Platform Design and Algorithm Tracking for Empirical Analysis of Team Cognition and Enterprise Performance in the Background of Big Data

Chen Yu

Liuzhou Railway Vocational Technical College, Liuzhou, Guangxi, China

Abstract—Through a survey of qualified relevant enterprise executives, 144 valid questionnaires were obtained, and empirical research such as factor analysis, correlation analysis and regression analysis were carried out on the questionnaires., market risk sharing awareness and management risk sharing awareness three dimensions, establish variable models and put forward hypotheses for the impact of these variables on the relationship between change leadership and corporate performance. In the process of verifying the hypothesis, we use the empirical analysis method of the questionnaire data. The weight of each indicator is determined by the AHP, thus establishing a brand-new performance empirical analysis platform. The design method of the system is described in detail in theory, and the specific operation of the performance appraisal index system design is described with examples.

Keywords—*Algorithm Tracking, Empirical Analysis, Team Cognition and Enterprise Performance, Big Data*

I. GROUND STUDY

In recent years, the development speed of the Internet has far exceeded human expectations, and the amount of data generated by the Internet has also increased exponentially [1]. However, the data collection and analysis methods that people have mastered are far from meeting the demand for data growth. From abroad, a historic change in attitude towards the arrival of big data has been made to accelerate the transformation and upgrading of my country's manufacturing industry, and to transform from "Made in China" to "Created in China" as soon as possible, has become the most important task in front of us [2].

How to realize the transformation and upgrading of China's manufacturing industry, most of the research takes a macro and meson perspective [3]. The decision-making technology of enterprises has changed, and enterprises have begun to use new decision-making technical means such as cloud computing and big data decision support systems instead of traditional decision-making technical means [4]. The flattening of team structures and the tendency for employees to self-manage have led teams to prefer co-leaders rather than specific leaders created through the leadership delegation system.

The report of the 19th National Congress of the Communist Party of my country pointed out that the main contradiction in our society is the contradiction between the people's ever-growing needs for a better life and the unbalanced and inadequate development [5]. To solve this contradiction, we must accelerate the development of science and technology, vigorously promote scientific and technological progress and innovation. To explore the relationship between the risk sharing awareness of the executive team and its three dimensions and the company's performance perception [6], and empirically analyze the impact of risk sharing awareness and its different dimensions on the company's performance perception. With reference to relevant literature and theoretical works, the research on the characteristics of executive teams, R&D expenditures, and corporate performance, as well as relevant theoretical materials, can be accessed through databases such as SpringerLINK and CNKI [7].

When carrying out performance appraisal work, not only should the principles of fairness, openness and fairness be implemented in specific operations, but also in the formulation of standards and organization of implementation [8]. Only by unifying the thoughts of employees and the expectations of the organization well. This paper constructs a theoretical model of the impact of cognitive conflict on the corporate performance of the executive team of private enterprises. The relationship between management team cognitive conflict and corporate performance [9].

Due to the large investment, long payback period, high risk, high technical content, and low and unstable treatment of senior management personnel in the seed industry, the loss of senior management personnel is extremely serious, resulting in frequent human resource management problems. Operation process and structure and other aspects Conduct in-depth research [10]. Inspired by this, scholars in this field have conducted extensive research on the operational process, power allocation, compensation and other structural characteristics represented by the behavior integration of the executive team [11].

Based on the above-mentioned reality and theoretical background, this paper conducts relevant literature review and finds that new challenges of big data value creation have emerged in the era of big data, but related research is lacking, and most of the existing research stays in the superficial list of big data impact effects [12], while upgrading to big data capabilities for big data. People can now use the effective data resources in the massive data to conduct unprecedented real-time analysis of the form of social and economic resources, helping the country to better respond to social and economic operations, and can also help companies better understand the state of business operations and the advantages of competitors. And disadvantages to change strategies to develop new strategies to seize opportunities for better development [13].

