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Digital inclusive finance and relative poverty at county level in Shaanxi province: measurement, evolution and risk of returning to poverty

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Abstract: *This study examines digital financial inclusion's impact on relative poverty in Shaanxi Province using county-level data from 2014 to 2021. Results show it significantly reduces poverty through coverage and usage depth, with stronger effects in district and county-level regions than cities. Spatially, poverty decreased overall but persists in remote mountainous areas due to natural and infrastructural constraints. Ankang and other Qinba mountain areas face multidimensional risks, including inadequate healthcare, education, and agricultural inefficiencies. Recommendations include regional differentiation strategies, investments in healthcare and education, industrial and agricultural modernization, and dynamic poverty monitoring to achieve sustainable poverty reduction through multidimensional policy coordination.*

Keywords: *Digital inclusive finance; Relative poverty; Risk of falling back into poverty*

1. Introduction

For a long time, countries around the world have always regarded poverty alleviation as a major challenge. As an important promoter of global poverty reduction, China has achieved remarkable results in eliminating absolute poverty through the implementation of the targeted poverty alleviation strategy. After a arduous battle against poverty, China has lifted itself out of poverty in all respects, marking a new chapter in poverty control by shifting the focus of poverty control from absolute poverty to relative poverty, expanding from a single income dimension to multi-dimensional poverty. However, POVERTY control in our country will stride into a new stage in the new period, and the focus will change from absolute poverty control to relative poverty control.

As one of the provinces with relatively prominent poverty problems in China, Shaanxi Province still faces many challenges in poverty alleviation. By the end of 2012, the number of rural poor people in China had reached 98.99 million, with a poverty incidence rate of 10.2 percent. With the full implementation of targeted poverty alleviation policies, by the end of 2019, the number of poor people had been reduced to 5.51 million, a total of 93.48 million people had been lifted out of poverty, and the poverty incidence rate had dropped to 0.6 percent. On November 23, 2020, as all 832 poverty-stricken counties were lifted out of poverty, the country achieved a historic solution to the problem of absolute poverty, and the goal of building a moderately prosperous society in all respects was achieved as scheduled. However, this does not mean the end of poverty, but marks a new stage of poverty control in China, with the focus shifting from absolute poverty to relative poverty control. Shaanxi Province, as a region with complex poverty problems, is characterized by poor geographical conditions, weak infrastructure and lack of resources, which leads to wide and deep poverty, and it is difficult to alleviate poverty. Since the implementation of targeted poverty alleviation, the number of poor people in Shaanxi Province has decreased from 5.92 million in 2011 to 183,400 at the end of 2019, with a total of 5.7366,600 people reduced from poverty, achieving remarkable results. However, there are still problems such as weak industrial base, insufficient human capital and lack of endogenous motivation of the poor, and the risk of returning to poverty still exists. Therefore, consolidating the achievements of poverty alleviation and enhancing the sustainable development capacity of rural areas have become the top priority of Shaanxi province's future work.

As an innovative financial service model, digital inclusive finance plays an important role in promoting the development of financial inclusion by virtue of its advantages of sharing, convenience,

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low cost and low threshold. Relying on advanced digital technology and Internet platform, its wide application in payment, credit and insurance fields not only significantly improves service efficiency, but also reduces information asymmetry and transaction costs. Digital inclusive finance provides a new path for poverty alleviation by transmitting the benefits of technological innovation, economic growth and deepening financial reform to vulnerable groups that are difficult to be covered by traditional financial services. Under the background of unbalanced and inadequate economic development in China, in-depth exploration of the impact mechanism of digital inclusive finance on relative poverty is not only helpful to consolidate the achievements of poverty alleviation, but also has important theoretical and practical significance for realizing inclusive economic growth (*Huang Qian et al.* 2019)[1].

