

# *Has the Reform of the Medical Insurance System been Deepened to Enhance the "Sense of Access, Happiness and Security" of Urban and Rural Residents?*

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**Abstract:** General Secretary Xi Jinping has proposed that the key to making the advantages of the socialist system with Chinese characteristics work is to make people feel a sense of access, happiness and security. Since the new medical reform in 2009, China's medical security system has undergone a comprehensive reform, which has achieved remarkable results, especially in curbing the rapid rise in medical costs and the systemic stubbornness of the public's "difficulty in accessing medical care and expensive medical treatment" in the past, but the standard for reviewing the effectiveness of deepening the reform of the medical security system should be whether the public can really feel a sense of happiness and security. The most important component of China's medical security system is the health care system. The most important component of China's medical security system is basic medical insurance, therefore, based on the CGSS 2017 database, this paper uses basic medical insurance as a proxy variable to examine whether the deepening reform of China's medical security system has led to a real sense of "access, happiness and security" for urban and rural residents, and to examine the reality of the deepening reform of the medical security system. This paper examines whether the deepening reform of China's medical insurance system has led to a real sense of access, happiness and security for urban and rural residents, and proposes effective ways to further improve the sense of access, happiness and security for urban and rural residents.

## 1. Introduction

The Communist Party of China (CPC) is celebrating its 100th anniversary in 2021. The CPC has always adhered to the principle and purpose of working for the benefit of the people over the past

100 years, especially in the area of social security, which involves people's livelihood, from advocating people's livelihood in the early days of the Party to the implementation of policies, from the initial implementation of social security during the Soviet Republic to the full implementation of social security work in the Shaanxi-Ganjiang-Ningxia border area, from the War of Resistance to the From the war of resistance to the war of liberation, a security system was built around the rights and interests of the people, to the establishment of the world's largest social security system in the new era. The mission to ensure the well-being of the people's livelihood has prompted the Communist Party of China to persist in expanding the scope and targets of social security and to constantly enhance the people's sense of access, happiness and security, truly reflecting the Communist Party of China's commitment to the well-being of the people. This is a true manifestation of the Communist Party's original intention and goal of working wholeheartedly for the well-being of the people, and a glorious achievement of 100 years in realising the century-old dream of the Chinese people.[1]

The report of the 19th National Congress proposes that "socialism with Chinese characteristics has entered a new era, and the main contradiction in our society has been transformed into the contradiction between the people's growing need for a better life and unbalanced and insufficient development. The people's needs for a better life are becoming increasingly widespread, with higher demands not only for material and cultural life, but also for democracy, the rule of law, fairness, justice, security and the environment." General Secretary Xi Jinping proposed, "The socialist system with Chinese characteristics is distinctive and efficient, but it is not yet perfect and mature and settled. In the new era, in order to continuously give full play to and enhance the advantages of our system and give the people a greater, more direct and tangible sense of "access, happiness and security", it is crucial that we must take the promotion of social justice and the well-being of the people as our starting point and anchor point, continuously push forward the deepening of comprehensive reform, and address the issue of breaking down all institutional and mechanical barriers to development and the fences of entrenched interests. The key is that we must provide a more systematic and complete, scientific and standardized, effective system for the development of the Party and State, the happiness and well-being of the people, social harmony and stability, and the long-term stability of the country." [2]

In the Opinions on Deepening the Reform of the Medical and Health System issued by the Central Committee of the Communist Party of China and the State Council in 2020, it was proposed that "under the guidance of Xi Jinping's Socialist Thought with Chinese Characteristics for a New Era, comprehensively implement the spirit of the 19th CPC National Congress and the 2nd, 3rd and 4th Plenary Sessions of the 19th CPC Central Committee, adhere to the people's health as the centre, accelerate the establishment of a multi-level medical security system that covers all people, is integrated between urban and rural areas, has clear rights and responsibilities, provides appropriate protection, and is sustainable. In addition, it will also promote the implementation of the Health China Strategy by unifying the system, improving policies, perfecting mechanisms and enhancing services, enhancing the fairness and coordination of medical security, bringing into play the strategic purchasing role of medical insurance funds, promoting the high-quality and coordinated development of medical security and pharmaceutical services, and giving the people a greater sense of "access, happiness and security". "This will enable the people to have a greater sense of access, happiness and security." [3]

As an important part of China's social security system, the current systemic shortcomings of China's medical insurance continue to expand and become increasingly evident, firstly, the unclear power and responsibility relationships between the main parties, resulting in a gradual imbalance in the financing responsibilities of basic medical insurance, and a growing mismatch of power and responsibility, which will have a negative impact on the sustainable development of the system, and

make the social risks faced by the reform of the medical insurance system continue to This will have a negative impact on the sustainability of the system and increase the social risks facing the reform of the health insurance system. The core task of deepening the reform of the health insurance system is to break down the barriers of interests and promote equal access to health care and health protection for urban and rural residents between groups, regions and urban and rural areas.[4]

As the most important component of China's medical insurance system, basic medical insurance has been a top priority since the State Council deepened medical reform in 2009, and has been particularly valuable in improving social security for urban and rural residents in China. In particular, as China is currently facing the challenges of an ageing population, a significant increase in the risk of disease throughout society, rising medical costs and increasing household medical expenses, basic medical insurance has played an extremely crucial role in protecting the general public from health and disease. The key variable to effectively evaluate the performance of the reform of the health insurance system is the performance of basic health insurance in providing urban and rural residents with access to medical treatment and good medical care.

Since the current deepening of the reform of the medical security system, the degree and effect of China's basic medical insurance on people's livelihood has been outstanding. By the end of 2020, the number of urban and rural residents covered by basic medical insurance reached 136,100,000, and the national coverage rate of urban and rural residents' coverage steadily reached over 95%. The number of employees participating in basic medical insurance reached 344.23 million, and the number of urban and rural residents participating in basic medical insurance reached 1016.77 million. [5]The current state of construction of basic medical insurance reflects that China's basic medical insurance has achieved "universal medical insurance" and "full coverage", but at this stage, after deepening the reform of the medical security system, whether the basic medical insurance has truly achieved "In particular, it is not clear whether urban and rural residents can actually feel the effectiveness of the reform of the medical insurance system from participating in the basic medical insurance and then in the process of seeking medical treatment, protecting the physical and mental health of urban and rural residents, and truly gaining a sense of "access, happiness and security". It remains to be seen.

