting up public welfare funds, carrying out charitable donations, and supporting education. For example, through the mode of "company + public welfare", G-bits and OurPalm initiate projects such as education aid, poverty alleviation and disaster relief to help with improving education and living conditions in poverty-stricken regions. They also encourage employees to participate in volunteer activities to promote the integration of company culture and social responsibility. All these public welfare measures not only enhance the social image of the companies, but also strengthen the company - community connection and interaction to form a good social atmosphere. G-bits and OurPalm have also made a difference in cultural inheritance. Through their game products, they spread Chinese culture, increase Chinese self-confidence in culture, and drive Chinese culture to the world. All these practices show the positive actions of domestic game companies in social welfare and community responsibility, and as a result, the social value and influences of these companies get enhanced.

### **6.3.2 Questionnaire results of CSR practices**

According to the results of the questionnaire, Chinese domestic game companies show certain uniqueness and difference in CSR practices. Data suggest that these companies score significantly lower than multinational game companies on several CSR dimensions, reflecting their differences in resource, management ability, and strategic focus. Specifically, Chinese domestic game companies score 3.794 in *cross-cultural communication and understanding*, indicating that these companies are relatively weak in the ability of international communication and cross-cultural communication. This is mainly due to their business focus, which is the Chinese domestic market. For *environmental protection*, their score is 3.619,

slightly lower than that of other dimensions, indicating that there is still room for improvement in practices for environmental sustainability.

The score of *employee career development and welfare* is 3.698 and *data protection and user privacy* 3.651, reflecting that domestic game companies have a certain foundation in employee welfare and data protection, but further strengthening is still required. The score of *supply chain social responsibility and fair trade* is 3.635, *promotion and protection of local culture* 3.571, *handling of user feedback and complaints* 3.508, indicating that domestic game companies do have certain practices in terms of supply chain management, local culture protection and user service. However, compared to multinational game companies, there is still a significant and great gap.

The score of *innovation and original content* is 3.635, and of *participation and influence in social responsibility projects* 3.302, indicating that these companies are lacking in innovation capacity and engagement of CSR projects, which is possibly due to resource constraints or lack of strategic orientation. The score of *social and economic inclusion* is 3.508, *workplace safety and health* 3.619, *fair career development and individual growth* 3.270, and *support and contribution to the external community* 3.540, indicating that these companies' practices in social inclusion, safety work environment, career development and community contribution need further strengthening.

The score of *support for education and training* is 3.571, *shareholders' interests and transparency* 3.397, and *advocacy and participation in public policy* 3.444, *providing technical and resource support to solve social problems* is 3.413. As shown in Figure 5.2, scores of all these dimensions are relatively low, indicating that there is a great room for domestic game companies to improve in terms of education, training, shareholder transparency, policy participation and technical resource support.

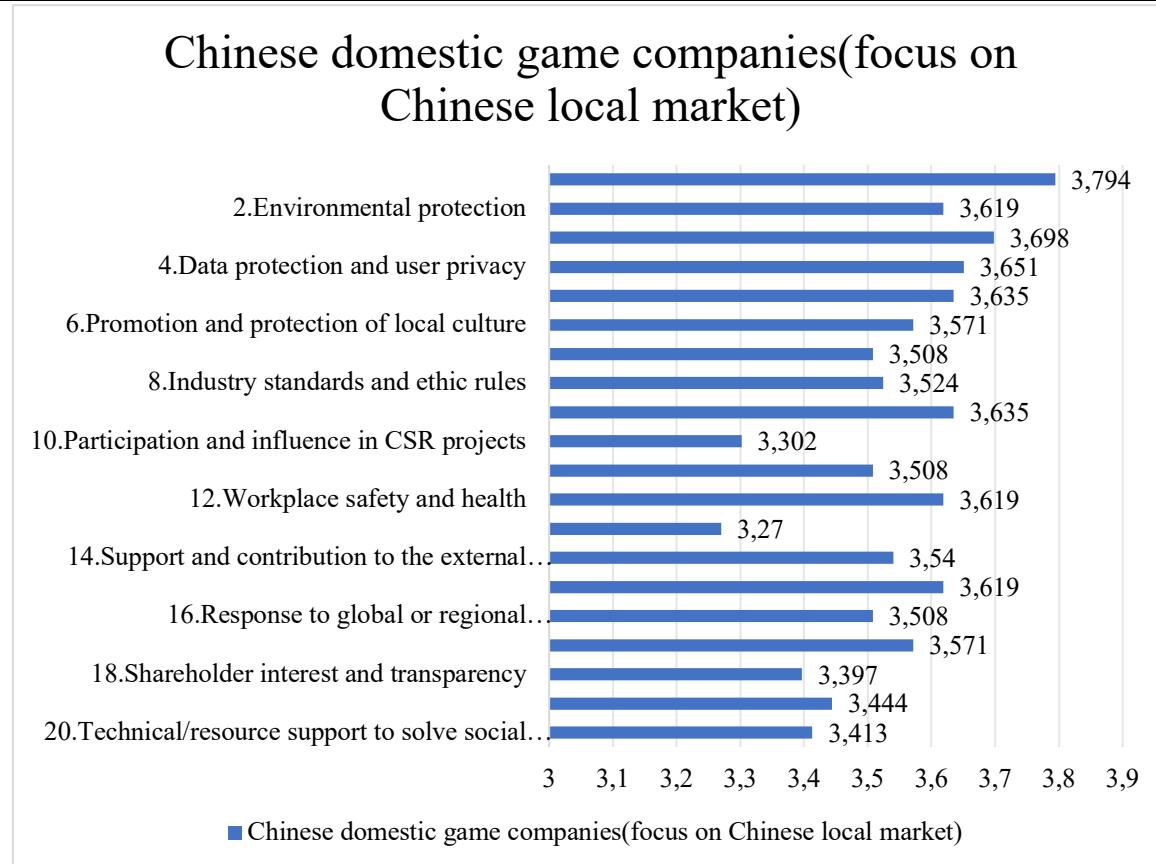


Figure 6.2 Average scores of CSR practices of Chinese domestic game companies

Chinese domestic game companies show certain efforts in CSR practices, but there is still much room for improvement in several key dimensions. They need to further enhance their overall performance in the field of CSR in order to promote company's sustainable development.

### 6.3.3 Interview and analysis of company stakeholders

CSR practices of Chinese domestic game companies show obvious contributions to different stakeholders, but there are also some deficiencies. Through the detailed interviews, we can gain insight into CSR of these companies.

1) From the perspective of suppliers, domestic game companies pay attention to social responsibility in the cooperation, but the practical effects need further improvements. The interviews show that there is a gap between the ideology advocacy and actual execution in CSR cooperation between domestic game companies and suppliers. Companies demonstrate a certain level of social responsibility consciousness in supply chain management, As described by a supplier: "We've been working with the company for five years, mostly in game art and content outsourcing. The company emphasizes environmental and social responsibility measures in cooperation, such as reducing paper contracts and adopting green office". Such

emphasis on social responsibility helps enhance the reputation of companies in the supply chain and gain recognition from partners. However, interviewed suppliers also point out “although the company advocates social responsibility, they are occasionally lax in the actual implementation, for example, the environmental protection measures are not utterly implemented, which influences the efficiency of the business sometimes”. This situation reveals a notable gap between the form and substance of executing social responsibility in supply chain management. While companies recognize the strategic significance of social responsibility in the supply chain, there is a lack of systematic management mechanisms to ensure the effectiveness of these measures. This may weaken the trust relationship between suppliers and companies and limit the long-term value enhancement effects of CSR advocacy.

2) In interviews with upstream and downstream technology partners, respondents acknowledge the companies’ sustainability and ethical standards. A technology partner noted, “The company attaches great importance to sustainability and ethical standards during technical cooperation, especially in the field of data security and privacy protection.” But the partner also mentioned, “The main challenge in working with the company is the long technology development cycle and the uneven allocation of resources.” In terms of successful cases, the respondent said, “Through cooperation with the company, we jointly developed a new game engine, which greatly improved the operation efficiency of the game and promoted technological innovation.”

3) From a regulator’s perspective, domestic companies comply with domestic regulations and industry standards well. “The company has an excellent regulatory compliance record, it operates strictly under national standards and has set an example in transparency and compliance for the industry,” one regulator said and added, “The company’s proactive participation in CSR, such as donating to educational projects and community building, has achieved remarkable results.” But the regulator also pointed out, “The Company need to increase its response speed and flexibility when new laws and regulations are issued.”

4) Game users’ comments demonstrate the companies’ efforts in content quality and user data protection. “The company’s game content is of high quality and innovation, they are full of unique gameplay,” said one respondent. This shows that the company has fulfilled its social responsibility commitment in enhancing user experience and strengthening market competitiveness. Meanwhile the respondent further mentioned, “The company has done a good job in user data security and privacy protection, and there has never been a case of data breach”, demonstrating a strong awareness of safeguarding user rights. However, user feedback also points out that sometimes the slow response of the company disturbs the user

experience. The company should seek for improvement in the handling speed of user feedback and complaints. This shortcoming reflects that although companies have established sound user feedback channels, there is room for improvement in internal process optimization and communication channel enhancement, which somewhat diminishes the positive influences of other CSR practices by the company.

