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Research Article

The Restriction Factors and Mechanism Analysis Model Design of the Commercial Serious Disease Insurance in Connection with Serious Disease Insurance

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Based on the internal and external constraints of serious disease insurance and commercial serious disease insurance, the logistic model of "whether you are willing to connect with commercial serious disease insurance on the basis of serious disease insurance" and "to understand the objective conditions of the connection between serious disease insurance and commerci"a" serious disease insurance" is designed. Based on the empirical research on the micro survey panel data of 6 municipal districts in W City in April 2020, the following research results are obtained: among the many influencing factors, "health status," "per capita family income," "gender," "age," "education level," "number of children," "operating rules," "public value recognition," "settlement linkage" Internal Factors of "Information Mastery" and "Implicit Restrictions." Therefore, the family should be insured in the optimal allocation of family members in the order of "family pillar-children-the elderly" and the scientific layout of insurance products on the basis of family per capita income. The government should promote the institutional integration by strengthening the mechanism construction, building an information platform, and optimizing the management system, so as to promote the health big data sharing, and provide a superior environment for the connection between serious disease insurance and commercial serious disease insurance.

1. Introduction

As the social environment changes, people's health is threatened. In particular, serious diseases have a great impact on patients and their families. According to statistics, about 44 million families worldwide face high medical costs every year due to serious diseases. Of these, about 25 million families and more than 100 million families are trapped in poverty due to spending money for curing serious illness [1, 2]. However, serious illness insurance can reduce family medical expenses, improve family labor participation, and achieve poverty reduction. Due to the rapid rise of "non-compliance" medical expenses, the unreasonable "threshold" of serious illness insurance, the development trend of younger diseases, the out-of-pocket expenses, and out-of-pocket burden cannot be reduced, and the incidence of catastrophic expenditure is still on the rise. Therefore, commercial serious illness insurance receives more and more attention [3–5]. Commercial serious illness insurance is a kind of supplementary medical insurance set according to the market demand to make up for the lack of social medical security [6]. Compared with serious illness insurance, commercial serious illness insurance has more types and a higher level of security. In the face of serious disease risk, it is necessary to choose commercial serious disease insurance [7–9]. On the basis of medical insurance reimbursement method and medical insurance payment method selection, the implementation of one-time payment method can alleviate the economic problems after the occurrence of serious diseases. This is also in line with the requirements outlined in the 2016 Healthy China 2030 Annual Plan Outline, such as "a sound multilevel medical security system

with basic medical security as the main body and various other forms of supplementary insurance and commercial medical insurance systems."

On the basis of commercial serious illness insurance, this paper deeply analyzes the factors that affect the cohesion of commercial medical insurance and social medical insurance from both internal and external aspects, uses questionnaire data to verify the reliability of the constraints, and accordingly proposes a linkage mechanism for the insured and the government to promote the two, so as to further optimize China's medical insurance mechanism..

2. The Choice of Factors

2.1. Intrinsic Constraints

2.1.1. Per Capita Family Income. At present, the purchase cost of commercial serious illness insurance is generally higher, and the insurance amount is not too high. If the amount of insurance increases, the family burden increases. Family per capita income is high, the economy is relatively loose, the insurance premium payment ability is higher, and the willingness to buy commercial serious illness insurance is higher. For families with relatively high family per capita income, their daily living expenses are also relatively high, and the demand for buying commercial serious illness insurance is also relatively high.

2.1.2. Number of Children. For the connection between serious illness insurance and commercial serious illness insurance, the number of family children can affect commercial serious illness insurance. The more children, the greater the financial pressure, and the lower the family's ability to resist risk. To reduce the risk and transfer the risk, the higher the need to buy commercial critical illness insurance. The fewer the children, the less the financial pressure of the family, the higher the family's ability to resist risks, which will not attract purchases, and the lower the desire to buy.

2.1.3. Personal Age. With the growth of age, children's growth, education, and marriage, the demand for economy is growing, and the source of economy is getting weaker. Facing the pressure of work and economy, in order to prevent health risks, people turn to commercial serious illness insurance to strengthen the cohesion of purchasing intentional serious illness insurance and commercial serious illness insurance.

