

# Research on the Effect of Digital Inclusive Financial Technology on Reducing Costs for Small and Micro Enterprises

## -- Taking the Yangtze River Delta Region as an Example

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### Abstract

**This article focuses on small and micro enterprises in the Yangtze River Delta region and analyzes the cost reduction effect of digital inclusive finance technology on small and micro enterprises. The research results show that the application of digital inclusive finance technology can significantly reduce the financing costs of small and micro enterprises. Based on the research results, this article proposes suggestions to improve the application level of digital inclusive financial technology, including strengthening the construction of digital infrastructure, implementing the "No.1 Project" of the digital economy, and promoting the digital intelligent transformation of small and micro enterprises. The research results of this article provide important theoretical and practical guidance for improving the efficiency of small and micro enterprises in obtaining financing and reducing financing costs, and provide valuable reference for the promotion and application of digital inclusive finance technology.**

### Keywords

**Digital Inclusive Finance; Small and Micro Enterprises; Financing Cost.**

## 1. Introduction

Small and micro enterprises are the "capillaries" of the national economy, creating economic output for the country while also creating a large number of employment opportunities for society. With the development of the economy and increasingly fierce market competition, small and micro enterprises are facing increasing competitive pressure in the market. As an important component of the national economy, the survival and development of small and micro enterprises are related to the economic stability and sustainable development of a country. However, due to issues such as small scale, limited funding sources, and information asymmetry, small and micro enterprises often find it difficult to obtain high-quality financing services. For a long time, the difficulty, high cost, and slow financing of small and micro enterprises have been important issues that have troubled their development. In recent years, the epidemic has caused many small and micro enterprises to face operational difficulties. Small and micro enterprises have relatively weak risk resistance capabilities and face enormous pressure in financing and enterprise survival and development. In the post pandemic era, how to reduce the financing costs of small and micro enterprises, enhance their financing effectiveness, and meet their funding needs is not only a requirement for the healthy

development of small and micro enterprises, but also a requirement for the smooth operation of the national economy and the expansion of employment.

In recent years, with the rapid development of digital technology, digital inclusive financial technology has emerged. Digital inclusive finance technology is supported by technologies such as the Internet, the Internet of Things, big data, and artificial intelligence. Through innovative forms and methods of financial services, it provides small and micro enterprises with full lifecycle financial services including financing, payment, settlement, and wealth management services, meeting their demand for financial services, enabling them to obtain more financing opportunities while reducing financing costs. It is conducive to improving the production efficiency and development scale of small and micro enterprises. Therefore, we are embarking on studying how digital inclusive finance, using digital technology, provides financing tools for small and micro enterprises and promotes their innovative, healthy, and stable development.

## 2. Literature Review

This article is dedicated to studying the impact of the development of digital inclusive finance on the financing costs of small and micro enterprises. The relevant literature mainly involves the following two aspects:

On the one hand, it is about the difficulty of financing costs for small and micro enterprises. Firstly, most small and medium-sized enterprises are at the end of the industrial chain and have weak resistance to external shocks, which increases the financing risk premium for small and medium-sized enterprises (Wang Yiming, 2021) [1]. Secondly, compared to large enterprises, the financial information of small and micro enterprises is not standardized and standardized enough, and the publicly disclosed financial information is limited. Banks find it difficult to accurately evaluate the credit of small and micro enterprises, and information asymmetry also reduces the availability of financing for small and micro enterprises (Ji Chuanfeng, 2020) [2]. At the same time, Cheng Bei (2023) [3] believes that the difficulty and high cost of financing for small and medium-sized enterprises have long received widespread attention from all walks of life, and due to the limitations of traditional financial models requiring collateral and heavy guarantees, as well as the reality of asymmetric information between banks and enterprises, the financing difficulties of small and medium-sized enterprises have not been fundamentally solved. In addition, Deng Qinwen (2022) [4] believes that the financing channels for small and micro enterprises are narrow, and bank loans are still the main way for small and micro enterprises in China to seek external financing.