Based on the deepening of the reform of the medical security system and the transformation of social contradictions at the current stage of China as proposed by the 19th National Congress, this paper leaves the evaluation to the real experience of urban and rural residents of basic medical insurance, i.e. by studying the effectiveness of the current basic medical insurance in improving the "sense of access, happiness and security" of urban and rural residents in China. In other words, by examining whether or not the current basic medical insurance has enhanced the "sense of access, happiness and security" of urban and rural residents, the effectiveness of deepening the reform of the medical insurance system in protecting urban and rural residents is examined, and whether or not the current medical insurance system in China has truly achieved the development goal of "giving the people a sense of access, happiness and security" as proposed by General Secretary Xi Jinping. "Based on the logical orientation to respond to this question, this paper conducts a comprehensive study on the impact of urban and rural residents' participation in basic medical insurance on their sense of access, happiness and security based on the China General Social Survey data (CGSS2017), and conducts an in-depth review of the effect of deepening the reform of the medical security system, i.e. whether the reform of the medical security system has The study will examine whether the reform of the medical insurance system has been successful, whether it has ensured the safety of people's lives, and whether it has given urban and rural residents a sense of access, happiness and security.

## 2. Theoretical Analysis and Research Hypothesis

Subjective welfare theory suggests that the welfare status of individuals and the effectiveness of policy implementation is more easily reflected in the subjective self-assessment of their welfare than in the construction of objective welfare indicators. Objective levels of well-being are usually defined by policy makers and experts and are usually a factual determination of the state of life and objective material conditions, while the degree of life satisfaction, subjective meaning and personal spirituality are the values by which subjective levels of well-being are evaluated. The extent to which the objectives of a policy or system are achieved and the extent to which the policy functions can be evaluated by the subjective level of well-being is a positive insight for the effective improvement and refinement of the current health care system in China.

### 2.1. Reviewing the Effects of Deepening the Reform of the Medical Insurance System: The Impact of Basic Medical Insurance on the Sense of Access of Urban and Rural Residents

At the 10th meeting of the Central Leading Group for Comprehensively Deepening Reform on 27 February 2015, General Secretary Xi Jinping proposed to "launch a number of hard and practical moves that can be called out, stand up and be recognized by the masses, so that the gold content of the reform programme can be fully demonstrated and the people can have a greater sense of gain" (Xi Jinping, 2015).[6]

Since then the evaluation criteria and objectives of reform have been positioned towards the people's sense of access. Some scholars define the sense of access as the degree of satisfaction and subjective feelings that people feel by obtaining and sharing the fruits of reform and development in real life (Ding Yuanzhu, 2016). [7] Since the reform of the deepened medical security system, basic medical insurance, as the key protection for urban and rural residents in China to seek medical treatment, has a strong effect of health protection and preventing the occurrence of catastrophic medical and health expenditures of families. The fundamental purpose of the reform of the deepened medical insurance system is to reduce people's financial burden of illness, and when high medical expenses occur, the power of individuals or families is very limited, and people jokingly say that "there is no middle class in front of major diseases" (Lu Quan, 2021). [8] With the advent of the ageing era in China, the risk of disease among the elderly in the family has increased significantly, and the probability of catastrophic medical and health expenditure in the family has increased. As a key social security system that protects urban and rural residents from "poverty caused by illness and return to poverty due to illness", basic medical insurance has the unique value of protecting urban and rural residents' household economy from the impact of illness. Since the deepening of the reform of the medical insurance system, China's basic medical insurance has changed from the old urban employment insurance, the new agricultural cooperative and the urban residence insurance to consist of urban residents' basic medical insurance and urban and rural residents' basic medical insurance, and the systemic differences in financing and reimbursement between urban residents' basic medical insurance and urban and rural residents' basic medical insurance have led to heterogeneity in the sense of access felt by urban and rural residents from the construction of basic medical insurance. Based on the above analysis, this paper proposes research hypothesis 3 and research hypothesis 4.

Research Hypothesis 3: Since deepening the reform of the medical insurance system, basic medical insurance has improved the sense of access of urban and rural residents

Research Hypothesis 4: Since the deepening of the reform of the medical insurance system, there is a difference between basic medical insurance to enhance the sense of access of urban and rural residents

## **2.2. Reviewing the Effects of Deepening the Reform of the Medical Insurance System: The Impact of Basic Medical Insurance on the Well-Being of Urban and Rural Residents**

Veenhoven was one of the first foreign scholars to conduct empirical research on the impact of health insurance on well-being, but his findings did not effectively prove a significant correlation between health insurance and well-being.[9] Davidson and Pack and Radcliff et al. began separate studies in OECD countries and found that countries with extensive coverage and high levels of spending on coverage programs such as health insurance their residents have higher levels of well-being.[10-11] As China continues to deepen the reform of its medical insurance system and the coverage of basic medical insurance continues to expand, domestic scholars have also begun to study the relationship between basic medical insurance and residents' well-being. By comparing the subjective well-being of China and the UK, Bian Yanjie et al. (2010) suggest that the value carrier affecting well-being is reflected in insurance systems such as basic medical insurance. [12] However, due to our dualistic social situation of urban and rural areas, there are differences in the types of basic medical insurance that urban and rural residents participate in. Since the deepening of the reform of the medical security system, the most important reform for basic medical insurance is the completion of the integration of the basic medical insurance system for urban and rural residents, so at this stage, rural residents mainly participate in the basic medical insurance for urban and rural residents, while urban residents participate in the insurance for both urban and rural residents. The basic medical insurance for urban employees is higher than the basic medical insurance for urban and rural residents in terms of funding and reimbursement ratio, and there are also differences in the types of insurance and drug catalogues for reimbursement, therefore, since the deepening of the reform of the medical insurance system, there is heterogeneity in the happiness of urban and rural residents from the basic medical insurance, based on the above analysis, this paper proposes research hypothesis 1 and research hypothesis 2.

