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Abstract
With the accelerated integration of technology into the social economy, the digital transformation of enterprises has become an important force to promote the development of the digital economy. However, most enterprises have financing constraints, and how to solve the problem of funding sources has become the key to the success of digital transformation. This project intends to select the data of A-share listed companies from 2013 to 2022 for research, analyze how to use government subsidies for digital transformation, and provide reference and enlightenment for exploring government subsidy policies suitable for the digital transformation of enterprises: to comply with the development trend of , , improve digital infrastructure construction and market mechanisms, introduce differentiated innovation subsidy policies, ease corporate financing constraints, and encourage them to increase R&D investment. Empower your business to complete its digital transformation.

Keywords
Government Subsidies; Enterprise; Digital Transformation.

1. Introduction
With the rapid development of emerging information technologies such as artificial intelligence, big data, and cloud computing, digital technology has become a strong driving force for high-quality economic development. In recent years, the country has paid more, and more attention to the digital transformation of enterprises, not only the central government has successively issued policies for the development of the digital economy, the local level has continuously strengthened the strategic guidance of local digital development. Governments at all levels have vigorously promoted the deep integration of digital technology and the real economy to create new advantages in the digital economy. (Minghao Shen et al., 2022).

According to the White Paper on the Development of China's Digital Economy (2020), the proportion of digital transformation of Chinese enterprises is only about 25%. This is because: on the one hand, the company's own hematopoietic function is weak and the external blood transfusion mechanism is constrained; On the other hand, the digital transformation cycle is long, the risk is high, and the iteration of technology application and equipment update has derived high costs that enterprises cannot bear. Therefore, most enterprises are still in the wait-and-see or exploratory stage of digital transformation. At this time, the government needs to play its role as a "visible hand" and empower enterprises through active policies. Government subsidies are targeted and signal-transmitted, and are an important means to stimulate the vitality of enterprises, enhance enterprise confidence, and stimulate digital transformation.

In recent years, Chinese scholars have paid much attention to the hot spot of the impact of government subsidies on the digital transformation of enterprises, and some scholars have also conducted corresponding research. Government subsidies may alleviate these difficulties to some extent. Government innovation subsidies have a targeted and signaling effect, which can
directly compensate for the lack of innovation resources (Wang et al., 2017). By screening qualified enterprises with strong development potential, the government directly supplements their innovation resources, reduces the trial and error opportunities for enterprise digital technology innovation, shares the risks of enterprise digital technology innovation (Hongtao Shang and Dan Fang, 2021), and activates the vitality of enterprise digital transformation. The indirect signaling effect of government subsidies can alleviate the external financing constraints of enterprises (Yang et al., 2015) and motivate them to increase R&D investment, thereby promoting their digital transformation. Theoretically, enterprises subject to government innovation subsidies have the government’s credit endorsement to a certain extent (Li et al., 2019), which can reduce the cost of external screening, alleviate the problem of information asymmetry between enterprises and external stakeholders (Blind et al., 2017), and then relax the external financing constraints of enterprises.

In summary, there is a lack of research on the impact of government subsidies on the digital transformation behavior of enterprises, and most of the existing research on enterprise digital transformation is mainly a single influencing factor, and rarely considers the effect of enterprise resource endowment factors and government subsidy factors at the same time. However, the logical relationship, process transmission mechanism, and heterogeneity conditions between government subsidies, factor endowments, and digital transformation of enterprises are relatively rare, which also provides a certain research space for this paper.

2. Theoretical Analysis

How to accelerate the digital transformation of enterprises has become a hot topic of concern from all walks of life. However, from the reality of the situation, the vast majority of enterprises will face many difficulties in digital transformation, as follows: First, digital transformation requires a large amount of capital injection, such as transformation requires enterprises to deeply integrate with digitalization in many aspects, but this matching process is time-consuming and expensive. Second, digital transformation requires complete supporting technologies and complete digital infrastructure, which is a huge expense, so it is difficult for enterprises to have enough funds to support digital transformation. Third, due to the characteristics of long cycle, slow effect, and high risk of digital transformation, most enterprises not only have financing constraints, but also have relatively low risk-bearing capacity, resulting in their own low willingness to transform. Therefore, how to solve the problem of funding sources has become the key to the success of digital transformation of enterprises.

