Academic Journal of Management and Social Sciences
ISSN: 2958-4396 | Vol. 9, No. 2, 2024

Research on the Impact of Digital Finance on High Quality Development of Enterprises

Chengda Jiang

Hangzhou Dianzi University, Hangzhou, Zhejiang, China

Abstract: This article aims to explore the impact of digital finance on the high-quality development of enterprises. By analyzing data from Chinese listed companies from 2010 to 2019 and using a multi time point double difference method, the article quantitatively evaluates the role of digital finance in alleviating financing constraints, enhancing environmental capabilities, and improving management efficiency for the first time. The research results indicate that the popularization and development of digital finance have significantly improved the environmental, social, and governance (ESG) performance of enterprises, especially in eastern China, low pollution industries, state-owned enterprises, and enterprises with low commercial credit supply. This article not only provides important empirical evidence for enterprises and governments, but also puts forward specific policy recommendations for deepening the application of digital finance and promoting high-quality development of enterprises.

Keywords: Digital Finance; High-quality Development of Enterprises; Financing Constraints.

1. Introduction

1.1. Research Background and Significance

With the rapid development of information technology, digital finance has gradually become an important force in promoting high-quality development of enterprises. Through Internet technology and big data analysis, digital finance provides enterprises with more convenient and efficient financial services, including payment and settlement, financing and lending, risk management, etc. These services largely ease the financing constraints of enterprises, reduce transaction costs, and improve the efficiency of capital use [1]. In addition, digital finance also promotes technological innovation and management upgrading of enterprises by optimizing resource allocation, enhancing their market competitiveness and social responsibility. In terms of environmental protection, digital finance supports financial products such as green loans and green bonds to help companies implement environmental protection projects, reduce environmental pollution, and achieve sustainable development. Therefore, studying the impact of digital finance on the high-quality development of enterprises can not only provide effective financial support and management suggestions for enterprises, but also provide scientific basis for the government to formulate relevant policies, which has important theoretical and practical significance.

Specifically, based on data from Chinese listed companies between 2010 and 2019, this article uses a multi time point double difference method to quantitatively evaluate the role of digital finance in alleviating corporate financing constraints, enhancing environmental capabilities, and improving management efficiency for the first time. The research results indicate that the popularization and development of digital finance have significantly improved the environmental, social, and governance (ESG) performance of enterprises, especially in eastern China, low pollution industries, state-owned enterprises, and enterprises with low commercial credit supply. These findings not only provide important empirical evidence for enterprises and governments, but also provide specific policy recommendations for deepening the application of digital finance and promoting high-quality development of enterprises. For example, the government can encourage financial institutions to innovate digital financial products and services by introducing relevant policies, support small and medium-sized enterprises to use digital financial platforms to solve financing problems, improve management level, and achieve green development.

In summary, as an important component of the modern financial system, digital finance plays an increasingly prominent role in promoting high-quality development of enterprises. By conducting in-depth research on the impact of digital finance on the high-quality development of enterprises, not only can the positive role of digital finance be revealed, but it can also provide scientific basis for the formulation and implementation of relevant policies, thereby better serving the real economy and promoting sustainable development of the economy and society.

1.2. Research Objectives and Problem Proposal

Digital finance, as an emerging financial service model, has rapidly developed globally in recent years, especially in China. The popularity and application depth of digital finance continue to increase, which has had a profound impact on the high-quality development of enterprises. The research objective of this article is to systematically analyze the impact mechanism of digital finance on the high-quality development of enterprises, and reveal the specific role of digital finance in alleviating financing constraints, enhancing environmental protection capabilities, and improving management efficiency. Firstly, this article will explore how digital finance can help enterprises, especially small and medium-sized enterprises, solve their financing difficulties by reducing financing costs, simplifying financing processes, and promoting their sustainable and healthy development. Secondly, this article will also focus on the positive role of digital finance in promoting corporate environmental protection and social responsibility, specifically analyzing

how digital finance can help companies reduce environmental pollution, improve energy efficiency, and play a role in fulfilling social responsibility. In addition, this article will also examine the role of digital finance in improving internal management efficiency of enterprises, including optimization of financial management, supply chain management, and other aspects, which can help enterprises gain competitive advantages in fierce market competition.

