

Data-Driven Operation Mechanism of Public Welfare Platforms for Left-Behind Children

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Abstract: *Left-behind children in rural China still have problems with mental health, academic pressure and a lack of social support. With the development of digital technology in recent years, public welfare platforms have started to emerge. Most of the platforms are still run by individuals and have not collected data systematically. Based on the actual construction and field data of the "Yuguang Tongxing" project, this paper has been written. A Data-Driven Operating Model for the Public Welfare Platform of Left-Behind Children is Proposed Here. According to the construction analysis of the data-driven model, psychological measurement, stress heterogeneity and public welfare governance have been added, and thus a mechanism for integrated data collection, analysis, intelligent decision-making and feedback optimisation has been established. Some of the testable hypotheses have also been given. Therefore, the two will help to improve the accuracy of the service and make better use of resources.*

Keywords: *Left-behind children, Public Welfare Platform, Data-driven mechanism, Digital governance*

Introduction

Due to the large-scale migration of rural labourers in China, the problem of left-behind children has become very serious. These children are often in emotional distress, lack parental support, are under great academic pressure, and as a result, are doing poorly in all areas.

As a result, digital public welfare platforms have begun to provide education, psychological and social services. Most platforms are still in the process of building an experience management system and have not collected data systematically.

Based on the data, it is expected that the first few results obtained will be correct^[1]. Reliable psychological assessment tools can be used to determine the mental health of children in the area of child development, and research has shown that left-behind children are subject to all kinds of stress and psychological problems. Research in the field of public welfare finance and platform risk management has shown that good use of resources and strong governance are needed.

Therefore, in order to improve the efficiency of the platform, we will use data for decision-making. There have been some problems in the implementation of the "Yuguang Tongxing" project, such as incorrect setting of service goals, lack of data integration, poor use of resources, etc., so the proposed mechanism needs to be introduced.

1. Limitations of Current Public Welfare Platforms

The platform economy has increased the accessibility of social services for left-behind children, but problems in the old governance system have also limited their benefits.

First, there is an inaccuracy in the service provided due to poor use of data. Standardised service models do not consider the different psychological and developmental needs of individuals, so they are not suitable for everyone.

Secondly, the distribution of funds is often inefficient and fails to meet the actual demands; it is based on administrative judgment or fixed indices rather than data analysis, so it cannot achieve the purpose of public service expenditure.

Third, there is a danger. With the development of online fundraising and resource organisation, problems of transparency, information asymmetry and accountability have begun to appear on the platform and have limited its progress.

In short, there is no coordination among institutions to improve the integration of services and intervention effectiveness, and the data are also scattered.

Given the shortcomings mentioned above, the present operating model for experience is not feasible, so we need to switch to a data-driven model based on data, technology and governance.

2. Theoretical Basis of the Data-Driven Operating Model

The new way of operation based on data is a combination of knowledge in technology, psychology, operation, etc. They will not work alone, but together they will show how data-driven capabilities can be applied to improve the administration of public welfare.

A mechanism-guided data-driven model is used to add knowledge of a particular area and its technical terms to the data analysis. Not all good ways are based on data; some are also derived from mechanisms and contexts to improve the accuracy and interpretability of decision-making. The Decisions of the Public Welfare Department should be open to the public and accountable. Therefore, the model above can be used to process the raw data and obtain a good and reliable intervention plan.

Fundamentally speaking, the goal of all public welfare activities should be to improve the living standards of the people. A good measurement system can be set up to quantify people's emotions, and then this data can be added to other systems for analysis^[2]. According to empirical studies, left-behind children have all sorts of stress and various types of mental health problems, so a one-size-fits-all intervention will not be appropriate for everyone. Based on the above theoretical ideas, we need to build personalised service models in a data-driven way and adapt them according to the individual circumstances of different people.

