

Research on the Development Status of Inclusive Finance in 26 Counties of Zhejiang Mountainous Area

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Abstract

Analyzing the level, spatial-temporal evolution, and driving mechanisms of digital inclusive financial development in the mountainous regions of Zhejiang province is beneficial for the government and scholars to gain a clearer understanding of its development trends and evolving patterns. This article utilizes panel data from 26 counties in the mountainous regions of Zhejiang province from 2016 to 2021, and employs descriptive and spatial correlation statistical methods to analyze the inclusive financial development in the area. Empirical research indicates that among the 26 counties, five counties in Wenzhou have higher development levels, while Kaihua County, Qingtian County, and Changshan County have lower development levels. Among them, Yunhe County and Qingyuan County have developed most rapidly over the six years, rising from the 25th and 2nd rankings in 2016 to the 11th and 12th rankings in 2021, respectively. Furthermore, the study finds that the overall development level of the 26 counties in the mountainous regions of Zhejiang province is relatively balanced, and there is no significant spatial difference. The rapid development of Kecheng District and Liandu District did not bring about a positive radiation effect on the surrounding areas. This analysis of the current status of inclusive finance has important reference significance for relevant regulatory departments to supervise digital inclusive finance and promote high-quality development in the mountainous regions of Zhejiang province.

Keywords

Inclusive Finance; Spatial Statistics.

1. Introduction

As a vibrant area in China's economic development, the digital economy has been continuously integrating with other economic and social sectors, playing an important role in stimulating consumption, driving investment and innovation, and creating employment opportunities. In 2021, the Chinese government issued an opinion on consolidating and expanding the achievements of poverty alleviation and effectively connecting them with rural revitalization, which proposed to improve the linkage of financial services policies. It is evident that promoting inclusive financial development can play a significant role in promoting rural development. This not only accelerates the progress of rural construction by innovating rural financial products but also matches the new financial demands arising from the rural revitalization work, guiding the balanced and orderly advancement of the rural revitalization strategy. According to the Statistical Yearbook 2021, the economic and social development level of the mountainous areas in Zhejiang province is still lower than the provincial average. Whether it is to build a model for common prosperity demonstration areas for high-quality development or to strive to become a socialist modernization pilot city, the focus and difficulty lie in this aspect. Therefore, it is necessary to fully tap the functions and roles of the financial industry, especially inclusive finance, to find a balance between market-oriented and policy-oriented approaches, and to effectively support the development of rural revitalization and common prosperity.

2. Literature Review

2.1. Establishment of Inclusive Financial System

Sarma (2008) expanded the range of indicator variables based on Beck's research and proposed the concept of an inclusive financial index (IFI) for the first time. Zhai Shuai (2015) measured the development level of inclusive finance using an adjusted range method based on monetary deposit balances, deposit and loan situations, and the number of financial institution branches. Zhou Beibei (2019) constructed an evaluation system for the level of inclusive finance development using a combination of extreme value processing and coefficient of variation methods and proposed further directions for developing inclusive finance in different regions based on the indicator scores. Gao Shiran (2020) included financial service quality in the measurement dimensions when constructing a measurement system for inclusive finance in Guangdong Province, emphasizing the role of small and micro enterprises and the efficiency of agricultural loans. Guo Feng et al. (2020) combined foreign inclusive finance indices with China's actual situation in digital inclusive finance to construct a digital inclusive finance index system, namely the "Peking University Digital Inclusive Finance Index".

2.2. Spatial Characteristics of Inclusive Finance

In 2018, Wu Jinwang analyzed through the use of spatial panel models that the development level of digital inclusive finance in eastern regions is higher than that in western regions, and that digital inclusive finance has obvious spatial heterogeneity. Although there are regional differences in digital inclusive finance in China, whether in macro-level differences between the east and the west or the north and the south, or in micro-level differences between urban and rural areas, it can still narrow the economic gap between regions with its inclusiveness (Wang, 2019). Therefore, in order to fully utilize the real effect of digital inclusive finance, it is necessary to enhance its accessibility and reduce service barriers (Xingyan, 2016), and fully utilize the incentives of high mobility, high income, and low financing costs of digital inclusive finance (Yang Xianming, 2021; Cai Hongyu, 2021).

