

High Quality Development of Regional Inclusive Insurance in China: Based on Logistic Multiple Linear Regression Model

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Abstract: As one of the key projects of poverty alleviation, inclusive insurance has received much attention in recent years. In May 2022, the Banking and Insurance Regulatory Bureau issued a document entitled “Circular on further enriching the supply of Life Insurance products”, which is intended to encourage more commercial insurance companies to participate in the construction of an inclusive insurance system closely related to the protection of people's livelihood. First of all, from the background of the development of inclusive insurance, this paper finds that there is still a gap in basic medical security, and inclusive insurance will play an important role in the development of the “main artery”. The second part focuses on the profound connotation of inclusive insurance from the perspectives of the product characteristics, operation mode, development status of each region, protection scope and so on. The third part makes an in-depth analysis of the factors affecting the inclusive insurance participation rate based on the multiple linear regression model and finds that the opening of basic medical insurance to individual accounts is important factors affecting the inclusive insurance participation rate. Starting from the reality of inclusive insurance, the last part of this paper puts forward three suggestions for the future development of inclusive insurance based on the coverage, “product & service”, multi-channel of science and technology.

Keywords: Inclusive Insurance; Operation Mode; Multiple Linear Regression Model; Participation Rate

1. The Development Background of

Inclusive Insurance

Inclusive insurance [1] integrates inclusive factors into the pricing side of the product to form the unique advantage of low premium and high security. Under the background of the increasingly perfect security of the national health care system, inclusive insurance plays an important role in it because of its uniqueness. Inclusive insurance is core-oriented to meet the omni-directional medical and health needs of the people and acts as a supplementary medium in the construction of multi-level medical security system.

1.1 Policy Support

In the top-level design, the Banking Insurance Regulatory Bureau fully affirmed the important role of inclusive insurance in the construction of the medical system and put forward many feasible measures to further develop inclusive insurance according to the characteristics of each region. In 2016, the Insurance Regulatory Bureau put forward the concept of "micro-insurance" [2] and suggested to focus on the research on the development of inclusive insurance with moderate protection and low price. In 2020, with the in-depth landing of a number of health care reform systems, the medical demand is gradually diversified, increasing the supply of inclusive insurance products, raising the average level of serious illness protection for residents, and helping to solve the problem of uneven development of medical security, has become an important concern to be solved urgently.

1.2 The Second Protective Net

Medical insurance [3], as the first protection net for residents' health, covers a wide range of areas as a whole, but there is still a certain degree of protection gap, which is specifically reflected in the related problems such as the

high proportion of personal burden and the uneven level of development in different regions. Inclusive insurance will play the role of a "second protection net" and act as a "supplementary force" of medical insurance, with the guidance of benefiting the people and transferring the risk of high self-cost of serious diseases, so as to inject fresh blood into the omni-directional health care system [4].

1.3 Initial Stage

Inclusive insurance is in the "initial stage", and the development of inclusive insurance is at a time when it is jointly organized by the government, commercial insurance companies and third-party platforms, which will form multiple support and protection at the payer. In the past, the development of inclusive insurance is still in its infancy, and in the future, as an important bridge between traditional health insurance and medical insurance, inclusive insurance will give better play to its innovative advantages.

2. The Present Situation of Inclusive Insurance Development

2.1 Product Characteristics

In the insurance side, traditional commercial health insurance [5], such as millions of medical insurance and special medicine insurance, has certain restrictions on the insurance age and the physical condition of the insured. And it is difficult for people over 60 years old, people with illness and workers engaged in special occupations to apply for insurance.

In order to meet the protection needs of residents, inclusive insurance has loose insurance conditions with no age and health requirements.

In the underwriting side, the premium of inclusive insurance is low. The traditional

millions of medical insurance premiums are concentrated in 300-400 yuan, and most of the inclusive insurance premiums are more than 100 yuan, which is only three hundred to four hundred of traditional insurance.

In the claim side, inclusive insurance can protect the hospitalization expenses within the health insurance and the specific drugs outside the health insurance, and the reimbursement ratio is as high as 70% and 80%.