2.1.4. Health Status. Their health status is directly related to the purchase intention. In the face of some possible hidden diseases, once it appears, the family cannot bear it. Therefore, people with poor health will have strong desire to buy commercial serious illness insurance, affecting the connection between serious disease insurance and commercial serious illness insurance.

2.1.5. Gender. In terms of the development law of human function, women and men suffer from serious diseases differently, and the probability of serious diseases in different diseases is also different. Therefore, gender affects the connection between serious disease insurance and commercial serious disease insurance.

2.1.6. Education Level. People with relatively high education level have a strong sense of insurance awareness, coupled with the nature of their work, and their willingness to buy commercial serious illness insurance is stronger than those with relatively high education level. Therefore, the level of education affects the connection between serious disease insurance and commercial serious disease insurance to a certain extent.

2.2. External Constraints

2.2.1. Operation Rules. Due to the professional connection between serious disease insurance and commercial serious disease insurance, the insured do not understand the operation norms and detailed rules of the connection. Therefore, we need to be clear in the relevant systems and policies of serious disease insurance or commercial serious disease insurance, but at present, we need to be clear in the deep connection of the two and coordinated development operation guidance basis. As the insured, only by mastering these foundations, can we better promote the connection between the two.

2.2.2. Integration. In recent years, many local governments have entrusted serious disease insurance to insurance companies to improve their professionalism. Some local governments also purchase insurance companies on serious disease insurance services, which are all operated by insurance companies. As an important product project of insurance companies, commercial serious illness insurance can strengthen the integration and development of the two based on the operation mode of serious illness insurance, and lay a foundation for the connection between serious illness insurance and commercial serious illness insurance.

2.2.3. Invisible Limit Clause. Serious disease insurance is the second reimbursement after basic medical treatment insurance reimbursement. It strictly follows the condition requirement of basic medical treatment insurance implementation, its clause is clear, and limit condition is clear. However, for commercial serious illness insurance, insurance companies have strict restrictions on serious illness compensation in order to improve profits. They usually stipulate in the contract documents that at first glance there are many clauses, but once the disease occurs, they do not meet the conditions of the contract. These "invisible restrictions" are not conducive to coordination with serious illness insurance, and it is difficult to provide a higher level of security, which restricts cohesion.

2.2.4. Information. In the connection between serious illness insurance and commercial serious illness insurance, data sharing is the key point. The emergence of information bottlenecks tends to lead to the lack of data in both serious illness insurance and commercial serious illness insurance, and the inability to share data related to disease treatment and inspection. Insurance companies, in particular, are unable to master basic medical information. Information acquisition is lagging behind, and residents' health is difficult to be accurate. This is not conducive to the price and safety of commercial serious illness insurance, and the cost performance is low. Therefore, promoting the data and information sharing of serious disease insurance and commercial serious disease insurance is conducive to the connection between the two.

2.2.5. Public Value Recognition. Serious disease insurance is essentially a national medical insurance, which needs to cover all the basic medical insurance of the participants. However, the coverage rate of commercial serious disease insurance is about 10%. It limits the selectivity of people, such as limiting age groups and high-risk occupations. Human identity affects the public value attribute of commercial serious illness insurance to a certain extent.

2.2.6. Settlement Linkage. As the serious illness insurance and commercial serious illness insurance belongs to different institutions or unit's, the cohesion will need to optimize the cost settlement platform and realize the linkage development. Under the asymmetric information of the medical system, how to strengthen the optimization of settlement, especially the issue of advance funds for serious illness insurance, and build a cost linkage cooperation platform between insurance companies and hospitals is conducive to serious illness insurance and commercial serious illness insurance.

3. Empirical Analysis

3.1. Data and Models

3.1.1. Data Procurement. This paper gives questionnaires to urban and rural residents who buy basic medical insurance and investigates 600 residents in a city on "whether they are willing to connect commercial serious illness insurance on the basis of serious illness insurance" and "whether to understand the objective conditions for the connection between serious disease insurance and commercial serious illness insurance."

The questionnaire was jointly carried out both on the Internet and on the spot.

The distribution scope of the questionnaire included 6 districts such as WC, HK, HP, DXH, JX, and CD districts. A total of 600 questionnaires were issued and 562 were recovered, including 548 valid questionnaires with an effective rate of 97.5%.