5) Creditors recognize the companies' financial stability and commitment to social responsibility. One creditor said, "The company's financial position is very stable, it is of high transparent. This is an advantage when making investment decisions." He also noted that despite economic pressures and market changes, the company always sticks to its CSR commitment. Even during the Covid-19 pandemic, it had never reduced employee benefits and continued to support community activities. However, the creditor also mentioned, "Nevertheless, when facing market volatility, the company's financial strategy is a bit of conservative, it's better to be more innovative and flexible."

6) From the perspective of employees, the companies perform well in terms of employee welfare and career development. One employee shared, "Working in the company is a great experience, we have good benefits and career opportunities. The company attaches great importance to CSR through the management of work environment and employee relations. We timely have team-building activities to enhance employees' sense of belonging. The company culture is very positive, advocating innovation and responsibility. And these values are regularly emphasized through training and internal publicity." However, "due to rapid expansion of the company, we will face great work pressure. The company needs to do more in employee mental health and work-life balance," the employee added.

Chinese domestic game companies have achieved a lot from their CSR practices, especially in the fields of supply chain management, technical cooperation, regulatory compliance, user data protection, financial transparency and employee welfare. However, deficiencies still exist in executive force of environmental protection measures, management of technology development cycle, response and processing speed of user feedback, and management of working pressure. The companies need further improvement in these fields.

### **6.3.4 Deficiencies in CSR practices of Chinese domestic game companies**

There are significant differences in CSR practices between Chinese domestic game companies and well-known multinational game companies. Despite the rapid development of Chinese domestic game companies in recent years, which have demonstrated characteristics such as flexibility and close alignment with local user needs, their CSR practices exhibit deficiencies

in environmental protection and public welfare. These shortcomings are specifically reflected in a lack of systematic strategy and limited global vision.

First, there is a lack of systematic approach in environmental protection and sustainable development strategy. Compared with the mature sustainable development strategies and global supply chain management of well-known multinational game companies, domestic game companies tend to adopt fragmented and short-term approaches in the field of environmental responsibility. On the one hand, domestic companies, benefiting from more flexible decision-making structures, have implemented certain initiatives in energy conservation, emission reduction, green office practices, and paperless operations. By promoting the concept of green operation, they have achieved a certain degree of industry-wide demonstration effect within the domestic gaming sector. However, most of these measures are limited to internal management, lacking an overall strategy. They fail to establish effective connections across the upstream and downstream supply chains, nor do they formulate clear, quantifiable environmental targets or standards. Therefore, it is hard to comprehensively monitor and continuously improve the environmental performance of the company. On the other hand, given the rapid expansion phase of domestic game companies, resource allocation is predominantly concentrated on product development and marketing, resulting in limited investment and attention in long-term environmental strategies. Consequently, these companies face difficulties in meeting higher standards in supply chain management, carbon emissions control, energy usage, and waste management. These limitations not only hinder long-term social recognition of the company but also prevent them from capitalizing on opportunities to lead in environmental technology and expand into the green gaming market under global sustainability trends, thereby constraining their competitive advantages in future development.

Second, there is a lack of an international perspective on social welfare and community responsibility. Domestic game companies have demonstrated advantages such as strong local cultural affinity, prompt responsiveness, and efficient decision-making in public welfare activities. They consistently respond promptly to national calls and actively participate in disaster relief, poverty alleviation, educational support, and epidemic prevention. These actions reflect their notable engagement in public welfare and social concern. However, compared to multinational companies, domestic companies' social welfare activities lack systematic planning and tend to be more episodic, temporary, and localized. They fail to establish dedicated foundations or public welfare platforms, nor have they fully recognized the strategic value of public welfare activities, resulting in insufficient long-term investment

in this area. Moreover, in their CSR practices, domestic game companies often overlook global public welfare issues such as diversity, inclusivity, international charitable collaboration, and cultural exchange. This oversight limits the international dissemination and recognition of their brands and hinders their ability to cultivate a lasting and appealing global CSR image. Such limitations in vision and action also indirectly lead to challenges in attracting high-caliber international talents and fostering employees' cultural identity and sense of belonging. Consequently, this restricts their competitive edge in talent acquisition and long-term innovation in the global market, ultimately impeding sustainable development of the company.

Therefore, it is imperative for domestic gaming companies to enhance the strategic dimension and broaden the international perspective of CSR while maintaining their localized advantages. They should establish a CSR practice system tailored to their distinctive characteristics and capable of achieving global influence, so as to realize long-term value enhancement and comprehensive brand expansion.

## **6.4 “Vitality” indie game studios**

### **6.4.1 Measures and effects of CSR practices**

Talking about CSR practices, “Vitality” indie game studios have achieved remarkable results through various initiatives, such as building game communities, actively responding to user opinions, promoting product creativity and promoting gameplay creativity. Taking TeamTiger, Mora Churrasco Studio, Mana Fish Games, Nightales Studio, Yohcan Co., Ltd., and YoYiYo Studio as the example, these studios have won wide recognition and acclaim from the market by closely contacting with players, actively incorporating player feedback into products, and creating unique and creative game experiences together with players. In terms of creating a good game community, these indie game studios have taken a series of positive initiatives. TeamTiger has established a highly interactive community in Greedland. It regularly organizes online and offline activities to accelerate communication among players, enhance their sense of belonging. In order to form a vibrant player community, Mora Churrasco Studio, the developer of game Lucky Hero, keeps close contact with players through social media and timely responds to players' feedback. Mana Fish Games has created a global and cross-cultural community in Teratale: Tide of Wishes through multi-language support. Whispers of Yan Shan of Nightales Studio has created a unique cultural community by telling stories full

of local characteristics, attracting a large number of players interested in local culture. Yohcan Co., Ltd. explores workplace culture through *Quit Today*, establishing a community for communicating career experience. YoYiYo Studio's *Nine Lives* has built a player community full of discussion and creation through its rich story lines and diverse characters. The studios actively respond to player opinions and optimize game content for realizing co-creation. During the development of *GreedLand*, TeamTiger extensively collected player feedback, quickly responded by adjusting and optimizing the game content. In the official version of *Lucky Hero*, Mora Churrasco Studio fully adopted all player suggestions collected during the beta phase, making the game more in line with player expectations. Mana Fish Studios kept close interaction with players through crowdfunding platform. The sense of participation and belonging of players was greatly enhanced. Nightales Studio regularly releases development logs and player questionnaires to ensure that voices of players can be heard and incorporated into the game. When developing *Quit Today*, Yohcan Co., Ltd. extensively collected players opinions through social platforms to make the game content closer to real-life workplace experience. YoYiYo Studio keeps real time interaction with players through the community platform to enrich the content and depth of the game. Regarding product creativity and innovative gameplay, TeamTiger has introduced innovative strategy gameplay to increase the enjoyment of the game. Mora Churrasco Studio combines traditional RPG elements with an innovative random event system to create a game world both classic and innovative in *Lucky Hero*. Mana Fish Studio combines role-playing and strategy combat to deliver a unique game experience. Nightales Studio created a highly immersive gaming environment by rich cultural elements. Yohcan Co., Ltd has made realistic portrayal of career life. YoYiYo Studio provides multiple endings and in-depth interaction experience.

In a comprehensive view, with the excellent practices such as building game communities, actively responding to player opinions, promoting product creativity, innovating gameplay, the “vitality” indie game studios have not only increased player engagement and satisfaction, but also established a good brand image in the market. These successful cases show that indie game studios, even with limited resources, can achieve significant results in CSR practices through innovation and community interaction.

#### **6.4.2 Questionnaire results of CSR practices**

According to the questionnaire survey, the practices of indie game studios in CSR is relatively limited. Data show that these small studios score low on overall CSR indicators, reflecting their lack of resources, management ability and CSR awareness. As shown in Figure 5.3, In

terms of *cross-cultural communication and understanding*, small game studios score 3.752, showing they have little experience in cross-cultural communication and international cooperation. This is mainly due to their narrow scope of business which focuses on the local market. The score of *environmental protection* is 3.629, indicating that these studios have limited investment and actions in environmental protection. This is possibly due to a lack of adequate resources and strategic planning. *Employee career development and welfare* scores 3.562, and *data protection and user privacy* 3.695, indicating that small studios still need to strengthen their efforts into employee benefits and user data protection. *Supply chain social responsibility and fair trade* scores 3.467, *promotion and protection of local culture* 3.562, and *handling of user feedback and complaints* 3.600, showing that these studios need to improve their practices in terms of supply chain management, local culture protection and user service. The score of *innovation and original content* is 3.676, reflecting that these studios have particular advantages in innovation as well as original content development. This is possibly due to their flexibility and high sense of innovation. However, the score of *participation and influence in social responsibility projects* is 3.657, the score of *social and economic inclusion* 3.562, the score of *workplace safety and health* 3.743, the score of *fair career development and individual growth* 3.371, and the score of *support and contribution to the external community* 3.438, showing that small game studios need to do more in these fields. *Support for education and training* scores 3.571, *shareholder interest and transparency* 3.429, *advocacy and participation in public policy* 3.581, and *technical and resource support to solve social problems* 3.524. These low scores reflect the weakness of small studios in education, training, shareholder transparency, policy participation and technical resource support.