It is difficult for companies to raise enough capital internally to support digital transformation, so the ability to raise funds externally is critical to digital transformation. If the financial market system in which the enterprise is located is relatively perfect, then the enterprise can obtain relatively sufficient funds for digital transformation, but from the actual situation in China, the financial system is not efficient to support the real economy, structural problems are prominent, and the possibility of enterprises obtaining funds for digital transformation from the financial market is low. Therefore, the "visible hand" of the government is crucial to the digital transformation of enterprises. The funds invested by the government are targeted, professional and policy-oriented, which can well support and guide the digital transformation of enterprises. First, government subsidies can effectively ease the financing constraints of enterprises. Enterprises can use government subsidies to purchase the equipment and technology needed for digital transformation, while bringing in more technical talents that match digital transformation, which can help promote digital transformation. Second, government subsidies can enhance the "certification effect" and enable firms to obtain more external financing. Due to the characteristics of digital transformation, such as high risk, high investment and slow
results, external investors are on the side of information disadvantage, and at this time, government subsidies label enterprises recognized by the government, which helps reduce the risk expectations of external investors for enterprises, thereby improving the confidence of external investors in the digital transformation of enterprises, and ultimately attracting more external funds into the digital transformation of enterprises. Third, government subsidies can improve the risk-taking capacity of enterprises.

3. Policy: Government Subsidies are the Guarantee for Enterprises to Break through the Difficulties of Digital Transformation

At present, the digital transformation of Chinese enterprises is generally in the initial stage. According to the "2022 Digital Transformation Survey Report of China's Private Enterprises", the proportion of enterprises in the initial digital transformation stage and the stage of untransformed is as high as 76.97%, very few have entered the mature application stage. From the perspective of enterprises themselves, first, most enterprises lack the awareness of proactive transformation, corporate strategies have limitations, and insufficient understanding of the necessity and importance of digital transformation; Second, the shortage of funds and lack of financing channels makes enterprises unable to afford the cost of digital transformation; Third, enterprises lack digital talents and technology, which is also a key shortcoming that restricts the digital transformation of enterprises; Fourth, enterprises are not sensitive to the policies issued by the government to encourage digital transformation, and only 4.84% of the surveyed enterprises said that they have enjoyed policy dividends. It can be seen that the policy access mechanism for benefiting enterprises still needs to be further improved.

Finance is the foundation and important pillar of national governance, fiscal policy is an important means of government macro-control, fiscal policy is one of the effective driving forces to accelerate the digital transformation and upgrading of enterprises, and the positive role of fiscal function must be fully exerted. Reasonable government subsidies will bring positive effects to the digital transformation of enterprises, give play to the guiding role of government subsidies, increase investment in weak links in digital transformation, ensure that the flow of production factors such as capital meets the expected goals of policies, stimulate the enthusiasm of enterprises for digital transformation and R&D innovation, and help enterprises break through the difficulties and bottlenecks that restrict digital transformation. Government subsidies are policy-oriented and timely, which can bring stable cash flow to enterprises within a certain period of time, ease the financial constraints of enterprises in digital transformation, and attract other external enterprises to invest in them. Reduce transformation risks and encourage digital transformation. The policy demonstration effect of government subsidies will guide more production factors into the field of digital transformation. However, it is undeniable that government subsidies may reduce the autonomy of enterprise project selection and future development direction, thereby bringing certain negative effects to the digital transformation of enterprises.

