

facing the development of Chinese MSMEs in the post-epidemic era and to analyze and explore appropriate countermeasures to promote the smooth operation of China's social economy and the healthy and rapid development of global economy and trade.

2. Literature review

At present, due to the long duration and wide impact of the COVID-19 pandemic, the relevant theoretical research results in domestic and foreign academia have been relatively abundant and enlightening.

Macroscopically, Zou Jing pointed out that in the post-epidemic era, China's foreign trade exports will face a more complex and volatile international trade environment and political risks in the global context [2]. Yang Yi found that the new pneumonia epidemic has severely affected the demand and consumption of most industries and significantly reduced the purchasing power of consumers [3]. Based on the attributes of public economic policies, Yixin Chang discussed the responses to public economic policies in the post-epidemic era from the perspectives of fiscal, monetary, industrial, labor and employment, and social security policies, respectively [4]. Zhao Dezhi and Li Haifeng pointed out that in the post-epidemic business environment, most MSMEs are facing the problems of difficult and expensive financing [5]. Jin Guofeng proposed to create a cooperative social environment for multiple actors and to build a two-way policy and market empowerment mechanism [6].

From the perspective of raising funds and financial credit, Cao Guangyuan and Zhao Wenju pointed out that how MSMEs can get out of the predicament in the current epidemic needs to be considered from three dimensions: enterprises themselves, financial institutions and government departments. In the process of policy formulation and implementation, the successful experience of typical cases at home and abroad should be combined and continuously adjusted according to the actual situation [7]. In the process of policy formulation and implementation, it should be adjusted according to the actual situation. Shao Kai and Han Junhui pointed out that the financial vulnerability of MSMEs is more obvious under the impact of the epidemic, and they need more financial support, but it is also more difficult to obtain financial support [8].

From the perspective of strategic planning and company management, in order to meet the needs of the era of highly competitive globalization, Rakesh D. Raut pointed out that companies should achieve cost reduction and efficiency through ICT innovations [9]. Ge Heping believes that MSMEs provide a larger space and market for the application and development of digital technology and are the most effective driving force for the development of digital technology innovation, and the new problems and contradictions in the development of MSMEs constantly put forward new demands for the development of digital technology [10]. Lu Minfeng and Xuyang Yang believe that digital technology is an all-round and multi-faceted aspect in the management of MSMEs, not only in the internal management of MSMEs, but also in the ecological management of MSMEs, which must make full use of digital technology to achieve better results [11].

In general, in the post-epidemic era, the country not only needs to strengthen the construction of new infrastructure, accelerate the digital transformation of traditional industries, enhance the supply of advanced digital technologies, strengthen the cultivation of talents in the digital field, improve relevant laws and regulations and institutional mechanisms, and promote the development of digital economy in a multi-pronged manner [12]. It also needs to continuously introduce relevant policies to support and establish a healthy and long-term development mechanism for MSMEs. The managers of Chinese MSMEs should also come up with new developmental ideas, follow the trend of the times and actively layout. Only with the joint efforts of many parties can we get rid of the current difficulties and turn them into success.

3. Data source and sample composition

3.1. Data source

The authors used a combination of online questionnaire research, field research, and expert interviews, mainly using wenjuan.com as the data collection platform, and using questionnaires distributed in a targeted manner and collected in a targeted manner. Relying on Hangzhou E-commerce Industrial Park and Hangzhou Normal University Digital Economy Research Institute, the questionnaire research was conducted on 242 Chinese MSMEs. In the survey, the opinions of the owners or the actual persons in

charge of the MSMEs were collected, and the validity of the questionnaire data was checked to ensure that the data collected in the survey can truly and objectively reflect the situation and development demands of Chinese MSMEs affected by the COVID-19 pandemic. The survey was conducted on December 21, 2021. The survey totally contained 13 questions, including information about the enterprises, the extent to which the industry was affected by the epidemic, the types of difficulties faced by the enterprises, the enterprises' own development countermeasures, and policy demands.