Research Hypothesis 1: Basic medical insurance has improved the well-being of urban and rural residents since the deepening of the medical insurance system reform

Research Hypothesis 2: Since the deepening of the reform of the medical insurance system, there is a difference between basic medical insurance to enhance the well-being of urban and rural residents

## **2.3. Reviewing the Effects of Deepening the Reform of the Medical Insurance System: The Impact of Basic Medical Insurance on the Sense of Security of Urban and Rural Residents**

An important feature of the overall sense of security in our country is the importance attached to both national security and people's security, and the recognition and perception of a good life by the people is an important measure of security satisfaction. Therefore, Sense of Safety should be defined as a stable and long-term psychological experience and aspiration of individuals, not only in terms of their visible expectations of society and the state as a whole and themselves, but also in terms of their controllable and worry-free current living conditions. Confidence and awareness of social style, livelihood and economy, public safety, political order and social security, etc., translate into a comforting experience of individual development, property, physical and mental well-being and survival that is assured, worry-free and controllable (Yu, Guoliang and Wang, Hao, 2016; Song, Baoan and Wang, Yi, 2010).[13-14]

The differences between disciplines have led to differences in the study of perceptions of security, as researchers have cross-fertilised and deepened their research, extending their focus from public security to include personal and property, social, environmental and economic aspects. Scholars have since expanded their explanatory discourse on perceptions of security from the

individual to the social and national levels, and their measurement and conceptualisation is no longer limited to the individual perspective. For example, Wang Junxiu (2008) classifies security from needs theory into eight areas: medical, food, labour, personal, property, privacy and personal information security. [15]Zhang Yuchun (2007), after measuring the sense of security of Beijing citizens, summarised the indicators for evaluating the sense of security into five dimensions: personal psychological quality, environmental safety, government security, economic and public safety, and social security;[16] Wang Haibin (2008) constructed the measurement system of the sense of security, for urban residents, into physical safety, community safety, family safety, social stability, physical safety and occupational security and other six dimensions;[17] Shi Jing (2017) measured Chinese citizens' sense of security in three dimensions, including future life expectations, emotional support and life production security, and found that most citizens felt a high level of security.[18]

The formation of a sense of security for poor groups is driven by a sound social security system, but guaranteeing income security is the foundation of the whole process (Qing Lianbin, 2018). [19]Since the deepening of the reform of the medical security system, basic medical insurance has ensured a sense of security in the lives of urban and rural residents by guaranteeing the public's right to seek medical treatment, especially since the completion of the integration of the basic medical insurance system for urban and rural residents in 2016, which has increased the proportion of medical reimbursement for urban and rural residents and made medical treatment more accessible to urban and rural residents. 2018 saw the establishment of the National Health Insurance Bureau, which issued a series of policy documents aimed at guaranteeing The aim is to provide urban and rural residents with "medical care" and to further achieve "good medical care for the sick". The biggest highlight of the current reform of China's medical insurance system is that the participation rate of urban and rural residents in the basic medical insurance system has reached over 95%, basically achieving "universal medical insurance", so that the basic medical insurance system enables urban and rural residents to receive stable medical protection when seeking medical treatment, and further reduces out-of-pocket expenses and The basic medical insurance system has thus made it possible for urban and rural residents to receive stable medical coverage when seeking medical treatment, and has further reduced out-of-pocket expenses and catastrophic medical expenses for families. However, the sense of security brought to urban and rural residents by the deepening of the medical security system since the reform, there are large differences between urban and rural residents, especially the important manifestation of the sense of security is in the sense of economic security and psychological security, for urban and rural residents with significant differences in income status and living culture, there is greater heterogeneity. Based on the above analysis, this paper proposes research hypothesis 5 and research hypothesis 6

Research Hypothesis 5: Since deepening the reform of the medical insurance system, basic medical insurance has improved the sense of security of urban and rural residents

Research Hypothesis 6: Since the deepening of the reform of the medical insurance system, there is a difference between basic medical insurance to enhance the sense of security of urban and rural residents

#### **2.4. Reviewing the Effects of Deepening the Reform of the Medical Insurance System: A Sense of Fairness Mediates between Basic Medical Insurance and Urban and Rural Residents' Sense of Well-Being, Access and Security**

The reduction in the "sense of access, happiness and security" of urban and rural residents is largely due to the uncertainty of survival brought about by an uncertain risk environment with the advent of a risk society, and the general public's perception of risk as a possibility. Whether or not

urban and rural residents ultimately perceive social opportunities to be fair will have a significant impact on their sense of access, happiness and security (Romer, 2002). (Romer, 2002). [20]Another important danger of a risk society is that it will significantly increase the uncertainty of disease risk for both urban and rural residents, which will lead to a sense of "relative deprivation" and pessimism about the future, which will ultimately reduce the sense of access, happiness and security.[21]

Easterlin et al. found that China's extensive and comprehensive social security network prior to 1990 contributed to a high level of "access, happiness and security" among residents at that time. [22]Income inequality had a significantly greater negative impact on the sense of access, well-being and security of rural and urban residents who did not participate in basic medical insurance than those who did.[23]

An important performance of the reform of the deepened medical insurance system is to enhance the perception of fairness among urban and rural residents, which is mainly generated through the income redistribution mechanism of basic medical insurance, to enhance the perception of fairness among urban and rural residents by protecting them from the systemic risk of "poverty caused by illness and return to poverty due to illness", and to improve their "A sense of access, happiness and security". The fairness of basic medical insurance is a basic indicator to evaluate the success of deepening the reform of the medical security system. Regarding the research on the fairness of basic medical insurance, apart from analysing its regulatory role on income redistribution, many scholars have also focused on its impact on health equity and healthcare service utilisation. [24]By obtaining a sense of equity in the use of health and medical services, urban and rural residents can effectively gain a sense of "access, happiness and security" in the process of deepening the reform of the medical insurance system.