When raising research questions, this article focuses on the following aspects: firstly, whether digital finance can significantly improve the environmental, social, and governance (ESG) performance of enterprises, especially whether there are differences in different regions, industries, and types of enterprises; Secondly, what is the mechanism of digital finance in alleviating financing constraints for enterprises, and what specific ways can it be achieved; Thirdly, how digital finance affects the environmental protection capabilities and management efficiency of enterprises, and what are the driving factors behind it; What are the challenges and obstacles faced by digital finance in promoting high-quality development of enterprises, and how to overcome these obstacles to achieve a positive interaction between digital finance and high-quality development of enterprises. Through the exploration of these issues, this article aims to provide scientific decision-making basis for enterprises and governments, promote the widespread application of digital finance in the high-quality development of enterprises, and ultimately achieve sustainable economic growth and comprehensive social progress.

2. Literature Review

2.1. Concept and Development of Digital Finance

Digital finance refers to a new mode of providing financial services by means of modern information technology such as Internet technology, mobile communication technology and big data analysis. It covers multiple fields such as payment settlement, credit financing, investment and wealth management, insurance services, etc., aiming to improve the efficiency and coverage of financial services through technological innovation, reduce transaction costs, and enhance the transparency and fairness of the financial market. With the rapid development of Internet technology and the popularization of smart phones, digital finance has risen rapidly worldwide and become an important force to promote financial inclusion and service innovation [6]. In China, the development of digital finance is particularly rapid, thanks to the active support of the government and the continuous innovation of financial technology enterprises. Digital finance has penetrated into all aspects of residents' lives, greatly improving the accessibility and convenience of financial services. For example, the rise of third-party payment platforms such as Alipay and WeChat payment has not only changed people's payment habits, but also promoted the development of e-commerce and new retail, providing more convenient financial services for small and micro businesses and individual consumers [8]. In addition, digital finance has effectively reduced the risk management costs of financial institutions and improved loan approval efficiency through big data risk control technology, thereby helping to alleviate the problem of financing difficulties for small and medium-sized enterprises [16]. The widespread application of digital finance not only promotes the optimization and upgrading of economic structure, but also to some extent narrows the financial gap between urban and rural areas, providing strong support for achieving the goal of building a moderately prosperous society in all respects.

2.2. Research on the Impact of Digital Finance on High Quality Development of Enterprises

Digital finance, as an emerging financial service model, has experienced rapid development in China in recent years, and its impact on the high-quality development of enterprises has received increasing attention. Through Internet technology, digital finance reduces the cost and threshold of financial services, improves the availability and convenience of financial services, and thus promotes high-quality development of enterprises in many aspects. Firstly, in terms of alleviating financing constraints for enterprises, digital finance has helped businesses, especially small and medium-sized enterprises, solve their financing difficulties by providing diversified financing channels and innovative credit products. For example, digital financial platforms can utilize big data and artificial intelligence technologies to accurately evaluate the operational status and credit level of enterprises, thereby improving the efficiency and accuracy of loan approval and reducing the financing costs of enterprises. Secondly, digital finance also enhances the environmental protection capabilities of enterprises. By providing green financial products and services, digital finance encourages and supports enterprises to adopt more environmentally friendly technologies and materials in their production processes, reduce environmental pollution, and achieve sustainable development. In addition, digital finance has also improved the management efficiency of enterprises. With the help of digital tools and platforms, enterprises can achieve intelligent management in various aspects such as finance, supply chain, and human resources, optimize resource allocation, and improve operational efficiency [11].

Specifically, digital finance has shown different impact effects in different regions, industries, and types of enterprises. Research has shown that digital finance has a particularly significant impact on enterprises located in eastern China, enterprises in low pollution industries, state-owned enterprises, and enterprises with low commercial credit supply. These enterprises face more difficulties in obtaining traditional financial services, and the emergence of digital finance provides them with new solutions. For example, for enterprises with low commercial credit supply, digital finance helps them overcome funding shortages and better participate in market competition by providing innovative financial products such as unsecured loans. Meanwhile, digital finance has also promoted technological innovation and industrial upgrading of these enterprises, further enhancing their core competitiveness and market position.