2.2 Operation Mode

At present, inclusive insurance has formed a tripartite "iron triangle" development model, in which the government, as the "commander-in-chief", leads the guidance and suggestions in the initial stage of product design, and plays a supervisory role in the middle stage of product sales promotion and operation. As a key link between the preceding and the next, commercial insurance companies provide the whole process support of inclusive product design and regular innovation research, insurance actuarial data support, inclusive insurance product promotion, underwriting and claim settlement. In addition, a third-party management platform is added to the model. On the one hand, as an independent third party, the platform will assist insurance companies to do a good job in early product design and promotion. On the other hand, it will also give full play to the functions of operation preliminary examination and claim settlement service, so as to bring good health management experience for policyholders.

2.3 Current Situation

According to the statistics of the research data, as of 2023, there are 175 inclusive insurance products in China, and the total number of participants is more than 100 million. (e.g., Table 1. The proportion of inclusive insurance in each province)

Table 1. The Proportion of Inclusive Insurance in Each Province

Number	Province	Provincial Level Products	City Level Products	County Level Products	Total	Proportion
1	Guangdong	0	26	0	26	14.9%
2	Shandong	2	18	0	20	11.5%
3	Jiangsu	2	15	1	18	10.3%
4	Zhejiang	0	14	0	14	8.0%
5	Sichuan	0	13	0	13	7.5%
6	Hebei	4	5	0	9	5.2%
7	Hunan	1	8	0	9	5.2%

8	Anhui	1	7	0	8	4.6%
9	Fujian	2	5	0	7	4.0%
10	Henan	2	5	0	7	4.0%
11	Liaoning	0	6	0	6	3.4%
12	Jiangxi	0	4	1	5	2.9%
13	Guangxi	2	1	0	3	1.7%
14	Guizhou	1	2	0	3	1.7%
15	Hubei	1	2	0	3	1.7%
16	Jilin	2	1	0	3	1.7%
17	Yunnan	0	3	0	3	1.7%
18	Beijing	2	0	0	2	1.1%
19	Hainan	2	0	0	2	1.1%
20	Ningxia	1	1	0	2	1.1%
21	Shanxi	1	1	0	2	1.1%
22	Shanxi	1	1	0	2	1.1%
23	Tianjin	2	0	0	2	1.1%
24	Chongqing	2	0	0	2	1.1%
25	Gansu	1	0	0	1	0.6%
26	Heilongjiang	0	1	0	1	0.6%
27	Shanghai	1	0	0	1	0.6%
Total		33	139	2	174	100%

From the perspective of regional distribution, a total of 19 provincial administrative regions have launched 32 provincial inclusive insurance products. 117 prefectural and municipal administrative regions have launched 140 inclusive insurance products at the prefecture and city level, and 2 districts and counties have launched 2 inclusive insurance products at the district and county level. Among them, the number of inclusive insurance products in the eastern region is about twice that of the central and western regions combined. The development of inclusive insurance shows a certain provincial regional scale cluster effect. A total of 26 types of inclusive insurance products in Guangdong Province are at the top of the list, followed by Sichuan, Jiangsu, Shandong and Zhejiang.

2.4 Scope of Protection

Inclusive insurance mainly includes three major safeguards: in-catalogue protection, special drug protection and off-catalogue protection. In-catalogue protection refers to the protection of the proportion borne by individual residents within the scope of medical insurance, which covers the widest of the three major guarantees and basically covers all the provisions of universal insurance. Special drug protection is the second largest content of inclusive insurance, which forms a list of specific drugs for rare diseases in the

terms of the policy. At present, the supply side of inclusive insurance is mainly divided into two categories according to whether it contains previous medical history or not. One kind of universal insurance will eliminate the corresponding coverage of patients when it is insured, and the other will include it. Through the study of the catalogue of 175 inclusive insurances, it is found that by the end of the first quarter of 2022, more than 80% of the inclusive insurances covered the "Special Drug list", including 325 of the 149 inclusive insurances. Among them, malignant tumor drugs accounted for more than half of the wall, and the number of drugs covered 55. (e.g., Figure 1. Distribution of compensation ratio of inclusive Insurance)