In view of the internal constraints of the connection between serious disease insurance and commercial serious illness insurance, a questionnaire survey was conducted on the family per capita income, number of children, personal age, their own health status, gender, education level of urban and rural residents who have purchased basic medical insurance, and whether they are willing to connect with commercial serious illness insurance on the basis of serious disease insurance. For the external constraints on the connection between serious illness insurance and commercial serious illness insurance, from the aspects of operation rules, integration, implicit constraints, information, public value recognition, settlement linkage, product design, etc., questionnaire survey on whether urban and rural residents who purchase basic medical insurance understand the objective conditions for the connection between serious illness insurance and commercial serious illness insurance. Considering that some variables are ranging variables, all variables are assigned to facilitate processing, and the assignment situation of each variable is shown in Table 1.

In order to test the statistical value of the questionnaire, the reliability and validity were tested. KMO test coefficient is 0.874, its value is greater than 0.5, Bartlett spherical test P value is 0.002, less than 0.001, the questionnaire validity is statistically significant.*p*value is 0.002, less than 0.001, questionnaire validity has statistical value. Cronbach α system value is 0.898, and the questionnaire's reliability is good and has statistical value".

3.1.2. Model Specification. Since the dependent variables of this paper "whether you are willing to connect with commercial serious disease insurance on the basis of serious disease insurance" and "whether you understand the objective conditions of the connection between serious disease insurance and commercial serious disease insurance" are both virtual variables, the linear regression model is estimated to make the research results bias for this discontinuous variable. In addition, considering that the selected internal constraints have different attributes in the demographic category, while the external constraints all belong to distance variables, the correlation between each independent variable is low, and the logistic regression model is sensitive to multiple colinearity of independent variables, the logistic model is used for analysis. Among them, the following calculation formula [10–15] for the internal constraints is studied:

$$\mathrm{Ln}\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \sum_{1}^{n} \beta_{i,n} X_{i,n}. \tag{1}$$

In the above formula, p_i denotes i respondents are willing to connect on the basis of serious illness insurance, $1 - p_i$ denotes i respondents are unwilling to connect on the basis of serious illness insurance, $X_{i,n}$ denotes gender, age, education, family per capita income, health, and children, $\beta_{i,n}$ denotes gender, age, education, family per capita income, health, children, and other independent variable regression coefficient, β_0 denotes constant items. As the external constraints of classification number is greater than 2, here

Table 1: Variable assignment of both intrinsic and external constraints.

Intrinsic constraints	Variable classification	Assignment	External constraints	Variable classification	Assignment
Sex	Man	1	Rules of operation fusion situation invisible restrictions	Has not yet been introduced	1
	Woman	2		Understand a little	2
Age	<30	1	Information mastery public value recognition settlement linkage	Be familiar with	3
	30–45	2		Insufficient fusion	1
	>45	3		Fusion in general	2
Degree of education	High school and below	1	Products design external constraints rules of operation	The fusion is very good	3
	Undergraduate degree and junior college degree	2		Disagree	1
	Bachelor degree or above	3		Self-identity	2
Household incomes per capita	RMB 2,500/month or less	1	Fusion situation invisible restrictions information mastery	Strongly agree with	3
	RMB 2501–5000 yuan/month	2		Information sharing has not yet been implemented	1
	More than 5,000 yuan/month	3		Understand a little	2
Health condition	Preferably	1	Public value recognition Settlement linkage products design	Familiar with information	3
	Same as	2		Does not match with social security	1
	Range	3		There is a certain commonality	2
Number of children	Not have	1	External constraints rules of operation fusion situation	Match with social security	3
	1	2		Linkage and cooperation have not yet been realized	1
	≥2	3		Understand a little	2
			Invisible restrictions	Understand thoroughly	3
				Has not yet been developed	1
				Understand a little	2
				Understand thoroughly	3

the second and third categories are expressed to understand to study into 0-1 variables. But $X_{i,n}$ denotes the operating rules, public value recognition, settlement linkage, information grasp, invisible limit terms, fusion, product design, and other independent variables, $\beta_{i,n}$ denotes the regression coefficient of their respective variables.