On the other hand, it is about digital inclusive financial technology. Digital finance is a financial model in which traditional financial departments and fintech enterprises use digital technology to provide financial services. It is a new situation, new technology, and new model manifested on the basis of traditional finance. With the deep integration of information technology and financial business, financial technology has become a new way to serve the real economy and deepen the development of inclusive finance, continuously empowering the digital transformation and upgrading of finance, as well as preventing and resolving financial risks (Tai Xuan et al., 2023) [5]. Digital inclusive finance utilizes technology to achieve the essence of inclusive finance, utilizing skills such as big data and cloud computing to accurately acquire customers and provide services, and providing financing services for the development of small and micro enterprises (Ding Fanzhi, 2021) [6]. After the release of the G20 Advanced Principles of Digital Inclusive Finance, digital finance has become a globally recognized new model of inclusive finance, an important way to improve the innovative financing difficulties of small and medium-sized enterprises, and a driving force for small and medium-sized enterprise innovation activities to obtain sustained investment (Gu Fuzhen, 2022) [7].

With the penetration of digital technology and the promotion of inclusive finance, digital inclusive finance has expanded the coverage and depth of financial services, which can effectively solve the financing problems of small and micro enterprises. There are already literature reports (Taiwan Xuan et al., 2023) that utilize technologies such as big data, artificial intelligence, and mobile internet to adopt a "platform+scenario" construction model to serve enterprise financing, achieving significant results in expanding financing channels for small and micro enterprises, improving service quality and efficiency, and improving risk sharing. Under the guidance of the National Development and Reform Commission and the China Banking and Insurance Regulatory Commission, the National Public Credit Information Center actively promotes the construction of a national integrated financing credit service platform network and the sharing and application of credit information, achieving new positive results (Men Liqun, 2022) [8]. Through the technology of "blockchain+big data", government procurement contract data, contract financing information, and centralized treasury payment data are linked up, achieving full process closure and tracking management of information. (Li Yanzhi and Yang Xiaowei, 2022) [9]. Lin Chenyang (2022) [10] proposed suggestions for expanding financial support for enterprise financing: to strengthen financial expenditures for supporting small and micro enterprises, implement various preferential policies, promote the construction of a guarantee system for small and micro enterprises, and at the same time, enterprises should also improve financial management and strengthen credit concepts.

### **3. Theoretical Analysis**

#### **3.1. Basic Concepts and Application Characteristics of Digital Inclusive Financial Technology**

Digital inclusive finance is a new financial model that achieves inclusive, fair, and progressive financial services. Its basic concept is to use financial technology to reach more user groups, narrow the wealth gap, improve the quality of financial services, and help develop a more dynamic financial market. Digital inclusive finance reduces fixed costs through digital means. At the same time, the marginal cost of customer acquisition is reduced, reducing the cost of traditional financial institutions from all aspects. Reduce promotion costs and risks. Improve the sustainability of internet finance at a lower cost. Digital inclusive finance mainly achieves the inclusive development of financial services by establishing an efficient and convenient financial service system, mainly utilizing big data technology, cloud computing technology, etc., fully utilizing financial technology and technological means to efficiently, accurately, and low-cost obtain customer information in all aspects, and then evaluating through professional models to promote the inclusive development of financial services to more consumer groups, small and micro enterprises, and impoverished groups.

#### **3.2. Reasons for Difficulty in Reducing Costs for Small and Micro Enterprises**

Small and micro enterprises have extensive management, high production costs, high tax burden, difficult and expensive financing, high operating costs, weak core competitiveness, and serious lack of development potential. Overall, small and micro enterprises in the Yangtze River Delta region have financing needs, but the financing channels are narrow and the financing threshold is high. There are a large number and small scale of small and micro enterprises, and the traditional manual service methods of banks have high costs and poor input-output effects, making it difficult for bank services to sustain. Although strongly advocated by the government, existing commercial banks are still constrained by traditional business models and costs, making it difficult to provide financial services to small and micro enterprises on a large scale.