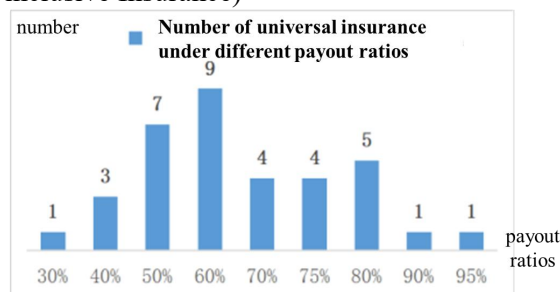


Figure 1. Distribution of Compensation Ratio of Inclusive Insurance

The third major protection of inclusive insurance focuses on off-list protection. Inclusive insurance, which includes off-list coverage, includes rare medical expenses that

are not covered by health insurance. There are 34 such inclusive insurances, accounting for 19.4%. However, in view of this protection, the current reimbursement ratio is still at a low level, with more than half of the inclusive insurance that is less than 70% of the off-catalog reimbursement ratio [6].

3. Analysis On the Factors Affecting the Participation Rate of Inclusive Insurance

3.1 Introduction of Multivariate Linear Regression Model

In order to study which independent variables influence a dependent variable, a multiple linear regression model [7] is used to study the linear relationship between the dependent variable and the independent variable. Dependent variable is B, independent variables are A_1, A_2, \dots, A_n , and the formula of the multivariate linear regression model is:

$$B = a_0 + a_1A_1 + a_2A_2 + \dots + a_nA_n + \varepsilon \quad (1)$$

3.2 Empirical Analysis

3.2.1 Data sources and samples

The data used in this study come from a total of 61 inclusive insurance products whose first-year participation rate data are available in the provinces and regions that are on sale from January 2020 to December 2022.

3.2.2 Factors affecting the participation rate of inclusive insurance

There are many factors that affect the participation rate of inclusive insurance. On the basis of consulting many references and historical research results, and combined with the current development situation and development trend of inclusive insurance in China, this paper takes the first-year participation rate of inclusive insurance as output variable B. The disposable income of the residents in this area is taken as the input variable A_1 . The insurance density of the area as the input variable A_2 . The government participation model as the output variable A_3 , in which the inclusive insurance of the government-led model is recorded as 2, the inclusive insurance of the government-guided model is marked as 1, and the rest is marked as 0. The opening degree of the basic medical insurance to the individual account is taken as the output variable A_4 , in which the unified deduction mode of each account is recorded as 2, the voluntary payment of each account is

recorded as 1, and the unusable account is recorded as 0. The premium is taken as the output variable A_5 .

3.2.3 Empirical analysis of multivariate linear regression model

Through the calculation of SPSS statistical software, the selected five factors affecting the participation rate of inclusive insurance in the first year are actually calculated. The correlation test is carried out, and the results are shown in the table. (e.g., Table 2. Statistical Table of the Correlation of the Influencing Factors)

Table 2. Statistical Table of the Correlation of the Influencing Factors

Independent Variable	A_1	A_2	A_3	A_4	A_5
Pearson	0.763**	-0.611**	0.994**	0.925**	-0.899**
Significant	0.009	0.017	0.000	0.005	0.001

3.2.4 Analysis of the results of influencing factors

There is a significant correlation between residents' disposable income, insurance density, government participation model, the opening degree of basic medical insurance to individual accounts, premium and the first-year participation rate of universal insurance in different regions. Among them, residents' disposable income, government participation model, and the opening degree of basic medical insurance to individual accounts are positively related to the participation rate, while insurance density and premium are negatively related to participation rate.

