Research on Financial Risk Management Strategies Based on Big Data

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Abstract: The irrational application of big data technology may lead to financial risks in enterprises, posing a serious challenge to creating a stable financial management environment. The article takes the irrational application of big data technology in financial risk management as the research object and sorts out its basic manifestations and characteristics. After conducting an in-depth analysis of the emotional presentation and reasons for the irrational application of big data technology, it is proposed that strategies to address the irrational application of big data technology should focus on strengthening data quality control, optimizing risk prediction models, improving risk identification capabilities, and improving risk response mechanisms, to promote the rational and healthy development of enterprise financial management environment.

1. Introduction

At present, we are in an era of rapid development of big data technology. The irrational application of big data technology in financial risk management has become a common challenge faced by enterprises, representing one of the most significant risks for businesses today. Big data technology and financial risk management have evolved simultaneously. The irrational use of big data technology can easily result in complex and constantly evolving financial risk issues, often compounded by various irrational decisions. This not only hampers the resolution of financial risks but also impacts the efficiency and pace of enterprise risk management, posing a threat to the financial security of businesses. In addition, the significant amount of irrational data analysis present on big data platforms can lead to irrational decision-making within enterprises, exacerbating financial risk issues and potentially becoming the focal point or catalyst for financial risk management. Particularly in today's advanced big data technology landscape, enterprises consider big data platforms crucial for risk management. At the onset of financial risk outbreaks, they tend to release numerous irrational analyses on big data platforms, posing significant challenges to resolving and managing financial risks. This not only hampers the decision support role of big data platforms but also disrupts internal financial management processes within enterprises, creating substantial barriers to financial well-being and harming the reputation of enterprises. Consequently, guiding and regulating the irrational use of big data technology in financial risk management has emerged as a critical practical issue that requires immediate attention.

2. The Basic Manifestations and Characteristics of Big Data Technology in Financial Risk Management

2.1 Irrational Data Analysis Behavior

The application of big data technology in financial risk management cannot be separated from the deep-level demand of enterprises for financial data.[1] When financial risks are related to the vital economic interests of enterprises, financial risks will become a hot topic of concern for enterprises. In the potential crisis awareness of enterprises, panic is infinitely amplified, and the attention to financial risks will continue to rise. Once conflicting financial information arises, enterprises will

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quickly participate in discussions and debates on financial risks, leading to common irrational data analysis behaviors and confrontations in financial risk management. Throughout the entire process of confrontation, collective emotions are mobilized, and the application of big data technology also exhibits irrational characteristics. In addition, for different types of financial risk topics, companies often mobilize emotional resonance between different departments to enhance the participation and adversarial nature of data analysis. With the development of financial risks and the continuous enrichment of big data analysis, false information in financial risk management continues to emerge, adding tension to financial risk management. Summarizing the application of big data technology within the time frame, it can be found that the outbreak points and development trends of financial risks are gradually alienated. As soon as they appear, they are "rhythmically" led by enterprises, and the objective and rational analysis of financial risks themselves has gradually become a labeled and stigmatized application of big data technology.

2.2 Negative Public Opinion Attitude

Faced with various problems in financial risk management, public opinion on big data platforms often presents a negative and negative discourse tendency. Especially in the process of financial risk management, hot topics such as market risk, credit risk, liquidity risk, and operational risk, once they appear on big data platforms, will quickly attract the attention of enterprises, and the speed of financial risk fermentation will continue to accelerate. The negative public opinion attitude quickly became popular on big data platforms under the influence of the herd effect. Individuals in a group often lose the ability to think independently. As experts have described, "When people gather in groups, their emotions and thoughts will turn in the same direction, and their independent autonomy will disappear, leaving only a collective mentality."[2] Enterprise groups often exhibit a disregard for the truth and emotional impermanence, even losing their original rationality and rational judgment. The expression of public opinion on big data platforms often manifests as a blind state of self-expression under the influence of emotions. The reversal of individual financial risk events can cause the expression of public opinion on big data platforms to shift from one extreme to another. Driven by interests, big data platforms often use hot topics to ride traffic, using bizarre content, exaggerated plots, and highly rhythmic sound effects to stir up the emotions of enterprise groups, pushing hot events to the forefront of public opinion. The basic manifestations and characteristics of big data technology in financial risk management are shown in Figure 1.

