

Impact of Internet Financial Regulatory Policy Development on Green Financial Policy, Corporate Governance and Enterprise Environment

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Abstract: The impact of Internet financial regulatory policy development on green financial policy, corporate governance and corporate environment is the focus of social and economic development. It is necessary to look for more advanced risk prediction technology, and AI (Artificial Intelligence) technology has a good performance in risk analysis. It is an excellent and novel idea to combine traditional financial risk prediction technology with AI technology and use AI to optimize financial risk prediction technology. This paper proposed a financial risk prediction technology based on AI, which combined traditional financial risk prediction technology with AI technology. The algorithm proposed in this paper is a financial risk analysis algorithm based on AI. This algorithm can use AI to analyze and process a large number of financial transactions and financial risk information. This algorithm can improve the accuracy and speed of risk prediction, and can also speed up the frequency of risk prediction. According to the survey, from 2018 to 2020, with the development of Internet financial regulatory policies, the proportion of the company's principal-agent governance model decreased from 32.08% to 26.09%, and finally to 21.13%. In addition, the proportion of the equity incentive governance model and the separation of two rights governance model had increased. Through the survey results, the changes and impacts of Internet financial regulatory policy development on green financial policies, corporate governance and enterprise environment can be clearly understood. This study can also prove the role of AI technology in financial risk prediction. In general, this research provided valuable information for the study of Internet financial regulatory policies.

Keywords: Green Financial Policy, Internet Financial Supervision Policy, Corporate Governance, Corporate Environment

1. Introduction

In recent years, Internet financial regulatory policies are vigorously developing, which has affected green financial policies, corporate governance and enterprise environment. In order to study the effects of these impacts, the research direction of this paper is to use AI technology to study the changes of green financial policies, corporate governance and enterprise environment. At this stage, financial risk prediction technology can better face various financial transactions and financial turbulence analysis. However, with the advance of economic globalization, the traditional financial risk prediction technology is somewhat inadequate. At this time, it is necessary to integrate AI technology with traditional financial risk prediction technology, so as to develop more intelligent risk prediction technology.

Green financial policy is a relatively new policy, which plays a guiding role in the development of green economy and the promotion of low-carbon life. At present, many scholars have conducted all-round research on green financial policy. Raberto Marco studied the regulatory policies of many banks and financial enterprises. He pointed out that in the case of speculative loans, higher bank capital is required, thus encouraging banks to provide funds for corporate investment [1]. Fabozzi Frank J explored the degree of correlation between the green income of economic companies and other macroeconomic and financial variables. The analysis also showed that financial risks are related to climate change risks, and oil prices and international bond prices would affect the green income of financial companies [2]. Malini Helma found that there was a significant relationship between the implementation of corporate social responsibility and green finance and financial decisions, financial

performance and corporate value of banks. This meant that the implementation of corporate social responsibility and green finance can only achieve short-term profits, but not long-term sustainable development [3]. Tan Xiuli believed that the bottleneck problem of environmental resources is becoming increasingly prominent. He pointed out that the use of green financial loans to implement technological innovation and upgrading, thus achieving the optimal decision-making space for the expected economic goals [4]. The above research content has carried out a more detailed study on green financial policy, which has a certain enlightening effect on this paper, and helps this paper better understand the situation of green financial policy.

At this stage, the development and transformation of financial management policies are very rapid, and their impact on the financial industry and enterprises can not be ignored. Therefore, it is necessary to study the financial management policies and financial industry, which has been comprehensively studied by many scholars. Gu Beibei believed that industrial transformation is an important step to implement cleaner production and achieve the goal of carbon neutrality. His research provides a reference for the government to strengthen policy regulation and establish a diversified environmental governance system [5]. Najaf Rabia believed that the most important aspect of the financial environment is the change of financial regulatory policies. He pointed out that the use of resources to protect the natural environment would improve the financial performance of enterprises [6]. Of course, the research of the above scholars provides a good research direction for this article. However, most of their research is in theory and lacks practical research results.

The establishment of a sound policy framework for green financial supervision is not only conducive to improving the statistical monitoring and evaluation system, but also provides guidance for green finance to support economic recovery. The continuous development of financial supervision policies has created a policy environment for the healthy and orderly development of green finance, and encouraged banking institutions to expand the scope of credit mortgage and pledge; it has innovated financial products and service methods, and enriched green insurance products, thus enhancing the risk protection ability of green economic activities.