The preferred way of perceiving and processing information of the senior managment team directly affects the choice of the technological innovation method of the enterprise [14]. This paper attempts to explore the impact of the cognitive style of the executive team on technological innovation from the perspective of cognitive psychology [15]. The conceptual model is shown in Figure 1. This breaks through the basic assumption of "bounded rationality" of decision makers to a certain extent. Some conclusions about corporate behavior research need to be re-examined. Many studies have shown

that leadership is an important factor in team effectiveness [16]. However, most of the research on team leadership is influenced by traditional leadership theories, which narrowly focus on the individual leaders of the team. As the specific implementers of corporate innovation, the executive team's behavior and decision-making process have become important factors affecting corporate innovation [17]. The research on the characteristics of the executive team has become a possible direction to improve the innovation performance of enterprises.

II. THEORETICAL REVIEW

Bolton and Bowen studied the relationship between past performance and innovation and believed that past performance positively affects organizational innovation [18]. The research results on the relationship between enterprise innovation ability and enterprise performance show that innovation ability positively affects enterprise performance [19].

Chen Zhongwei [20] proposed that a high-level management team full of entrepreneurial spirit can not only reach a consensus on the risk preference of a certain event, but also use the heterogeneity of team members to recognize and analyze from the knowledge perspective of members themselves. And evaluate risk, increase the likelihood of correct risk perception, and make more profitable risk-taking behaviors [21].

III. THE PROPOSED METHODOLOGY

A. Team Cognition of Enterprises in the Context of Big Data

Execution in the era of big data. The arrival of big data and technological changes have provided enterprises with an unprecedented development opportunity. How to seize this opportunity to achieve development must first formulate a development strategy, and the premise is that it needs a strong execution force. A good vision is a reality that requires action. Previous studies have not introduced organizational crisis as a moderator variable into the research on innovation ability and enterprise performance, and organizational crisis can have a huge impact on business operations. Traditional line leaders need to appoint or elect a leader who performs the leadership behavior of the entire team; while shared leadership should be viewed as a shared management process, implemented by members of the entire team.

The awareness of management risk sharing means that members of the senior management team can continuously adjust and improve the company's rules and regulations and strategic arrangements according to the development needs of the environment and the market and improve organizational efficiency and avoid uncertain risks by formulating some effective management measures. Mainly from three aspects: the characteristics of the senior management team and corporate performance, the characteristics of the senior management team and R&D expenditure, the characteristics of the senior management team, the characteristics of R&D expenditure and the enterprise performance, the previous research results of domestic and foreign scholars are reviewed, and the literature is reviewed.

Private enterprises in my country refer to domestic-funded enterprises composed of private capital other than state-owned and collective enterprises, which originated in the early stage of reform and opening. After more than 20 years of development since the reform and opening, especially after the completion of the original accumulation of capital, the article defines the concept of change leadership, which is considered by many scholars to be the most effective among enterprises in the contemporary environment of drastic changes. One of the management styles, transformational leadership, as the name suggests, is a transformational style of leadership that is very different from traditional leadership. Educational level. Most studies show that the higher the level of education received by the executive team, the greater the insight into the environment, the ability to process complex information, and the more inclined to adopt innovative strategies or embrace change.

B. Empirical Analysis of Team Cognition and Enterprise Performance

Build a model of the relationship between change leadership and corporate performance with employee voice as an intermediate variable; third, the moderating role of corporate innovation climate in the relationship between employee voice and corporate performance, and specifically explore the three levels of corporate innovation climate. Colleague support. Of course, the senior management team is not a simple combination of senior managers but is defined as those top management teams with benign interaction, common goals, resource integration and optimization, and high performance. Organizational redundancy is the difference between the resources an enterprise has and the resources it needs, to develop existing capabilities and build new ones.
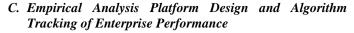
The superscript r represents the two-phase rotor coordinate system; us, ur are fixed, rotor voltage.