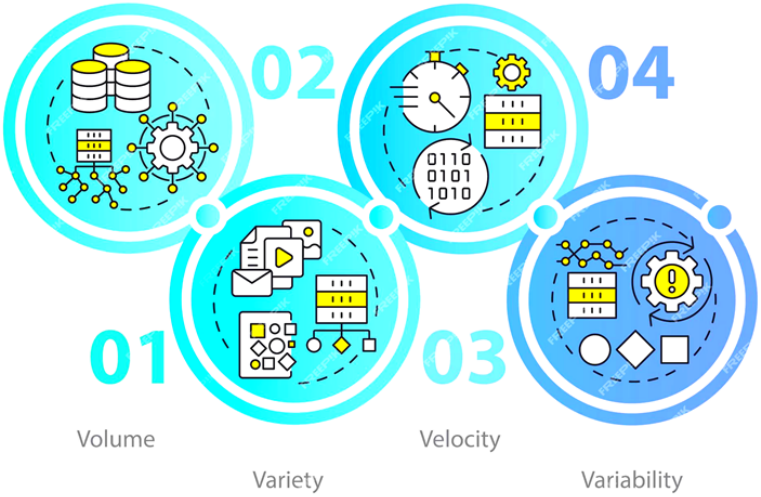

Figure 1 Basic manifestations and characteristics of big data technology in financial risk management

2.3 Irrational Group Phenomena

The accelerating irrational group phenomenon and the increasing financial risk pressure faced by enterprises have become a reality.[3] People are increasingly pursuing fast data analysis results and

instant decision feedback, especially in the field of financial risk management, which is gradually diversifying. The big data platform has changed the decision-making and risk assessment methods of enterprises. For the enterprise group, misunderstandings and barriers between them and the market environment make them more inclined to relieve themselves in the big data platform space and obtain temporary pleasure. The group phenomenon has gradually given rise to irrational group phenomena, which are driven by multiple factors such as market pressure,[4] competitive pressure, and internal management pressure. It is a trend of thinking and enterprise group phenomena that use irrational data analysis as the main means of risk management, containing value judgments that prioritize or even only rely on irrational data analysis. The expression of irrational group phenomena in public opinion mainly manifests as commenting on financial risk hotspots through humorous, humorous, parody, sarcastic, and nonsensical language, especially the emergence of many big data platform languages, which not only express the emotional release of individual enterprise groups but also project a confrontation with mainstream financial management values.

3. The Emotional Presentation of Big Data Technology in Financial Risk Management

3.1 Panic and Anger: Negative Emotions with Strong Hostility

Psychological theory suggests that financial risks can cause panic and anger.[5] All factors that threaten the economic interests of enterprises can be attributed to financial risks, such as market fluctuations, credit losses, and funding shortages. Members of the enterprise community may believe that if a strong driving force is formed, it can change the status quo, and this strong force can be driven by panic.[6] On the contrary, if members of the group feel powerless about the actual situation, they will generate anger. Once the public opinion on big data platforms involves the enterprise community, public panic will quickly escalate, resulting in a significant irrational group phenomenon. Therefore, from a psychological perspective, among all human emotions, panic and anger spread the fastest have the strongest infectivity, and have the greatest impact on public opinion on big data platforms. Almost all members of the enterprise community are unable to stay outside the group and maintain a calm mind. Instead, they may be ignited by emotions within the group, helping to spread panic and anger.