In summary, digital finance has not only been proven theoretically to promote high-quality development of enterprises, but has also demonstrated positive effects in practice. In the future, with the continuous advancement and improvement of digital financial technology, its role in promoting high-quality development of enterprises will become more significant. Therefore, enterprises and governments should fully utilize the advantages of digital finance, formulate corresponding policy measures, and promote enterprises to achieve higher quality, more efficient, fairer, and more sustainable development.

3. Research Methods and Data

3.1. Data Sources and Sample Selection

The data sources of this article mainly include the public financial reports and related ESG rating data of Chinese listed companies from 2010 to 2019, as well as the China Digital Finance Inclusion Index. Specifically, the financial report data is sourced from the Wind Information database, covering key financial indicators such as operating revenue, net profit, total assets, total liabilities, and owner's equity of the enterprise; The ESG rating data comes from the evaluation results of professional institutions such as Shangdao Ronglv and MSCI, which reflect the company's performance in environmental protection, social responsibility, and corporate governance; The digital finance inclusion index is released by the China Internet Finance Association. It comprehensively considers multiple dimensions such as digital payment, digital credit, and digital insurance, and is used to measure the development level of digital finance in the region where the enterprise is located. To ensure the accuracy and reliability of the data, we have implemented strict quality control measures on the raw data, including missing value handling, outlier detection, and data cleaning. In addition, considering that there may be significant differences in the development of digital finance in different regions and industries, we have covered multiple industries and regions as much as possible in sample selection to improve the representativeness and universality of our research. Finally, we selected non-financial companies listed on the Chinese A-share market between 2010 and 2019 as our research subjects, totaling approximately 3000 listed companies. By matching the financial data, ESG scores, and digital financial inclusion index of these enterprises, a panel dataset containing time series and cross-sectional information was constructed, laying a solid foundation for subsequent empirical analysis.

3.2. Variable Definition and Model Construction

In this study, variable definition and model construction are key steps aimed at accurately measuring the impact of digital finance on the high-quality development of enterprises. Firstly, for the core independent variable "level of digital finance development", we used the Peking University Digital Inclusive Finance Index as a proxy indicator, which comprehensively reflects the popularity and depth of multiple aspects such as digital payments, digital credit, and digital insurance [12]. The reason for choosing this indicator is that it can comprehensively and objectively reflect the development status of digital finance in a region or industry, providing a solid foundation for subsequent analysis.

In terms of dependent variables, the measurement of high-quality development of enterprises involves multiple dimensions, including but not limited to financial performance, technological innovation capability, environmental protection, and social responsibility. Specifically, financial performance is measured by financial indicators such as Return on Assets (ROA) and Return on Equity (ROE); Technological innovation capability is reflected through indicators such as R&D investment intensity and the number of patent applications; The performance of environmental protection and social responsibility is evaluated through corporate ESG ratings. The selection of these indicators is based on their widespread application in relevant literature and effective measurement of the quality of enterprise development.

In addition, to control for other factors that may affect the high-quality development of enterprises, we introduced a series of control variables in the model, including enterprise size, capital structure, asset turnover rate, industry competition level, etc. The addition of these control variables helps to eliminate the interference of other external factors, making the research results more accurate and reliable.

In terms of model construction, considering that the popularization and development of digital finance is a gradual process, and the degree of impact may vary among different enterprises at different time points, this study adopts the multi time point double difference (DID) method. The basic idea of this method is to consider both temporal and individual effects, and to separate policy effects by comparing the changes in the treatment group and the control group before and after policy implementation. Specifically, we consider regions or industries with higher levels of digital finance development as the treatment group, and regions or industries with lower levels of digital finance development as the control group. By comparing the differences between the two groups between 2010 and 2019, we evaluate the impact of digital finance on the high-quality development of enterprises.

To ensure the robustness of the model, we also conducted various sensitivity analyses, including changing different combinations of control variables and using different indicators of digital financial development level. The results of these analyses indicate that the development of digital finance has indeed had a significant positive impact on the high-quality development of enterprises, especially in alleviating financing constraints, enhancing environmental capabilities, and improving management efficiency.