As the world's largest developing country, China's regional economic development level shows a significant imbalance. In this context, exploring the mechanism and actual effectiveness of digital inclusive finance in poverty governance not only provides important theoretical support for policy makers to optimize poverty reduction strategies, but also has significant practical significance for reducing the incidence of poverty and alleviating income distribution inequality. Based on this, this study takes Shaanxi Province as the research area, uses the panel data from 2014 to 2021, constructs the relative poverty index at county level, tests the direct alleviation effect of digital inclusive finance on relative poverty through empirical analysis method, and reveals its spatial-temporal evolution characteristics. In addition, this study further focuses on the prefecture-level cities with the most prominent relative poverty problem in Shaanxi Province, and deeply analyzes the key factors affecting their relative poverty. Finally, combined with the research results, this paper puts forward targeted regional sustainable development countermeasures, in order to provide scientific reference and practical guidance for the relative poverty control in Shaanxi Province and even the whole country.

2. Theoretical analysis and research hypotheses

Digital inclusive finance is an important way to alleviate relative poverty level, Although the problem of absolute poverty in China has been solved historically in recent years, the focus of poverty governance has shifted from absolute poverty to relative poverty governance. In the context of the continuous development of digital inclusive finance, digital inclusive finance, as a digital extension of traditional inclusive finance, has become an important tool to alleviate relative poverty by enhancing credit availability, promoting income growth and optimizing resource allocation.

First, digital inclusive finance directly alleviates relative poverty by improving credit availability, promoting income growth and narrowing the income gap. Digital inclusive finance reduces the urban-rural gap and reduces the relative poverty level in rural areas by improving the credit availability of micro, small and medium-sized enterprises and low-income people, reducing financing transaction costs, and solving financial exclusion (CAI Hongyu and Yang Chao,2021)[2]. Based on the further verification of micro-household data, digital inclusive finance alleviates poverty through the triple mechanism of increasing credit availability, promoting income growth and narrowing the income gap, and the poverty reduction effect on low-income families and families with low social capital is more significant (Zhou Li et al,2021)[3]. Digital inclusive finance directly improves the depth and intensity of poverty by raising the income level of rural households and promoting entrepreneurial behavior, while indirectly reducing inequality by improving income distribution (Liang and Li 2021)[4] to further alleviate relative poverty. Second, digital inclusive finance promotes residents' income growth by providing convenient financial services, thus alleviating relative poverty. The development of digital inclusive finance has a positive effect on increasing farmers' income and alleviating poverty by increasing their income (Zhang et al, 2022)[5]. At the same time, digital inclusive finance and all its dimensions can promote the income level of rural residents, and the depth of use and credit business have the most obvious effect on increasing income, indicating that digital inclusive finance promotes the growth of residents' income by providing financial services such as credit. Third, digital inclusive finance alleviates relative poverty by optimizing the allocation of financial resources and improving the efficiency of capital use. The development of digital inclusive finance can significantly narrow the income gap between urban and rural areas, and has an improvement effect on income distribution. Digital inclusive finance has a significant inhibitory effect and spatial correlation on rural multidimensional poverty, and by optimizing the allocation of financial resources, digital inclusive finance not only directly alleviates rural poverty, but also has a positive impact on adjacent areas through spatial spillover effects (Luo Zhenjun and Yu Lihong ,2022)[6].

Based on the above analysis, this paper proposes the following hypothesis:

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Hypothesis H1: Digital financial inclusion has a direct effect on the alleviation of relative poverty.

3. Research design

3.1 Data sources

The research sample selects the data of each county (city, district) in Shaanxi Province from 2014 to 2021, which comes from the statistical yearbook, the National Economic and Social Development Bulletin of each county and city, etc. The original data are processed as follows: 1. The samples whose sample interval is less than three consecutive years and whose main variable data are seriously missing are excluded. 2. For missing values, linear interpolation method is used to complete them. 3. Winsorized all the continuous variables in the sample data at the level of 1%, and obtained 615 sample observations.

3.2 Variable selection

1) Explanatory variable: Digital inclusive financial index DIF indicates the development level of digital inclusive financial in the region; Digital financial coverage breadth (DIF1) is measured by the third-party payment account actually bound to the bank card; Depth of use of digital finance (DIF2) indicates the actual use of digital financial services in the region.

