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Digital Finance Alleviates the Financing Problems Faced by Small and Medium-Sized Enterprises

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Abstract. The funding problem is a big challenge in the development of Small and Medium-sized Enterprises (SMEs), although SMEs play an important role in economic development. In the rapidly developing digital finance era, how to leverage digital finance to solve the financing issues of SME has become an important research topic. However, in terms of existing research, mainly studies on the positive side of digital finance in the context of financing of SMEs are found. This paper uses literature review method, analyzes the current situation of digital finance and SME financing, comprehensively discusses the two-way influence relationship between digital finance and SME financing, not only provides opportunity but also the potential risk for SMEs to solve the financing problem, discusses the countermeasures from the three perspectives of SMEs, financial institutions and government, to jointly improve the financing ability of SMEs, help SMEs solve the financing problem, provide reference for SMEs to improve financing ability.

Keywords: Digital finance, Enterprise financing, Small and medium-sized enterprises

1. Introduction

In recent years, with continuous progress in science and technology, many new forms of digital technology have developed, such as artificial intelligence, big data, cloud computing, blockchain, etc., and these are being integrated into the traditional financial industry. The financial industry is expanding and also changing with the digital age. Small and medium-sized enterprises account for some of the employment, innovation, income, and market distribution. Today, SMEs' financing needs are increasing on a daily basis. However, financing problems that affect the development of small and medium enterprises include a single financing channel, asymmetric information, high financing cost, and weak anti-risk ability due to financing constraints. Therefore, a thorough study to explore how digital finance can contribute to alleviating the problem of financing for SMEs is highly imperative.

At this time, there is a rich research base on the related fields, such as "digital Finance alleviates the financing problems of small and medium enterprises," which clearly shows the positive effect of digital Finance on small and medium enterprises' financing. Some scholars have found that digital inclusive finance can help to balance the market structure and high-quality development of small and medium-sized enterprises (SMEs) by expanding the coverage of digital inclusive finance [1]. Some scholars have built financial indicators and then applied the Panel Fixed Effect Model to

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conduct an empirical study to determine whether digital finance can improve the financing efficiency of small and medium-sized enterprises (SMEs) and reduce the bankruptcy risk of SMEs [2]. Although many studies have shown that the application of digital finance can reduce the financing constraints for small and medium-sized enterprises (SMEs), most of this research has only explored the positive effect of digital finance on easing these constraints, and the risks and challenges that may arise from using digital finance for financing are not well-documented. A certain amount of limited research has been conducted on this part.

First, this paper introduces the concept of small and medium-sized enterprises and digital finance; next, it analyzes the reasons for financing difficulties faced by small and medium-sized enterprises, summarizes the mechanism of digital finance to help address the financing problems of small and medium-sized enterprises, adds a discussion on the risks and challenges of digital finance for small and medium-sized enterprises, and finally, based on all the dimensions of small and medium-sized enterprises, financial institutions and the government take measures to help small and medium-sized enterprises strengthen their financing capabilities. To ensure that digital finance can achieve a dual positive and negative effect, and for all three parties to cooperate: small and medium-sized enterprises (SMEs), financial institutions, and the government. This paper can offer some ideas and references for small and medium-sized enterprises in addressing financing difficulties and continuously innovating and developing.

2. Analysis of the current situation of SME financing problems in the era of digital finance

The SMEs are the key contributors to the economy, scientific and technological innovations, and help balance the market. However, the problems of funding for SMEs are more crucial than those for the big firms [3]. Information asymmetry is a major issue in small and medium enterprises' financing problems on one side due to non-standardization of financial statements, deficiency in information disclosure, longer credit evaluation cycle, non-ideal credit evaluation result, and on the other side due to the high cost of financial institutions providing finance for small and medium enterprises [1]. Secondly, SME financing can only be done with the traditional financing method, which is equity financing and bond financing; the financing channel is single, and the human, material, and time required for the project are expensive. In addition, the small and medium-sized enterprises are small-scale operations, lack sufficient fund reserves, do not have a proper internal finance management system, have poor credit conditions, and so on; therefore, financial institutions may offer a higher interest rate for small and medium-sized enterprises and thus increase the financing cost of these enterprises. Thirdly, SMEs are small-scale enterprises with limited funds. They are affected by changes in the market economy and have a lower ability to bear financing risks compared with large enterprises.