### 3.3. The Mechanism of Reducing Costs for Small and Micro Enterprises Through Digital Inclusive Financial Technology

Digital inclusive finance technology achieves online payment, settlement, loan and other functions of funds through automation and electronics, reducing transaction costs for enterprises. The application of digital inclusive financial technology has promoted innovation in financial business and achieved refined allocation of financial resources. Through technologies such as big data analysis and cloud computing, digital inclusive finance technology can more accurately identify the funding needs and loan capabilities of small and micro enterprises, providing diversified financial products and services for online lending, financial leasing, supply chain finance, etc., enabling small and micro enterprises to receive more accurate financial support. Digital inclusive finance utilizes internet technology, information communication, and network data platform technology to collect and process information more systematically and automatically, search for effective information, and reduce the financing costs of small and micro enterprises. Digital inclusive finance can promote the development of small and micro enterprises by providing unsecured or low interest loans. The development of small and micro enterprises receives more financial support, thereby better promoting the progress of the real economy, driving the local economy, and increasing the total social wealth.

## 4. Empirical Analysis

### 4.1. Data Source

The principle of assigning weights to indicators is to use information theory to maximize the retention of effective information. The coefficient of variation method and entropy weight method has the characteristics of relatively simple and objective operation. This article uses the entropy weight method to determine the weight, and uses the calculation results of the coefficient of variation method as a reference. The data for measuring inclusive financial indicators mainly comes from the "Regional Financial Operation Report" released by the People's Bank of China, as well as the statistics of small credit companies, statistical yearbooks of various provinces, and the "China Statistical Yearbook" released by the People's Bank of China.

### 4.2. Determination of Weights for Digital Inclusive Finance

According to the weight calculation of inclusive finance index, the scores of inclusive finance in the Yangtze River Delta region are shown in Table 1.

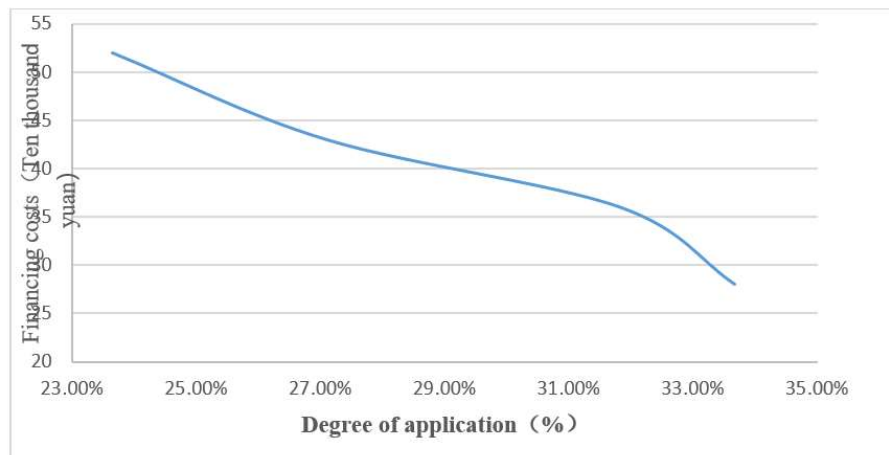
**Table 1.** Measurement Results of the Digital Inclusive Finance Index (IFI)

Region	2009	2010	2013	2017
Shanghai	0.643	0.761	0.892	0.901
Anhui	0.051	0.054	0.067	0.080
Jiangsu	0.117	0.125	0.150	0.183
Zhejiang	0.135	0.144	0.164	0.183

From the table, it can be seen that Shanghai has the best situation in the construction of inclusive finance, followed by Zhejiang, Jiangsu, and Anhui provinces. Shanghai is located in the eastern coastal region of China, with a relatively high level of economic development and a large scale of small and medium-sized enterprises. Therefore, the overall level of inclusive financial development is higher than the other three regions.

### 4.3. Correlation Analysis

Taking the catering service industry in the Yangtze River Delta region as an example, a correlation analysis was conducted between its financing cost and the mean value of the digital inclusive finance index in the region. The results are shown in Figure 1.



**Figure 1.** Correlation between the financing cost of small and micro enterprises and the degree of application of digital inclusive finance technology

From the figure, it can be seen that digital inclusive finance technology has a significant effect on reducing the financing costs of small and micro enterprises in the catering service industry, indicating that digital inclusive finance can reduce the financing costs of small and micro enterprises. Digital inclusive finance technology provides more flexible financing products and services for small and micro enterprises, making it easier for them to obtain loans and financing.