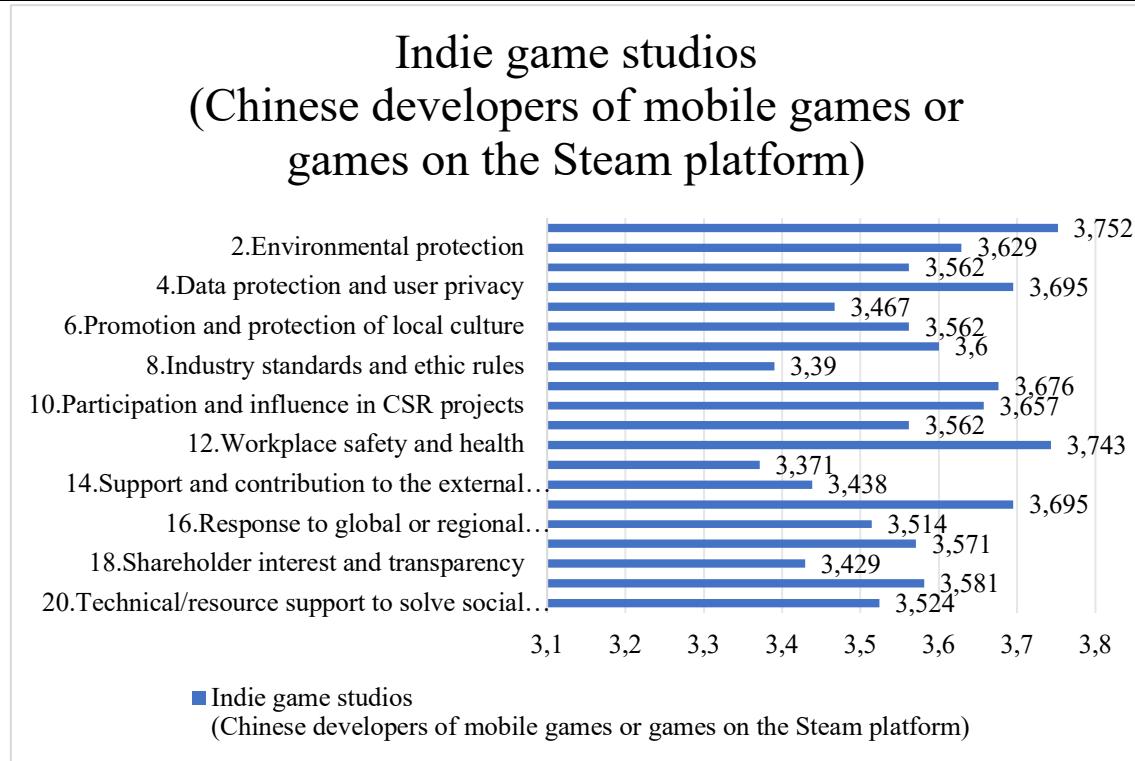


Figure 6.3 Average scores of CSR practices of indie game studios

Indie game studios are insufficient in CSR practices, which requires them to further improve the abilities of resource allocation and management, and strengthen CSR awareness in order to enhance their overall competitiveness and social influences in the industry.

#### 6.4.3 Interview and analysis of company stakeholders

Targeting different stakeholders, CSR contributions of indie game studios are obvious. Several deficiencies are also revealed at the meantime.

1) From suppliers' perspective, the cooperation mode with indie game studios is relatively flexible and tight. One supplier described, "Collaboration with these studios focuses on artistic design and technical support. The modes of cooperation are very flexible, usually we cooperate on the basis of projects." These studios place a high value on ethics and responsibility of supply chain. A suppliers noted, "They pay particular attention to fair trade and working conditions in the supply chain to ensure employees are treated appropriately." However, due to the limited size of indie game studios, the supplier also mentioned, "There are limitations in business continuity and scale effects when working with these small-scale studios, so our business strategies need to be adjusted to accommodate their flexible but unstable pace."

2) In the interviews with upstream and downstream technical partners, the performance of

indie game studios in technical cooperation and resource sharing gets unanimous praise. “These studios have performed well in technical cooperation. They are willing to share resources and technologies to promote mutual growth,” said one technology partner. Talking about specific cases, “We worked with an indie studio to develop an innovative game engine that not only improves their game performance, but also increases our technical ability.” The studios demonstrate a positive attitude in adopting new technologies and sustainable practices, “They are very willing to try new technologies and implement environmentally friendly and sustainable development practices in their projects.”

3) From the angle of a regulator, indie studios are facing unique challenges in complying with industry norms and regulations. “These studios often have limited resources to fully understand and comply with complex regulatory requirements,” noted one regulator. However, the regulator pointed out that these studios act well in terms of transparency and compliance, “Despite the limited resources, they have made every effort to keep transparent operation and actively cooperate with the work of regulators.” Talking about social responsibility and community engagement, one regulator praised, “These studios show a strong sense of social responsibility for they frequently delivering positive social messages through game content and actively participating in local community activities.”

4) Game users speak highly of the games developed by indie game studios. “In general, I’m very satisfied with the games from these studios. They are distinctive in innovation and uniqueness,” said one user. These studios do a good job in user rights, “They take user privacy very seriously. They are responsive to user feedback and often communicate directly with users in the communities.” User feedback plays an important role to these studios, “They often improve the content of the game based on user feedback, then quickly release new versions to improve the user experience.”

5) Creditors are cautiously optimistic about their financial relationships with indie game studios as well as the corresponding investment returns. One creditor stated, “While financial state of these studios may not be as stable as multinational game companies, their innovative potential and market performance often result in sizable investment returns.” Under uncertain market conditions, these studios demonstrate a high level of financial responsibility and transparency, “They publish financial reports regularly to ensure transparency, also to increase creditor confidence.” In the face of economic challenges, they adhere to their commitment to social responsibility, “Even when facing financial strain, they insist on not cutting employee benefits and continue to support community and social programs.”

6) From employees’ perspective, indie game studios offer them a great work experience

and career opportunity. “It’s a lot of fun to work in these studios. Despite limited resources, there is a lot of freedom and room for innovation,” one employee shared. The studios are also active in employee support and development, “They support the career development of employees through flexible working arrangements and ongoing vocational training.” In promoting corporate culture and core values, these studios have taken concrete measures, “They attach great importance to teamwork and spirit of innovation. To create a positive working atmosphere, they often organize internal discussions and team activities.”

It can be seen that indie game studios demonstrate a significant contribution in CSR practices, especially in the fields of supply chain ethics, technical cooperation, user rights protection and community engagement. However, due to resource and scale limitations, they are still facing challenges in business continuity, compliance with regulations and market stability, which call for their further improvement.

#### **6.4.4 Deficiencies in CSR practices of indie game studios**

Indie game studios typically exhibit greater originality in content and more freedom in mechanism design, allowing them to circumvent the path dependence of large commercial game companies on market profit models, thereby fostering the development of game cultural diversity. For example, the Chinese independent game Bright Memory demonstrates a strong commitment to technological innovation in mechanism integration and visual presentation, breaking the structural boundaries of traditional genre games. In terms of community construction, indie game developers often cultivate highly interactive relationships with player communities through social media, development blogs, and crowdfunding platforms such as Kickstarter.

However, indie game studios demonstrate several deficiencies in CSR practices, which negatively influence long-term competitive advantages and increase operational risks. While these companies show outstanding performance in innovation and user interaction, they generally lack systematic and long-term CSR planning. CSR practices tend to be fragmented and random. Due to a lack of stable strategic investments and institutionalized management mechanisms, companies are unable to effectively accumulate social reputation and brand trust, resulting in insufficient sustained market influence. In the long run, this strategic deficiency will limit the company’s scale expansion, lower the confidence of investors and partners in the stability of the company’s operations, hinder the acquisition of stable financial and technical support, and ultimately restrict the company’s potential for value creation. The strategic deficiency also makes it difficult for independent game studios to establish a solid

brand image in a highly competitive market environment, reducing user loyalty and increasing market competition costs and marketing burdens. This further weakens the accumulation of economic value for the company. On the other hand, indie game studios lack the capacity to comply with regulations and manage risks in social responsibility fields, which directly exposes them to higher operational risks. Due to limited resources and scale, these companies generally lack dedicated legal compliance teams, making it difficult to effectively respond to increasingly stringent requirements for data protection, content regulation, and intellectual property rights. Such deficiencies in standardized management processes and risk control mechanisms increase the probability of facing regulatory penalties and legal disputes. This significantly increases the potential operational costs for the company. If any data breach or content violation occurs, it not only leads to direct economic losses such as fines and compensations but more significantly, it causes long-term damage to the company's brand image. This can result in massive user churn and a decrease in market trust, further increasing the company's operational costs and user acquisition costs. This compliance risk can also limit opportunities for cooperation with large partners and platforms, thereby restricting the business development space and long-term strategic expansion potential for independent game studios. Ultimately, this causes a lasting and severe negative influences on the company's enterprise value.