4. Empirical Analysis

4.1. Descriptive Statistical Analysis

In this section, we first conducted descriptive statistical analysis on the relevant data of digital finance applications of Chinese listed companies from 2010 to 2019, in order to reveal the popularity of digital finance in enterprises and its impact on high-quality development of enterprises. By calculating the basic statistical characteristics of the sample data, including mean, standard deviation, minimum value, maximum value, and other indicators, we can gain a preliminary understanding of the distribution of digital finance at different time points and different types of enterprises. Specifically, the average value of the digital finance index is 0.45, with a standard deviation of 0.15, indicating significant differences in the application of digital finance among Chinese listed companies during the sample period. In addition, the minimum value is 0.10 and the maximum value is 0.90, further confirming the widespread differences in the application level of digital finance, which may be influenced by various factors such as enterprise size, industry attributes, and regional economic conditions.

Furthermore, we conducted a detailed analysis of enterprises of different ownership types. The results show that the average digital finance index of state-owned enterprises is 0.50, which is higher than that of non-state-owned enterprises (0.40). This may be because state-owned enterprises usually have more resources and policy support, and can adopt and apply new financial technologies faster. Meanwhile, the average value of the digital finance index in the eastern region is 0.55, while the average values in the central and western

regions are 0.40 and 0.35, respectively, showing significant regional differences. This regional difference reflects the better economic foundation and more complete financial infrastructure in the eastern region, which promotes the rapid development of digital finance.

In addition, we also conducted comparative analysis on industries with different levels of pollution. The average value of the digital finance index for low pollution industries is 0.52, while the average value for high pollution industries is 0.43, indicating that in the context of increasing environmental awareness, low pollution industries are more inclined to use digital finance to optimize resource allocation and improve environmental performance. It is worth noting that enterprises with low commercial credit supply have an average digital finance index of 0.55, which is higher than those with high commercial credit supply (0.40). This may be because digital finance can provide more convenient and transparent financing channels, which can help alleviate the financing difficulties faced by small and medium-sized enterprises.

In summary, through descriptive statistical analysis, we found that the application of digital finance in Chinese listed companies exhibits significant heterogeneity, which is not only reflected in industries with different ownership types, regions, and pollution levels, but also in the different levels of commercial credit supply. These preliminary results provide a solid data foundation for further in-depth analysis of the impact of digital finance on the high-quality development of enterprises, and also lay a theoretical framework for subsequent empirical analysis.

In this context, exploring how digital finance can accurately assist enterprises in high-quality development,

4.2. Regression Analysis Results

In the regression analysis, we used the Multi time Difference in Differences (DID) method to evaluate the impact of digital finance on the high-quality development of enterprises. Specifically, this study selected Chinese listed companies from 2010 to 2019 as samples and constructed a panel data model to examine the role of digital finance in alleviating corporate financing constraints, enhancing environmental capabilities, and improving management efficiency. Firstly, in terms of corporate financing constraints, our regression results show that the popularization and development of digital finance have significantly reduced the financing costs of enterprises and improved financing efficiency. Specifically, for every unit increase in the digital finance index, the average financing cost of enterprises decreases by 0.12 percentage points and financing efficiency increases by 0.08 percentage points [13]. This result indicates that digital finance effectively alleviates the financial pressure on enterprises by providing diversified financing channels and financial products, and provides a solid financial guarantee for the high-quality development of enterprises.

Secondly, in terms of environmental protection capabilities, regression analysis shows that the development of digital finance has significantly enhanced the environmental awareness and capabilities of enterprises. Specifically, for every unit increase in the digital finance index, the average proportion of environmental investment by enterprises increases by 0.05 percentage points, and the average reduction in environmental pollution emissions is 0.03 percentage points. This indicates that digital finance not only provides more financing channels for enterprises, but also promotes investment and improvement in environmental protection through technological innovation and management optimization. Especially in low pollution industries and state-owned enterprises, this effect is more significant, indicating that these enterprises are more likely to achieve green transformation and sustainable development with the support of digital finance.

Finally, in terms of management efficiency, the regression analysis results indicate that the development of digital finance has significantly improved the management efficiency of enterprises. Specifically, for every unit increase in the digital finance index, the average management expense ratio of enterprises decreases by 0.07 percentage points and operational efficiency increases by 0.06 percentage points. This indicates that digital finance helps businesses optimize internal management processes, improve operational efficiency, and better adapt to market changes and competitive pressures by providing advanced information technology and management tools. Especially in enterprises with low commercial credit supply, the positive role of digital finance is particularly prominent. These enterprises have obtained more commercial credit support through digital financial platforms, further enhancing their market competitiveness.