3.2. Sample Composition

Through simple data processing and analysis, the authors found that most of the industries in which the MSMEs participating in the questionnaire survey are located are commercial services and wholesale industries, accounting for about 52%, followed by machinery manufacturing, accounting for about 24% of the score. The number of employees of all enterprises is within 300, among which, the number of enterprises with employees between 100 and 300 accounts for about 6%, the number of enterprises with employees between 10 and 100 accounts for about 49%, and the number of enterprises with employees less than 10 accounts for about 45%. The nature of the research target enterprises are mostly private enterprises, the total of the two accounted for about 93%. And the platforms used by each enterprise to carry out cross-border e-commerce business are shown in Figure 2.

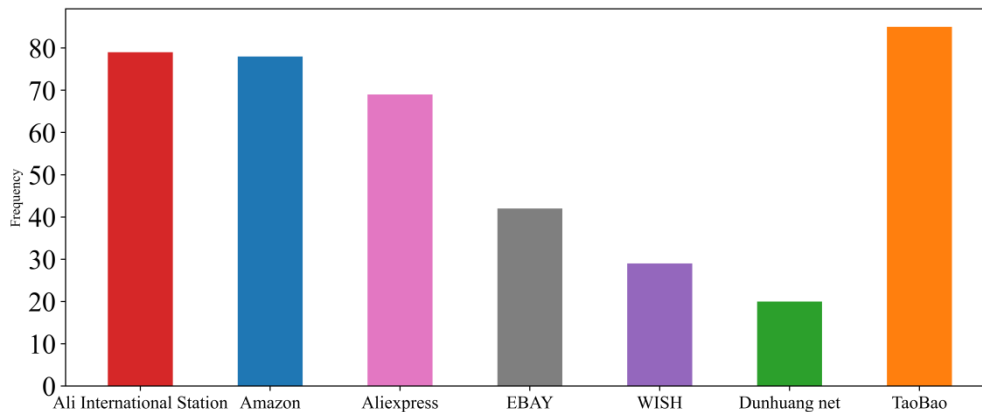


Figure 2: Bar chart of platform chosen frequency

4. Problems encountered by Chinese MSMEs affected by the pandemic of COVID-19

A sudden epidemic brought an unprecedented shock to the economy, and numerous companies in many industries were affected to various degrees. Enterprises of different sizes have different resilience to the impact. MSMEs were more affected and impacted by the epidemic compared to large enterprises. Due to the long duration of the epidemic, crowds were banned from gathering for a long period of time, which led many MSMEs to the dilemma of difficulty in resuming work and labor shortage. At the same time, most of the MSMEs have difficulties in getting rid of some other unfavorable factors, such as lack of corresponding financing guarantee, non-transparent financial status, vulnerability to external environment, and poor risk resistance. As a result of the combined effect of multiple factors, Chinese MSMEs were generally faced with the problems of "no one to work" and "no money to work" without the help of government policies, which directly led to the difficulties of survival of some MSMEs during the epidemic and their bankruptcy and closure or imminent closure.

Observing the questionnaire data and reviewing the relevant reported literature, the authors found that the risks of running and operating Chinese MSMEs under the influence of the epidemic shock are mainly distributed in the following areas:

- Continuously increasing logistics costs;
- Financing difficulties and poor liquidity;
- Stagnant production cycle;
- Challenges to business management posed by telecommuting.

4.1. Continuously increasing logistics costs of Chinese MSMEs

As a result of the epidemic, the prices of global maritime transport continued to rise, especially the routes of China-US maritime transport frequently broke the high point, sometimes even close to the price of air transport. Maersk, Mediterranean, Hapag-Lloyd and other regions have raised ocean freight charges one after another, or used to increase prices by adding other kinds of surcharges (such as new peak season surcharges and congestion charges at destination ports). These are the key factors for the significant increase in ocean freight prices. And China, as the world's largest trade exporter, the huge demand for continuous export of a large number of commodities has also become one of the main driving forces for the continued high sea freight costs in the special period, which has caused huge problems for MSMEs, especially those whose main business is foreign trade, in terms of logistics costs.