To sum up, indie game studios show excellence in CSR practices, especially in the fields of player community and innovation. This stems from their flexible operating model, tight community ties, and strong drive for innovation. However, compared with well-known multinational game companies, there are still a long way to go for indie game studios, especially in resource investment and strategic planning. The latter two need to improve their comprehensive competitiveness and social influences in the context of globalization by continuously improving their management system and increasing CSR investment.

## 6.5 Summary

Based on the empirical analysis in Chapter 5, Chapter 6 further deepens the understanding of CSR practices in the game industry through a combination of questionnaires and interviews. The selection of survey respondents covers multinational game companies, Chinese domestic game companies and indie game studios. Comprehensive surveys and in-depth interviews are conducted to the CSR practices of each type of game companies respectively. Particular attention is paid to the differentiated practices and corresponding influences of CSR in game

companies of different scales. The survey results show that multinational game companies, despite their relatively well-developed CSR practices, still perform inadequately in some fields of social responsibility; Chinese domestic companies, restrained by their resources and market positioning, have varying degrees of attention to CSR, also their abilities to fulfill CSR are uneven; and Indie game studios, despite their strong CSR awareness, are significantly constrained in terms of CSR effectiveness due to limitations of resources. On the whole, through qualitative surveys, Chapter 5 effectively makes up for the deviations and limitations which may exist in the aforementioned analysis of financial indicators. This chapter further expands the comprehensiveness and depth of research on CSR in the game industry, and provides a more practical direction for game companies to improve their CSR level in the future.

## Chapter 7: Conclusions and Discussions

### 7.1 Conclusions

In the context of the rapid development of digital technology and artificial intelligence, the relationship between social responsibility practices in the game industry and the enhancement of enterprise value has become an important topic that needs to be explored in depth. The existing studies have obvious deficiencies in the aspects of technology application, value orientation analysis, and the correlation between development cost and social responsibility, they fail to fully reveal how game companies realize the enhancement of enterprise value during the fulfillment of social responsibility. Taking A-shares listed game companies in Shanghai and Shenzhen Stock Exchanges as the research subjects, this thesis systematically discusses the social responsibility practices of game companies from the perspectives of different stakeholders and related influence mechanism on enterprise value through theoretical model construction and empirical analysis. Subsequently, with micro survey analysis of “Leading geese” multinational game companies, “Backbone” Chinese domestic game companies and “Vitality” indie game studios, the problems existing in the social responsibility practices of different types of companies in actual operation are further revealed. The research in this thesis offers empirical basis and practical guidance for future social responsibility strategies in the game industry. It aims to drive game companies to achieve sustainable development and value enhancement while assuming social responsibility.

Through empirical analysis, this thesis reveals the differentiated CSR practices of Chinese listed game companies and their influences on enterprise value. From empirical research of the relationship between CSR practices and enterprise value enhancement of A-shares listed companies from online game sector of Shanghai and Shenzhen Stock Exchanges, it comes to following conclusions. The active CSR practices of game companies to technological development, regulators, creditors and employees can significantly enhance enterprise value. By reinforcing CSR investment in technological development, companies can improve the efficiency of technological innovation, and thereby achieving an direct increase in market competitiveness and enterprise value (Shen et al., 2021); CSR practices to regulators help companies to avoid policy risks, establish a good company reputation and industrial

environment, and then gain recognition from the market and capital (Shan et al., 2014); active CSR practices to creditors refer to sound capital management measures which can effectively reduce financial risks, enhance the trust of the capital market, and thus promote the stable enhancement of enterprise value (Cai et al., 2020); Through active investment in CSR to employees, companies can enhance employee satisfaction and loyalty, improve the stability of human capital and innovation ability of employees, and in the long term, significantly promote the formation of competitive advantage (Yan et al., 2022). On the contrary, CSR practices to suppliers and customers fail to show significant enhancement of enterprise value. There are several reasons for this condition. In the case of CSR to suppliers, there is a problem of capital turnover efficiency, that is, excessive capital occupation in terms of suppliers results in higher pressure in company operating funds and lower operating efficiency; in the case of CSR to customers, excessive R&D investment may not necessarily lead to the expected market returns, which is closely related to the short product life cycle and rapid changing user preferences in the gaming industry (Van Rooij & Schoenmakers, 2013). Therefore, game companies should pinpoint the key fields of CSR, implement differentiated strategies in technological innovation, compliance management, debt risk control and employee incentives, at the meanwhile, optimize supply chain capital management and accurately grasp the market demand, in order to realize a win-win result through the synergy of CSR practices and enterprise value.

Through detailed surveys of CSR practices of different types of companies in Chinese game industry, this thesis reveals their performance and differences in different dimensions. Multinational game companies, such as Tencent Holdings and NetEase Games, show significant advantages with high scores in CSR practices, especially in cross-cultural communication, environmental protection, employee career development and data protection, reflecting their systematic and strategic CSR management capabilities brought by their global operations and rich resources. However, despite their excellent performance in most aspects, these companies still need further improvement in the fields of supply chain supervision, technical cooperation, complaint handling and employee management. In contrast, Chinese domestic game companies, such as Xiamen G-bits and OurPalm Technology, have made certain achievements in environmental protection, employee protection and development, social welfare and community responsibility, but there are still significant gaps in key areas such as cross-cultural communication, data protection, innovation and original content when comparing to large companies. Especially in the ability of internationalization and cross-cultural communication, domestic companies lack of the ability and have to further strengthen

the global-oriented strategic planning. Indie game studios such as TeamTiger and Mora Churrasco Studio, despite their limited resources, have demonstrated unique strengths in player community building, innovation and original content, their flexible business model and tight community ties enable them to do a remarkable job in user feedback handling and product innovation. However, compared with multinational companies, there is still a long way for indie game studios to go regarding resource investment and strategic planning. In a comprehensive perspective, for CSR practices in the game industry, to build an all-round and multi-level CSR system for the industry, thereby promoting the sustainable industry development, it requires the joint effect of the policy guidance, the industry norms, the demonstration effect of leading companies, and the mutual actions of flexible and innovative small and medium companies.

## 7.2 Discussions

The digital game industry exhibits distinct characteristics in CSR practices compared to traditional industries. This divergence stems from the industry's unique products attributes, audience characteristics, value creation model, and distinctive external regulatory framework (P. Jones et al., 2013). These differences manifest in four key dimensions: the scope of CSR definitions, stakeholder structures, mechanisms for responsibility fulfillment, and regulatory orientations. First, the industry demonstrates distinctive characteristics in defining social responsibility. Unlike industry sectors such as manufacturing and finance, which emphasize conventional CSR dimensions like environmental protection, labor rights, and product safety, CSR practices in the digital game industry focuses on "soft" responsibility areas such as cultural orientation, psychological influence, behavioral induction and information protection. Mitigating game addiction, protecting minors, ensuring transparency in virtual item transactions, and promoting appropriate value orientations in game content have emerged as key CSR issues in the industry. These issues cannot be quantified using traditional physical metrics. Instead, they often require interdisciplinary approaches incorporating behavioral science, ethical standards, and public discourse to establish responsibility benchmarks. Consequently, the boundaries of CSR in this industry remain highly dynamic and contested (Czerska & Majerska, 2023). Second, the stakeholder structure is highly digitalized and platform-based. In the game industry, stakeholders operate within a digital ecosystem. For example, suppliers prioritize technological platforms and collaboration on creative content, regulators focus on cultural review and minor protection, customers exhibit high engagement,

creditor financing depends on project valuation, and employee management contends with the high turnover rate of creative talent and the need for flexible incentives. In contrast, traditional industries rely on physical supply chains, where suppliers emphasize stable raw material procurement, regulators prioritize quality and safety standards, customers engage in low-frequency transactions, creditor financing depends on mortgage of fixed assets, and employee structures emphasize production skills and career advancement. These structural distinctions between the game industry and traditional industries require game companies to simultaneously respond to market mechanisms and ethical standards. They must not only meet users' immersive experiences demands but also mitigate issues such as game addiction, misleading advertising, and consumption inducement. To sum up, CSR practices in game industry show high complexity and face the challenge of multidimensional coordination (L. Y. Xiao & Henderson, 2021). Third, the non-standardization and context-dependency of the responsibility fulfillment mechanism. Traditional industries often have relatively standardized responsibility assessment systems, such as environmental compliance, control of occupational injury rates, and tax compliance. In contrast, the digital game industry exhibits high flexibility and creativity in content generation, user interaction, and operational management, making its methods of responsibility fulfillment more dependent on companies' self-regulation, industry standards, and public perception (L. Y. Xiao, 2023). For instance, in constructing anti-addiction systems for minors, responsibility fulfillment depends not only on companies establishing technical prevention systems, but also on the coordination of parental supervision, user self-discipline awareness, and institutional implementation effectiveness. Consequently, responsibility fulfillment in the game industry relies more on soft regulations and platform governance capabilities, lacking unified standards and replicable templates. Fourth, the cultural policy orientation of the external regulatory framework. The digital game industry possesses dual attributes of cultural dissemination and industrial development. CSR practices in this industry are not only an ethical self-regulation issue for market entities, but also a critical component of national cultural security and ideological governance. Compared with regulatory frameworks based on economic indicators in sectors such as finance, manufacturing, and construction, the game industry is more significantly influenced by policy guidance and value regulation (J. H. Lee, 2018).