But with digital finance also come digital opportunities for SMEs to tackle digital problems. Digital finance is a new model that is technology-driven, data-driven, and oriented towards the overall digitalisation of financial services. It has been deeply integrated into the traditional financial industry, based on information technology, artificial intelligence, big data and other technologies, it can provide more efficient financial services to break the "straightjacket" of traditional finance, promote the sustainable development of small and medium-sized enterprises, provide strong impulse for the development of small and medium enterprises, narrow social-economic gap, maintain the stability of the market.

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3. What is the solution of financing problem of SMEs by applying digital finance

The main objective of digital finance is to promote SME financing, with the help of reducing information asymmetry, expanding the financing channels, lowering the financing costs, and improving the risk control mechanisms in financing.

Digital finance has not only changed the financing threshold of small enterprises, but also surpassed the traditional financial statements and other one-sided methods to evaluate SMEs' credit. For example, digit-ai can optimize SMEs, narrow down the information gap between SMEs and financial institutions, draw a more vivid and precise "enterprise portrait" of SMEs for the financial institutions, and lastly, urge the institutions to make loans to SMEs [4]. The information of the SMEs can be analysed in real time, transparently displayed, and it can convince the financial institutions to enhance the financial support of SMEs, reduce the burdens of SMEs through the use of Fintech big data [5].

With digital finance, the financing of SMEs is not only restricted to traditional financing like equity financing and bond financing. Different sources are raised to provide more easily and efficiently funding for servicing the small and medium-scale enterprises [5]. Take advantage of digital currency financing: Equity crowdfunding can help SMEs raise funds; Lower the amount of equity fundraising; Simplify the financing process, improve financing efficiency of enterprises; Avoid bank financing tedious procedures; Improve financing income of SMEs; Bond financing is upgraded and innovated, and digital currency becomes a new financing channel. This digital enterprise pass will be able to expand the financing area, raise funds from all over the world, and increase the financing efficiency [6]. Supply chain finance is the supply of financial services, which is based on the upstream and downstream enterprises' relationship of the trade in the real scene, reducing the financing risks and satisfying the financing needs of small and medium enterprises in the real scene [7].

The enterprise financing costs mainly include information processing costs and operating transaction costs. The machine learning algorithm can be used in the past, and can efficiently collect and sort out the enormous data, improve the speed and efficiency of the financial institutions in the audit of small and medium enterprises' credit and business status, reduce human resources, time, and economic cost, and reduce the cost of information processing [5]. Small and medium-sized enterprises can reduce the tedious process and physical space of manual operations through digital finance to improve the efficiency of online services, loan application and approval, payment handling, etc. They can choose from multiple transaction models and reduce both operating and transaction costs [6]; thus, the reduced funds will be available for other purposes by small and medium-sized enterprises, and their loan interest rates will be lower.

In terms of the field of digital finance, big technology has a large credit system which can analyze loan source correctly and rapidly, reduce SME's loan risk, alleviate SME's financing constraints, reduce SME financing, and protect SMEs' property safety correctly [8]. With the current circumstances of small and medium-sized enterprises (SMEs), big data analysis technology can be used to identify potential financing risks in time, notify relevant departments promptly, and take appropriate counter-measures in a good cycle of "problem discovery - solution, etc." An AI system will continuously monitor the changes in the market in real time. Minimize the risk of financing for small and medium-sized enterprises at the financing stage, reduce financing risks, and thereby limit losses due to these risks.

In conclusion, digital finance has brought new ideas to SMEs to overcome financing problems. Through its broad coverage, efficiency, and convenience, it has helped SMEs to tackle the 'financing

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is difficult and expensive'challenge, and with the application of blockchain and other technologies, it has optimized the financing effectiveness through information transparency, financing cost reduction, and big data intelligent risk control.

4. The digital finance risks for SMEs are discussed

Digital finance is a wonderful channel to finance SMEs better, but it has significantly increased the SMEs' financing efficiency. But, digital finance will also present some threats and problems for the financing of small and medium enterprises (SMEs), including technical issues, leakage of data and privacy, lack of regulations, etc.

The financing technology threshold for SMEs is high in using digital financial technology, and technology innovation is costly. There are a lot of businesses that are okay with the way things are that aren't motivated, and their own digital level is low. Digital talents are not their focus for cultivation. Lack of support for digital technology and lack of ability to use digital technology for finance will result in much lower digital financing performance. In the modern era of digital technology, the technology has not been popularized yet, and on the other hand, there is also a digital divide in the society; if science and technology is made to popular on a large scale may create a technology monopoly, capture a lot of resources, which may lead to an increase in socio-economic gap, affect the interest of small and medium enterprises and affect the balance of the market. Therefore, a good understanding of how to build digital technology capability in the digital era is important for SMEs to be able to solve the financing problem.