3.2. Intrinsic Constraints. The misjudgment matrix was constructed to compare the difference size between the predicted value and the actual value. Secondly, each explanatory variable was introduced into the model one by one, and the rationality of the logistic regression model was judged by the significant level of the variables. After the introduction of a new variable, if the variable-2 log-likelihood value is less than the results in the previous step and the pAfter introducing a new variable, if the logarithmic likelihood value of the variable - 2 is less than the result of the previous step, and the p value is less than 1%, it indicates that the explanatory variable has a significant correlation with the explanatory variable "on the basis that the major disease insurance is willing to join the commercial major disease insurance," and the logistic regression model "on the basis that the major disease insurance is willing to join the commercial major disease insurance" is reasonable [16–20]. Table 2 shows the regression results in the final step, and the odds ratio reflects the explanatory variables screening process and regression system, the final model includes "health status," "sex," "per capita income," "gender," "age," "education," and "number of children." Logistic regression model variables in the p value of each explanatory variable coefficient is less than 0.05 significance level, so on the basis of serious disease insurance, linear relationship is retained in the model equation.

Comparing the misjudgment matrix of the initial situation and the misjudgment matrix after introducing all the explanatory variables, the following can be found (see Table 3): in the process of gradually introducing the explanatory variables, the accuracy rate of the model gradually increases from 54.7% to 89.7%, and the prediction accuracy is relatively high. To sum up, "on the basis of serious illness insurance is willing to join commercial serious illness insurance," logistic regression model analysis shows that "health," "family per capita income," "gender," "age," "education," "children," and so on for residents on the basis of serious illness insurance cohesion commercial serious illness insurance will restrict. Therefore, in the serious illness insurance and commercial serious disease insurance, we should pay attention to combine the above six factors design of policy-holder, in order to enhance the purchase intention of the policy holder.

3.3. External Constraints. Similar to the analysis of intrinsic constraints, a misjudgment matrix was first constructed to compare the magnitude of the difference between the

Table 2: The logistic regression results of the internal factors connected between commercial critical illness insurance and serious illness insurance.

	Coefficient estimate	Free degree	The odds ratio
Health condition	0.650 * * * (0.000)	1	1.915
Household incomes per capita	0.695 * * * (0.000)	1	2.003
Sex	0.643 * * * (0.001)	1	1.902
Age	0.623 * * * (0.001)	1	1.864
Degree of education	0.546 * * * (0.001)	1	1.727
Number of children	0.390 * * * (0.007)	1	1.476
Constant term	−6.629 * * * (0.000)	1	0.001

Note. p value in parentheses; * * * is significant at 1%.

Table 3: Results of logistic progressive regression model.

Observed			Predicted		
			Connect with commercial serious illness insurance		Percent correction
			Yes	No	
Step 0	Connect with commercial serious illness insurance total percentage	Yes	0	248	0.0
		No	0	300	100.0
			—	—	54.7
Step 1	Connect with commercial serious illness insurance total percentage	Yes	130	118	52.4
		No	83	217	72.3
			—	—	63.3
Step 2	Connect with commercial serious illness insurance total percentage	Yes	181	67	73.0
		No	65	235	78.3
			—	—	76.2
Step 3	Connect with commercial serious illness insurance total percentage	Yes	189	59	76.2
		No	55	245	81.7
			—	—	79.5
Step 4	Connect with commercial serious illness insurance total percentage	Yes	195	53	78.6
		No	49	251	83.7
			—	—	81.7
Step 5	Connect with commercial serious illness insurance total percentage	Yes	206	42	83.1
		No	38	262	87.3
			—	—	85.7
Step 6	Connect with commercial serious illness insurance total percentage	Yes	218	26	89.3
		No	28	272	90.7
			—	—	89.7

predicted value and the actual value. Secondly, each explanatory variable was introduced into the model one by one, and the rationality of the logistic regression model was judged by the significant level of the variables [21–26]. If the log-likelihood value of each newly introduced variable is less than the result in the previous step, and the p value is less than 1%, it indicates a significant correlation between the explanatory variable and "understand the objective conditions of the connection between serious disease insurance and commercial serious disease insurance."