2. Financial Supervision and Green Finance

2.1 Basic Concept of Green Finance

At present, there are many definitions of green finance in the academic circle [7-8]. Green finance under the support policy of environmental protection is a new financial model that focuses on improving the environment. In combination with risk, cost and other factors, core resources are directly or indirectly invested in areas such as environmental protection and resource conservation, so as to achieve a balance between sustainable economic development and the ecological environment.

To sum up, the definition of green finance shows that it needs to be separated from the internal environment and the overall perspective [9-10]. From the perspective of internal environment, green finance focuses on improving the operation mode of social finance and economy, and carries out financial activities in a more low-carbon and environment-friendly way. From the perspective of internal environment, whether financial activities are green financial models can be evaluated through a series of scientific evaluation standards. This approach can accelerate the process of attaching importance to green finance, and green finance can optimize the internal business model and operation process of enterprises.

2.2 Problems in the Development of Green Finance

Over the years, various financial enterprises have actively responded to the ecological civilization policy. They vigorously developed green finance related construction and helped the reform of emerging financial industries [11-12]. The problems are as follows.

1) Small scale of green bond industry

At this stage, green finance has not yet established economies of scale [13]. Among them, loans mainly depend on factories, chambers of commerce and other financial institutions. Loan flows are very common, involving green industries such as environmental protection, energy conservation, clean energy, green transportation and green buildings. However, no special attention was paid to the formation of other green financial industries. Compared with other types of bonds, the growth time of green bonds is shorter, and the market is still immature. On the other hand, the issuance and circulation

of green bonds are relatively complex, and the approval cycle is long, which violates the requirements of enterprise financing and timeliness.

2) Lack of talents and green intermediaries

First, the green financial intermediary market is not developed enough [14]. Compared with the whole financial industry, the employment threshold of green finance is higher, which requires financial knowledge and certain environmental protection operation knowledge. Green finance develops slowly in China, and the accumulation and iteration of talents are very slow. Financial institutions, government institutions and environmental protection organizations are seriously short of such professional talent pool, and such enterprises cannot participate in green financial activities such as carbon emission trading.

3) Weak willingness to develop green finance

First of all, the costs and benefits of green financial transactions are lower than expected. In addition, large infrastructure projects such as environmental protection are usually characterized by large initial investment and long payback period.

4) Uneven development level of green finance

Although the development trend of green finance is good, the overall level of its development is poor, and the overall regional gap still exists. Regional disparity is the main source of China's green finance development gap, and the level of green finance development is polarized. Some scholars have studied the changes in the development level of green finance in border provinces. For example, the overall development level of green finance in China's provinces has improved in recent years, but the internal differences in the development level of green finance are large.

2.3 Development Stage of Green Financial Policy

Through the analysis of green finance at this stage, the development of green finance policy system can be divided into three stages in combination with the policy form [15].

The improvement stage of green financial policy: while the main policies in the green financial policy system have been refined and improved, some new green financial policies have emerged as the times require, which has made great contributions to the protection of social ecology. In the improvement stage of green financial policy system, green development fund and green factor market policy have become beneficial supplements to the financial policy system, which shows that the composition of green financial policy is gradually improved. At this stage, green finance is a powerful measure to promote the process of national ecological protection. Under this background, green finance policy has been slowly optimized and adjusted, and has formed an excellent supplement to the original green finance policy system [16].

The development stage of green financial policy is shown in Figure 1.