4.2. Financing difficulties and poor liquidity of Chinese MSMEs

The COVID-19 pandemic has interrupted the production activities and capital chains of many enterprises, which are even more difficult due to the small scale of MSMEs, insufficient capital, insufficient innovation ability and lack of new technology support. A large amount of MSMEs have unclear property rights ownership and property subjects, and low management level. Banks naturally choose not to lend or lend less to small enterprises in order to avoid risks based on the business principle of soundness. Because of the lack of capital reserves of MSMEs, the collateral and third-party guarantees provided by them are often lack of collateral assets and insufficient repayment ability, so the threshold for small business loans is relatively high and the procedures are relatively complicated compared with those for large enterprises. In addition, MSMEs usually do not have professional advisers, insufficient knowledge of financial products, loan processes are not clear, and usually can not provide complete loan materials, making it difficult for banks to grasp the credit, property rights, business conditions of enterprises, there are often MSMEs default on bank loans, set up false debt subjects, borrowing bankruptcy well-known debt, etc., even if banks want to provide financial support to MSMEs.

4.3. Stagnant production cycle of Chinese MSMEs

Due to the repeated difficulties in controlling the COVID-19 pandemic, Chinese MSMEs are not only subject to certain restrictions on the nominally scheduled resumption of work, but even if they are approved to start work, in actual operation there are still problems with the actual return to work of employees, the difficulties in ensuring protection standards and material conditions in resumption of production. Production activities of enterprises may still be forced to be delayed. Due to the impact of the epidemic, the return to work of enterprises after the Chinese New Year holiday in 2020 has also been postponed until after the 16th of the first month. During the capacity "vacuum" of more than half a month, MSMEs' owners have been under tremendous pressure. And failure to support this segment will have a serious impact on China's economic cycle. Some traditional manufacturing economies and offline brick-and-mortar stores are at risk of shutting down under the weight of structural adjustments and COVID-19 pandemic. In addition, orders not delivered on schedule due to labor shortages not only prevented Chinese MSMEs from receiving input, but also added insult to injury by exposing them to the risk of loss of deductions.

4.4. Challenges to business management posed by telecommuting

As the workforce is forced to postpone the return to work, some MSMEs have tried to adopt online telecommuting to enable some employees engaged in management and design work to return to work. However, due to the limited technical level of most MSMEs and the quality of their employees, the traditional offline management model in the past is difficult to be replicated and implemented in the online office, which restricts the efficiency of the online office of MSMEs. Therefore, how to prevent problems in the epidemic, effectively improve the level of online management of MSMEs, improve the efficiency of employees working online, become limited power outages, production can not be carried out normally.

5. Strategies for Chinese MSMEs to cope with problems and challenges

5.1. Policy Support

By compiling and analyzing the questionnaire results (the results are shown in Table 1) and reviewing a series of policy documents issued by the Chinese government, the authors found that most of the support for MSMEs is related to the provision of tax and loan services. Although these policies can relieve some of the pressure on MSMEs for a short period of time, they only address the symptoms but not the root cause. Several major difficulties of Chinese MSMEs in the post-epidemic era, such as reduced business demand, shrinking orders, soaring logistics costs, persistently high raw material prices, and blocked supply chains, cannot be solved just by the government through tax cuts and the provision of loan support.

In order to help many MSMEs solve these difficulties and pain points, improve the development quality and development efficiency of Chinese MSMEs, create a fair and convenient environment for survival and development, and effectively stimulate the development vitality of MSMEs, the government should continuously improve the legal policies related to the financing of MSMEs, further implement the policy of targeted downgrading of inclusive finance, strengthen the support and assistance to MSMEs, and also include eligible small and medium-sized banks in the scope of refinancing policy for operation [13], actively guide the many Chinese MSMEs to expand financing channels and enrich financing means, and promote MSMEs to rely on accounts receivable. The government should also speed up the research on the financing of MSMEs by means of accounts receivable, supply chain finance and franchising, and provide scientific and effective theoretical guidance to solve the financing problems of MSMEs. At the same time, the government should also accelerate the improvement of the risk-sharing and compensation mechanism for intellectual property pledge financing, and give full play to the role of intellectual property in increasing credit and loans. Encourage large, medium and small financial institutions to issue medium and long-term loans to Chinese MSMEs, develop renewal products for MSMEs, reduce the financing burden of MSMEs, and clean up and standardize matters such as guarantees, appraisals, notarization, and various additional fees that must be handled in the process of financing for MSMEs. The implementation of MSMEs financing guarantee fee reduction bonus policy to support financial guarantee institutions to further expand the scale of MSMEs financing guarantee businesses, and reduce the financing guarantee fee rate.