Table 4 shows the regression results of the final step. The final model includes explanatory variables such as "operating rules," "recognition of public value," "settlement linkage," "information mastery," and "invisible restriction clause". Since the p value of each explanatory variable coefficient is less than 0.05 significance level, the linear relationship of serious disease insurance and commercial serious disease insurance in the logistic regression model is significant in the model equation.

In the process of gradually screening, the final model failed to enter the fusion situation and product design of two explanatory variables. Due to the introduction of the two explanatory variables after probability p value of 0.099 and 0.140, respectively, more than 0.05 lead to "the serious illness insurance and commercial serious illness insurance cohesion objective conditions understanding." Logistic regression model linear variable linear relationship is not significant and, therefore, is not retained in the model equation.

To sum up, "the understanding of the objective conditions for the connection between serious illness insurance and commercial serious illness insurance"

Table 4: Logistic regression results of external factors linking between commercial critical illness insurance and serious disease insurance.

	Coefficient estimate	df	The odds ratio
Rules of operation	0.578 ∗ ∗ ∗ (0.000)	1	1.783
Settlement linkage	0.476 ∗ ∗ ∗ (0.000)	1	1.609
Information mastery	−0.534 ∗ ∗ ∗ (0.000)	1	0.586
Public value recognition	−0.503 ∗ ∗ ∗ (0.000)	1	0.605
Invisible restrictions	0.549 ∗ ∗ ∗ (0.002)	1	1.731
Constant term	−1.061 (0.071)	1	0.346
Fusion situation	2.723 (0.099)	1	—
Products design	2.181 (0.140)	1	—

Note. p value in parentheses; ∗ ∗ ∗ is significant at 1%.

Table 5: Results of the progressive regression model.

Observed			Predicted		
			Understand the objective conditions of connecting commercial serious disease insurance		Percent correction
			Yes	No	
Step 0	Understand the objective conditions of connecting commercial serious disease insurance	Yes	0	246	0.0
		No	0	302	100.0
	Total percentage		—	—	55.1
Step 1	Understand the objective conditions of connecting commercial serious disease insurance	Yes	90	156	36.6
		No	82	220	72.8
	Total percentage		—	—	56.6
Step 2	Understand the objective conditions of connecting commercial serious disease insurance	Yes	114	132	46.3
		No	87	215	71.2
	Total percentage		—	—	60.3
Step 3	Understand the objective conditions of connecting commercial serious disease insurance	Yes	154	92	62.6
		No	84	218	72.2
	Total percentage		—	—	68.1
Step 4	Understand the objective conditions of connecting commercial serious disease insurance	Yes	187	59	76.0
		No	71	231	76.5
	Total percentage		—	—	76.6
Step 5	Understand the objective conditions of connecting commercial serious disease insurance	Yes	201	45	81.7
		No	54	248	82.1
	Total percentage		—	—	82.2

Logistic regression model analysis shows that "operating rules," "public value recognition," "settlement linkage" information, and "hidden restrictions" have an impact on the objective situation of the connection between serious illness insurance and commercial serious illness insurance. Therefore, in the connection between serious illness insurance and commercial serious illness insurance, attention should be paid to combining the applicant's demand for mastering the above five factors, strengthen design and optimization.

3.4. Internal-External Constraints. The internal and external constraints are introduced into the model, and the model is used to be tested again, in order to screen the constraints more accurately. The model regression results are presented in Table 6.

First, the p value of the parameter likelihood ratio test of the logistic regression model was less than 0.05, indicating a statistical significant OR value for at least one of the 13 variables, so the fitted model was statistically significant. Second, the p value (0.409) of the Hosmer and Lemeshow tests is greater than 0.05, indicating that the information in the current data has been fully extracted, and the model has a better goodness of fit. Finally, the results of the logistic regression for each intrinsic and extrinsic factor indicate that the six intrinsic factors and the five extrinsic factors described above are plausible, and that there is no multicollinearity between the internal and extrinsic factors.

Therefore, in the process of connecting commercial serious illness insurance and serious illness insurance, we pay attention to the design of the "health status," "family per capita income," "gender," "age," "level," "education," "number," and other children, to enhance the purchase intention of the insured. In addition, we should fully obtain the understanding of the "operation rules," "public value recognition," the "settlement linkage," "information

Table 6: Logistic regression results of intrinsic-extrinsic factors between commercial critical illness insurance and serious disease insurance.