3.3 Empirical Result Analysis

3.3.1 Government participation model

"One city, one model" is the main feature in the operation of inclusive insurance. The modes of government participation are different in different regions, which are mainly divided into three models: government-led, guided and non-active participation. The empirical study shows that there is a strong positive correlation between the degree of government participation and the first-year participation rate of inclusive insurance in this area, and the first-year participation rate of inclusive insurance under the government-led mode is higher. For example, the Lishui municipal government linked the first-year underwriting rate of its "Zhejiang Libao" inclusive insurance products to indicators, supporting a number of administrative support programs, and finally the first-year

participation rate of "Zhejiang Libao" was as high as 86%. Participation leads the market in all-inclusive insurance.

3.3.2 The opening of basic medical insurance to personal accounts

According to the results of empirical research, there is also a significant positive correlation between the opening of basic medical insurance to individual accounts and the first-year participation rate of inclusive insurance. For example, compared with the geographically similar cities of Shenzhen and Guangzhou, the universal insurance product of Shenzhen Inclusive Insurance can uniformly deduct the basic medical insurance account of the residents and the payment account of the insurance, and the underwriting rate in the first year reaches 53%. Although Guangzhou inclusive Insurance has the same terms as its insurance terms, because its two accounts have not opened the payment process, its first-year underwriting rate is only 5%, which is only 1/10 of that in Shenzhen.

4. Policy Suggestions on the Development of Inclusive Insurance

4.1 Provide "Wide" Universal Insurance Services to Expand the Coverage of Special Groups

Multi-participants in inclusive insurance should continue to uphold the concept of "people-centered", take solving the problem of people's "urgent and sad hope" as the starting point and goal, and actively provide "wide" inclusive insurance services. First of all, commercial insurance companies should closely combine the promotion of inclusive insurance with their own high-quality development, constantly optimize their business structure in the process of preparing and expanding inclusive insurance products, and constantly optimize their development ideas in the process of focusing on sustainable development.

Enhance the "inclusive" output in the front-end product design and back-end product claim settlement process of inclusive insurance, and continuously pay attention to the changes in the trend of population health and the changes in insurance market demand brought about by the enhancement of insurance consciousness. To provide more comprehensive health and living protection for socially vulnerable groups

and special care groups.

4.2 Improve the "Products & Services" of Inclusive Insurance to Enhance People's Sense of Achievement and Satisfaction

In the process of building and delivering the supply chain of inclusive insurance, we should firmly adhere to the original intention and mission of inclusive insurance and constantly enrich the connotation and extension of "Products & Services". By providing medical risk protection in the whole life cycle, in order to help citizens better resist the risk of disease, give full play to the complementary role of inclusive insurance for basic medical insurance, and improve the coverage and protection level of inclusive insurance.

On the one hand, constantly enrich the "product +" and improve the coverage and protection level of inclusive insurance. In the future, in the research and development of inclusive insurance, it is necessary to focus on the accurate positioning of inclusive characteristic products with low premium, long protection, high insurance amount and complete protection. The range of inclusive products needs to be further expanded, focusing on the depth and breadth of protection and service upgrading. We will increase universal pension and nursing products to meet the multiple needs of the elderly, such as old-age care and care. Focus on the insurance needs of the elderly and fully participate in the construction of the health and old-age security system.

On the other hand, continuously optimize the "service +", increase aging services, benefit more vulnerable groups, comb and optimize the claims platform ring section, and enhance the service experience of the whole process of inclusive insurance. For simple business, you can further upgrade the usefulness of commercial insurance APP product terminals; for special complex business, you can also connect professional customer service tellers through the APP platform for remote video processing. At the same time, increase the coverage of the customer service center, finely formulate the customer service process, and provide customers with one-cabinet access to the security business under the inclusive concept.

4.3 Continue to Promote Digital

Transformation and Improve the Efficiency of Insurance Services

In the process of digital empowerment, accurately understand the scope division of new citizens, commercial insurance companies do a good job in the total score to improve data accuracy, to accurately match products, services and other data support. Based on the characteristics of aging population, enrich more suitable aging business scenarios, and improve the efficiency of insurance services for the elderly. Continue to expand the physical network digital business ecological scene and improve the digital ability of front-line personnel.

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