Research hypothesis 7: A sense of fairness mediates the role of basic medical insurance in enhancing the "sense of access, happiness and security" of urban and rural residents since the deepening of the medical insurance system reform

### **3. Data Sources and Variable Selection**

#### **3.1. Data Sources**

The data used in this study is the China General Social Survey 2017 (CGSS2017), the first continuous, comprehensive and national large-scale social survey project in China established by the China Survey and Data Centre of Renmin University of China. The purpose of CGSS2017 is to systematically and regularly collect data on all aspects of Chinese society, to systematically analyse long-term trends in Chinese society, to study social issues that are both relevant and theoretically significant, to promote the sharing and openness of social science research in China, and to provide data for international comparison and government decision-making. This year's data is based on a combination of stratified and multi-stage sampling, covering 478 villages in 28 provinces/municipalities/autonomous regions across China. The overall data information relates to socio-demographic attributes, basic health insurance participation and perceptions of well-being, equity and life satisfaction, and is very much in line with the main theme of this paper. Although the survey was not designed specifically for the topic of this study, it also avoided the potential pitfalls of a targeted questionnaire design that might have induced subjects to choose. In accordance with the eligibility norms for basic health insurance participation, the sample was restricted to residents with urban and rural household registration status. Due to the different restrictions, there is some variation in the number of samples that meet the information completeness criteria. After excluding observations with missing important variables, the valid sample size was 10,103.

#### 4. Variable Selection and Data Description

Table 1. Variables and descriptions

Variable category	Variable name	Assignment notes	Observations	Average value	Standard deviation
Dependent variable	Happiness	Unhappy = 1, Unclear = 2, Happy = 3	10103	2.71	0.60
	Sense of Access	Unsatisfactory = 1, Unclear = 2, Satisfactory = 3	10103	2.05	0.57
	Economic security	Not good = 1, unclear = 2, good = 3	10103	1.65	0.61
	Psychological security	Distrust = 1, Unclear = 2, Trust = 3	10103	2.42	0.84
Independent variable	Basic medical insurance	Insured = 1, uninsured = 0	10103	0.93	0.26
Intermediate variables	Sense of fairness	Unfair = 1, Unclear = 2, Fair = 3	10103	2.15	0.88
Control variables	Age	Actual age (years)	10103	55.52	16.43
	Education level	No schooling = 1, literacy class = 2, primary school = 3, secondary school = 4, specialist = 5, undergraduate=6, postgraduate=7	10103	3.81	1.33
	Gender	Female = 0, Male = 1	10103	0.51	0.50
	Work	Not working=0, working = 1	10103	0.62	0.49
	Annual household income	Logarithm of household income	10103	11.13	1.91
	Annual personal income	Log of personal income	10103	10.30	1.92
	Region	East = 1, Central = 2, West = 3, North East = 4	10103	2.02	1.08
	Marriage	Not in marriage = 0, in marriage = 1	10103	0.77	0.42
	Political affiliation	Non-party member = 0, Party member = 1	10103	0.13	0.33
	Health	Unhealthy = 1, Unclear = 2, Healthy = 3	10103	2.36	0.78

The dependent variables in this paper are the "sense of access, happiness and security" of urban and rural residents. In the CGSS2017 questionnaire, the main value of basic medical insurance since the reform of the medical insurance system is to protect urban and rural households from catastrophic medical expenses, and to ensure that they do not fall into "poverty due to illness and return to poverty due to illness". This paper uses the question "Are you satisfied with your family's



income" to construct this questionnaire, assigning a categorical value of 1 to 3 to the sense of access, with 1 indicating dissatisfaction, 2 indicating uncertainty, and increasing to 3 indicating satisfaction.

For the measurement of happiness, this paper uses the questionnaire "Overall, do you think you are happy in your life?" was constructed. where happiness in life is assigned a categorical variable of 1 to 3, with 1 being unhappy, 2 being unclear and increasing to 3 in order of happiness.

There are many standards for measuring the sense of security, but most of them use the perception of social trust as a proxy variable. This study uses social trust as the core indicator to measure the current sense of security of urban and rural residents in China, which is more representative and can objectively reflect the evaluation of social security of urban and rural residents in China. In this paper, we refer to the method of Chu Lei and Xing Zhanjun (2020)[25] to select the security of social trust and the security of economic status to construct the latitude of measuring the security of basic medical insurance.

This paper uses the questionnaire "On the whole, do you agree that the majority of people in society can be trusted?" The categorical variable of social trust security is assigned a value of 1 to 3, with 1 being distrustful, 2 being unclear and increasing to 3 being trustworthy, known as "psychological security". and "What is the economic status of your household in your location?" The question constructed a categorical variable of economic security assigned a value of 1 to 3, with 1 being below average, 2 being unclear and increasing to 3 being above average, referred to as "economic security".

The independent variables in this paper use basic medical insurance, the most important component of China's medical security system, as the key proxy variable to study urban and rural residents' "sense of access, happiness and security" since the reform of the medical security system. In the CGSS2017 questionnaire, the main measure of basic medical insurance participation is "Are you currently participating in the following social security programmes?" This question was constructed with 9,354 residents (93.03%) participating in basic medical insurance and 701 residents (6.97%) not participating in basic medical insurance.

The mediating variable in this paper is perception of fairness. It is based on the questionnaire "Do you think society is fair today" and is categorised on a scale of 1 to 3, with 1 being unfair, 2 being unclear and 3 being fair.

The control variables in this paper include age, length of education, gender, political affiliation, marriage, annual personal income, annual household income, region, marriage, and health.

See Table 1 for details of all variables and descriptive statistics.