	Coefficient estimate	df	The odds ratio
Age	0.643 * * * (0.003)	1	1.902
Degree of education	0.539 * * * (0.002)	1	1.714
Invisible restrictions	0.564 * * * (0.008)	1	1.757
Rules of operation	0.209 * * (0.038)	1	1.233
Household incomes per capita	0.575 * * * (0.002)	1	1.776
Public value recognition	−0.779 * * * (0.000)	1	0.459
Fusion situation	0.391 * * (0.013)	1	1.478
Settlement linkage	0.275 * * (0.046)	1	1.317
Information mastery	−0.600 * * * (0.000)	1	0.549
Products design	−0.548 * * * (0.001)	1	0.578
Number of children	0.409 * * (0.013)	1	1.505
Health condition	0.760 * * * (0.000)	1	2.139
Sex	0.752 * * * (0.001)	1	2.121
Constant	−5.814 * * * (0.000)	1	0.003
Likelihood ratio test	195.739 * * * (0.000)	13	—
The Hosmer and Lemeshow tests were performed	13.071 (0.409)	8	—

Note. p value in parentheses; * * * and * * * are significant at 1% and 5% levels, respectively.

mastery," and "invisible restrictions" and strengthen the design and optimization of insurance products.

4. Linkage Mechanism between Commercial Serious Disease Insurance and Serious Disease Insurance

4.1. Promote the Connection between Serious Disease Insurance and Commercial Serious Disease Insurance Based on Internal Factors

4.1.1. Optimize the Insurance Order and Insurance Items of Family Members Based on Their Age and Health Status. When purchasing health insurance, families first consider children, but from a professional perspective, adhere to the configuration order of family pillars, children, the elderly, and optimize the insurance order of family members. Not only that, as far as insurance projects are concerned, family support is the safety foundation of families. We need to adhere to the insurance principle of "income pillar should be given priority," strengthen the purchase of commercial critical illness insurance to supplement basic medical insurance and serious illness insurance, and ensure that family pillars will not cause family difficulties when they are ill; For children, its premium is relatively low. Adhere to the principle that "child protection should be comprehensive." It can be comprehensive and long-term. Try to buy an insurance with comprehensive protection function. If the insurance amount of commercial serious disease insurance can be increased, promote its protection from the perspective of physical protection. In terms of product selection, you can choose partial payment products. For the elderly, especially family members over 50 years old, the insurance premium is high and the protection is not strong. Therefore, we can purchase products from accident insurance and cancer prevention insurance by adhering to the principle that accidental cancer prevention is necessary for the elderly.

4.1.2. Scientific Layout of Insurance Product Allocation Sequence Based on Family per Capita Income. First, the priority guarantee type to buy financial management type. On the basis of the basic "security" insurance allocation, the per capita family income is surplus, we can consider financial insurance products, and even some wealthy families can use commercial serious disease insurance to do a good job in asset inheritance. Second, choose commercial serious illness insurance according to the per capita family income. The family per capita income is low and can buy consumer commercial serious disease insurance. This kind of insurance is usually paid every year. This kind of premium takes into account the risks of different ages, and also from the gender perspective. Different people, different genders, different ages, different premiums, small amount of insurance benefits, and high leverage ratio.

4.2. Link Serious Disease Insurance with Commercial Serious Disease Insurance Based on External Conditions

4.2.1. System Integration. First, strengthen the construction of market mechanism. Serious disease insurance should not only rely solely on the government but also give full play to the market mechanism. Let alone exclude the market allocation of insurance resources. We should leave enough market space for commercial serious disease insurance, so as to ensure the scientific use of insurance resources. The common development of the two mechanisms of serious disease insurance and commercial serious disease insurance needs to start with the top-level design and constantly optimize the service supply connecting the serious disease insurance and commercial serious disease insurance. Second, strengthen the construction of a multiagent coordination mechanism. Relevant government departments shall take the lead in establishing the coordination structure of medical insurance, to give full play to the leading role of the government, promote strengthened cooperation among relevant subjects, and jointly discuss and formulate

specific methods and detailed rules for the connection between serious disease insurance and commercial serious disease insurance. To increase the government's support for commercial critical illness insurance, the relevant government functional departments and medical institutions can establish a cooperative promotion mechanism with insurance companies to interpret the public value, supporting policies and insurance conditions of commercial critical illness insurance to the public, so as to stimulate the public's demand for medical treatment and health security.