For eligible MSMEs of all types, governmental financing guarantee institutions should actively provide financing guarantee support, timely fulfill their obligations in lieu of compensation, promote financial institutions to lend as soon as possible, not blindly draw loans, pressure loans, broken loans, and the above-mentioned eligible financing guarantee business into the scope of cooperation with the National Financing Guarantee Fund re-guarantee.

From the perspective of taxation, the national government should consider including MSMEs and individual entrepreneurs in the scope of "six taxes and two fees" including resource tax, urban maintenance tax, property tax, urban land use tax, stamp duty, etc. [14], and continue to implement the policy of institutional tax reduction, extend the implementation period of such phased policies as preferential value added tax (VAT) for small-scale taxpayers, and implement new structural policies. In addition, the government should continue to implement institutional tax reduction policies, extend the implementation period of small-scale taxpayers' VAT concessions and other phased policies, and implement new structural tax reduction initiatives to balance the impact of some tax policy adjustments. In light of the actual situation, consideration can also be given to raising the starting point of VAT for small-scale taxpayers and considering a 50% reduction in income tax on top of the current preferential policies for small and micro enterprises and individual industrial and commercial households with annual taxable income less than 1 million yuan. For MSMEs with annual taxable income not exceeding 3 million yuan, the taxable income will be calculated in two segments. The government may also consider incentivizing MSMEs to increase investment in R&D through a tax incentive mechanism, deducting a certain percentage of the income tax on equipment and apparatus for MSMEs on a one-time basis, allowing MSMEs to voluntarily choose to deduct a certain percentage of the unit value before corporate income tax, and appropriately deferring the payment deadlines for various types of MSMEs to pay corporate income tax, personal income tax, domestic VAT and other taxes and fees.

Aimed at serving MSMEs and individual entrepreneurs and helping them reduce the pressure of housing rent, China should actively promote the state-owned housing rental businesses and consider exempting MSMEs with real difficulties or special circumstances from housing rent for three months in the first half of the year. For lots leasing state-owned housing owned by the central government and implementing housing rent support policies, non-state-owned housing lessors are required to consider

the actual difficulties of the lessees and reduce or extend the collection of housing rent on the basis of equal consultation between the two parties, and state-owned banks are encouraged to give support such as pledging loans at certain preferential interest rates to lessors with reduced rent, depending on the actual situation. Non-state housing initiatives to reduce the rent of MSMEs renters, in addition to the same access to the above policy preferences, the state should also encourage local governments to give additional policy preferences. Through subleasing form of rental housing lessors, to ensure that the rent relief preferential policies benefit the final lessee, not in the subleasing, subleasing links to inflate the rent, the state should timely supervision, clean up the rental market chaos, to solve the majority of MSMEs and individual entrepreneurs' problems.

Table 1: Policy aspirations of MSMEs

Project	Percentage (%)
Decrease in corporate operating income	82.34
Increase in corporate costs and expenses	68.38
Tight liquidity	59.76
High pressure to repay loan debts	30.76
Facing the risk of capital withdrawal and loan disconnection	13.07
Decrease in financing capacity	10.71
Reduced demand for financing	1.22

5.2. Business Development

Chinese MSMEs have a relatively low ability to resist stress as well as bear risks and have a certain degree of vulnerability, which is especially exacerbated by the outbreak and continuous continuation of the COVID-19 pandemic. Both the various fixed cost expenditures during the duration of the epidemic and the production, operation and procurement after the resumption of work require a certain amount of capital to maintain. In order to cope with these problems, it is urgent and important for Chinese MSMEs to raise funds. They need to enrich their financing channels and adopt more flexible and diversified financing means; promote enterprise financing and capital turnover speed through listing and financing, financial and tax outsourcing, etc.; actively use relevant government support policies and assistance funds to get rid of difficulties; reduce labor costs by lowering employees' salaries, reducing performance and delaying salary payment within a reasonable range. If necessary, the company can also reduce the scope of business, especially by eliminating unnecessary markets and projects, strictly control the company's office expenses, travel expenses, marketing and promotion expenses, etc.; actively communicating with the property and landlords to seek a partial reduction of advertising and plant rent, etc., to adopt a multi-pronged strategic approach to raise funds to ensure the liquidity needs of the enterprise, to achieve the efficient transformation of corporate needs and reserve funds.