To ensure the continuous operation and good performance of the public welfare platform in actual operation, resources should be used efficiently and good governance should be established. Research on public service expenditure has shown that, in order to achieve the best results for society, resources should be distributed according to actual demand. At the same time, research on online public welfare platforms has also found that, in order to promote accountability and long-term stability, risk management and transparency should be built into the operating model. Therefore, the aim of employing data is to enhance the efficiency of public services and promote good governance.

The three above work together to offer full theoretical support for the mechanism shown above. The first is the technical way to process and use data; the second is the desired psychological effect; and the third is the operation method that controls resources and risks. Together, they are the reasons for environmental change and the problems that need to be addressed by policies.

3. Data-driven Mechanism for Optimisation of Public Welfare Platforms

3.1 Data Integration for All-Encompassing Profiling

The foundation of a good Data-Driven Public Welfare Platform is a good Data Infrastructure and high-quality, comprehensive data. Therefore, the first is to build a multi-dimensional data integration system that can gather all the data from different places in one place for analysis.

The three kinds of data that will be collected by the platform are: (1) Demographic information, such as age, gender, family background, etc.; (2) Educational data, which include academic performance, attendance records, learning interest and so on; and (3) Psychological data based on validated instruments, such as well-being indices and stress levels.

Normalise, regularise, clean up and organise the data in a good way for use. These profiles are not fixed but should be updated regularly according to changes in children's development. A dynamic profiling method can be used to collect a large amount of data on a child from all kinds of places at different times.

Data integration should also consider the interoperability of all departments in schools and local governments. Increase the Scope of Data Collection to Offer a Good Foundation for Inter-departmental

Cooperation and Management.

3.2 Data Analysis to Discover Specific Problems

Based on the above data, analysis will be conducted to obtain some practical knowledge from the raw data. First, one should learn about the actual circumstances of the people and identify problems.

Based on the above descriptions and predictions, the platform can divide children into various risk groups according to their mental health and study pressure, etc. Clustering and profiling can be used to find groups of children who are more likely to be severely stressed by school and have other problems. Based on the previous research, many problems have been identified in the daily lives and mental health of left-behind children.

Network-based and pattern-recognition methods can be used to find connections among all the factors mentioned above, such as the effect of stress on emotional well-being. Based on the above analysis, we will build an early warning system and deal with any problems in time.

The way of analysis should not be confined to looking back. Add some predictive functions to know what people will need in the future and prepare for that change in advance.

3.3 Intelligent Decision-Making for Resource Allocation

One of the reasons for collecting data is to help us make better choices. Therefore, to make full use of the resources and improve the matching of services, data-driven decisions will be made.

Based on the above analysis, some intervention plans will be automatically generated for different people. For example, children who are regarded as high-risk may receive special care in the form of psychological counselling, educational support, etc. The accuracy of the service will be relatively high now.

A mechanism-guided data-driven model can use the domain knowledge and algorithmic decision rules of the problem mentioned above to obtain good results and be more interpretable. One should be open about the use of the people's funds and accountable.

The Division of Resources Should Be Reasonable and Fair. With the help of data, we can make better use of our scarce resources and reduce or avoid waste. Therefore, there will be good public services for all the people.

3.4 Feedback Mechanism for Continuous Improvement

One of the first attributes of a data-driven system is that it has a continuous feedback loop. Thus, it will know the results of the intervention and adjust the operation plan.

Based on the above measures, collect some data on changes in students' mental health, grades and class participation over time. Based on the results of the above observations, the original plan will be amended.

After many attempts, both the analysis model and the decision rules for the platform will continue to be improved. Based on the above data, it will be self-optimising and continually improving.

The feedback will be used to hold managers accountable and improve the performance of the company. Public welfare platforms are in a bad state, and we need to improve transparency and public trust.

In short, all the above parts will be connected to form a closed loop and help us better organise public welfare services flexibly and intelligently.

3.5 Application in the "Yuguang Tongxing" Program

A new way of working with data can be introduced to improve the implementation of the "Yuguang Tongxing" project. Field investigation and collection of participants' opinions and activity data have been carried out, and some sources of data will be combined for the programme.