4.2.2. Build a Cohesion Platform. First, establish a health big data information platform. From the perspective of collaborative public management, build health big data information platform, realize the information data sharing between the related subject, help to reduce adverse selection risk and moral hazard, effectively improve the efficiency of medical insurance costs, is also conducive to the insurance institutions using health data information platform accurate positioning, according to different groups design, develop personalized commercial health insurance, such as health insurance products. Second, promote the integration construction of commercial health insurance, hospital, and medical insurance fee settlement platforms. Commercial insurance institutions shall be encouraged and guided to participate in the development, construction, and maintenance of unified settlement platforms for commercial health insurance compensation expenses, such as medical expenses and commercial serious disease insurance, so as to provide convenient direct compensation and claim settlement services for the insured.

4.2.3. Optimize the Management System. First, strengthen operational risk management to provide a superior environment for the connection between serious disease insurance and commercial serious disease insurance. Develop an innovative new model of medical insurance cooperation. Commercial health insurance institutions should establish a service framework combining insurance provision and health management, try to get involved in medical institutions through investment and establishment, merger and acquisition, and strategic cooperation, and increase the complementary advantages and win-win development of insurance industry and medical and health service industry. Second, we will strengthen the reform of the medical system to build a benign space for the connection between serious disease insurance and commercial serious disease insurance. We will strengthen the construction of the government's supervision capacity for the health industry, and at the same time, improve the patient reporting channels, establish a sound and effective supervision network, and strictly investigate and punish any violations found in time. We will resolutely crack down on illegal and unreasonable acts such as arbitrary fees and excessive medical treatment and ensure that medical institutions return to formality and public welfare. We will improve the environment for the orderly development of social security, constantly promote the sustainable development of social security programs, and serve the well-being of the people.

5. Conclusion

This paper is based on the basis and feasibility of connecting commercial serious illness insurance and serious disease insurance, centering on the internal constraints and external constraints of the participants of serious disease insurance and commercial serious disease insurance, respectively. The logistic model of "whether you are willing to connect with commercial serious disease insurance on the basis of serious disease insurance" and "to understand the objective conditions of the connection between serious disease insurance and commercial serious disease insurance" is designed. Based on the microsurvey panel data of the six municipal districts of W city in April 2020, the model was estimated using the maximum likelihood estimation method. The study found that, among many influencing factors, "family members," "health status," "family per capita income," "gender," "age," "education level," "number of children," internal factors as well as external factors such as "operation rules," "public value recognition," "settlement linkage," "information mastery," and "hidden restriction clauses" "have a significant constraint on residents" willingness to connect commercial serious disease insurance on the basis of serious disease insurance. "Fusion situation" and "product design" and other factors have no obvious impact on it. Accordingly, the family should adhere to when being insured "family pillar-child-old man," and the order optimizes the insurance order of configuration family members, with "income pillar wants priority," "children safeguard should be comprehensive," "old man accident prevents cancer prevention is very necessary." The principle chooses appropriate insurance project. At the same time, insurance products should be scientifically distributed based on the per capita family income of families and give priority to the basic "guarantee" insurance allocation of commercial serious disease insurance + serious disease insurance. On the basis of the surplus of the per capita family income of families, financial management insurance products should be considered. In view of the external constraints, the problems existing in the connection process between commercial serious disease insurance and serious disease insurance are imperfect, the connection information sharing and information platform construction need to be promoted, and the connection management system still needs to be strengthened. System integration should be promoted by building market mechanism, improving the coordination mechanism, improving commercial insurance legal system, promoting the interconnection and information sharing of health big data and integrated settlement platform of commercial health insurance, hospital and medical insurance expenses, and competition mechanism.

Data Availability

The dataset can be accessed upon request to the corresponding author.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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