3. Data and Model Construction

3.1. Data and Variable Description

This article's data mainly comes from the "Peking University Digital Inclusive Finance Index" jointly released by Peking University Digital Finance Research Center and Ant Group from 2011 to 2021, as well as the "China Urban Statistical Yearbook," "China Regional Economic Statistical Yearbook," and "Zhejiang Statistical Yearbook." The digital inclusive finance index and related sub-dimensions (coverage, usage depth, and digital support services) and 33 specific indicators of each prefecture-level and county-level city in Zhejiang Province from 2016 to 2021 were selected as the main focus. The indicator system constructed to comprehensively describe digital inclusive finance not only includes banking services (mainly credit), but also payment, investment, insurance, money market funds, credit services, and other business formats, in order to more comprehensively depict the level of development of digital inclusive finance. In terms of the breadth of digital finance coverage, unlike the direct manifestation of traditional financial institutions reaching users through "the number of financial institution branches" and "the number of financial service personnel," under the internet-based digital finance model, since the internet is naturally not limited by geography, the extent to which digital finance service supply can ensure that users receive corresponding services is reflected in the number of electronic accounts.

3.2. Page Numbers

To analyze the spatial distribution characteristics and spatial clustering dynamics of digital inclusive finance development in Zhejiang Province more intuitively, this article calculates the global Moran I index and local Moran I index of digital inclusive finance in Zhejiang Province's county-level areas to analyze the global and local spatial autocorrelation levels of digital inclusive finance development. Considering that there were many missing values for digital inclusive finance in Zhejiang Province's county-level areas in the previous years, this article mainly analyzes the spatiotemporal evolution of digital inclusive finance in Zhejiang Province's county-level areas from 2016 to 2021 using a spatial analysis model.

$$I = \frac{n}{\sum_i^n \sum_j^n w_{ij}} \times \frac{\sum_i^n \sum_j^n w_{ij} (x_i - \bar{x})(x_j - \bar{x})}{\sum_i^n (x_i - \bar{x})^2} \tag{1}$$

In this formula, n represents the number of selected county-level units, x_i represents the level of digital inclusive finance development of the i-th county-level unit, and w_{ij} represents spatial weight. The value range of Moran's I is [-1, 1], and the calculation result can be verified using a random distribution or an approximate normal distribution. At a given significance level, if Moran's I is positive, it indicates positive correlation, which means that areas with high attribute values are clustered together, and areas with low attribute values are also clustered together.

4. Empirical Results Analysis

4.1. The Current Status of Inclusive Finance in 26 Counties of the Mountainous Areas in Zhejiang

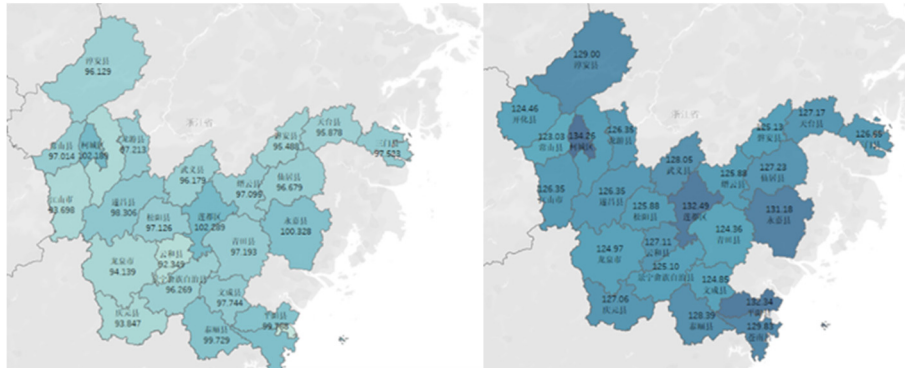


Figure 1. Digital inclusive finance index of 26 mountainous counties in Zhejiang Province in 2016 and 2021