3.2 Negativeness and Jokes: Implicit Adversarial Expression Strategies

Negative attitudes and joking behaviors are another form of expression on big data platforms, which are negative emotions and their connotations are also strategies for expressing irrational group phenomena.[7] When the actual financial situation of a company conflicts with expected goals and causes great disharmony, negative attitudes, and humorous behaviors will appear in the public opinion of big data platforms, mainly conveying a sense of powerlessness towards real financial management through negative attitudes and humorous behaviors. Therefore, negative attitudes and joking behaviors are likened to weapons of enterprise groups and a form of hidden resistance. When the public feels that collective behavior requires a greater cost, they will avoid risks on big data platforms in this way. The expression of negative attitudes and joking behaviors carries a humorous element. The expression of dissatisfaction by the enterprise group through humorous and joking language will attract more enterprise groups to watch and like, and can also spread faster on big data platforms.

3.3 Schadenfreude: The Deep Emotions of Human Nature

This kind of emotion is often accompanied by anger. When the object of anger in the enterprise group experiences misfortune, the deepest human emotions of the enterprise group are stimulated,[8] and they will show a sense of schadenfreude. Of course, it is also an extremely harmful group phenomenon, as if a certain psychology can be realized, creating balance and pleasure deep within the heart. The emotions between different groups of enterprises are gradually moving towards opposition, and the sense of schadenfreude is constantly amplified. When competitors or market competitors encounter unfavorable situations, the schadenfreude of the enterprise group will infect each other, and the overall picture and truth of the event are often ignored by the enterprise group.

The emotion is particularly prominent in various public opinion hotspots caused by irrational group phenomena. Although schadenfreude is a secondary emotion, it can also become a enterprise group emotion, allowing the enterprise group to vent their pent-up dissatisfaction and anger.

4. Analysis of the Irrational Application of Big Data Technology in Financial Risk Management

4.1 The "Weak Checkpoint" of Big Data Platforms

Experts say, "When people believe that their actions will not be held accountable, they become unconstrained by enterprise customs and rules.". The emergence of irrational group phenomena has gradually weakened the gatekeepers of big data platforms. Enterprise groups conceal their true identities, express and vent their emotions in an unconstrained state, and even trample on their due enterprise responsibilities and morals. However, big data platforms lack effective supervision over highly biased and extreme speech and analysis, resulting in irresponsible speech and analysis repeatedly appearing on hot searches. As a new battlefield for irrational group phenomena, big data platforms should review their published content. However, due to the large scale and uneven quality of enterprise groups, the inadequate regulatory system of big data platforms, and the use of big data platforms to increase user numbers and activity to gain economic benefits, many reasons have led to the "weak control" of big data platforms, ultimately promoting the proliferation of irrational group manifestations.

4.2 The Changes in Enterprise Group Psychology

The underlying reason for the irrational application of big data technology in financial risk management is the profound changes in people's cognition and emotions brought about by the group psychology of enterprises. The group psychology of enterprises has brought about changes in values and behavioral patterns, changing the attitude and response strategies of enterprises towards financial risks. The continuous penetration of enterprise group psychology in big data platforms has led to a high degree of integration between reality and big data platforms. The irrational data analysis and negative attitudes on big data platforms reflect the dissatisfaction of enterprise groups with financial management and risk control in real enterprises and are also the root cause of public negative emotions. This irrational group phenomenon is gradually spreading. Psychological theory holds that it is almost impossible to conduct human behavior in an objective, fair, and emotionally independent manner. Most irrational group emotions are irrational, and the negative perception of enterprise groups is the main reason for the public's irrational application, as well as a concentrated reflection of enterprise group psychology.

4.3 The Polarization Phenomenon of Enterprise Groups Intensifies the Formation of Extreme Public Opinion

The polarization phenomenon of enterprise groups mainly stems from the information solidification brought by big data platforms. When there are opposing views within a enterprise group, there is often a one-sided and one-dimensional stance within the enterprise group. The screening mechanism of big data technology can make the public opinion within the enterprise group tend to be consistent. To avoid marginalization and isolation, to make homogeneous voices out of the instinct of seeking benefits and avoiding harm, or to choose silence, most people will reinforce their advantageous opinions, and this opinion is gradually strengthened, fully confirming the information cascade theory in social psychology.