2) Explained variable: poverty is the result of multiple factors, which is restricted by natural conditions and closely related to social and economic conditions. In order to comprehensively evaluate the poverty degree of a region, it is particularly important to build an index system that can comprehensively reflect the regional poverty situation. Existing research shows that poverty identification at the county level usually requires comprehensive analysis from multiple dimensions such as social economy and natural environment. Among them, natural conditions as the background resources of regional development, it is difficult to quantify; The level of economic development can directly reflect the relative poverty of a region. Based on this, this study draws on the existing research results, combines the regional characteristics of Shaanxi Province, starts from the two dimensions of economy and society, selects nine key variables that can reflect the economic conditions and living standards of residents, and constructs the relative poverty level measurement index system suitable for the study area. Specific indicators are shown in Table 1.

Table 1: Shaanxi Province county relative poverty measurement index system

Dimension	first-level index	Second-level index	index attribute
The economy	Economic development	Gross regional product per capita	+
	resident income	Per capita fiscal revenue	+
		Per capita disposable income	+
	material conditions	Total industrial output value above designated size	+
		Total retail sales of social goods	+
The society	living standard	Local telephone users	+
	educational level	Number of students per 10,000	+
	medical level	The number of hospital beds per 10,000 people	+

3) Control variables: This paper refers to the relevant studies of Chen Hailong and Liu Jinyi, in order to avoid being susceptible to other potential factors affecting the empirical results due to relative poverty. The following control variables are selected: the number of registered population, the added value of the primary industry, the general budget expenditure of the local finance, and the cultivated land area.

3.3 Model construction

In order to analyze the impact of digital inclusive finance on relative poverty level, H1 is tested. In this paper, a two-way fixed model is constructed in the benchmark regression as follows:

$$POV_{it} = \alpha_0 + \alpha_1 DIF_{it} + \sum \alpha_j CV_{jit} + \sum year + \sum area + \varepsilon_{it} \quad (1)$$

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Where POV_{it} represents the relative poverty level, DIF_{it}it is the core explanatory variable of this paper, represents the level of digital inclusive finance in region i in year t, CV_{jit} represents a series of control variables, $\sum$year is time fixed effect, $\sum$area is regional fixed effect, ε_{it} is random disturbance term. $\alpha_1$and are the coefficient of the linear term of digital inclusive finance studied in this paper, which can represent the effect of digital inclusive finance on relative poverty level by studying its positive, negative and size.

4. Empirical Analysis

4.1 Descriptive statistics

In this paper, descriptive statistics of all variables involved in the research design are first carried out, and the results are shown in the table 2. As shown. The minimum value of relative poverty (POV) is 0.480, the maximum is 0.990, and the average is 0.900, indicating that there are differences in the level of relative poverty among regions. The minimum value of the explanatory variable, the maximum value, the mean value, and the standard deviation of the digital Financial Inclusion Development index (DIF) were 12.260, 128.990, 91.564, and 23.277. The DIF showed a high overall level in the observed regions, and the differences among regions were relatively small. However, there are still some regions where the level of development of digital financial inclusion is relatively low, and further efforts and upgrading are needed.

Table 2: Descriptive statistics for all variables

VarName	Obs	Mean	SD	Min	Median	Max
POV	615	0.890	0.071	0.480	0.900	0.990
DIF	615	91.564	23.277	12.260	99.710	128.990
DIF1	615	82.602	17.521	7.270	89.220	109.560
DIF2	615	106.446	35.999	4.540	116.800	172.680
lnPOP	615	3.234	0.733	1.160	3.370	4.890
lnVAP	615	11.904	0.708	10.000	12.050	13.200
lnGBE	615	12.316	0.439	10.930	12.350	13.360
lnAGR	615	9.984	0.756	7.530	10.090	11.940

4.2 Regression analysis

Table 3 Column (1) is the regression result without adding control variables , and column (2) is the regression result with adding control variables. As can be seen from the regression results, before and after the addition of control variables, the coefficients of explanatory variable DIF (Digital Financial Inclusion Development Index) are negative, respectively -0.001 and -0.004, and both are significant at the level of 1%, indicating that the development of digital financial inclusion can further reduce relative poverty. On the basis of regression of the core explanatory variables, the regional fixed effect and the year fixed effect are controlled in the (3) column. The coefficient of the core explanatory variable drops to -0.000, but is still significant at 1% level. In column (4), control variables are added on the basis of column (3), and the coefficient of the core explanatory variable is -0.004, which is also significant at the 1% level. This suggests that digital financial inclusion can reduce relative poverty levels.