This thesis presents an in-depth examination of the core problem of how game companies can enhance their enterprise value through the fulfillment of social responsibility. Through theoretical model construction and empirical analysis, it demonstrates the CSR practice of game companies, as well as the influence mechanisms of these practices on enterprise value,

from the perspectives of different stakeholders.

First, this thesis seeks to find the answer to “how game companies can achieve enterprise value enhancement by CSR practices”. The empirical results of research show that game companies can effectively enhance enterprise value by selectively focusing on the fields of technological innovation, compliance management, debt management and employee incentives. Therefore, in order to achieve the maximum enhancement of enterprise value, game companies should accurately grasp the characteristics of the industry as well as themselves when fulfilling CSR, and optimize the resource allocation strategy.

Second, in order to answer the question of “From a macroscopic perspective, what are the influences of CSR practices of game companies on each stakeholder?”, this thesis points out the heterogeneous influences of CSR practices on stakeholders in game industry. From the perspective of stakeholders, CSR to technological development not only enhance enterprise value, but also promotes the technological innovation capacity of the entire industry (Y. H. Liu et al., 2020); companies can enhance their compliance reputation by actively responding to the requirements of regulators and complying with the policies and norms, and this also helps to build a good industrial ecology and maintains the overall stability of the industry (Cai et al., 2020); for creditors, good fund management and risk control measures significantly reduce the default risks faced by creditors and enhance creditor trust (Shen et al., 2021); CSR practices to employees are embodied in the enhancement of employee satisfaction and loyalty, which improves the stability of human capital as well as the innovation of employees. Consequently, competitive advantages in the long term will be formed for the company (Yan et al., 2022). However, the influences of game companies in fulfilling CSR to suppliers and customers is non-significant, reflecting the lack of efficiency in supply chain fund management and the imprecise grasp of customers’ market preferences. Such non-significance suggests that companies need to make differentiated adjustments to their CSR strategies. For CSR practices in the game industry, close attention should be paid to the online data privacy and the construction of virtual community ecosystems, in order to better protect the online safety and trust of customers (Kwon & Johnson, 2014; J. M. Zhang & Tang, 2022).

Third, in order verify the theoretical model of the relationship between CSR practices and enterprise value enhancement within the context of the game industry, this thesis uses relevant data from the online game sector of A-shares listed companies in Shanghai and Shenzhen Stock Exchanges for empirical analysis. Empirical test results significantly support the hypotheses that CSR practices towards technological development, regulators, creditors and employees can exert a positive influence on enterprise value. Through the construction and

analysis of the empirical model, the critical path for game companies to fulfil CSR has been effectively identified, and the theoretical logic that investment in CSR can significantly improve business performance of companies (Bollen, 1989; Byrne, 2013). The research results show that CSR to suppliers and customers fail to get significant supports. This reflects the specific problems existing in business management and resource allocation bottlenecks of companies, and further verifies the explanatory ability and practical significance of the theoretical model to the practice. Also this reminds game companies to define the strategic boundaries of CSR practices more precisely, so as to reduce ineffective investment and better cope with the uncertain market competition and uncertain policy environment (Van Rooij & Schoenmakers, 2013).

Fourth, in order to answer the question “From a microcosmic perspective, how does a game company fulfill CSR in practical operations? By this act, what are the influences on its enterprise value?”, taking “Leading geese” multinational game companies, “Backbone” Chinese domestic game companies, and “Vitality” indie game studios as the surveyed companies, this thesis delves into the actual CSR practices of these companies and the associated influences on enterprise value. At the micro level, multinational game companies have effectively reduced business risks and consolidated their global market layout and brand value by actively carrying out cross-cultural exchange projects, environmental protection measures, employee welfare improvement and data privacy protection in their actual operations. However, there are still deficiencies in micro-operations such as supply chain supervision, technical cooperation and employee pressure control. The deficiencies increase operating costs and brand reputation risks a certain extent, thus influencing the steady increase of long-term enterprise value. Regarding micro-operations of domestic game companies, whose mainly focus on the local market, limited CSR practices are carried out in fields such as cross-cultural communication, innovative content creation and international market expansion. To be specific, the lack of original game content and cultural exchange or cooperation projects directly limits these companies to build brand and extend user base in the global market. As a result, potential for international development and further enhancement of enterprise value is reduced. In the future, such type of companies needs to strengthen CSR practices in terms of product innovation, cultural communication and international cooperation in order to achieve a sustainable increase in enterprise value. Indie game studios show significant CSR advantages in terms of player community building and innovative interactions at the micro operating level. To be specific, these studios maintain close interaction with the player community, actively respond to player demands, and make timely

product innovations and adjustments correspondingly. Such interactive CSR practices strengthen user stickiness and product competitiveness, and have a direct positive influence on enterprise value enhancement in short term. However, in the long run, these companies generally have deficiencies in actual operational responsibilities such as compliance with regulations, financial stability and business continuity. Their lack of effective risk management and market stabilization mechanisms may lead to an increased enterprise survival risk as well as a weakened stability of enterprise value in the long term. By in-depth analysis of the interactive relationship between enterprise value and CSR practices of different types of game companies in practical operations from a micro perspective, suggestions for improvement are proposed. According to their own scale and market positioning, game companies should accurately identify the key CSR fields which are most appropriate to them. Then they should actively fulfill CSR in the actual business, so as to effectively reduce the operational risk, enhance brand value, expand market base, and ultimately enhancing the long-term ability of enterprise value creation.

In summary, by analyzing the theoretical and practical contributions of existing research, this thesis deepens the exploration of the influence mechanism of CSR in multiple dimensions. Theoretically, it expands the perspective and framework for researching the relationship between CSR and business performance, company reputation, long-term business success, shareholder value, consumer behavior, employee satisfaction and data privacy. It also reveals the differentiated influences on enterprise value of each entity's CSR activities. Practically, thesis provides companies with a framework for formulating and implementing CSR strategies within a complex market environment, emphasizing the way to balance the expectations of different stakeholders, optimize CSR practices, and maximize the contribution of CSR to enterprise value when dealing with both short - and long-term challenges. This thesis contributes not only to the academic discourse by providing a substantial theoretical foundation, but also to companies operational and practical suggestions of for CSR management, which is of great significance for promoting companies to realize sustainable development while fulfilling their social responsibilities.

## 7.3 Research implications

### 7.3.1 Implications for game companies

For game companies, specific policy measures should be implemented across multiple

domains, including technological innovation, compliance management, financial stability, talent incentives, supply chain management, and customer experience, to achieve the synergistic enhancement of CSR and enterprise value.

First, game companies should increase investment in technological development to enhance core competitiveness and market value. In the current fiercely competitive industry environment, technological innovation is a key factor for game companies to achieve sustained growth and expand market share. Policy recommendations include increasing R&D funding, optimizing the structure of technical teams, attracting high-end technical talent, promoting independent R&D and fostering technological collaboration and innovation between upstream and downstream partners, and improving product innovation and market adaptability. Intellectual property protection should be strengthened to ensure the effective transformation of technological achievements, thereby securing a competitive edge in the intense market competition.

Second, game companies must prioritize CSR to regulators to ensure the alignment of legal adherence and CSR. Under China's stringent policy and legal environment, game companies must strictly comply with government regulatory requirements, particularly in fields such as game content approval, tax compliance, and the protection of minors. Companies should establish robust compliance business systems to ensure timely responses to policy changes, actively fulfill CSR towards regulators such as fulfilling tax obligations and addressing employment issues, build positive relationships with regulatory authorities, and mitigate potential risks correlated to non-compliance.

Third, regarding CSR to creditors, companies should focus on capital management and financial stability by maintaining reasonable capital structures and liquidity management to reduce financial risks. Given the heavy reliance on external financing, game companies should strengthen communication with financial institutions, optimize debt structures, maintain appropriate leverage levels, and ensure sufficient liquidity to cope with market volatility.

Fourth, concerning CSR to employees, companies should emphasize enhancing human capital value by implementing fair compensation incentives and career development mechanisms to attract and retain core talent. In the talent-intensive game industry, where technical and creative professionals exhibit high mobility, companies should adopt flexible compensation systems, equity incentives, and other measures to strengthen employee loyalty and motivation, fostering innovation and productivity. Companies should also focus on employees' career planning by providing training and promotion opportunities, facilitating

professional growth, and ultimately achieving a win-win outcome for both the company and its employees.

Fifth, in terms of CSR to suppliers and customers, game companies should adopt differentiated management strategies. Long-term strategic partnerships with suppliers should be strengthened, supply chain management be optimized, and efficient and stable resource allocation ensured. For customers, companies should prioritize user experience and market feedback, avoiding excessive investment in R&D projects that may not yield returns. Instead, they should focus on product innovation and accurately addressing user needs to enhance customer satisfaction and loyalty.