The polarization phenomenon of enterprise groups not only has great influence within the enterprise but also continuously permeates externally. When the internal emotions of the enterprise group are spread and infected to a certain extent, a high-density and high-pressure public opinion environment will be formed. At the same time, this extreme emotion may be the release and explosion of a specific group of enterprises after experiencing market competition, economic fluctuations, or long-term accumulated business pressure. When the topic within the enterprise group involves financial risks, members of the group will freely express the true emotions of the real enterprise group

within the big data platform, even extreme expressions, filling up the internal emotions of the enterprise group and constantly spreading, thereby creating a spark for public opinion. The excessive aggregation of extreme expressions poses a great threat to the stability and financial risk management of enterprise groups.

4.4 Algorithm Bias Leads to Reinforcement of Irrational Decisions

Currently, algorithmic biases on big data platforms are very common. Algorithm bias refers to using a specific algorithm as a measure of all values, giving it the supreme decision-making position and comprehensive influence. The personalized recommendation and filtering bubble effect of big data platforms lead to enterprise groups receiving data through incomplete information. Enterprise groups perceive the nature of financial risks from their interests and quickly gather within the same group of enterprises with the same viewpoint. Experts say, "When people only focus on information they are interested in, they do not seek different opinions, and even consider those with different opinions as competitors. However, when we focus on a common risk, we always seek like-minded people." The members within the enterprise group have gradually solidified their individual beliefs and cognition, and individual viewpoints become group attitudes after group discussions, which are usually more extreme than individual attitudes within the enterprise group. Therefore, after group discussions, public opinion will become stronger, and those words or behaviors that do not conform to the so-called mainstream views will be strongly criticized under public pressure. The polarization phenomenon brought about by this kind of public opinion can not only gain support from larger-scale enterprises but also give irrational decisions so-called real legitimacy.

5. Path Selection for Preventing Irrational Application of Big Data Technology

5.1 Strengthening Data Quality Control: Ensuring the Accuracy of Data Analysis

Enterprises should strengthen their control over the quality of big data to ensure the accuracy of data collection, storage, processing, and analysis. By establishing strict data management processes, the integrity and reliability of data can be improved, avoiding irrational decisions caused by data quality issues. At the same time, enterprises should adopt advanced data cleaning and validation technologies to eliminate invalid, incorrect, or redundant data, ensuring the authenticity and validity of data analysis results.

5.2 Optimizing Risk Prediction Models: Improving the Foresight of Risk Identification

Enterprises should continuously optimize their financial risk prediction models and use machine learning and artificial intelligence technologies to improve the accuracy and response speed of the models. By integrating multiple sources of data and applying complex algorithms, enterprises can identify potential financial risks earlier and take corresponding preventive measures. In addition, enterprises should regularly evaluate and update risk prediction models to adapt to changes in the market environment and the evolution of internal management needs.

5.3 Enhancing Risk Identification Capability: Strengthening the Professionalism and Sensitivity of Risk Management

Enterprises need to enhance their ability to identify financial risks and strengthen the professionalism and sensitivity of risk management departments. By training and introducing talents with professional knowledge and experience, enterprises can more accurately identify and evaluate various financial risks. At the same time, enterprises should establish cross-departmental communication and collaboration mechanisms to ensure that risk management departments can timely obtain and analyze information from different business areas.

5.4 Improving Risk Response Mechanisms: Building Flexible and Efficient Risk Handling Processes

Enterprises should establish and improve financial risk response mechanisms, and build a flexible and efficient risk management process. By developing detailed risk response plans and contingency

plans, enterprises can quickly respond to different types of financial risks. In addition, enterprises should strengthen monitoring and evaluation during the risk response process to ensure the effective implementation of risk management measures and make adjustments and optimizations according to the actual situation.

6. Conclusion

By deeply analyzing the application of big data technology in financial risk management, we can systematically identify and respond to various financial risks faced by enterprises. This analysis not only makes risk management more scientific and effective but also provides strategic decision support for enterprises, helping them maintain stable development in complex and ever-changing market environments. Therefore, it is particularly important to explore in depth how to effectively integrate big data technology into financial risk management. This not only reveals the potential value of this technology in new fields but also promotes its wider application and development.

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