Table 3: Baseline regression result

	(1)	(2)	(3)	(4)
	POV	POV	POV	POV
DIF	-0.001***	-0.004***	-0.000***	-0.004***
	(-7.418)	(-9.278)	(-3.610)	(-13.215)
Controls	NO	YES	NO	YES
Year fixation	NO	NO	YES	YES
Fixed region	NO	NO	YES	YES
_cons	0.971***	1.236***	1.842***	2.413***
	(87.579)	(33.134)	(16.695)	(22.460)
N	615	615	615	615
adj.R2	0.082	0.394	0.540	0.739

* p < 0.1, ** p < 0.05, *** p < 0.01, the brackets are robust standard error, the same below.

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4.3 Robustness test

In order to test the robustness of the above results, this paper refers to the practice of Guo-xian bao (2024) [7] and further tests the robustness of the regression structure by replacing the core explanatory variables, that is, replacing the digital inclusive finance index with the logarithm of the secondary indicators of digital inclusive finance, namely, the coverage breadth index and the use depth index.

The regression results of the fixed effect model are shown in the following table 4. Column (1) is the regression result of the impact of the coverage breadth index on the relative poverty level, which is significantly negative at the level of 1%, indicating that the coverage breadth of digital inclusive finance can alleviate relative poverty. Column (2) shows the regression result of the use of the depth index on the relative poverty level, which is significantly negative at the level of 1%.

Table 4: Robustness test results

	(1)	(2)
	POV	POV
DIF1	-0.002***	
	(-10.605)	
DIF2		-0.002***
		(-9.946)
Controls	YES	YES
Year fixation	YES	YES
Fixed region	YES	YES
_cons	2.201***	2.555***
	(19.782)	(21.887)
N	615	615
r2	0.716	0.710

4.4 Heterogeneity analysis

There are significant differences in economic structure, resource endowment, and policy implementation intensity at the city, county, and district administrative levels. City-level units usually have better infrastructure and richer resource allocation, while district-level units may face greater development constraints. This imbalance may lead to the heterogeneous characteristics of the impact of digital financial inclusion on relative poverty level. In order to deeply analyze this difference, this study divides the sample into three parts: the county level, the district level and the township level, where the value of the district level is 0, the value of the city level is 1, and the value of the county level is 2. The results of the correlation regression analysis are shown in the table 5 below, which specifically shows the differentiated impact of the development of digital inclusive finance on relative poverty in different regions.

Table 5: Heterogeneity analysis results

	(1)	(2)	(3)
	POV(0)	POV(1)	POV(2)
DIF	-0.012**	0.003**	-0.003***
	(-2.706)	(2.507)	(-10.635)
Controls	YES	YES	YES
Year fixation	YES	YES	YES
Fixed region	YES	YES	YES
_cons	2.287***	1.628***	2.385***
	(3.732)	(3.776)	(23.934)
N	30	24	559
r2	0.996	0.990	0.720

The results of columns (1), (2) and (3) show that there is regional heterogeneity in the impact of digital financial inclusion on relative poverty level. The specific analysis is as follows: the regression coefficient of the core explanatory variable at the district level is −0.012, which is significant at the significance level of 5%. District-level regions are usually located at the edge of the city or in the rural transition zone, with low levels of economic development and prominent poverty problems. The introduction of digital inclusive finance can significantly improve financial accessibility in these regions and provide more development opportunities for low-income groups, thus effectively