### **7.3.2 Implications for suppliers**

From the perspective of suppliers to game companies, they should strengthen cooperation and communication with game companies. Through refined supply chain management, suppliers and companies could establish stable and efficient supply chain relationships. To improve capital efficiency, suppliers should optimize payment settlement cycles, avoiding excessive reliance on long payment terms that may lead to capital occupation issues, thereby strengthening their financial stability.

In terms of technical collaboration, suppliers should align with game companies' R&D needs, enhancing technical support and innovation to ensure that products meet quality and performance requirements. By strengthening cooperation with game companies' technical teams, suppliers should promptly communicate market trends and technological advancements, jointly developing solutions that align with market demands. Suppliers should optimize contract management with game companies, clearly defining quality standards, delivery schedules, and payment terms to minimize disputes or delays caused by incomplete agreements.

Regarding customer relationship management, suppliers should establish regular communication and feedback mechanisms to ensure rapid responses to changing demands, preventing supply chain instability due to information asymmetry or poor communication. To foster long-term partnerships, suppliers should enhance service levels, improve product quality, and optimize logistics to provide comprehensive support to game companies. Suppliers should focus on brand building and reputation enhancement by increasing transparency and compliance in CSR practices. Compliance with relevant laws and regulations will strengthen market recognition and game companies' confidence in their collaboration capabilities.

### **7.3.3 Implications for regulators**

From the perspective of game company regulators, they should further strengthen the regulation and management of the game industry, particularly in terms of content approval, tax compliance, and protection of minors, to ensure the healthy development of the industry.

In terms of content approval for game companies, regulators should continue to enhance the review of game products to ensure compliance with national laws, regulations, and social values, with a focus on cultural dissemination and social responsibility, and to avoid the spread of vulgar or violent content. Regulators can further clarify content review standards and improve efficiency, reducing the approval period to promote industry innovation and competitiveness.

For tax compliance, regulators should strengthen tax inspections for game companies to ensure timely payment of taxes in accordance with the law, and to prevent tax evasion through transfer pricing and other means. Regulators can help companies better understand and comply with relevant tax regulations by strengthening the transparency and guidance of tax policies. Regulators should promote innovation in tax policies to encourage game companies to increase R&D investment and technological innovation, and to promote long-term development of companies through preferential tax policies.

In terms of protection of minors, regulators should further impose strict time and consumption restrictions on games, requiring game companies to establish real-name authentication and parental monitoring mechanisms to prevent minors from becoming addicted to games, and to ensure effective control over their consumption behavior in games.

### **7.3.4 Implications for game players**

In the current evolving game industry, players (customers) have a significant influence as direct beneficiaries on the fulfillment of CSR by game companies. Through rational and proactive actions, players can promote game companies to fulfill higher social responsibilities in terms of product quality, community environment, and technological innovation.

First, players can push game companies to improve product quality and innovation. Players' purchasing power and feedback are crucial for game companies. By choosing games that reflect high quality and innovation, players can not only enjoy more immersive gaming experiences but also indirectly push game companies to develop to higher standards. When players provide constructive criticism or suggestions on game content, gameplay, and design, this interaction can help development teams better understand user needs and develop

products with greater social value.

Second, players should maintain and promote a healthy gaming community environment. A healthy gaming community environment not only enhances the overall player experience but also plays a crucial role in game companies' fulfillment of CSR. Players should actively participate in community building, advocate for a respectful and friendly atmosphere, and oppose any form of discrimination, bullying, or malicious behavior. Players' behavior should also convey positive energy, support and participate in game activities that have social influences, such as charity events or donations, thereby further promoting a company's fulfillment of CSR.

Third, players should promote technological innovation and sustainable development. With the gradual application of technologies such as virtual reality and artificial intelligence, the game industry's reliance on technology is constantly increasing. Players can promote the industry towards overall technological improvement, greater transparency and better responsibility by supporting companies that prioritize technological innovation while respecting privacy and data security. Players should also pay attention to the environmental influences of game products, especially in terms of energy consumption in data centers and the lifecycle of hardware products.

Fourth, players should strengthen the supervision and evaluation of game companies' CSR. Players' evaluation of game companies' fulfillment of CSR should not be limited to the consumption level. Players can express their views and suggestions on a company's fulfillment of CSR through public discussions, joining player organizations, or using social media platforms.

### **7.3.5 Implications for creditors**

Chinese game companies face financial health and debt repayment risks at different levels in the context of increasingly fierce market competition in recent years. Creditors need to ensure the fulfillment of game companies' CSR towards creditors through effective supervision and contractual arrangements to ensure the stability of creditor interests.

First, creditors can set strict requirements for financial transparency in debt contracts. Creditors could require game companies to regularly disclose detailed financial reports (particularly regarding key information such as cash flows, debt structures, and operating costs). Creditors could also require game companies to establish early warning mechanisms for changes in their financial conditions to detect potential financial risks faced by the company in advance.

Second, creditors should pay attention to the improvement of game company governance structures to ensure the stability of company management and the reasonableness of decision-making. Creditors can, through debt contracts, require companies to establish an independent risk management committee and rigorously review appointments and changes in senior management. Creditors can also request companies to provide reports on executive compensation, changes in equity structure, and records of senior personnel turnover.

Third, creditors can establish crisis response clauses to foresee risk factors that may influence a company's debt-paying ability in advance. Creditors can establish trigger mechanisms through debt contracts to require companies to take timely measures when facing sudden legal or market risks, such as increasing capital investment, adjusting business strategies, or seeking external support.

Fourth, creditors should strengthen their scrutiny of the long-term strategies of game companies to ensure the sustainability of their business models and market strategies. Creditors should require companies to consider factors such as social responsibility, brand image, and market diversification in their business strategies to avoid excessive reliance on a single product or market. Creditors can also request companies to submit future development plans, clearly specifying the implementation of social responsibility, to ensure that the company not only maintains financial health but also upholds certain standards in fulfilling CSR.

### **7.3.6 Implications for employees**

From the perspective of game company employees, they can play a role in promoting the fulfillment of CSR by the company in various ways, both to protect their own rights and interests and to encourage the company to pay more attention to fulfilling CSR. While the Chinese gaming industry is experiencing rapid development, it also faces challenges such as high employee turnover, high workload, and insufficient fulfillment of CSR. Employees can contribute to both the protection of their own interests and the promotion of a broader range of social responsibilities by the company through reasonable means.

First, employees should promote the improvement of the company's CSR by participating in internal decision-making and feedback mechanisms. Employees can provide regular feedback and participate in employee representative conferences to reflect social responsibility issues related to game content to the company's management. Voices from grassroots employees can prompt company management to better understand the importance of CSR in sustainable company development and make necessary adjustments to game design,

product development, and marketing processes.

Second, employees can advocate for and promote the establishment of a more comprehensive labor protection system within the company to ensure the effective protection of their basic rights and interests. Employees can work through labor union organizations or formal channels to push for the establishment of fairer and more transparent systems regarding working conditions, salary, and occupational health within the company.

Third, employees can focus on their professional ethics and practice social responsibility in their day-to-day work to influence the company culture through their own behavior. Employees can proactively pay attention to whether game content complies with laws and regulations, particularly in terms of protecting minors and preventing game addiction, in the process of game design, testing, and operation. Through internal suggestions, workshops, and other forms, employees can push the company to incorporate CSR into various aspects of product design and operation.

Fourth, employees can enhance their legal awareness to safeguard personal and collective rights and interests and encourage the company to fulfill its responsibilities to society and employees more effectively. Employees can strengthen their understanding of relevant laws and regulations, improve their awareness of legal compliance in their work, and ensure that the company does not cross legal boundaries in its operations. Employees can also participate in the company's external CSR projects, such as public welfare activities and environmental protection projects, to encourage the company to fulfill CSR through concrete actions. This multidimensional practice of CSR from within and without helps enhance the company's public image and employees' sense of identification with the company's fulfillment of CSR.

## 7.4 Research limitations and future directions

This thesis studies in-depth on whether CSR practices of game companies can enhance their enterprise value or not; however, some limitations exist.

First, there are some deficiencies in the coverage of research subjects. This thesis combines financial data analysis and questionnaire survey to improve the representativeness and comprehensiveness of the research results. However, due to the rapid development of the Chinese game industry and frequent alternation of game companies, a large number of emerging game companies in recent years are not able to be included in the sampling framework of the questionnaire survey. Consequently, the range of research subjects is constrained to the identifiable companies at the current stage, thereby compromising the

representativeness of the research results. This limitation, which does not encompass all game companies, particularly the emerging ones, may result in the research conclusion being unable to fully predict the future trend of the overall relationship between CSR fulfillment and enterprise value in the Chinese game industry.

Second, the thesis selects “Leading geese” multinational game companies, “Backbone” Chinese domestic game companies, and “Vitality” indie game studios for micro survey and analysis; however, research based on a single company will lead to insufficient analysis for there is little data support from different game companies and different types of markets, thus influencing the typicality of the research conclusion.