Previous studies have shown that organizational redundancy, as a buffer and potential resource, can promote the improvement of innovation capabilities. Compared with individual senior managers, senior management teams have a more dimensional cognitive perspective. By improving the quality and quantity of information, cooperation Team processes such as behavior, collective decision-making, etc., form a unique cognition of the environment to formulate the most direct competitive behavior and then affect the performance of the enterprise. Based on the research of these scholars, this paper proposes a big data capability based on the Chinese context. The measurement scale is measured from the two dimensions of big data resources and the ability to integrate and utilize big data resources. Through scientific and rigorous questionnaire design methods, a measurement scale for big data capabilities is formed.

According to the results of the pre-investigation of some EMBAs mentioned above, there are four main variables in this paper, transformation leadership, corporate performance, employee voice, and corporate innovation atmosphere. Because some variables are divided into different dimensions, after analysis and detailed analysis Finally, the measurement variables in this paper are determined to be 8. Big data enables enterprises to develop and utilize enterprise innovation capabilities in a targeted manner, form core competitiveness that is scarce and difficult to imitate, promote enterprises to respond to changes in the external environment and form competitive advantages, and improve enterprises. Performance. It embodies the strategic goals of the enterprise and its achievement. On the other hand, it should be used as the result and measurement standard of the other three non-financial aspects, so that a vertical causal relationship is formed between the financial performance of the enterprise and its non-financial performance drivers. Relationship chain, this causal chain runs through the four aspects of BSC.

C. Empirical Analysis Platform Design and Algorithm Tracking of Enterprise Performance

Under the background of knowledge economy, employees with high value and high creativity have become the core productivity of enterprises. Shared leadership creates full creative play for team members with professional expertise and high personal quality. It is quite difficult to obtain an accurate absolute financial performance of a company. Empirical research also shows that there is a relationship between absolute financial performance and relative financial performance of a company. strong correlation. Data collection on environmental cognition was done by four master graduate students familiar with this study.

To ensure the reliability of the data, before data collection, each participant was familiar with the theoretical connotation of environmental cognition and related research. Use SPSS 19.0 to conduct reliability analysis on big data capabilities, and the results are shown in Table 6-1. It can be seen from the table that at this time, the CITC values of all items of the big data capability are greater than 0.4, and the minimum value is 0.671. If any item is deleted, the reliability of the variable will not be improved, and the variables in each dimension will not be improved. The Cronbach's coefficients are all greater than the recommended 0.7, and the minimum value is 0.907, which indicates that the Big Data Capability Scale has high internal consistency. The coefficients in this paper are generally high. This paper requires that the Cronbach's alpha coefficient is at least 0.60 to indicate high reliability.

In the previous description, it was pointed out that the reliability test is to test the internal consistency of the questionnaire scale, so the Cronbach's alpha coefficient is the expression of consistency, so this method is suitable for the measurement of general opinion attitude questionnaires. The sensitive information provided by big data promotes rapid decision-making and rapid response of enterprises, which can effectively transform innovative capabilities and innovative ideas into innovative results and solidify them into the products or services of the enterprise, thereby improving the performance of the enterprise. Understanding, decision-making commitment and mutual have a positive impact on emotional acceptance. Consistency of decision-making commitment. We are conducive to enterprises to better implement strategic decisions, develop market opportunities and respond quickly to dynamic external markets, which has an important impact on enterprises' competitive advantage in the market.

CONCLUSION

This paper empirically tests the influence of the cognitive style of the executive team on technological innovation based about Chinese manufacturing enterprises. The analytical cognitive style prefers process innovation, and the creative cognitive style prefers product innovation. The team role cognition and team performance are systematically expounded. In the big data environment, to enhance innovation ability, enterprises should make full use of organizational goals, organizational redundancy, and past performance. The complete information and accurate calculation provided by big data can effectively promote organizational goals, organizational slack and past performance can have a positive effect on innovation ability, build a research framework and research model, conduct empirical research through many questionnaire results, analyze shared leadership, The relationship between team member role cognition and team performance.

References

[1] Min Yuanyuan. An Empirical Analysis of the Factors Influencing the Commercialization Degree of my country's Provincial Capital Cities under the Background of Big Data [J]. Business Times, 2020.