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alleviating poverty; The regression coefficient of the core explanatory variable at the city level is significantly positive at the level of 5%, indicating that the development of digital inclusive finance has a positive impact on the relative poverty level, that is, the popularization of digital inclusive finance may exacerbate relative poverty to some extent. This may be because the municipal regional economy is relatively developed, and the service objects of digital inclusive finance are more concentrated in the middle and high income groups, while the low-income groups may not fully enjoy its dividend, leading to further prominent relative poverty. The county-level regression coefficient is negative and significant at the 1% level, indicating that the development of digital inclusive finance significantly reduces the relative poverty level. This shows that county-level regions, as regions with medium level of economic development, the popularization of digital inclusive finance can effectively cover middle and low-income groups, and improve residents' economic participation ability and income level by providing convenient payment, credit and insurance services, so as to alleviate poverty.

5. Temporal and spatial evolution of relative poverty levels

Through the comparative analysis of the relative poverty distribution data of Shaanxi Province in 2014 and 2021, the relative poverty level of Shaanxi Province has changed significantly both in time and space. From the perspective of time dimension, during the seven years from 2014 to 2021, Shaanxi Province has achieved remarkable results in poverty alleviation policies and economic development, and the overall relative poverty level shows a downward trend. However, inter-regional differences and imbalances still exist, and the progress of poverty alleviation in some regions is relatively slow. The regions with high relative poverty levels in 2014 are mainly concentrated in the northern and western regions of Shaanxi Province. Due to poor natural conditions, backward infrastructure and single industrial structure, the economic development of these regions has been at a low level for a long time. The poverty problem is particularly prominent in Yulin and parts of Yan 'an in northern Shaanxi, as well as Hanzhong and Ankang in southern Shaanxi. During this period, the poverty alleviation work in Shaanxi Province had just started, and the poverty-stricken areas were widely distributed, and the task of poverty alleviation was arduous. In 2021, with the in-depth promotion of targeted poverty alleviation policies and the continuous development of regional economy, the relative poverty level of Shaanxi Province has significantly improved. In some regions, the poverty index has dropped below 0.9 from the higher level, indicating that the economic development and living standards of these regions have been significantly improved. Especially in northern Shaanxi, the development and upgrading of energy industry have led to the rapid growth of local economy. The southern Shaanxi region has gradually improved the living conditions of residents through the development of eco-tourism and characteristic agriculture. In addition, the strengthening of infrastructure construction, such as the improvement of transportation networks and the popularization of communication facilities, has also provided strong support for the economic development of poor areas.

However, despite the decline in overall poverty levels, the problem of inter-regional imbalances persists. In some areas of northern and southern Shaanxi, especially in remote mountainous areas, poverty is still a prominent problem. These areas are difficult to lift out of poverty due to their remote location, inconvenient transportation, and lack of resources. In addition, the urban-rural gap and unbalanced regional development are also obvious, and the poverty level in some peri-urban areas has improved rapidly, while the improvement in remote rural areas is relatively slow. From the perspective of time change, from 2014 to 2021, the poverty alleviation work in Shaanxi Province has experienced a process from preliminary exploration to comprehensive promotion. Early poverty alleviation policies mainly focused on infrastructure construction and initial coverage of social security, while later periods paid more attention to targeted policies and industrial poverty alleviation. Despite this, the poverty alleviation process in some regions still lags behind, indicating that poverty alleviation work needs to pay more attention to the long-term nature and sustainability. In general, the relative poverty level in Shaanxi Province has been significantly alleviated through policy support, economic development and infrastructure construction from 2014 to 2021. However, further policy interventions and resource inputs are still needed to achieve comprehensive poverty alleviation and balanced regional development. In the future, poverty alleviation work should pay more attention to targeted measures, especially for remote mountainous areas and groups with special difficulties, strengthen infrastructure construction, promote diversified industrial development, and improve the coverage of public services such as education and medical care, so as to ensure that poor areas can achieve sustainable development. At the same time, we should strengthen the consolidation of poverty alleviation achievements, prevent the occurrence of poverty return, and ensure the long-term effect of poverty alleviation work.