Based on research results in this thesis, future research is suggested to be carried out from the following directions:

First, future research endeavor should focus on expanding the boundaries of company sample by paying close attention to the dynamic evolution characteristics of the game industry, which can be achieved by employing continuous tracking investigation or dynamic monitoring methods, as well as including newly established and emerging game companies into the analysis framework. The utilization of big data and text mining technology holds considerable potential in the context of rapidly evolving game industry, for the purpose of capturing information of CSR performance. The establishment of a real-time updated data platform can facilitate continuous and in-depth analysis of the long-term trend and change mechanism of the interactive relationship between CSR fulfillment and enterprise value in the game industry. These methods have the potential to enhance the dynamic validity and practical guiding significance of research conclusions.

Second, future research should further expand the scope and diversity of surveys and analyses, especially surveys of companies of different scales and under different markets and growth stages, so as to form a diversified perspective of cross-regional and cross-market comparative analyses. For instance, a comparative study on multinational game companies from different countries or regions can be conducted to reveal the heterogeneity of the relationship between CSR fulfillment strategies and enterprise value in the context of globalization. Furthermore, more local small and medium-sized game companies or indie studios can be selected to strengthen the analysis of the diversity and dynamic characteristics of micro-subjects. By increasing the sample of companies and strengthening the comparison, future research can more accurately identify the common patterns and differential characteristics of CSR practices. This, in turn, will improve the representativeness and theoretical explanatory power of research conclusions.

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## Annex A: Annex Tables

Annex Table 1 ANOVA results classified by game company type

Item	2. The type of company you refer to in this questionnaire (Average value ± standard error)			F	p
	Multinational game companies (n=159)	Chinese domestic game companies (n=63)	Indie game studios (n=105)		
1. Cross-cultural understanding and communication	4.25±0.91	3.79±0.88	3.75±0.97	10.916	0.000**
2. Environmental protection	4.13±1.08	3.62±0.96	3.63±0.96	9.796	0.000**
3. Employee career development and welfare	4.16±1.07	3.70±0.94	3.56±1.06	11.463	0.000**
4. Data protection and user privacy	4.25±1.04	3.65±0.94	3.70±0.99	13.346	0.000**
5. Supply chain social responsibility and fair trade	4.21±0.97	3.63±1.00	3.47±1.06	19.462	0.000**
6. Promotion and protection of local culture	4.20±0.95	3.57±0.91	3.56±1.02	17.783	0.000**
7. Handling of user feedback and complaints	4.23±1.01	3.51±1.05	3.60±0.98	18.163	0.000**
8. Industry standards and ethic rules	4.09±1.06	3.52±0.98	3.39±1.00	16.584	0.000**
9. Innovation and original content	4.27±0.99	3.63±1.02	3.68±0.98	15.458	0.000**
10. Participation and influence in social responsibility projects	4.09±1.06	3.30±0.98	3.66±0.90	15.603	0.000**
11. Social and economic inclusion	4.30±0.94	3.51±1.05	3.56±0.96	24.911	0.000**
12. Workplace safety and health	4.25±0.93	3.62±1.02	3.74±1.00	13.420	0.000**
13. Fair career development and individual growth	4.21±1.00	3.27±1.00	3.37±1.03	31.322	0.000**
14. Support and contribution to the external community	4.08±1.11	3.54±0.88	3.44±0.97	14.147	0.000**
15. Sustainable business practices and green technologies	4.28±0.99	3.62±0.96	3.70±1.02	15.559	0.000**
16. Response to global or regional environmental issues	4.14±1.07	3.51±1.00	3.51±1.03	14.716	0.000**
17. Support for education and training	4.16±1.07	3.57±1.00	3.57±1.04	13.147	0.000**
18. Shareholder interest and transparency	4.14±1.08	3.40±1.06	3.43±1.03	18.966	0.000**
19. Advocacy and participation in public policy	4.18±0.93	3.44±1.06	3.58±1.01	18.398	0.000**
20. Technical and resource support to solve social problems	4.25±0.93	3.41±1.03	3.52±1.06	24.932	0.000**

Note: \* p<0.05 \*\* p<0.01

Annex Table 2 Calculation details within and among the game-company groups

Item	Difference	Sum of squares	DOF	MS	F	p
1. Cross-cultural understanding and communication	Among the groups	18.687	2	9.343	10.916	0.000
	Within the group	277.313	324	0.856		
2. Environmental protection	Among the groups	20.490	2	10.245	9.796	0.000
	Within the group	338.856	324	1.046		
3. Employee career development and welfare	Among the groups	24.920	2	12.460	11.463	0.000
	Within the group	352.187	324	1.087		
4. Data protection and user privacy	Among the groups	26.898	2	13.449	13.346	0.000
	Within the group	326.502	324	1.008		
5. Supply chain social responsibility and fair trade	Among the groups	39.341	2	19.671	19.462	0.000
	Within the group	327.466	324	1.011		
6. Promotion and protection of local culture	Among the groups	33.023	2	16.512	17.783	0.000
	Within the group	300.836	324	0.929		
7. Handling of user feedback and complaints	Among the groups	36.701	2	18.350	18.163	0.000
	Within the group	327.336	324	1.010		
8. Industry standards and ethic rules	Among the groups	34.956	2	17.478	16.584	0.000
	Within the group	341.472	324	1.054		
9. Innovation and original content	Among the groups	30.436	2	15.218	15.458	0.000
	Within the group	318.965	324	0.984		
10. Participation and influence in social responsibility projects	Among the groups	30.985	2	15.492	15.603	0.000
	Within the group	321.694	324	0.993		
11. Social and economic inclusion	Among the groups	46.547	2	23.274	24.911	0.000
	Within the group	302.701	324	0.934		
12. Workplace safety and health	Among the groups	25.211	2	12.606	13.420	0.000
	Within the group	304.348	324	0.939		
13. Fair career development and individual growth	Among the groups	63.738	2	31.869	31.322	0.000
	Within the group	329.657	324	1.017		
14. Support and contribution to the external community	Among the groups	29.744	2	14.872	14.147	0.000
	Within the group	340.593	324	1.051		
15. Sustainable business practices and green technologies	Among the groups	30.631	2	15.315	15.559	0.000
	Within the group	318.929	324	0.984		
16. Response to global or regional environmental issues	Among the groups	32.060	2	16.030	14.716	0.000
	Within the group	352.931	324	1.089		
17. Support for education and training	Among the groups	28.638	2	14.319	13.147	0.000
	Within the group	352.891	324	1.089		
18. Shareholder interest and transparency	Among the groups	42.587	2	21.293	18.966	0.000
	Within the group	363.750	324	1.123		
19. Advocacy and participation in public policy	Among the groups	35.527	2	17.763	18.398	0.000
	Within the group	312.828	324	0.966		
20. Technical and resource support to solve social problems	Among the groups	48.847	2	24.424	24.932	0.000
	Within the group	317.397	324	0.980		

## **Annex B: Supplementary Tests of Model Assumptions**

### **(Collinearity and Residual Normality)**

#### **1. Collinearity analysis**

When the variance inflation factor (VIF) of an independent variable exceeds 10 (or 5 under stricter criteria), the null hypothesis is rejected, as it indicates the presence of multicollinearity between the variable and other independent variables.

Conversely, if the VIF values for all independent variables are less than or equal to 10 (or 5), the null hypothesis cannot be rejected, suggesting that no significant multicollinearity exists among the independent variables. This satisfies the requirements for related statistical analyses, such as regression analysis.

Collinearity diagnostics 1

Item	VIF value	Tolerance
Return on assets (ROA)	1.084	0.923
Sup - Net operating cycle	1.084	0.923

Collinearity diagnostics 2

Item	VIF value	Tolerance
Return on assets (ROA)	1.058	0.946
Tech_1 - Return on invested capital	1.000	1.000
Tech_2 - cash to investment ratio	1.058	0.945

Collinearity diagnostics 3

Item	VIF value	Tolerance
Return on assets (ROA)	1.037	0.965
Taxr_2 - Total number of employees	1.011	0.989
Taxr_1 - Taxes payable/total assets	1.048	0.955

Collinearity diagnostics 4

Item	VIF value	Tolerance
Return on assets (ROA)	1.103	0.907
Sta - Payroll payable/total operating cost	1.103	0.907

Collinearity diagnostics 5

Item	VIF value	Tolerance
Return on assets (ROA)	1.900	0.526
Cus - Main business cost/revenue	1.900	0.526

Collinearity diagnostics 6

Item	VIF value	Tolerance
Return on assets (ROA)	1.008	0.992
Cre - Cash-to-short-term-debt ratio	1.008	0.992

Collinearity diagnostics 7

Item	VIF value	Tolerance
Return on assets (ROA)	1.323	0.756
Sto_1 - Basic EPS (earnings per share)	3.127	0.320
Sto_2 - Free cash flow per share	2.618	0.382

## 2. Residual normality test (Q-Q Plot)

The Q-Q plot is commonly used to visually examine whether the data follow a normal distribution (Kozak & Piepho, 2018). The residual normality test serves to determine whether the residuals of the regression model follow a normal distribution. The Q-Q plot (quantile-quantile plot) is a commonly employed graphical representation. The Q-Q plot compares the actual residual quantiles with those of a theoretical normal distribution, providing a visual representation of the deviation between the residual data and the normal distribution. This enables verification of the hypothesis whether the residuals meet the normality assumption or not. The verification criterion is: if the residuals predominantly align near the reference line and exhibit an approximately linear trend, this suggests conformity with the normality assumption. Conversely, if the residuals demonstrate significant deviation from the reference line or exhibit systematic curvature or extreme deviations in the tails, this indicates a violation of the normality assumption, necessitating further analysis (Das & Imon, 2016).