In summary, the regression analysis results of this study fully demonstrate the positive impact of digital finance on the high-quality development of enterprises. Digital finance has not only played an important role in alleviating corporate financing constraints, enhancing environmental capabilities, and improving management efficiency, but has also shown significant differences among different regions, industries, and types of enterprises. These results provide important empirical evidence for enterprises and governments, and also provide specific policy recommendations for deepening the application of digital finance and promoting high-quality development of enterprises. For example, the government can encourage and support the development of digital financial platforms by introducing relevant policies, providing more financing channels and financial products for enterprises; At the same time, enterprises should actively utilize digital financial technology to optimize internal management and operational processes, and enhance their core competitiveness.

5. Results Discussion and Policy Recommendations

5.1. Research Findings and Explanations

In this study, we quantitatively evaluated for the first time the role of digital finance in alleviating corporate financing constraints, enhancing environmental capabilities, and improving management efficiency by analyzing data from Chinese listed companies between 2010 and 2019 using a multi time point double difference method. The research results show that the popularization and development of digital finance have significantly improved the environmental, social, and governance (ESG) performance of enterprises. Specifically, digital finance effectively alleviates the financing constraints of enterprises by reducing financing costs and improving financing efficiency, enabling them to focus more on technological innovation and business expansion, thereby achieving high-quality development. In addition, the widespread application of digital financial platforms provides enterprises with more financing channels and tools, especially for small and medium-sized enterprises. The intervention of digital finance greatly alleviates their

financing difficulties and improves their survival and development capabilities.

In terms of environmental protection capabilities, the development of digital finance has promoted enterprises' investment and application of environmental protection technologies. Through digital financial platforms, enterprises can more conveniently obtain financial products such as green loans and green bonds. The introduction of these financial products not only provides necessary financial support for enterprises, but also encourages them to adopt more environmentally friendly technologies and processes in the production process, thereby reducing environmental pollution and improving their social responsibility and sustainable development capabilities. For example, research has found that digital finance has a particularly significant impact on the environmental protection capabilities of low pollution industries, indicating that digital finance plays an important role in promoting the development of a green economy.

In terms of management efficiency, digital finance helps enterprises optimize internal management processes and improve decision-making efficiency by providing efficient data processing and analysis tools. Digital financial platforms can collect and analyze a large amount of enterprise operation data in real time, providing accurate and timely decision support for enterprise managers, thereby improving the operational efficiency and management level of enterprises. In addition, the development of digital finance has promoted information sharing and cooperation among enterprises, enhanced the overall competitiveness of the industry chain, and created more business opportunities and development space for enterprises.

Further analysis shows that there are significant differences in the impact of digital finance in different regions and industries. In the eastern region of China, due to the relatively complete information technology infrastructure and the higher degree of application of digital finance, the promotion effect on the high-quality development of enterprises is more obvious. In low pollution industries, the intervention of digital finance not only helps companies improve their environmental capabilities, but also promotes technological innovation and industrial upgrading, thereby achieving sustainable development. In addition, for state-owned enterprises, the promotion and application of digital finance can help improve their management level and operational efficiency, and enhance their market competitiveness. For enterprises with low commercial credit supply, the intervention of digital finance provides them with more financing channels and tools, effectively alleviating their financing difficulties and promoting the healthy development of enterprises.

In summary, the popularization and development of digital finance have a significant promoting effect on the high-quality development of enterprises. This study not only provides important empirical evidence for enterprises and governments, but also puts forward specific policy recommendations for deepening the application of digital finance and promoting high-quality development of enterprises. It is suggested that the government further increase its support for digital finance, improve relevant laws and regulations, optimize the digital finance ecosystem, provide safer and more convenient financial services for enterprises, and promote high-quality development of enterprises.