## 5. Research Methods and Models

Firstly, this paper uses ordered logit regression to examine the impact of basic medical insurance on urban and rural residents' "sense of access, happiness and security" since the reform of the medical insurance system was deepened in the total sample. Secondly, the total sample is grouped into urban/rural sub-samples. examines whether there is heterogeneity in the effects of basic medical insurance on the "sense of access, well-being and security" of urban and rural residents. and uses ordered logit regression to observe the group effects. Finally, the Bootstrap mediating effect test was used to analyse the mediating mechanism of basic medical insurance on the "sense of access, happiness and security" of urban and rural residents from the perspective of equity. The design of the econometric model was determined by the type of data and the type of explanatory variables; CGSS2017 is a cross-sectional data, and the explanatory variables "urban and rural residents' sense of access, happiness and security" are multinomial variables, so an ordered logit regression was conducted. The ordered logit regression model assumes that there are latent

variables that can represent the explanatory variables, and the equation for determining the latent variables is as follows.

$$Utility_i^* = \alpha + \beta Medicalinsurance_i + \lambda W_i + \varepsilon \quad (1)$$

In the above equation, Utility<sub>i</sub>\* denotes the unobservable *i*th urban and rural residents' "sense of access, happiness and security" of Utility<sub>i</sub>, Medicalinsurance<sub>i</sub> denotes whether the unobservable *i*th urban and rural residents participate in basic medical insurance, W<sub>i</sub> denotes all control variables, and ε denotes random error term.

## 6. Empirical Tests and Analysis of Results

### 6.1. The Impact of Deepening the Reform of the Medical Insurance System on the "Sense of Access, Happiness and Security" of Urban and Rural Residents

Table 2. Impact of basic medical insurance on the sense of access of urban and rural residents

Variables	Sense of Access (Model 1)	Sense of Access (Urban) (Model 2)	Sense of Access (Rural) (Model 3)
Basic medical insurance	0.212** (0.083)	0.210** (0.101)	0.211 (0.146)
Age	0.014*** (0.002)	0.015*** (0.002)	0.012*** (0.003)
Gender	-0.153*** (0.043)	-0.070 (0.052)	-0.313*** (0.078)
Education level	0.077*** (0.020)	0.073*** (0.025)	0.072* (0.037)
Political affiliation	0.122* (0.067)	0.089 (0.075)	0.203 (0.154)
Personal income	0.022 (0.014)	0.011 (0.018)	0.036 (0.022)
Household income	0.054*** (0.014)	-0.087*** (0.018)	-0.001 (0.022)
Work	-0.147* (0.051)	-0.143** (0.068)	0.055 (0.084)
Marriage	0.077 (0.020)	0.078 (0.060)	0.063 (0.095)
Region	-0.002 (0.020)	0.039 (0.024)	-0.070* (0.039)
Health	0.263*** (0.030)	0.275*** (0.039)	0.234*** (0.047)
N	10103	6727	3376
Pseudo R2	0.015	0.016	0.012

Note: \*\*\*, \*\*, \* indicate significant at the 1%, 5% and 10% levels respectively

In order to study the impact of deepening the reform of the medical insurance system on the "sense of access, happiness and security" of urban and rural residents, 12 models were constructed in this paper, Model 1 in Table 2, Model 4 and Model 7 in Table 3, Model 10 in Table 4 mainly reflect the results of full-sample regressions, Model 2 and Model 3 in Table 2, Models 5, 6, 8 and 9 in Table 3, and Model 11 and Model 12 in Table 4 mainly reflect the results of heterogeneous regressions. Model 9, Table 4 Model 11 & Model 12 mainly reflect heterogeneity regression results.

As can be seen from model 1 in Table 2, the impact of basic medical insurance on urban and rural residents' sense of access since the deepening of the reform of the medical security system is mainly reflected in the enhancement of urban and rural residents' sense of income access, with the effect of basic medical insurance on urban and rural residents' sense of access reaching 21.2%. The effect of basic medical insurance on urban residents' sense of access is 21%, while the effect on rural residents' satisfaction with household income is not significant. For details of the effects of other control variables and urban-rural differences, please refer to Model 5 and Model 6 in Table 3.

*Table 3. Impact of basic medical insurance on the well-being of urban and rural residents*

Variables	Well-being (Model 3)	Well-being (Urban) (Model 4)	Well-being (rural) (Model 5)
Basic medical insurance	0.271*** (0.089)	0.286*** (0.108)	0.227 (0.158)
Age	0.018*** (0.002)	0.016*** (0.003)	0.021*** (0.003)
Gender	-0.291*** (0.051)	-0.289*** (0.065)	-0.348*** (0.087)
Education level	0.214*** (0.023)	0.231*** (0.030)	0.220*** (0.040)
Political affiliation	0.475*** (0.099)	0.423*** (0.111)	0.715*** (0.155)
Personal income	-0.015 (0.016)	0.021 (0.023)	-0.036 (0.024)
Household income	0.078*** (0.017)	0.102*** (0.022)	0.057** (0.025)
Work	-0.206*** (0.061)	-0.288*** (0.083)	-0.210** (0.095)
Marriage	0.535*** (0.056)	0.574*** (0.069)	0.456*** (0.100)
Region	0.015 (0.024)	-0.025 (0.030)	0.076* (0.044)
Health	0.647*** (0.034)	0.660*** (0.045)	0.673*** (0.054)
N	10103	6727	3376
Pseudo R2	0.062	0.065	0.056

Note: \*\*\*, \*\*, \* indicate significant at the 1%, 5% and 10% levels respectively

As can be seen from Table 3, the effect of basic medical insurance on the well-being of urban and rural residents, which is a proxy variable for deepening the reform of the medical insurance system, is mainly manifested as an increase in the well-being of urban and rural residents, with this effect reaching 27.1%, and there is urban-rural heterogeneity in the well-being felt by urban and rural residents from the construction of basic medical insurance, as manifested in the increase in the well-being of urban and rural residents from basic medical insurance reaching 28.6%, while the effect on the well-being of rural residents is not significant. The effect of basic medical insurance on the happiness of urban and rural residents was 28.6%, while the effect on the happiness of rural residents was not significant. As for the control variables, the effect of age on the happiness of urban and rural residents was 1.8%, but gender reduced the happiness of urban and rural residents by 29.1%, the effect of education on the happiness of urban and rural residents was 21.4%, political

outlook was 47.5% and marriage was 53.5%. For details of the effects of the remaining control variables on the happiness of urban and rural residents and the happiness of urban and rural residents, please see Table 2 Model 1, Model 2 and Model 3. The above analysis proves Research Hypothesis 1 and Research Hypothesis 2.