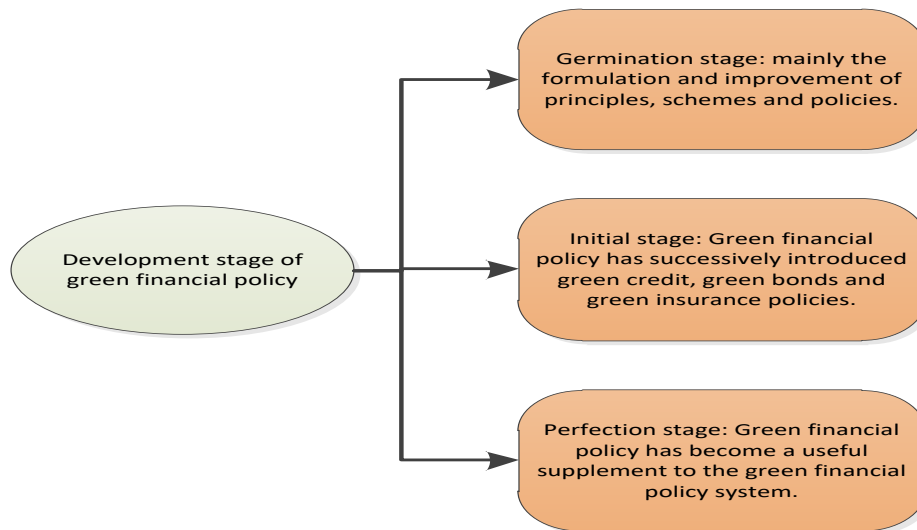


Figure 1: Development stage of green financial policy

2.4 Internet Financial Supervision Theories

Financial supervision refers to government financial supervision conducted by government agencies and supervision departments. Generally speaking, entities and objects involved in financial related transactions are managed and contacted in a specific mode and manner. The government's supervision of the Internet is mainly the responsibility of financial regulators [17].

(1) Functional supervision theory

According to the functional supervision theory, the function of financial regulation is to ensure that various financial elements optimize the allocation of resources between regions and over time, and play an active role in promoting economic stability and sustainable development. Therefore, functional supervision is the supervision of major financial functions. Compared with institutional supervision, functional supervision pays more attention to the actual function and operability of financial products. The focus is to ensure that the financial structure can improve the efficiency of financial markets and financial institutions, and that the maintenance of regulatory rules and systems can ensure the continuity and stability of financial products and financial systems.

(2) Penetrating supervision theory

The innovative development of the financial industry has promoted the renewal and modernization of the regulatory concept and concept. In the gradual transformation of financial supervision from micro prudential to macro prudential, the combination of the two supervision methods produces the concept of infiltration supervision. Infiltration is to see the essence of investment behavior and financial transactions through phenomena and underlying logic. It is necessary to understand the business essence of Internet finance penetrating producers and financiers, and reveal its true attributes, so as to formulate corresponding regulatory rules according to its true functional attributes.

(3) Collaborative governance theory

The theory of collaborative management believes that financial management is of strategic importance. When dealing with cross regional and cross organizational issues such as natural resource management and environmental protection, collaborative management has more advantages than traditional bureaucratic management. In collaborative management, multiple government agencies reach consensus through collective decision-making, and through mutual collaboration and cooperation. As result, the implementation of public policies and the management of state-owned assets can be achieved, which is conducive to improving management efficiency and efficiency?

2.5 Corporate Governance Theories

The definition of corporate governance theory is very simple. The goal of corporate governance is to improve the company's operating profits and ensure the maximization of shareholders' interests. Corporate governance theory can be roughly divided into three directions:

1) Principal-agent theory

2) Equity incentive theory

In order to attract outstanding talents in the process of business development, enterprises have always adopted the performance sensitive equity incentive model. The purpose of encouraging enterprises to participate in shares is usually to bring the interests of managers and shareholders closer. Therefore, the enterprise issues stock options according to the performance of managers. When the management obtained equity, their personal interests were linked to the company's interest, which was conducive to their full physical and mental involvement in the company's management and operation, and improved the company's overall performance. Equity incentive has become the most important incentive mechanism in modern enterprises. Enterprises combine the interests of managers and shareholders through equity incentives that can help enterprises develop and reduce agency costs. However, equity incentive is not an ideal measure. In order to seek illegitimate interests, some enterprise cadres would falsify financial indicators and raise short-term stock prices. The equity incentive of enterprises does not necessarily have a positive impact on the value of enterprises, but links the personal property of managers with the amount of shares held. This kind of incentive system is regarded by enterprises as a useful tool to balance the interests of shareholders and managers. However, the reality is that managers are likely to take measures to manipulate the stock price, so that the short-term stock price is higher than the actual value of the enterprise. Generally speaking, equity

incentive may produce opposite results. For example, instead of trying to improve the overall value of the company, managers take a series of measures to increase the company's share price.

Theory of separation of two rights

The separation of rights usually means the separation of enterprise ownership and management rights. With the development and scale increase of enterprises, the management mode of enterprises is becoming more and more complex. At present, the management mode of most enterprises is separation of two rights. Its connotation is that shareholders only have the ownership of the enterprise and do not participate in the daily management of the enterprise. The daily management of the enterprise is managed by the non ownership management. With the transition of enterprises from the traditional cooperative system to the joint-stock system, the ownership and management rights of enterprises are increasingly separated. As the owner of the enterprise, shareholders' actual control over the enterprise is declining, while managers' actual control is increasing. In this business model, there is an inevitable conflict of interest between managers and shareholders. The separation of ownership and management of enterprises eventually leads to the separation of the rights of shareholders. The ultimate controlling shareholder refers to the shareholder who has important control over the enterprise and can decide major issues of the enterprise. Pyramid ownership structure is ubiquitous in enterprises, which leads to the separation of the two rights. Two independent direct results are that the ultimate controlling shareholder of the enterprise can control the company, and using less capital can obtain greater control. The higher the level of ownership pyramid, the higher the level of ultimate controlling shareholders; the lower the ultimate controlling shareholder's cash flow right, the lower the quality of information disclosure.