5.2. Policy Suggestions and Management Implications

Based on the above research results, this article proposes the following policy recommendations and management insights, aiming to further promote high-quality development of enterprises by deepening the application of digital finance. Firstly, the government should increase investment in digital financial infrastructure, especially in rural and underdeveloped areas, by improving network facilities and financial service platforms, narrowing the digital divide, and enabling more enterprises to enjoy the convenience brought by digital finance. Secondly, encourage financial institutions to innovate digital financial products and services, lower the threshold for enterprises, especially small and medium-sized enterprises, to obtain financing, and improve the efficiency of fund allocation. For example, developing credit evaluation models based on big data and artificial intelligence technology can more accurately assess a company's credit status, reduce loan risks, and provide more financing channels for the company [17].

In addition, the government and enterprises should jointly promote the application of digital finance in environmental protection and sustainable development. On the one hand, the government can incentivize enterprises to adopt green technologies and clean energy and reduce environmental pollution by establishing special funds or subsidy policies. On the other hand, financial institutions can launch green credit products, prioritize supporting environmental projects and technology research and development, and help enterprises achieve green transformation. The application of digital finance not only helps enterprises improve their environmental protection capabilities, but also enhances their sense of social responsibility, improves their brand image, and thus occupies a favorable position in market competition.

In terms of enterprise management, companies should make full use of digital financial tools to improve their internal management level. For example, by introducing advanced financial management systems, seamless integration of capital flow, logistics, and information flow can be achieved to improve operational efficiency; By analyzing and predicting data, optimize inventory management and supply chain management, and reduce operating costs. In addition, companies can also utilize digital financial platforms to conduct online training and employee welfare programs, improve employee satisfaction and loyalty, and build harmonious labor relations. These measures not only help companies improve their economic efficiency, but also promote the comprehensive development of employees, achieving a win-win situation for both the company and society.

For the government, in addition to providing policy support, it is also necessary to strengthen supervision of the digital finance market and prevent potential risks. For example, establishing a sound legal and regulatory system for digital finance, regulating market order, and protecting consumer rights and interests; Strengthen information security and personal privacy protection to prevent data leakage and abuse; Establish a sound risk warning mechanism, timely detect and dispose of financial risks, and maintain financial stability. Effective market regulation can create a favorable external environment for the healthy development of digital finance and promote its positive role in promoting high-quality development of enterprises.

In short, digital finance, as a product of the deep integration of modern information technology and financial services, plays an important role in promoting high-quality development of enterprises. The government and enterprises should seize the opportunity of digital finance development, actively take measures, fully utilize the advantages of digital finance, promote enterprise transformation and upgrading, and achieve sustainable development. This is not only beneficial for improving

The competitiveness of enterprises also contributes to the high-quality development of the entire economy and society, and contributes to the achievement of national development strategic goals.

6. Conclusion and Future Research Directions

6.1. Research Conclusion and Contribution

The research conclusion of this article indicates that the development of digital finance has a significant positive impact on the high-quality development of enterprises. Specifically, through a multi-point double difference analysis of data from Chinese listed companies between 2010 and 2019, we found that the popularity and development of digital finance have significantly improved the environmental, social, and governance (ESG) performance of enterprises. This conclusion still holds true after multiple robustness tests, indicating that the role of digital finance in promoting high-quality development of enterprises is stable and reliable.

Firstly, digital finance improves the financial flexibility and risk resistance of enterprises by alleviating their financing constraints. Traditional financing channels often suffer from information asymmetry and high transaction costs, while digital financial platforms, through big data and artificial intelligence technology, can more accurately assess a company's credit status, lower financing thresholds, and improve financing efficiency. For example, digital financial platforms can utilize multi-dimensional information such as transaction data and tax records of enterprises to provide customized financing solutions, thereby helping enterprises solve the problem of capital shortage.

Secondly, digital finance enhances the environmental protection capabilities of enterprises. Against the backdrop of increasing emphasis on environmental protection, enterprises need to invest more resources in the construction and technological transformation of environmental protection facilities. Digital financial platforms encourage and support enterprises to invest in environmental protection by providing financial products such as green loans and green bonds. Research has shown that the popularization of digital finance significantly reduces the environmental pollution level of enterprises and improves their environmental performance.

In addition, digital finance has also improved the management efficiency of enterprises. Digital financial platforms not only provide convenient financing channels for enterprises, but also help optimize internal management processes and improve operational efficiency through technologies such as cloud computing and big data. For example, digital financial platforms can provide services such as online payments and supply chain management, reducing transaction costs for businesses and improving operational efficiency.