*Table 4. Impact of basic medical insurance on the sense of security of urban and rural residents*

Variables	Sense of economic security (Model 4)	Sense of economic security (urban) (Model 5)	Sense of economic security (rural) (Model 6)	Psychological security (Model 7)	Psychological Security (Urban) (Model 8)	Psychological security (rural) (Model 9)
Basic medical insurance	0.453*** (0.081)	0.475*** (0.097)	0.036** (0.145)	0.221*** (0.081)	0.180* (0.097)	0.237* (0.143)
Age	0.012*** (0.002)	0.014*** (0.002)	0.008*** (0.003)	0.020*** (0.002)	0.016*** (0.002)	0.008*** (0.003)
Gender	-0.145*** (0.041)	-0.086* (0.050)	-0.277*** (0.075)	-0.010 (0.042)	-0.015 (0.051)	-0.063 (0.079)
Education level	0.255*** (0.020)	0.277*** (0.024)	0.234*** (0.037)	0.050** (0.019)	0.278*** (0.024)	0.095** (0.012)
Political affiliation	0.495*** (0.066)	0.445*** (0.073)	0.648*** (0.150)	0.359*** (0.072)	0.367*** (0.079)	0.435** (0.183)
Personal income	0.055*** (0.013)	0.074*** (0.018)	0.037* (0.021)	-0.017 (0.013)	0.001 (0.017)	-0.019 (0.022)
Household income	0.188*** (0.013)	0.212*** (0.017)	0.160*** (0.022)	-0.022* (0.013)	-0.032* (0.017)	0.014 (0.023)
Work	0.059 (0.050)	-0.026 (0.065)	0.117 (0.083)	0.144*** (0.050)	-0.011 (0.065)	0.168* (0.086)
Marriage	0.210*** (0.049)	0.158*** (0.058)	0.301*** (0.094)	0.054 (0.049)	0.038 (0.058)	0.125 (0.096)
Region	-0.013 (0.020)	0.014 (0.023)	-0.085** (0.038)	-0.052** (0.020)	0.056** (0.024)	-0.057 (0.040)
Health	0.444*** (0.029)	0.414*** (0.038)	0.496*** (0.047)	0.123*** (0.029)	0.239*** (0.037)	-0.018 (0.049)
N	10103	6727	3376	10103	6727	3376
Pseudo R2	0.082	0.074	0.079	0.014	0.014	0.024

Note: \*\*\*, \*\*, \* indicate significant at the 1%, 5% and 10% levels respectively

As can be seen from Model 4 and Model 5 in Table 4, since the deepening of the reform of the medical insurance system, the impact of basic medical insurance on the sense of security of urban and rural residents is mainly reflected in the enhancement of the sense of economic security and psychological security of urban and rural residents, with the effect of basic medical insurance on the sense of economic security of urban and rural residents reaching 45.3% and the effect on the sense of psychological security of urban and rural residents reaching 22.1%. By group, the effect of basic medical insurance on urban residents' sense of economic security reached 47.5%, while the effect on rural residents' sense of economic security reached 3.6%, with a more significant effect on urban and rural residents' sense of economic security. As for the control variables, the effect of age on the happiness of urban and rural residents reached 1.2%, education level reached 25.5%, political

outlook reached 49.5% and marriage reached 21%; for details of the effects of other control variables and urban-rural differences, please refer to Model 4, Model 5 and Model 6 in Table 4. For the control variables, the effect of age on the economic status of urban and rural residents' households was 20%, education level was 5%, political outlook was 35.9%, work was 14.4% and health was 12.3%. Please see Models 7, 8 and 9 for more details.

## 7. Robustness Test: Propensity Score Matching Method

As the participation in basic medical insurance since the reform of the deepening of the medical insurance system is the result of individual subjective choice, it is likely that the results estimated directly by the ordered logit model in the baseline model are biased due to the systematic bias between the two groups of participants and non-participants in basic medical insurance. Therefore, the robustness check in this paper uses the Propensity Score Matching Method (PSM) to construct a Rubin counterfactual framework for the impact of basic medical insurance on urban and rural residents' "sense of access, happiness and security" since the deepening of the medical insurance system reform to correct for possible self-selection effects, so as to verify the impact of basic medical insurance on the "sense of access, happiness and security" of urban and rural residents. This is to verify the robustness of the effect of basic medical insurance on urban and rural residents' sense of access, well-being and security.

The use of propensity score matching (PSM) presupposes that the sample must pass a balance test. In a strictly randomised test, there should be no large systematic differences between the control variables in the control and treatment samples, i.e. the results of propensity score matching should be such that the magnitude and range of variation in each control variable is kept to within 10% as far as possible. Due to space constraints, we do not provide a detailed graphical representation of standard deviation control margins here. However, the results show that the systematic deviation of basic medical insurance on the control variables of "sense of access, happiness and security" of urban and rural residents can be controlled within 10% before and after matching. The differences in individual characteristics between the insured and uninsured groups were well eliminated and the samples were well matched.

Table 5 shows the results of the PSM estimation of the impact of basic medical insurance on the "sense of access, well-being and security" of urban and rural residents, reporting the average treatment effect (ATT) based on three different matching methods: nearest neighbour matching, radius matching and kernel matching, and also calculating the significant mean ATT value.