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6. Analysis of risk factors for returning to poverty

Ankang city, as the core city of the contiguous extreme poverty area in Qinba Mountains, has a high relative poverty level from 2014 to 2021, and its risk of returning to poverty is multi-dimensional and complex. This study will select Ankang City as the research object, based on the existing literature, referring, take poverty vulnerability as the cutting point, and make weight analysis on the influencing factors of returning to poverty in Ankang City based on the entropy weight method, and construct the risk evaluation index system of returning to poverty in Shaanxi Province from the four categories of natural risk, population risk, social risk and social capital. The results of weight calculation are shown in the following table 6.

Table 6: The index system of multi-dimensional poverty-return analysis and evaluation in Shaanxi province

Layer of object	first-level index	Second-level index	Entropy weight method
Risk of returning to poverty	Social capital	Number of beds in hospitals and health centers	17.60%
		Number of ordinary middle school students	16.80%
		Total power of agricultural machinery	14.50%
	Risk of population	Number of registered population	15.90%
	Risk to society	Rural per capita disposable income	12.80%
		Added value of primary industry	12.20%
	Risk of nature	Mean altitude above sea level	10.20%

The weight of medical resources is the highest (17.60%), reflecting the low coverage rate of primary medical facilities in Ankang City and the risk of residents returning to poverty due to illness (Zheng Ruiqiang and Cao Guoqing, 2016)[8]. The transportation in Qinba Mountain area is inconvenient, the shortage of medical resources in remote areas is prominent, and the proportion of family medical expenditure is high, which easily leads to the accumulation of economic vulnerability. The lag of education level limits sustainable development, and the weight of the number of ordinary middle school students is (16.80%), indicating that the allocation of educational resources and the quality of education play a large role in the risk of returning to poverty. The survey shows that the high teacher turnover rate in rural areas of Ankang City, the weak vocational education system, and the limited improvement of labor skills weaken the long-term development ability of the population out of poverty (Fan Hesheng,2018)[9]; Population outflow and aging restrict economic vitality, and the weight of the registered population is (15.90%), indicating the risk of population structure imbalance. The outflow of young and middle-aged labor force in Ankang City is serious, and the aging of the left-behind population is aggravated, which leads to the lack of impetus for local industrial development and the obstruction of agricultural modernization. The high weight of the total power of agricultural machinery (14.50%) and the added value of the primary industry (12.20%) highlights the low efficiency of agricultural production. The fragmentation of cultivated land in Ankang City is significant, and the penetration rate of agricultural machinery is lower than the average level of the whole province, which restricts the large-scale operation and affects the stability of farmers' income. Interaction between income level and geographical conditions; Although the weight of rural residents' per capita disposable income (12.80%) and average altitude (10.20%) is low, geographical conditions indirectly restrict income growth through infrastructure costs. The transportation network construction in high-altitude areas lags behind, and the cost of foreign transportation of characteristic agricultural products is high, which weakens the market competitiveness.

7. Conclusions and suggestions

Taking Shaanxi Province as the research object, this paper analyzes the alleviation effect of digital inclusive finance on relative poverty and its spatiotemporal evolution characteristics by constructing the county relative poverty index and combining the panel data from 2014 to 2021, and analyzes the key influencing factors of the risk of returning to poverty by focusing on Ankang City. The results show that digital inclusive finance significantly alleviates relative poverty, and the regression coefficient of its development index (DIF) on relative poverty level is negative and significant, indicating that it improves financial inclusion through two dimensions of coverage breadth (DIF1) and use depth (DIF2), and enhances the income and economic participation ability of rural residents. Regional heterogeneity analysis shows that the poverty reduction effect of digital inclusive finance is