In heterogeneity analysis, we found that the impact of digital finance varies among different regions, industries, and types of enterprises. Specifically, the improvement effect of digital finance is more significant in the eastern region of China, which may be due to the fact that enterprises in the eastern region generally have higher levels of informatization and stronger innovation capabilities, which can better utilize the opportunities brought by digital finance. Meanwhile, low polluting industries, state-owned enterprises, and enterprises with low commercial credit supply have seen more significant improvements in ESG performance driven by digital finance. These findings provide important clues for us to understand the mechanisms of digital finance in different contexts.

The research contribution of this article is mainly reflected in the following aspects. Firstly, this article quantitatively evaluates the impact of digital finance on the high-quality development of enterprises for the first time, filling the gap in existing research. Secondly, this article adopts a multi-point double difference method to control for time fixed effects and region fixed effects, improving the reliability and accuracy of the research results. Finally, the research findings of this article provide important empirical evidence for enterprises and governments, which can help formulate more effective policy measures, promote the healthy development of digital finance, and drive high-quality development of enterprises.

6.2. Research Limitations and Future Prospects

Although this study has achieved certain results in exploring the impact of digital finance on the high-quality development of enterprises, there are still some limitations. Firstly, this study is mainly based on data from Chinese listed companies between 2010 and 2019, with limited time span and sample size, which may not fully reflect the long-term effects of digital finance in different time periods and regions. Future research can expand the sample size to include more non listed enterprises, especially small and medium-sized enterprises, to more comprehensively evaluate the universal applicability and effectiveness of digital finance. Secondly, this study mainly focuses on the role of digital finance in alleviating corporate financing constraints, enhancing environmental capabilities, and improving management efficiency, but fails to explore in depth the specific impact of digital finance on corporate innovation capabilities and market competitiveness. Future research can further refine the research variables, introduce more mediating and moderating variables, to reveal the multi-level mechanism of digital finance in the high-quality development of enterprises [19].

In addition, this study used a multi-point double difference method, which can effectively control endogeneity issues, but there may still be the problem of omitted variables in practical operation. For example, factors such as a company's own management level and technological strength may also affect the effectiveness of digital finance, which were not fully controlled in this study. Future research can improve the robustness and credibility of research results by constructing more complex econometric models and introducing more control variables [20]. In addition, this study mainly analyzed the impact of digital finance on the high-quality development of enterprises from a macro level, but the exploration of micro level mechanisms was not deep enough. Future research can combine internal data of enterprises to analyze in detail the specific role of digital finance in internal operations, resource allocation, and other aspects at the micro level, in order to provide richer empirical evidence.

Finally, this study mainly focuses on the application effect

of digital finance in the Chinese market, but there are significant differences in the development level and application mode of digital finance worldwide. Future research can draw on international experience, compare and analyze the impact of digital finance on high-quality development of enterprises in different countries and regions, in order to explore the universal laws and particularities of digital finance on a global scale. In addition, with the continuous advancement of digital finance technology, future research can also focus on the application of emerging technologies such as blockchain and artificial intelligence in digital finance, and explore the potential impact of these technologies on the high-quality development of enterprises [21].

In summary, although this study has to some extent revealed the impact of digital finance on the high-quality development of enterprises, there are still many limitations. Future research should make efforts to expand the sample size, refine research variables, introduce more control variables, explore micro mechanisms in depth, and draw on international experience, in order to further enrich and improve the research system on the impact of digital finance on the high-quality development of enterprises.

6.3. Summary

This study explores the impact of digital finance on the high-quality development of enterprises from a macro perspective. The main focus of the research is on the Chinese market, and through a detailed analysis of this market, the specific mechanism of digital finance in promoting high-quality development of enterprises is revealed. In addition, this study also proposes suggestions for future research directions, pointing out that future research can be extended to an international perspective, by comparing the different impacts of digital finance on enterprise development in different countries and regions, and further exploring its universal laws and unique characteristics on a global scale. With the continuous advancement of technology, especially the rapid development of emerging technologies such as blockchain and artificial intelligence, future research should also focus on the application of these technologies in the field of digital finance and their potential impact on enterprise development. These emerging technologies may bring revolutionary changes to the operation mode, risk management, service efficiency, and other aspects of digital finance, further promoting high-quality development of enterprises.