The results of the estimation based on the total sample show that basic medical insurance has a significant effect on the "sense of access, happiness and security" of urban and rural residents, which is consistent with the results of the ordered logit regression. However, in terms of the degree of impact, the mean ATT values of basic medical insurance on the "sense of access, happiness and security" of urban and rural residents are 0.76, 0.55, 0.17 and 0.10 respectively, with the absolute values of the sense of access and happiness of urban and rural residents slightly higher than the results of the ordered logit regression, and the absolute values of the sense of security of urban and rural residents lower than the results of the ordered logit regression. This indicates that there is a problem of selectivity bias, and the effect of basic medical insurance on the "sense of access, happiness and security" of urban and rural residents is underestimated in the ordered logit regression. The results of the sub-sample-based estimation show that there are urban-rural differences in the impact of basic medical insurance on urban and rural residents' sense of access, happiness and security, with a significant positive effect on urban residents, but basically insignificant on rural residents. However, in terms of the degree of impact, the PSM estimates are also higher than the results of the ordered logit regressions, again confirming the aforementioned

conclusion that if there is selective bias, the ordered logit regressions will underestimate the impact of basic medical insurance on urban and rural residents' "sense of access, happiness and security" since the deepening of the medical security system reform.

*Table 5. PSM estimation results of the impact of basic medical insurance on the "sense of access, happiness and security" of urban and rural residents*

Output variables	Sample	Nearest Neighbour Matching	Radius matching	Nuclear matching	ATT mean value
		ATT	ATT	ATT	
Sense of Access	Overall	0.76**	0.76**	0.77***	0.76
	City	0.59**	0.40	0.70**	0.56
	Rural	0.53	0.54	0.58	0.55
Happiness	Overall	0.72**	0.72**	0.95***	0.55
	City	0.10**	0.10**	0.09**	0.10
	Rural	0.06	0.06	0.09*	0.07
Economic security	Overall	0.17***	0.17***	0.17***	0.17
	City	0.17***	0.17***	0.18***	0.17
	Rural	0.14***	0.14***	0.15***	0.14
Psychological security	Overall	0.10**	0.10**	0.10***	0.10
	City	0.10	0.10	0.07	0.09
	Rural	0.17**	0.17**	0.13**	0.16

Note: \*\*\*, \*\*, \* indicate significant at the 1%, 5% and 10% levels respectively

## 8. Mechanism of Action Analysis: Bootstrap Mediated Effects Test

As the most important component of China's current medical security system, how has basic medical insurance affected urban and rural residents' "sense of access, happiness and security" since the deepening of the medical security system reform? Based on theoretical analysis, this paper examines the impact of basic medical insurance on urban and rural residents' sense of fairness from the perspective of enhancing their sense of fairness. The mediating variable is based on the questionnaire's "perception of fairness". The mediating variable is based on the questionnaire "In general, do you think the society today is fair or unfair? The question was constructed by assigning a value of 1 to the choices "not fair at all" and "rather unfair", which means "unfair"; and assigning a value of 2 to the choices "not fair but not unfair" to 2, which means "not clear"; and "fair" and "completely fair" to 3, which means "Fair". The mediating effect of fairness is expressed in the impact of basic medical insurance on the happiness, sense of access and sense of security of urban and rural residents, which is called the "fairness promotion channel".

Most studies have used the causal stepwise regression test proposed by Baron et al[25]. for mediating effects, but in recent years there have been many questions about this method[26]. In this paper, we use the total sample and the Bootstrap method proposed by Preacher et al. to test for mediation effects[27], specifically using the bias-corrected non-parametric percentile Bootstrap method.

Table 6 presents the results based on the mediating effects test. The following analysis was conducted following the mediation effect test and analysis procedure proposed by Zhao et al[28]. Regarding urban and rural residents' sense of access, the direct effect of basic medical insurance on urban and rural residents' sense of access was significant (BC 95% CI [0.010-0.095]) and the indirect effect was significant (BC 95% CI [0.001-0.009]) after the inclusion of the mediating

variable of sense of fairness. Regarding urban and rural residents' happiness; regarding the effect of urban and rural residents' happiness, the direct effect of basic medical insurance on urban and rural residents' happiness was significant (BC 95%, CI [0.012-0.111]) and the indirect effect was significant (BC 95%, CI [0.003-0.026]) after adding the mediating variable of perception of fairness; regarding urban and rural residents' economic security, after adding the mediating variable of perception of fairness With regard to urban and rural residents' sense of economic security, the direct effect of basic medical insurance on urban and rural residents' sense of economic security was significant (BC 95%, CI [0.079-0.160]) and the indirect effect was significant(BC 95%, CI [0.002-0.012]); with regard to urban and rural residents' sense of psychological security, the direct effect of basic medical insurance on urban and rural residents' sense of psychological security was significant(BC 95%, CI [0.002-0.012]) after adding the mediating variable of perception of fairness. Direct effect was significant (BC 95%, CI [0.008-0.131]) and indirect effect was significant (BC 95%, CI [0.006-0.040])

Therefore, it can be concluded that since the deepening of the reform of the medical security system, basic medical insurance, as the most important component of China's medical security system, has increased the sense of well-being, access and security of urban and rural residents through the "equity effect of urban and rural residents", and hypothesis 7 has been verified.

Table 6. Results of the mediation effect of basic medical insurance on the "sense of access, happiness and security" of urban and rural residents

Type of effect	Access for urban and rural residents		
	Effect value	Bootstrap standard error	Bias-corrected 95% CI
Ind_eff	0.005	0.002	0.001 - 0.009
Dir_eff	0.053	0.022	0.010 - 0.095
Ind_eff/dir_eff(%)	9.4		
Type of effect	Happiness of urban and rural residents		
	Effect value	Bootstrap standard error	Bias-corrected 95% CI
Ind_eff	0.015	0.006	0.003 - 0.026
Dir_eff	0.062	0.025	0.012 - 0.111
Ind_eff/dir_eff(%)	24.19		
Type of effect	Economic security of urban and rural residents		
	Effect value	Bootstrap standard error	Bias-corrected 95% CI
Ind_eff	0.007	0.003	0.002 - 0.012
Dir_eff	0.120	0.021	0.079-0.160
Ind_eff/dir_eff(%)	5.83		
Type of effect	Psychological security of urban and rural residents		
	Effect value	Bootstrap standard error	Bias-corrected 95% CI
Ind_eff	0.023	0.009	0.006 - 0.040
Dir_eff	0.070	0.031	0.008 - 0.131
Ind_eff/dir_eff(%)	32.86		