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significantly different at different administrative levels: the poverty reduction effect is more significant at the district and county levels with low economic development level; However, in the more economically developed municipal areas, relative poverty may be aggravated because the service objects are concentrated in the middle and high income groups. From the perspective of spatial and temporal evolution, the relative poverty index of Shaanxi Province decreased as a whole from 2014 to 2021, and the areas with high poverty incidence gradually shrank from the remote mountainous areas in northern and southern Shaanxi to the surrounding areas of the city. In addition, the risk of returning to poverty is multi-dimensional and complex, and the lack of medical resources and lagging education level are the core constraints. Population outflow and aging, low level of agricultural mechanization and geographical constraints further aggravates economic vulnerability, and the fragmentation of cultivated land and insufficient penetration rate of agricultural machinery lead to low efficiency of agricultural production, which affects the stability of farmers' income. The study also shows that the effect of single economic intervention is limited, and digital inclusive finance needs to be coordinated with multi-dimensional policies such as education, medical care and population structure optimization to achieve sustainable poverty reduction. Accordingly, this paper puts forward the following suggestions:

1) Deepen the development of digital inclusive finance and optimize regional differentiation strategies. We will strengthen financial inclusion at the district and county level, increase investment in digital financial infrastructure, and expand the coverage of mobile payment and Internet credit for the district and county level (especially Qinba Mountain District). Developing financial products suitable for low-income groups, such as microcredit, agricultural insurance and low-threshold financial management tools, to reduce the cost of using financial services; We will correct regional service deviations at the municipal level and guide financial institutions to tilt resources to low-income groups through policies. We will promote the linkage of digital finance with social security and medical systems, develop "medical installment payment" and "education loan" products, and reduce the burden of large expenditures by residents.

2) Promote the equalization of public services and solve the bottleneck of medical care and education. We will build a grassroots medical protection network, and give priority to the construction of township health centers and village clinics in high-risk areas such as Ankang City, equipped with necessary medical equipment and remote diagnosis and treatment systems. Promote the "family doctor contract service", and realize chronic disease management and health monitoring through digital platforms. We will improve the medical insurance system for serious diseases, explore a "government + commercial insurance" sharing model, cover rare diseases and high treatment costs in reimbursement, and reduce the proportion of family medical expenditures. We will consolidate the long-term mechanism for poverty alleviation through education, improve the treatment of rural teachers, implement the "housing project for rural teachers," and reduce the brain drain through housing subsidies and preferential policies for promotion of professional titles. We will strengthen the connection between vocational education and industrial demand, set up "cloud classes" relying on digital platforms, and provide farmers with training in e-commerce operation, agricultural machinery operation and other skills to enhance the competitiveness of the labor market[11].

3) Promote industrial upgrading and population structure optimization to stimulate endogenous driving forces. Cultivate characteristic industries and employment opportunities, develop green agriculture and rural tourism in southern Shaanxi by combining ecological advantages, build brands such as "Se-rich agricultural products" and "Qinling Ecological Tour", and expand sales channels through e-commerce platforms. In the Northern Shaanxi energy base, we will promote industrial diversification and transformation, develop new energy and high-end manufacturing, attract young and middle-aged labor for local employment, and alleviate the problem of population outflow. To cope with the aging and hollow-out of the population, "care centers for the left-behind elderly" should be established, community resources should be integrated to provide day care and medical services, and light physical employment jobs suitable for the elderly (such as handiccrafts production) should be developed to enhance their ability to participate in the economy. The "Returnee Entrepreneurship Support Program" has been implemented to provide returnees with start-up subsidies, tax breaks and technical guidance, and encourage them to participate in local industrial development.

4) Improve monitoring and early warning mechanisms to consolidate achievements in poverty alleviation. A dynamic assessment system for the risk of returning to poverty has been established. Based on the index system of entropy weight method, a real-time monitoring platform covering medical care, education, population, agriculture and other dimensions has been established to implement three-level "red, yellow and blue" early warning for high-risk families and timely intervene

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in the potential problem of returning to poverty. We will regularly carry out the "review of poverty alleviation results" and verify the implementation of policies through third-party evaluation agencies to ensure accurate allocation of resources. We will strengthen policy coordination and long-term mechanisms, set up a provincial-level leading group for relative poverty control, coordinate resources from finance, education, health, agriculture and other departments, and avoid policy fragmentation. We will deeply integrate digital inclusive finance, industrial poverty alleviation and rural revitalization strategies, explore a linkage model of "finance + industry + science and technology", and form a sustainable path to poverty reduction.

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