4. Targeting: Government Subsidies Promote the Precise Supply of Digital Transformation of Enterprises

Under the new development pattern, how to promote the digital transformation of enterprises is a must-answer question to ensure high-quality economic development. Based on its mechanism, government subsidies target the difficult pain points in the digital transformation of enterprises, accurately target them, and accelerate the digital transformation of enterprises. Government subsidies can provide funds for enterprises, ensure stable operations, and lay a solid foundation for digital transformation. Government subsidies are conducive to enterprises
focusing on R&D and innovation, and government subsidies should build a long-term mechanism to drive the digital transformation of enterprises. It is found that the intensity of government subsidies with the main purpose of supporting enterprises' technological innovation has a positive relationship with the degree of digital transformation of enterprises, which can significantly drive the digital transformation of enterprises. To build a long-term mechanism to drive the digital transformation of enterprises, first, we should dynamically adjust the structure of fiscal expenditure, increase the proportion of fiscal science and technology expenditure, and set corresponding targets for the growth of fiscal science and technology expenditure. The second is to implement differentiated policies to improve the targeting of government subsidy expenditure and smooth the accessibility mechanism of policies that benefit enterprises. The third is to strengthen the whole budget process, improve the efficiency of subsidy expenditure, reduce the waste of resources and the inefficiency of their allocation. At the same time, focusing on science and technology education, government subsidies should strengthen support for higher education. High-quality talents have the characteristics of strong policy sensitivity, high digital technology literacy and strong awareness of digital management, and can provide intellectual support for the digital transformation of enterprises.

5. Research Conclusion and Recommendations

5.1. Research Conclusion

The digital transformation of enterprises is an important way to adapt to the development of the digital economy, improve the economic efficiency of enterprises, and transform business models and business models. However, due to the characteristics of digital transformation, such as long cycle, slow results, and high risks, most enterprises are often not willing to transform due to financing constraints and risk avoidance. Coupled with the prominent structural problems such as "attribute mismatch", "field mismatch" and "stage mismatch" in China's financial market, how to solve the problem of funding sources for digital transformation of enterprises has become the focus of attention from all walks of life. This paper uses the data of China's A-share listed companies from 2013 to 2022 as a sample to examine the impact of government subsidies on the digital transformation of enterprises. The study found that government subsidies can effectively promote the digital transformation of enterprises. Through the mechanism test, it is found that government subsidies can significantly reduce the sensitivity of enterprises to cash flow in digital transformation.

5.2. Policy Recommendations

The above research conclusions provide the following enlightenment for how government subsidies can drive the digital transformation of enterprises: First, consolidate the foundation of digital transformation and help enterprises enhance their core competitiveness. Where finance permits, relevant departments can increase support for the digital transformation of enterprises, provide sufficient financial guarantees for enterprises, and introduce digital transformation-oriented innovation subsidy policies to provide a solid guarantee for the digital transformation of enterprises. Second, build and improve the government’s mechanism to support the digital transformation of enterprises. Establish a support system for government subsidies for "precision drip irrigation", especially to increase support for enterprises with high short-term debt and enterprises with low financial development levels in their regions. At the same time, improve the tracking and efficiency mechanism of government subsidy funds, strengthen the tracking and evaluation of the use of digital transformation funds of enterprises, prevent possible rent-seeking behavior of enterprises, and improve the efficiency of the use of government subsidized funds. Third, strengthen the government’s guiding and exemplary role in the digital transformation of enterprises. The government should guide enterprises to seize
the opportunities of digital development, take advantage of the national policy dividends to encourage the digital transformation of enterprises, improve the "information transmission signal" of enterprise development advantages, maximize external financing, increase R&D investment and technological innovation, and deepen digital transformation. The government can provide a "beacon effect" for the digital transformation of enterprises by establishing industry benchmarks and building demonstration projects and demonstration parks for digital transformation, so that more enterprises can avoid detours in the process of digital transformation and enhance their confidence in digital transformation. Fourth, accelerate the development of the digital industry system and improve the supply quantity and quality of digital transformation elements of enterprises. It is recommended that the government and relevant departments increase support for the digital industry sector, strengthen cooperation with universities and scientific research institutions, build a sound digital talent training system and incentive mechanism, and provide sufficient intellectual support for the digital transformation of enterprises. Fifth, implement differentiated innovation subsidy policies and improve policy targeting to enhance the incentive effect of innovation subsidies on the digital transformation of enterprises. Local governments should formulate precise innovation subsidy policies based on their own resource endowments, give priority to supporting technology-intensive industries, alleviate external financing constraints, encourage them to increase investment in R&D, and help enterprises complete digital transformation and upgrading.

Acknowledgments

This work is supported by Anhui University of Finance and Economics Undergraduate Research and Innovation Fund, Project number: XSKY23200.

References