## 5. Conclusions and Suggestions

### 5.1. Conclusions

This article conducts research on the reduction of financing costs for small and micro enterprises using digital inclusive finance technology through theoretical and empirical analysis. The following conclusions are drawn:

(1) Overall, the application of digital inclusive finance technology can significantly reduce the financing costs of small and micro enterprises. The model results show that an increase in the application level of digital inclusive finance technology can significantly reduce the financing costs of small and micro enterprises. The application of digital inclusive finance technology enables small and micro enterprises to more conveniently carry out lending, payment and other related financial activities, while reducing the operating costs of financial institutions, thereby promoting a decrease in the financing costs of small and micro enterprises.

(2) Factors such as enterprise size, industry, and region can also affect the financing costs of small and micro enterprises. Our research has found that factors such as the size, industry, and region of small and micro enterprises also have an impact on their financing costs. In general, smaller enterprises, small and micro enterprises in high-risk industries, and enterprises located in underdeveloped areas have relatively high financing difficulties and costs. When the application of digital inclusive finance technology increases and is fully utilized, the size of the enterprise has a negative impact on financing costs, partly because small and micro enterprises with smaller financing needs find it difficult to obtain lower financing rates.

(3) The impact of different types of digital inclusive financial technology applications on financing costs varies. Digital inclusive finance technology includes various types such as digital banking, mobile payment, blockchain, etc. The costs and benefits of implementing these technologies also vary. In the application of digital inclusive finance technology, it is necessary to evaluate and compare the costs and benefits of different technologies.

## 5.2. Suggestions

Based on the research findings, this article proposes the following suggestions:

(1) The government should vigorously promote the construction of financial infrastructure. Expand the scope and application of digital inclusive financial technology. We should strengthen policy support for digital inclusive financial technology, improve credit policies and loan interest rate reductions for financial institutions and technology enterprises, encourage them to carry out digital inclusive financial business, actively explore new models of financial services, strengthen their technological research and application, promote the development of digital inclusive financial technology, and provide more convenient, efficient, and low-cost financing services for small and micro enterprises. Improve the efficiency of financial services in terms of supply, further reduce the financing costs of small and micro enterprises, and enhance the financing effect of small and micro enterprises. We should strengthen cooperation with regulatory authorities, strengthen information sharing, jointly regulate and crack down on illegal and irregular behaviors, and ensure the legal, safe and reliable application of digital inclusive financial technology in the field of small and micro enterprises. At the same time, relevant policies in the industrial field should also be followed up, encouraging the deep integration of digital inclusive financial technology with the real economy, promoting the development of small and micro enterprises and economic stability.

(2) Breaking bank monopolies and encouraging the establishment of small and medium-sized online financial platforms. Due to factors such as traditional bank risk control and capital costs, small and micro enterprises often find it difficult to obtain loans or incur high financing costs. Establishing a small and medium-sized online financial platform can provide more favorable financing services for small and micro enterprises through its capital allocation and risk control capabilities, thereby strengthening the ability of digital inclusive financial technology to reduce financing costs for small and micro enterprises. The application of innovative financing products, new financial products and models can reduce financing costs.

(3) Small and micro enterprises actively promote digital and intelligent transformation, and actively connect with digital inclusive finance. Small and micro enterprises should closely focus on the direction of reform and development, seize opportunities, quickly improve their business capabilities in a fiercely competitive market environment, continuously enhance their own strength, and strive for more opportunities to obtain credit financing. One is to consolidate the foundation of business management, promote corporate governance, improve governance structure, and establish a modern corporate management system. The second is to clarify the development strategy and ensure the long-term development of the enterprise. The third is to fully utilize e-commerce platforms and enrich marketing methods. The fourth is to adapt to the trend of the times and actively research and innovate. The fifth is to strengthen the introduction and cultivation of talents, and attract high-end and cutting-edge talents. Actively improve the information system of enterprises, promote digital and intelligent transformation, actively connect with various platforms of digital inclusive finance, eliminate data barriers, and enable enterprises to maximize the value of their data, in order to enjoy the dividends brought by digital inclusive finance earlier and more.

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