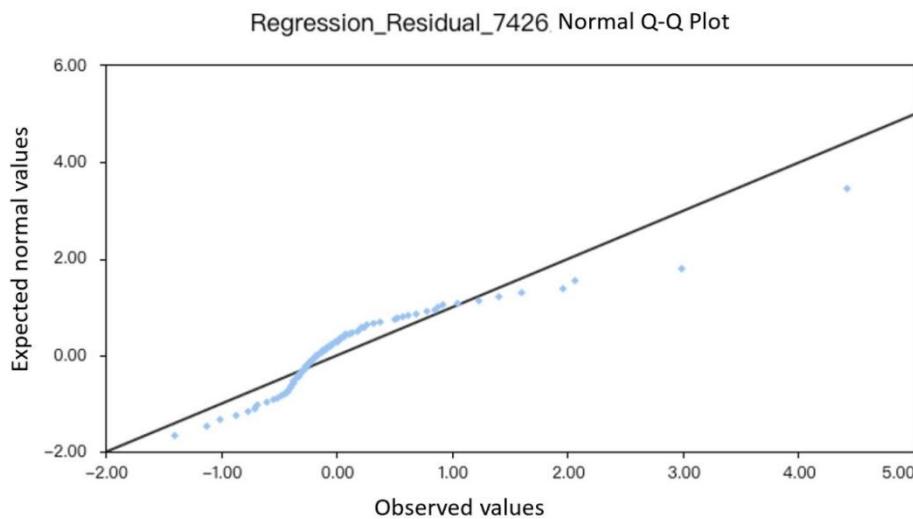
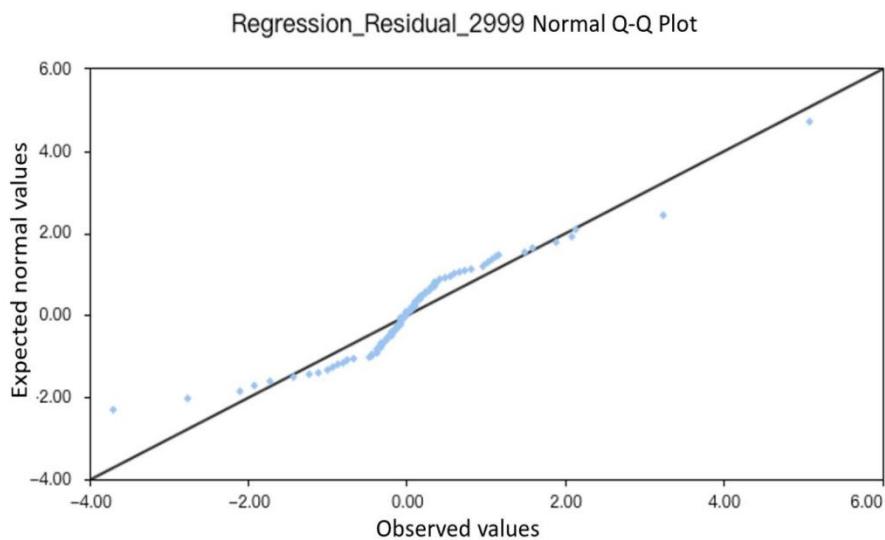
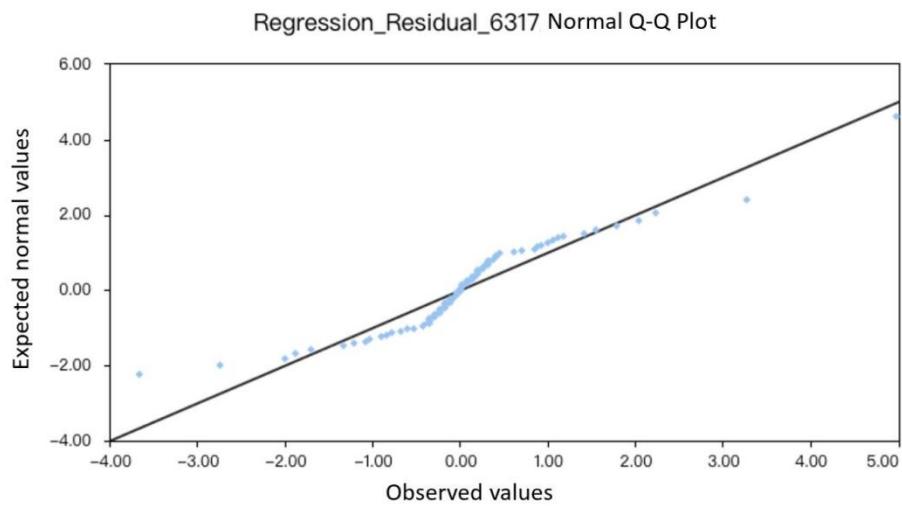
First, if the data are normally distributed, the quantiles of the data under the normal distribution should basically align with the actual data.

Second, the actual data are plotted on the X-axis, while the corresponding quantiles of the normal distribution are plotted on the Y-axis, a scatter plot is then generated.

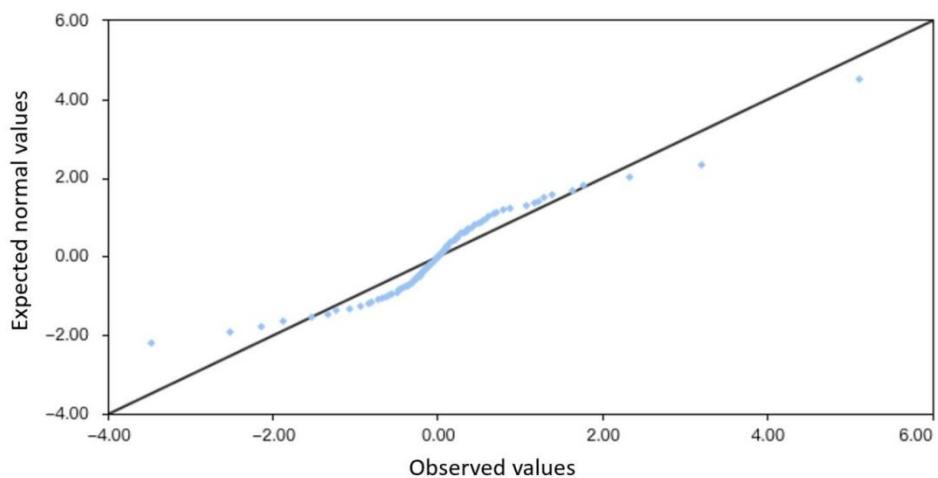
Third, if the scatter plot approximates a straight diagonal line, it suggests that the data are normally distributed. Otherwise, the data are not normally distributed.

Based on the results of the following Q-Q plot, it can be concluded that the residuals of the regression models largely conform to the properties of normality. Therefore, the test

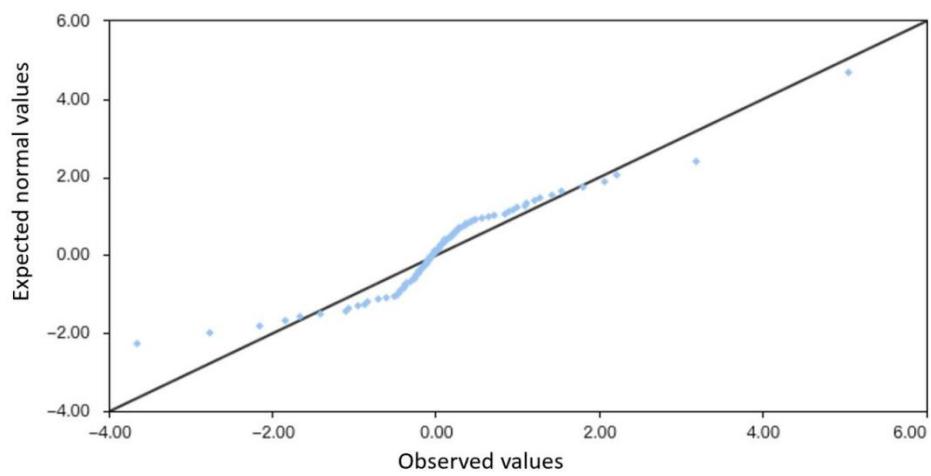
requirements are satisfied.



Regression\_Residual\_2736 Normal Q-Q Plot



Regression\_Residual\_8354 Normal Q-Q Plot



Regression\_Residual\_9110 Normal Q-Q Plot