While the machine learning algorithm can identify the condition of the platform and provide measures to resolve the issue, ensuring the safety and stability of the platform [9]. But the use of digital technology still poses risks. For example, it can be a network attack on the users, users can give out private information willingly, they can have their property stolen/damaged by enterprises, or even by malicious ID theft with the threat to the security of financing [10]. In addition, the security and stability of the model algorithm on which big data analysis is based can't be guaranteed. After the data error has been made, it will impact financial institutions' assessment of SMEs and even worsen SMEs' financing issues. However, model design is at the discretion of the model designer, and "algorithm bias" might lead to an incorrect assessment of SMEs or worsen their situation with the financial institutions. Also important is how to use digital technology effectively and safely to alleviate the financing of SMEs.

Digital technology is being developed very rapidly, and in some areas, there are no regulatory mechanisms, making it difficult to maintain a healthy financial environment. In a traditional regulatory legal system, the focus of the system is human, and the authority and responsibility are diffused. But it is hard to assess the legality of the behavior and regulate digital finance with AI and other technologies that can automatically make decisions. There is no longer any old regulatory system. Now, with the development of digital finance, it has been extended to all aspects of the bank (such as loans, insurance, etc.)and extended to cross-domain cooperative development. The original regulatory authorities are in different areas and are independent of each other. The popularity of digital finance is lagging behind the regulatory capacity. Thus, in the steady development of digital finance, it is necessary to have a perfect regulatory mechanism and stipulate the use of technology limits, not only to maintain the stability of the market, but also to protect the interests of small and medium-sized enterprises. In addition, enterprises need to focus on the standardisation and legalisation of their own behavior, and create a healthy financing environment through the application of digital technology in financing.

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5. What can be done – financing of SMEs

Without SME's' efforts, the efforts to enhance the financing efficiency of SMEs cannot be done. There are several topics that need to be covered, and a financial environment should be established that would be conducive to financing small and medium enterprises together. Small and medium-sized enterprises need to be encouraged to digitalise and upgrade enterprise credit; Financial institutions need to build a comprehensive digital finance platform and provide comprehensive cooperation; The government needs to improve the system of regulation and provide policy support.

SMEs need to fully understand the trend of digital development, strengthen their investment in digital construction, pay attention to digital talents cultivation, promote digital transformation and upgrading of enterprises, support the development of digital finance, enhance the capability of financing, and reduce the dependence on external funds. In doing so, it is necessary to enhance credibility, build a sound internal control mechanism, optimize the financial management system, form a good financing image, and improve the financing success rate.

Financial institutions need to optimize the process of delivering financing services, must actively adopt digital technology in the financial service process for SMEs, and need to utilize the digital technology to evaluate the credit of SMEs accurately [11]. Financial institutions should establish a financial platform based on Big Data, Cloud Computing, etc., overcome the "hard wall", realize multi-party cooperation with SMEs and government, etc., use digital technology to provide diversified financial products, flexibly meet the financing needs of various enterprises, meet the convenience of financing for small and medium-sized enterprises, and meet the real needs of enterprises.

Increase the amount of government funding for the construction of a digital financial network to reduce financing pressure and promote the all-around development of small and medium-sized enterprises. Policies promoting digital finance, reducing taxes for innovative enterprises, strengthening the digital transformation of small and medium-sized enterprises (SMEs), and improving the financing technical capacity of SMEs will be released [12]. Moreover, the government needs to enact laws and regulations on digital finances, close loopholes in the regulations, treat the behavior of enterprises, encourage the development of digital finances, and build a positive financing environment.

6. Conclusion

This paper uses the literature review (combining the existing literature) method, and the literature obtained shows that most of the literature is about the positive effect of digital Finance towards SMEs. This paper's authors believe that there is a two-way interaction between digital, as they believe the user can enter their own data and then analyse data presented to them.

The role of finance and SME financing is discussed, as well as the risks and challenges of digital finance for SMEs. For instance, the technical threshold of SME financing is lifted, the security of data privacy is not guaranteed, and there are legal gaps in the supervision. So, it is advisable for SMEs to actively implement the digital transformation, optimize credit and create good financing environment; for financial institutions, it is urgent to introduce the concept of digital finance into credit financing, improve the capability of credit financing and speed up the process of credit financing; For the government, it is urgent to speed up the establishment of relevant financial laws and regulations to support the development of digital finance. This paper has not been a full discussion on the risk of digital finance to SMEs, and additional studies may be conducted based on this.

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