3. Exploration on AI Technology

3.1 Exploration on AI Financial Technology

At present, the development of mobile Internet has stimulated the growth of the digital economy. Various intelligent devices and AI have not only become the focus of the development of the new generation of information technology, but also become an important driving force for innovation and change in various industries of financial services and business models. Among them, the highly centralized data of the financial industry is an important direction to achieve digital transformation, and the highly integrated intelligent financing of AI technology and data is an important direction for the future development of the financial industry.

Although AI is becoming an important driving force for a new round of industrial transformation and digital development in industries including finance, it still faces many challenges. First, in terms of data management, the database supporting intelligent conversion is poor. Secondly, the scene planning level and AI application scenarios are not clear. In addition, the level of AI technology infrastructure is high, and its technology development threshold is high.

3.2 Financial Risk Evaluation Algorithm Based on AI

Financial risk value refers to the measurement and calculation of possible financial losses under normal market fluctuations. By quantifying investment risks, financial regulators and financial enterprises can easily predict potential financial crises and avoid the coming financial risks. FR is the risk coefficient in a financial period. Under confidence level α , the maximum loss value that investors may face can be defined as FR by $1 - \alpha$ of the rate of return:

$$\text{Prob}(\Delta P \leq \text{FR}) = 1 - \alpha \quad (1)$$

$$\Delta P = P(t + \Delta t) - P(t) \quad (2)$$

Among them, Prob represents a probability measure, and ΔP is the expected loss in holding period Δt ; $P(t)$ is the value generated by the current time t , and α is the confidence level; FR is the risk coefficient under α . In practical application, the confidence level can reflect the degree of expected loss. The greater the value of α , the greater the probability that the loss is less than the FR value.

In a financial relationship, the available income is basically distributed independently, so FR with different holding periods can be converted. At the same confidence level, the FR value of T period can be explained by one period, and the conversion between them is:

$$FR^{(T)} = \sqrt{T} * FR^{(1)} \tag{3}$$

By Formula (3), the calculation of FR value is to estimate the probability distribution of loss ΔP . Therefore, it can be assumed that the loss ΔP in holding period Δt is a continuous distribution with a probability density function of $f(r)$. The formula after sorting out is:

$$1 - \alpha = \text{Prob}(\Delta P \leq FR) = f(r) \tag{4}$$

If $F_p(FR)$ is used to express its distribution function, there are:

$$F_p(FR) = 1 - \alpha \tag{5}$$

that is:

$$FR(\Delta P) = F_p(1 - \alpha) \tag{6}$$

Among them, the methods to determine the distribution of risk loss ΔP are different, but this algorithm can predict it more accurately and efficiently. To sum up, the algorithm proves the role of AI technology in the field of financial risk prediction.

4. Exploration on the Impact of AI Algorithms and Financial Regulatory Policies on Finance and Enterprises

4.1 Testing of Financial Risk Evaluation Algorithm Based on AI

Above the financial risk analysis algorithm based on artificial intelligence, also only the theoretical research, not in practical use of the analysis of the algorithm test, therefore, the experiment will test the algorithm, here respectively through the traditional financial risk prediction technology and financial risk analysis algorithm based on artificial intelligence for financial risk prediction test. The prediction experiment needs to eliminate external interference factors. Therefore, the same processing host is selected for this test, and the financial risk is predicted for the same financial company at the same moment.

First of all, to test the prediction accuracy of the two financial risk analysis algorithms for financial risks, this experiment will consider three performance indicators, namely support degree, confidence degree and improvement degree, which are detailed as follows. The specific outcome data are shown in Table 1.

Support (Support): It can indicate the frequency of the predicted data set, the larger the value, the higher the degree of association between the data sets.

Confidence (Confidence): Determine the frequency of Y in events containing X, and the greater the value, indicating that the more closely related the two events are.

Increase (Lift): the frequency of event A and event B, the greater the value, the more accurate the prediction of the event.