Note:ind\_eff represents the indirect effect of improving perceptions of fairness; dir\_eff represents the direct effect of improving perceptions of fairness; ind\_eff/dir\_eff (%) represents the indirect effect as a percentage of the direct effect; Bootstrap sampling is set at 1000 times

## 9. Conclusion

This study has reached the following main conclusions: First, since the deepening of the reform of the medical insurance system, basic medical insurance has had an enhancing effect on urban and rural residents' "sense of access, happiness and security", and the reimbursement of medical expenses by basic medical insurance has had a guarantee function on urban and rural residents' "sense of access, happiness and security" when seeking medical treatment. The basic medical insurance reimbursement has a guarantee function for urban and rural residents' "sense of access, happiness and security". Secondly, basic medical insurance has an enhancing effect on urban and rural residents' "sense of access, happiness and security"; the enhancing effect of basic medical insurance on urban and rural residents' sense of happiness is more obvious to urban residents than to rural residents; the enhancing effect of basic medical insurance on urban and rural residents' sense of access is more obvious to urban residents than to rural residents; and the enhancing effect of basic medical insurance on urban and rural residents' sense of security is more obvious to urban residents than to rural residents. The effect of basic medical insurance on urban and rural residents' sense of security is both economic security and psychological security. Thirdly, a sense of fairness plays a part in mediating the relationship between the basic medical insurance system and urban and rural residents' sense of access, happiness and security.

The above findings have important policy implications for the deepening of medical insurance in China and the establishment of a multi-level medical insurance system: as the most important component and key design of China's medical insurance system, basic medical insurance has a series of policy tasks such as regulating income disparity, safeguarding health rights and maintaining health justice. This study shows that since the reform of the medical insurance system, basic medical insurance at this stage has been able to improve urban and rural residents' "sense of access, happiness and security", which is in line with the original intention of the system design to ensure fairness and promote stability.

Since the deepening of the reform of the medical insurance system, the difference in the degree of improvement in the "sense of access, happiness and security" of urban and rural residents among different sub-groups, especially urban and rural groups, is also an important aspect that deserves attention. The original design of China's medical insurance system was to maintain social equity and justice, so that all people in the country could enjoy the benefits of medical insurance in a fair and equitable manner. The findings of this study show that, using basic medical insurance, the most important component of China's current medical insurance system, as the key variable to examine the effect of deepening the reform of the medical insurance system on urban and rural residents' "sense of access, happiness and security", the urban group is more significant, mainly because: firstly, basic medical insurance includes The urban residents' basic medical insurance has a significantly higher reimbursement rate than the urban and rural residents' basic medical insurance, and there is a personal account, while the urban and rural residents' basic medical insurance was completed in 2016. Although the system was integrated in 2016, urban and rural residents can choose between "one system with multiple levels" and "one system with one level", i.e. the integrated system uses either one mandatory level of contribution or multiple levels of contribution, with the higher the level of contribution, the higher the reimbursement rate.[29] However, on the whole, the reimbursement rate of basic medical insurance for urban and rural residents is still not as high as that of basic medical insurance for urban residents, so the "sense of access, happiness and security" that urban residents enjoy from the basic medical insurance system is also more obvious than that of rural residents. Secondly, by the end of 2019, the number of people fully insured under China's basic medical insurance system reached 1.35 billion, maintaining a coverage of over 95%. In terms of the participation rate alone, "universal health insurance" has been achieved, but one of



the main problems facing the segmented basic health insurance system based on household registration and employment status is the lack of "equitable health insurance"[30]. As a result, rural residents have a significant inequality with urban residents in access to health care, and are not treated as well as urban residents, and their ability to pay is extremely limited. The "sense of access, happiness and security" is greatly affected.

This article believes that in order to consolidate and deepen the effect of the reform of the medical insurance system, further improve the quality of the medical insurance system, and promote the most important component of China's medical insurance system, the basic medical insurance, to further play a policy effect of enhancing the "sense of access, happiness and security" of urban and rural residents, the basic medical insurance should be optimized in the following aspects Policy optimisation: (1) Expanding the coverage of basic medical insurance to enhance the accessibility of medical insurance. China's basic medical insurance participation rate has reached 96.5% in 2019, but the actual proportion of urban and rural residents using basic medical insurance to seek medical reimbursement is far lower than the participation rate, which is likely due to the differences in the scope of reimbursement between urban employees' basic medical insurance and urban and rural residents' basic medical insurance and the design of each province's policy, which affects the accessibility of medical services for urban and rural residents. Therefore, China should further expand the current scope of reimbursement of basic medical insurance for outpatient and inpatient services to ensure that urban and rural residents have access to medical care and good medical care in the process of seeking medical treatment, thereby promoting "health for all". "(2) To improve the accessibility of medical services to urban and rural residents, and to achieve the transition from "universal medical insurance" to "fair medical insurance". (2) Increase the reimbursement ratio of basic medical insurance for urban and rural residents. According to the current design of China's basic medical insurance, the actual reimbursement rate for urban workers' basic medical insurance is higher than that of urban and rural residents' basic medical insurance, with the actual reimbursement rate for urban workers' basic medical insurance for hospitalisation at 75.6% and urban and rural residents' basic medical insurance at 59.7% by the end of 2019. This will negatively limit the health performance and income distribution of both urban and rural residents, and the reimbursement rate of basic medical insurance for urban and rural residents, especially for rural residents seeking medical treatment, should be increased in the design of the system to enhance the fairness of basic medical insurance. (3) Raise the level of co-ordination to make medical insurance treatment more equitable. We must consolidate the municipal level of basic medical insurance coordination, actively promote provincial-level coordination, and realize the "six unifications" of basic policies, treatment standards, fund management, operation management, fixed-point management and information systems" at the provincial level. We will implement a list system for medical insurance benefits, continuously improve the fairness and universality of our policies, enhance the efficiency of the use of medical insurance funds, strengthen the fund's ability to help and resist risks, and meet the free flow of talent.

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## Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Conflict of Interest

The author states that this article has no conflict of interest.

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