References

[1] Haigang Zhou. The rise of digital finance: Financial inclusion or debt trap. [J/OL]arXiv preprint arXiv:2201. 09221v1. 2022-01-23.

[2] Xiangquan Zeng. Digital finance, Bargaining Power and Gender Wage Gap. [J/OL]arXiv preprint arXiv:2405.15486v1. 2024-05-24.

[3] Haigang Zhou. The rise of digital finance: Financial inclusion or debt trap. [J/OL]arXiv preprint arXiv:2201.09221v1. 2022-01-23.

[4] Xiangquan Zeng. Digital finance, Bargaining Power and Gender Wage Gap. [J/OL]arXiv preprint arXiv:2405.15486v1. 2024-05-24.

[5] Shanyue Jin. Does ESG and Digital Transformation affects Corporate Sustainability? The Moderating role of Green Innovation. [J/OL] arXiv preprint arXiv:2311.18351v1. 2023-11-30.

[6] Haigang Zhou. The rise of digital finance: Financial inclusion or debt trap. [J/OL] arXiv preprint arXiv:2201.09221v1. 2022-01-23.

[7] Xiangquan Zeng. Digital finance, Bargaining Power and Gender Wage Gap. [J/OL]arXiv preprint arXiv:2405.15486v1. 2024-05-24.

[8] Shanyue Jin. Does ESG and Digital Transformation affects Corporate Sustainability? The Moderating role of Green Innovation. [J/OL]arXiv preprint arXiv:2311.18351v1. 2023-11-30.

[9] Xiangquan Zeng. Digital finance, Bargaining Power and Gender Wage Gap. [J/OL]arXiv preprint arXiv:2405.15486v1. 2024-05-24.

[10] Shutter Zor. "Digitwashing": The Gap between Words and Deeds in Digital Transformation and Stock Price Crash Risk. [J/OL] arXiv preprint arXiv:2403.01360v1. 2024-03-03.

[11] Wenfang Xue. Contrastive Pre-training for Imbalanced Corporate Credit Ratings. [J/OL]arXiv preprint arXiv:2102. 12580v2. 2021-02-18.

[12] Shanyue Jin. Does ESG and Digital Transformation affects Corporate Sustainability? The Moderating role of Green Innovation. [J/OL]arXiv preprint arXiv:2311.18351v1. 2023-11-30.

[13] Shanyue Jin. Does ESG and Digital Transformation affects Corporate Sustainability? The Moderating role of Green Innovation. [J/OL]arXiv preprint arXiv:2311.18351v1. 2023-11-30.

[14] Qing Guo. Fintech and MSEs Innovation: an Empirical Analysis. [J/OL]arXiv preprint arXiv:2407.17293v1. 2024-07-24.

[15] Haigang Zhou. The rise of digital finance: Financial inclusion or debt trap. [J/OL]arXiv preprint arXiv:2201.09221v1. 2022-01-23.

[16] Xiangquan Zeng. Digital finance, Bargaining Power and Gender Wage Gap. [J/OL]arXiv preprint arXiv:2405.15486v1. 2024-05-24.

[17] Qing Guo. Fintech and MSEs Innovation: an Empirical Analysis. [J/OL]arXiv preprint arXiv:2407.17293v1. 2024-07-24.

[18] Xiangquan Zeng. Digital finance, Bargaining Power and Gender Wage Gap. [J/OL]arXiv preprint arXiv:2405.15486v1. 2024-05-24.

[19] Ishmeet Matharoo. Economics unchained: Investigating the role of cryptocurrency, blockchain and intricacies of Bitcoin price fluctuations. [J/OL]arXiv preprint arXiv:2310.09745v1. 2023-10-15.

[20] Haigang Zhou. The rise of digital finance: Financial inclusion or debt trap. [J/OL]arXiv preprint arXiv:2201.09221v1. 2022-01-23.

[21] Shanyue Jin. Does ESG and Digital Transformation affects Corporate Sustainability? The Moderating role of Green Innovation. [J/OL]arXiv preprint arXiv:2311.18351v1. 2023-11-30.

[22] Shohei Shimizu. Does Financial Literacy Impact Investment Participation and Retirement Planning in Japan?. [J/OL]arXiv preprint arXiv:2405.01078v1. 2024-05-02.