Table 1: Basic performance indicators of the different algorithms

	Traditional financial risk prediction technology	Financial Risk Analysis Algorithm Based on Artificial Intelligence
Support	0.896	0.938
Confidence	0.877	0.941
Lift	0.893	0.936

From the basic performance indicators in Table 1, we can understand that the support degree, confidence degree and improvement degree of the traditional financial risk analysis algorithms are 0.896, 0.877 and 0.893, respectively. In addition, the support degree, confidence degree and improvement degree of the financial risk analysis algorithm based on artificial intelligence technology are 0.938, 0.941 and 0.936, respectively. It can be seen from these data that the performance indicators of the financial risk analysis algorithm based on artificial intelligence technology are larger, which shows that the algorithm is more accurate for event prediction.

4.2 Detection of the Impact of Financial Regulatory Policies on Green Financial Policies, Corporate Governance and Corporate Environment

(1) Investigation direction

The selected survey direction was to study the impact of the development of Internet financial regulatory policies on green financial policies, corporate governance and corporate environment.

(2) Investigation content

This survey mainly covered three aspects. The first is to investigate the impact of Internet financial regulatory policies on green financial policies. The second is to investigate the impact of Internet financial regulatory policies on corporate governance. The last is to investigate the impact of Internet financial regulatory policies on the enterprise environment. Through the investigation and research of the above three aspects, it is possible to comprehensively understand the impact and changes of Internet financial supervision policies on finance and enterprises.

(3) Investigation methods

In the statistical survey, combined with questionnaire survey, network data mining survey and financial risk analysis algorithm based on AI, the impact results of Internet financial supervision policies were investigated in real time and accurately. Through this scientific investigation method, the scientificity and effectiveness of the investigation results are ensured.

(4) Investigation results

During the survey, the development of green financial policies in 2018-2020 since the promulgation of Internet financial regulatory policies was first examined. It was mainly divided into the proportion of green financial business, the proportion of green financial users and the proportion of green financial business risks. The results are shown in Table 2.

Table 2: Development of green financial industry from 2018 to 2020

	2018	2019	2020
Proportion of green financial business(%)	21.36	26.25	33.87
Proportion of green financial users(%)	12.26	15.87	21.64
Risk proportion of green financial business(%)	15.25	14.32	13.21

It can be seen from Table 2 that since the implementation of the Internet financial regulatory policy, the proportion of green finance business increased from 21.36% to 26.25% and then to 33.87% in 2018-2020, which indicated that more and more green finance businesses were being handled. The proportion of green finance users increased from 12.26% to 15.87% and then to 21.64%, which showed that green finance had attracted more people's attention and its user development had steadily increased. In addition, the proportion of green financial business risk decreased from 15.25% to 14.32% and then to 13.21%, which meant that the risk of green financial business was getting lower and lower, and its risk had been effectively controlled. These data fully demonstrated that since the implementation of the Internet financial regulatory policy, the development of green financial policy has been progressing.

In addition, it is also necessary to investigate the impact of Internet financial regulatory policies on corporate governance. Among them, corporate governance model was mainly divided into principal-agent governance model, equity incentive governance model and separation of two rights governance model. The test results are shown in Figure 2.

From the proportion in Figure 2, it can be seen that from 2018 to 2020, the proportion of the company's principal-agent governance model decreased from 32.08% to 26.09%, and finally to 21.13%. In addition, the proportion of equity incentive governance model and separation of ownership governance model had been improved. This showed that with the implementation of the Internet financial regulatory policy, the corporate governance model is more inclined to the equity incentive governance model and the separation of two rights governance model.