[2] Zhu Jinye. Research on the relationship between equity incentives, corporate innovation, and corporate financial performance [D]. Jiangxi Normal University, 2020.

[3] Zhou Xianchun, Shen Tao, Zou Qinqin, et al. Practice and exploration of teaching team building for big data and artificial intelligence courses under the background of first-class undergraduate education construction [J]. Science and Technology Vision, 2021, 000(031):12-14.

[4] Yu Qiuju, Shen Yuanyuan. An empirical analysis of China's digital economy and e-commerce under the background of big data [J]. Journal of Shangqiu Normal University, 2022, 38(6):4.

[5] Ying Wei, Jiaming Zhu, Yuxiang Chen. An empirical study on the background characteristics of executive teams, investment efficiency and corporate performance [J]. Journal of Natural Science of Harbin Normal University, 2021.

[6] Ren Xiangwei, Sun Liwen, Xing Liyun. Heterogeneity of senior management team, team conflict and corporate green performance: An integrated analysis framework under the adjustment of differentiated CEO leadership style [J]. Science and Technology Progress and Countermeasures, 2021, 38(20) :10.

[7] He Mingqin. The functional background of the executive team, innovation investment and corporate performance [J]. Industrial Technology Economics, 2020, 39(8):10.

[8] Ye Huayong. Empirical Analysis and Commentary of Exam Papers Based on Big Data [J]. Mathematics Education in Primary Schools, 2022(1):3.

[9] Li Ning. An Empirical Study on the Background of Executive Team and Mergers and Acquisitions Performance [J]. China Collective Economy, 2021(9):3.

[10] Lv Tu, Lin Huan, Chen Hao. The influence of entrepreneurial team cognitive ability on entrepreneurial performance—with dual entrepreneurial improvisation as an intermediary [J]. Science and Technology Progress and Countermeasures, 2021(5):29-37.

[11] Wang Lizhen, Sun Yue. The Interaction Effect and Threshold Effect of Capital Structure and Corporate Performance: An Empirical Analysis Based on Property Insurance Industry [J]. Contemporary Economic Science, 2021.

[12] Li Xiangyang. An Empirical Analysis of the Impact of Big Data Technology Application on the Performance of Listed Companies [J]. Dongyue Lun Cong, 2021.

[13] Tang Zhiwei, Zhou Wei, Wang Yan, Li Xiaoyan. Research on Public Participation Behavior in Public Crisis Events under the Background of Big Data: An Empirical Analysis Based on the New Coronary Pneumonia Epidemic [J]. Library, 2020(8):8.

[14] He Xifang. Research on the training plan of financial management professionals under the background of big data [J]. Office Automation, 2022.

[15] Xu Lanyue, Dong Baobao. Transformational Leadership and New Venture Performance: A Cross-Level Study [J]. Southern Economics, 2021(8):16.

[16] Yue Shangzhi, Yan Peng, Ren Qiuzhen. Analysis of the impact of corporate executive background characteristics on corporate M&A performance: An empirical study based on Shanghai and Shenzhen A shares [J]. 2021(2017-12):21-25.

[17] Xu Xiaochen. Analysis and Empirical Research on Influencing Factors of Weibo Group Opinion Polarization in the Background of Big Data [J]. Journal of Jilin Education Institute, 2020.

[18] Wang Yiting. Research on the relationship between Internet word-of-mouth and homestay industry under the background of big data [J]. Economic Research Guide, 2022(15):3.

[19] Min Yuanyuan. An Empirical Analysis of the Factors Influencing the Commercialization Degree of Capital Cities in my country under the Background of Big Data [J]. Business Economics Research, 2020(6):3.

[20] Wu Wenhan. Design and demonstration of big data user portrait model based on qualitative and quantitative fusion method [J]. Data Analysis and Knowledge Discovery, 2022, 6(4):12.

[21] Li Wen, Zhang Zhenzhen, Mei Lei. Research on Enterprise Network, Big Data Capability and Business Model Innovation Mechanism——An Empirical Analysis Based on the fsQCA Method [J]. Science and Technology Progress and Countermeasures, 2022, 39(1):11.