International Journal of Biology and Genetics
Research Article

On the Enterprise Dynamic Management in the COVID-19 Pandemic

Weihua Z[1], Jinming C[2], Bin Z[3]*

[1]Shenzhen Leading Investment Technology Co., Ltd, China.

[2]School of Information and Mathematics, Yangtze University, China.

[3]School of Science, Hubei University of Technology, China.

Received: 16 June, 2020; **Accepted**: 7 July, 2020; **Published:** 13 July, 2020

*** Corresponding author:** Bin Zhao, School of Science, Hubei University of Technology, China. **E-mail:** zhaobin835@nwsuaf.edu.cn

Abstract

Background: With the worldwide spread of the novel coronavirus (COVID-19), the global economy has entered a cold winter, and the International Monetary Fund predicts that the global economy will shrink by about 3% in 2020. The outbreak of the epidemic has also caused heavy losses to the Chinese economy. In the first quarter of 2020, actual GDP fell sharply for the first time by 6.8% year-on-year for the first time. This is the first decline since record. Then, according to the data from the business survey in March, China's economy has improved compared with February, which shows that the economy has rebounded under the influence of policies. Judging from the current situation, although China has passed the peak period of the epidemic, affected by the high cases abroad, it can only be carried out slowly for the resumption of production. Enterprises, as micro-individuals under the macro economy, need to pass through analyzing the dynamic management of the enterprise to deepen the reform of the commercial system and stimulate the vitality of the enterprise. This will also provide data support for the government formulating relevant policies, which is conducive to the synergy of various policies and enhance the momentum of economic recovery.

On the other hand, we choose tourism as our specific research object. Thus, we need to set different scenarios according to the development situation of the epidemic, evaluate the impact of the novel coronavirus epidemic on China's tourism industry, and discuss tourism development and opportunities in the post-epidemic era from the aspects of tourism's response to the epidemic and the development trend of the tourism after the epidemic[4].

Methods: This dissertation first discusses the issue of enterprise dynamic management in the post covid-19 epidemic era, establishes the Difference-in-Difference model (DID model), and improves the model reasonably. It puts forward the dynamic management plan of different regions, and judges the effect of the policy on the implementation of the epidemic. At the same time, it also aims at the impact of the epidemic on the tourism industry at the important time points. The elasticity method and linear regression are used to evaluate and forecast. Using transportation data as a leading indicator, the elasticity of the total number of tourists E_{t1} and the elasticity of total tourism revenue E_{i1} during the Spring Festival and Spring Festival are calculated to be 1.39 and 1.60 respectively. The impact of COVID-19 on the Spring Festival tourism market is evaluated through the Spring Festival elasticity; During the period, the elasticity of the International Workers' Day

tourism market relative to the Spring Festival tourism market $E_{t2,}$ E_{i2} is calculated to be 1.14 and 0.9024 respectively through data over the years. Combining the forecast results of the Spring Festival tourism market and the data calibration of different forecast scenarios, the International Workers' Day is predicted. The total number of tourist trips and total tourism revenue during the period; for the National Holiday, the above ideas are used to calculate the elasticity of the National Holiday tourism market relative to the Spring Festival and International Workers' Day tourism markets E_{t3}, E_{i3}, which are 0.69 and 0.94, respectively, predicting the total number of tourists and total tourism revenue during the National Holiday period.

Findings: The results based on DID model analysis show that the significance level of the policy to the GDP of Jiangsu Province is 32%. The saliency level in Hubei province is 37%. In the first quarter of the year 2020, the total travel time and total tourism revenue of the first quarter of the year 2020 are predicted, and the logarithmic linear regression equation is established based on the total tourist arrivals and the total tourism revenue in the year 2020 as the explanatory variables of total tourism trips and total tourism revenue in the first quarter. The total number of tourist trips in the first quarter of the year 2020 is 394 million, a decrease of 74.42% over the same period last year, and the total value of tourism revenue is 319 billion 565 million Yuan, a decrease of 77.01% over the same period last year. The counter-factual prediction value of the total number of tourists in the first quarter of the year 2020 is 1 billion 676 million, and the counter-factual prediction value of the total tourism revenue is 1 trillion and 580 billion yuan. During the first half of the year 2020, the total number of tourists and the total tourism revenue in the first half of the year are predicted. The total number of tourists in the first quarter and the International Workers' Day is used as the explanatory variables of the total travel time in the first half of the year. Logarithmic linear regression equations are established respectively and replaced by the estimated values. The predicted value of the total tourist arrivals in the first half of the year 2020 is 1 billion 440 million, which is 53.25% lower than that in the same period last year. The forecast value of total tourism revenue is 1 trillion and 165 billion 98 million yuan, with a decrease of 58.09%. Compared with the same period last year, the potential decline of the total number of tourists in the first half of the year 2020 is 1 billion 911 million, with a decrease of 57.03%, resulting in a potential loss of 1 trillion and 994 billion 902 million yuan and a loss ratio of 63.13% for tourism total revenue. Under the optimistic forecast, the total number of tourist trips in the year 2020 is 4 billion 659 million. A decrease of 23.12% compared with the same period last year, and the total value of tourism revenue is 4 trillion and 807 billion 295 million yuan, 26.27% lower than that of the same period last year. Under the prudent forecast, the total number of tourist trips in the year 2020 is 3 billion 941 million, a decrease of 34.97% over the same period last year, and the total value of tourism revenue is 3 trillion and 922 billion 883 million yuan, a decrease of 39.83%, over the same period of the last year.

Interpretation: China's economy has been affected by the epidemic to varying degrees in all sectors, especially in the tertiary sector. And because the outbreak situation in China did not look good in the first quarter of 2020, almost all companies made a loss in the first quarter of 2020. To address the economic downturn, the Chinese government has taken various measures, such as issuing coupons to stimulate consumption, discounting promotions, etc. And as the domestic epidemic situation in China continues to improve, more and more companies have resumed normal operations in the last two months. It is believed that in the near future, China's economic situation will be significantly better than in the first quarter.

Keywords: Enterprise Dynamic Management; Post Covid-19 Epidemic Period; Tourism Industry; Policy Evaluation; DID Model; Time Series Analysis.