Data integration and profiling methods will be employed to build dynamic individual profiles of the left-behind children, and thus their psychological and educational needs can be better understood. Based

on the analysis of the data, some groups of high-risk individuals have been identified among the participants, and all sorts of support, such as psychological counselling, study assistance and social activities, have been provided.

Organise the scarce resources in a more reasonable way according to the different demands of all the groups. We will provide feedback on the results of the intervention to help improve the programme in the future.

In short, the application of the new plan has increased the accuracy, efficiency and sustainability of the "Yuguang Tongxing" project, and it is a good case of data-driven public services.

4. Hypothesis Development and Empirical Significance

To provide some support for the above framework, we have put forward some testable hypotheses based on the operation mechanism of the data. The hypotheses above are based on the logical connections among the data ability, intervention process and outcome variables.

4.1 Data-driven Competence and Service Precision

First, there should be a system for collecting, processing and analysing the data. The old public welfare system has some general assumptions about services and does not meet the actual needs of the people. Based on the above data analysis, we will know what people want.

Collect all the data from various places and analyze it to enhance the accuracy of service matching. It will be less asymmetric and better at solving the problems.

Therefore, the following hypothesis is presented:

H1: A Data-Driven Company has a Higher Service Quality.

4.2 Data-driven Competence and Psychological Well-being

The first goal of the public welfare platform for left-behind children is to improve their mental health. Based on the above research, the following reliable instruments have been developed to quantify people's sense of well-being.

Data-driven thinking can help us solve the problems of the people more quickly. Early discovery of emotional problems and other risk factors can be addressed in time to improve people's mental health.

Therefore, the following hypothesis is presented:

H2: A Data-Driven Society will Benefit the Mental Health of Left-Behind Children.

4.3 The Mediation Effect of Individualized Intervention

Although the basis of good results is data, it will not be realised directly but through some intermediate links. The degree to which the service meets the people's actual demands is called personalised service.

Based on the analysis of the data, the children will be divided into several groups and different support plans will be introduced. A single policy for everyone is not feasible; people are at different levels of risk and have various needs at different times.

Therefore, personalised assistance is needed at this time to boost people's sense of self-worth according to data.

H3: Individualised Intervention is a Mediator of Data-driven Capability and Psychological Well-being.

4.4 Data-driven Thinking and Optimisation of Resources

The first demand of the public welfare platform is to make better use of resources. The old division of labour is based on administration and is therefore inefficient and wasteful of resources.

Increase the Allocation Efficiency according to the above data. Based on the analysis of demand and

the results of intervention, we will increase investment in the areas that have performed well. It is in line with the previous research that has been conducted.

Therefore, the following is the hypothesis.

H4: Optimisation of Resource Allocation is Data-driven.

4.5 The Moderating Effect of Stress Heterogeneity

Left-behind children are not a uniform group; in fact, there are many differences in their stress and mental health. Stress Profiles are not the same, and people will react differently to the intervention.

Therefore, the results of the individualised intervention will differ among various groups of people. Children who are more stressed are more likely to be the recipients of this help, so their needs should be met promptly and seriously.

Therefore, the degree of the effect of the intervention on the outcome will differ at various levels of stress.

H5: Heterogeneity of stress moderates the effect of intervention on psychological well-being; that is to say, this effect is stronger for people who are already stressed.

4.6 Empirical Suggestions

Based on the above hypotheses, some additional experiments will be conducted. The above relations can be obtained from the survey data, psychological assessment scales and platform-generated behaviour data.

The degree of integration, analysis and use of data is often used as an indicator of a country's development in data. Standardised Instruments will be used to measure the mental health of the people, and platform performance indicators will be employed to quantify the quality of services and efficiency of resource allocation.

Regression analysis, mediation analysis and moderation analysis are also other kinds of tests that can be used to examine the above links. Therefore, the concept framework has a theoretical basis and can be verified by observation.

