Research on the Precise Funding System for College Students with Financial Difficulties from Families in the Perspective of Big data

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Abstract: Targeted Poverty Alleviation refers to the targeted funding work completed in the process of higher education development. However, at present, in the process of implementing the requirements of Targeted Poverty Alleviation in China's universities, some students' families are difficult to complete identification, and there are also some problems in the information management of the funders, which has seriously affected the funding for students with financial difficulties in their families during the period of higher education in China. With the rapid development and progress of Big data technology, through the establishment of a sound information technology system, we must help students actively change the funding model in the future and greatly improve the funding, which is of great significance to the development of university funding supervision and management.

Keywords: Big Data; Universities; Family Financial Difficulties; Precision Funding

1. Big data technology concept

Big data technology refers to a series of methods, tools and technologies used to process and analyze large-scale, fast-growing and diversified data sets. It involves extracting valuable information from structured, semi structured, and unstructured data sources, and discovering patterns, trends, and insights from them. The following are some key concepts of Big data technology: first, Big data can complete data collection and storage. Big data technology collects and stores data in different ways, including sensors, log files, social media, Internet applications, etc. These data are usually stored in their original format on distributed storage systems (such as Hadoop) or cloud platforms. Secondly, data processing and management can be carried out. Big data technology uses various processing engines and frameworks, such as Hadoop MapReduce, Apache Spark and Apache Flink, to process, transform and integrate large-scale data. At the same time, data management also includes Data cleansing, de duplication, archiving, backup and other operations. Thirdly, data can also be analyzed and mined. Big data technology uses machine learning, statistical analysis and data mining algorithms to conduct pattern recognition, classification, clustering and prediction on massive data, and obtain valuable information about customer behavior, Market trend and business insights. Big data technology is widely used, affecting various industries and fields, including business intelligence, finance, health care, transportation, social media, energy management, etc. It helps organizations and businesses better understand their users and markets, optimize operational efficiency, promote innovative development, and bring positive social impacts in many aspects.

2. Shortcomings in the current precise funding work for college students

2.1 The identification basis is too simple, and the basic database of universities is not sound

Firstly, during the identification period of impoverished students in Chinese universities, especially during the class evaluation process, due to the limited number of members in the evaluation group, comprehensive evaluation and judgment cannot be achieved for all applicants. The evaluation basis of the evaluators is often based on individual applications submitted by students. This situation has led to a relatively single source of identification information for students from financially disadvantaged families, and the

identification basis is not sufficient and complete enough, Mixing too many personal factors can lead to subjective emotions among some staff members during the identification of students with financial difficulties in their families. Once subjective emotions are objectively identified, it can easily lead to inaccurate evaluation results, and some truly impoverished students may find it difficult to receive financial assistance from the school.

Secondly, due to the different environments in different regions and various factors, many universities are unable to conduct one-on-one visits in the process of identifying impoverished students. In addition, the poverty alleviation staff in the student origin area will also issue some certificates that do not have credibility due to personal subjective factors, which leads some students who do not meet the requirements to enter the Targeted Poverty Alleviation queue, which not only wastes national resources, but also leads to the loss of trust in the identification work.

2.2 The recognition criteria are not scientific enough

Nowadays, there is little mention of the standards for identifying difficult students in universities in the relevant regulations. The recognition criteria currently used are still the relevant regulations issued in 2007, which state that students' families are generally in a difficult economic situation, and their monthly living expenses are the same as the minimum guarantee for residents in the area where the school is located or appear to be low, making it difficult to support their normal life and learning expenses during their school years. Therefore, students can be recognized as disadvantaged students. This definition method leans towards theory, and the overall scope is relatively large. In addition, the process of identification requires manual identification by staff, which will present a certain subjective tendency. At the same time, the sources of students in different regions of China are different, and there are also certain differences in the minimum living standards for students, which makes it difficult to make accurate judgments in the actual process.

2.3 Lack of professional management talents

In order to better improve the current way of identifying impoverished students in universities, it is necessary to actively innovate in work content and methods, which will involve various fields and disciplines such as data, statistics, and computer science. At present, colleges and universities are short of corresponding professional data talents in terms of funding management personnel allocation, and the student funding work cannot be in line with the technical level, and it is also difficult to meet the basic needs of funding work in the Big data environment .

3. Precise funding channels and methods based on Big data technology

3.1 Using data mining to achieve precise identification criteria

In the future, it is necessary to improve the precision funding level of universities, and the key core of this work is to accurately identify impoverished students. Through Big data technology, a set of more reasonable dynamic data collection database can be established to mine and analyze various data of poor students. The traditional mode of relying on the education department for search has become difficult to obtain economic data of students and families. Therefore, it is necessary to establish a comprehensive data information service platform involving multiple departments such as education, banking, and civil affairs, in order to complete resource sharing and update communication. This can provide a more reliable and comprehensive data foundation for the identification of impoverished students, ensuring the effectiveness and accuracy of the identification of impoverished students.

3.2 Realizing Accurate Recognition Standards through Data Integration

Specifically, during the actual identification and funding of students, it is necessary to conduct a comprehensive data analysis of the daily life data of students from financially disadvantaged families to select the most suitable funding plan and process for impoverished students. In response to this situation, universities also need to actively understand the actual situation of subsidized students, and create subsidized programs such as work study, living subsidies, and social donations for students. This is of great significance for ensuring the smooth life of students from financially disadvantaged families.

Secondly, through various kinds of analysis and investigation work, we can further expand the off campus Big data, effectively sort out various indicators, and quantitatively deal with some originally complex problems and data, so as to complete the complete division and calibration of indicators. The focus is on elaborating and carefully explaining important data such as students' place of origin, family income, and place of origin, in order to form a complete indicator system. During the actual funding period, it is

necessary to analyze and integrate the Big data information, and provide targeted financial assistance to some poor students to maximize the benefits of financial assistance, so that every student who really has financial difficulties can be helped.

3.3 Cultivate Big data professionals

Universities can organize relevant training courses to systematically explain and train the basic knowledge, data analysis methods and tools of Big data technology. This includes the concept, principle and application scenarios of Big data technology, commonly used data processing and analysis tools, and data privacy and security knowledge. Secondly, combine Big data technology with funding practice, organize practical projects or Case study, and let staff participate in and apply Big data technology to solve practical problems. Through practical projects, they can understand how to collect, clean, store, and analyze data, and obtain valuable information and insights from it. Finally, encourage university funding staff to actively participate in relevant academic conferences, seminars, and industry exchange activities, and share experience and technology with other institutions and professionals. Through exchanges with peers, they can understand the latest Big data technology development trends, learn from and absorb the successful experience of other institutions.

Conclusion

Precision funding is a key content and important measure of education poverty alleviation work. Establishing a precision funding mechanism is the foundation and important work content for achieving precision funding in the future. Nowadays, Big data technology is developing rapidly. Using Big data thinking to carry out precision funding for colleges and universities is of great significance and key value for promoting the efficiency of precision funding and optimizing the quality of precision funding. Therefore, in this process, it is necessary to make a comprehensive consideration from the perspective of Big data technology and make a detailed analysis of the implementation of precise funding, which is of great significance and key value in promoting education equity.

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