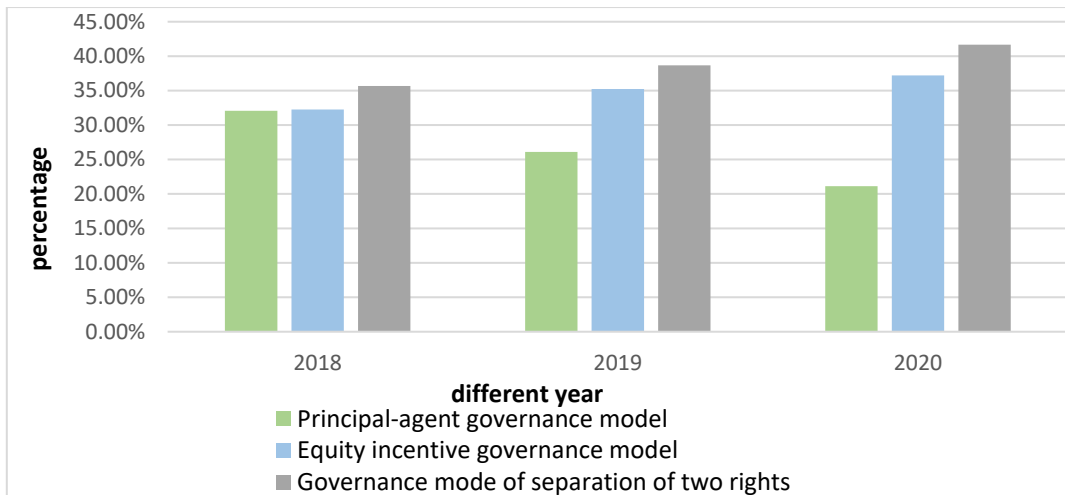


Figure 2: Changes in the percentage of corporate governance models in each year

Finally, the impact of Internet financial regulatory policies on the corporate environment was also investigated. In this part, questionnaires were used to conduct questionnaires on employees and leaders of a number of financial companies. Among them, the enterprise environment was mainly divided into enterprise culture, enterprise material foundation and enterprise organizational structure. The test results are shown in Figure 3.

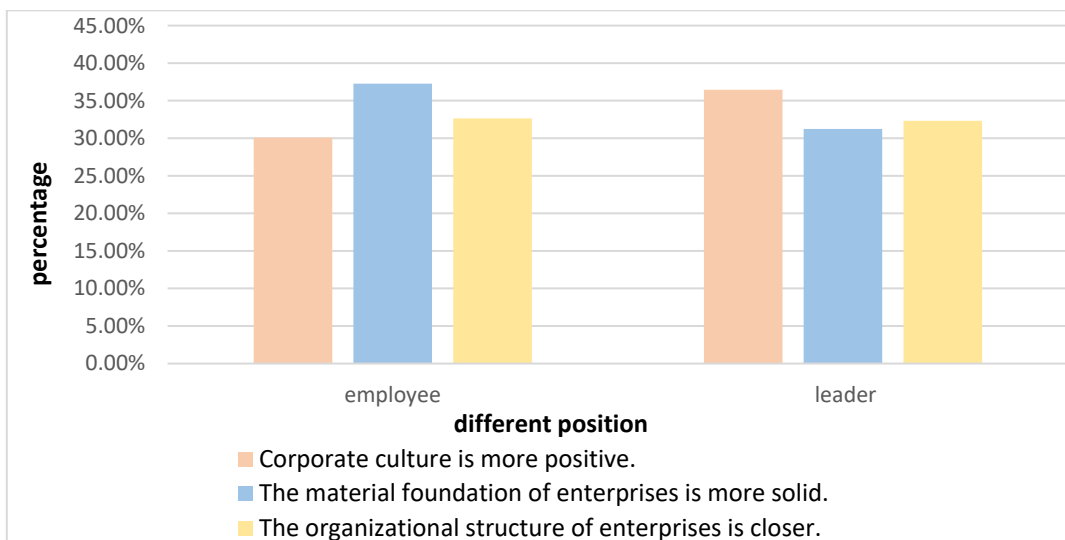


Figure 3: Change of enterprise environment

Through the survey results of the questionnaire in Figure 3, it can be understood that after the implementation of the Internet financial supervision policy, the corporate environment had changed significantly. Among them, almost the same proportion of employees and leaders believed that the organizational structure of the enterprise was closer. However, 30.08% of employees thought that the corporate culture was more positive, and 37.27% thought that the material foundation of the enterprise was more solid. On the contrary, 36.45% of the leaders believed that the corporate culture was more positive, and 31.23% believed that the material foundation of the enterprise was more solid.

Based on the above experimental results, it is possible to effectively understand the impact of the development of Internet financial supervision policies on green financial policies, corporate governance and corporate environmental direction. In addition, according to the above accurate survey results, it can be shown that the financial risk analysis algorithm based on AI can play a good role in the investigation of financial policy, corporate governance and corporate environment.

5. Conclusions

Through the survey results of this paper, the changes and impacts of Internet financial regulatory

policy development on green financial policy, corporate governance and enterprise environment can be fully understood. It pointed out the development of green financial policy, the transformation form of corporate governance model and the change trend of enterprise environment. This research is of great significance. It not only revealed the changes in the development of Internet financial regulatory policies, but also studied the specific change trends of green financial policies, corporate governance and corporate environment. In addition, it also proved that AI technology plays an important role in financial risk prediction.

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