5. Discussion: Implications for Public Welfare Governance

According to the actual circumstances of left-behind children, a new type of improvement for the governance of public welfare platforms has been proposed by data. Although they are the means by which services are provided, they should also be data-driven governance systems that collect information, make decisions, organise resources, etc.

5.1 From General Support to Specific Governance

One of the aims of the above plan is to change from general support to specific assistance. The old model of public welfare is too uniform and cannot meet all the different and changing needs of left-behind children.

Based on the above data, we know what people need improved and will offer more personalised services accordingly. The new kind of leadership will be based on facts and not on the old system of experience. Therefore, the effect of the intervention will be relatively large, and the special needs of high-risk groups will also be considered.

5.2 Data-driven Resource Allocation and Efficiency Improvement

The other is that we have reduced the amount of resources. Public welfare resources are scarce, so there is a problem of efficiency in the governance system.

Based on the above financial, behavioural and result data, we will allocate funds according to the actual needs and the effect of the intervention, rather than fixed amounts. Based on the above data, we will make better use of the funds and be more accountable for how these funds benefit the people. Therefore, it can be concluded that the improvement of public service expenditure should be promoted^[4].

Increase the legitimacy of the government by allowing the people to see how public funds are being used and thereby build more trust in public institutions.

5.3 Improve Risk Governance and Platform Stability

Risk Management Based on Data will be introduced to improve the general situation of government work. With the increase in digitalisation and commercialisation of public welfare platforms, problems of fund management, information asymmetry and lack of operational transparency have become more and more serious.

Add risk monitoring and evaluation to the data system to find any problems in an early stage and prevent the misuse of funds due to poor governance. Therefore, to ensure the stable operation and long-term development of the platform, we will correct the problems mentioned above.

Embed risk governance in the daily work of the company and change from a reactive mode of risk control to a proactive one.

5.4 Problems in Implementing Data-Driven Governance

There are still some problems in the actual implementation of the data-driven governance model, etc.

First, data privacy and ethics will limit the scope of data collection and use. As the subject group is minors, some precautions need to be taken to protect their privacy and ensure the ethical use of data.

Second, there is a lack of technology in the countryside, so data-driven systems cannot be employed. Many rural areas do not have good digital networks or technical personnel, so it is difficult to collect and analyse the data in line with the plan above.

Thirdly, there is a problem of data dispersion among all the organisations. Schools, local governments and social organisations generally work independently and do not share data or cooperate well. If there is no good way to share data, then we cannot build a data-driven government.

5.5 Policy and Practical Suggestions

The following are some policies and measures to deal with the problems mentioned above.

A single Data Governance Policy should be released by the government to promote the sharing and use of data in all sectors. With the changes in society, so too have the laws and ethics for data protection.

The second is that the technology platform for public welfare services in rural areas needs to be strengthened and trained. Train platform operators and other parties in data literacy and how to make good use of data.

To build an all-weather government, the cooperation of all sectors should be strengthened to share relevant resources and data.

6. Conclusion

A Data-Driven Operating Model for the Public Welfare Platform of Left-Behind Children is put forward in this paper; it is intelligent in nature, has a closed-loop feedback optimisation system, and is based on data collection and analysis. Therefore, it is hoped that the above measures will improve the accuracy of service delivery, optimise the use of resources, and promote the long-term stability of platform operation. This paper will add to the current body of knowledge by demonstrating that data-driven methods can be used to provide personalised public services and enhance the efficiency of welfare in the digital age. It is only a theoretical study, and there is no actual data or a good data system. Based on the real data above, we will verify these hypotheses in the future and find new ways to use technology to improve the efficiency and scale of the platform.

In short, the above mechanism can be employed to improve the operation of the "Yuguang Tongxing" project. Add data-driven features to the services to help us better understand the problems people are facing, make fairer decisions, and continuously improve the services. Therefore, it can be seen that the traditional public welfare activities are also data-driven governance systems.

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