This paper uses the proportion of urban population in five mountainous counties to examine the development of inclusive finance. The comprehensive index of digital inclusive finance development in 26 mountainous counties in Zhejiang Province from 2016 to 2021 is shown in Table 3, and the digital inclusive finance topography map of 26 mountainous counties in Zhejiang Province in 2016 and 2021 is further made, as shown in Figure 1. It can be seen from the comprehensive Table 3 and Figure 1 that the comprehensive evaluation index of digital inclusive finance development in 26 mountainous counties in Zhejiang Province showed a growing trend from 2016 to 2021, which is closely related to the changes in the economic environment of Zhejiang Province. On the one hand, the economic development of Zhejiang Province is committed to digitization and intelligence, making inclusive finance better serve the real economy. The reason why small and medium-sized enterprise loans are difficult is due to information asymmetry. The construction of the Zhejiang Province Financial Comprehensive Service Platform can effectively solve the problem of high information acquisition costs,

thereby preventing risks and easing credit constraints. This government department and financial institution docking model is conducive to improving the efficiency of financial services. On the other hand, Zhejiang Province's financial sector continues to introduce new technologies, give birth to new ideas, create new products, in order to meet the loan needs of small and micro enterprises, and effectively improve the depth of digital inclusive finance use.

4.2. Spatial Correlation Analysis

4.2.1. Spatial Autocorrelation

The calculation results of the Moran I index of the total digital inclusive finance index in Zhejiang province from 2014 to 2020 are shown in Table 4. It can be seen that the values of the Moran I index of the total digital inclusive finance index in Zhejiang province from 2014 to 2020 are mostly negative, ranging from -0.16 to 0.001, indicating weak overall spatial correlation. Moreover, the p-values are all less than 0.01, which did not pass the significance test at the 1% level, indicating that the development of county-level digital inclusive finance in Zhejiang Province is randomly distributed in space and there is no significant spatial clustering.

Table 1. The spatial autocorrelation index of the total digital inclusive finance index from 2016 to 2021

Year	Mran I value	P value	Z value
2016	0.0089	0.7203	0.3581
2017	-0.1376	0.4167	-0.8121
2018	-0.0506	0.9364	-0.0797
2019	-0.1625	0.3238	-0.9868
2020	-0.0534	0.9205	-0.0998
2021	-0.1592	0.3771	-0.8833

4.2.2. Local Spatial Correlation

This article further analyzes the local Moran I index of digital inclusive finance in Zhejiang Province. As shown in Figure 2, the difference in the development of inclusive finance in the 26 mountainous counties of Zhejiang Province is not significant. In 2016, there was a "high-low" phenomenon between Chun'an County and Kecheng District, but after 6 years, only Chun'an County showed a "high-low" phenomenon, indicating that Kecheng District has a certain radiating effect, from a significantly higher level of inclusive finance development than surrounding areas in the early stage to no significant difference in the end. Suichang County was in the "low-low" category in 2016, indicating that in the past six years, the development of inclusive finance in the surrounding counties of Suichang has been very effective. From the curve that was significantly lower than the surrounding areas in 2016 to the convergence in 2021, it shows the joint development between counties.

5. Conclusion

This article analyzes and measures the development level of digital inclusive finance in Zhejiang Province based on relevant data such as the coverage breadth, depth of use, and digital support services of digital inclusive finance in various cities in Zhejiang Province from 2011 to 2020 in the "Peking University Digital Inclusive Finance Index". The spatial distribution characteristics, spatial pattern evolution, and driving mechanisms of digital inclusive finance development in Zhejiang Province are also analyzed. The study shows that the overall development trend of digital inclusive finance in the 26 counties of Zhejiang's mountainous areas is on the rise, and the development level of digital inclusive finance in each county is constantly improving. Through spatial correlation analysis, it is found that the development trends and levels of the

26 counties in the mountainous areas are very similar. This feature shows that the problems encountered in the development of inclusive finance in Zhejiang's mountainous areas are consistent, and the development among counties has linkage. Once the development of a county is better than other counties, it will have a radiation effect on surrounding counties, and the gap between counties is constantly narrowing. By making good use of this feature, it will not only help the development of inclusive finance in Zhejiang but also facilitate the achievement of common prosperity in Zhejiang in the future.

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