Chinese MSMEs started to resume production after the epidemic had subsided, but most of them are still facing a series of problems such as product shortage, upstream and downstream supply and marketing difficulties. The supply chain, which usually does not change frequently, needs to be highly emphasized by MSMEs. MSMEs should promptly contact upstream suppliers and downstream channels, and work with partners to judge the supply capacity and order demand during the special period, focus on maintaining the supply chain resources, actively make alternative plans or multi-channel procurement to ensure the supply of goods, and consider broadening the procurement channels if necessary, such as choosing cross-border procurement. In addition to strengthening communication with suppliers, it is also necessary to pay attention to their dynamics as much as possible, such as the number of employees on board, the time to return to work, capital chain problems, raw material procurement, order status, etc. MSMEs can consider the specific situation at this time to ensure the priority supply of upstream suppliers through some ways to strengthen the customer relationship (such as advance payment or deposit), or be in collaboration with enterprises whose supply chains are weak to keep warm during the special period.

Difficulties always contain the meaning of both challenges and opportunities, how to deal with the many challenges in the dilemma, seize the opportunities in the risk, turn the crisis into opportunities, test the wisdom of every enterprise manager. Chinese MSMEs should seriously learn from the lessons brought by the COVID-19 pandemic, actively promote the digital transformation of enterprises in the era of big data, and embark on upgrading to a high value-added industrial chain. At the same time, managers should also put their sight on the end of the epidemic, observe a series of irreversible transformations that may occur in the market, conceive layouts in advance, expand new business segments, develop new business models, expand diversified sales channels, give full play to the role of internet platforms such

as Alibaba, Jingdong, Amazon, and Netease to promote the collaborative innovation development of enterprises, and realize a factor-driven to innovation-driven [15]. The company's competitive strength can be improved in all aspects.

6. Conclusions

The survival and development of Chinese MSMEs in the post-epidemic era greatly affects China's economic trends, livelihoods and social stability. As shown in Figure 3, based on a large amount of literature research, analysis of existing cases, and scientific data analysis, this paper proposes recommendations mainly from two perspectives: policy and enterprise, to help Chinese MSMEs achieve sustainable development in the post-epidemic era. From the policy point of view, the country should favor enterprise financing, strengthen financial supervision, and supplement with appropriate direct financial support to solve the capital chain problem, which is the biggest blow to enterprises. From the aspect of enterprises themselves, they should adopt flexible financing means to solve the primary financial problems as much as possible, and try to strengthen the supply chain and actively explore the digital transformation of enterprises to enhance their own competitiveness and vitality. Managers and employees of enterprises should have confidence in the darkness, hold on to their posts, find breakthroughs and wait for the next spring to come.

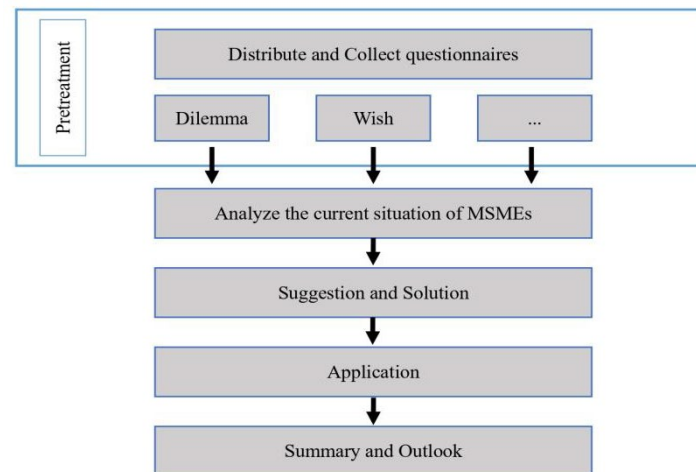


Figure 3: Research Methodology

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