Effects of the COVID-19 Epidemic on Revenue of Tourist Accommodation Establishments in Laocai Province

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ABSTRACT

Using the survey data of 223 tourist accommodation establishments in Laocai province, the research uses Cobb - Douglas multivariate regression analysis to analyze the factors affecting the revenue of these establishments in the province. The research results show that 88.04% of changes in tourist accommodation establishments' revenues are influenced by the following factors: fixed costs of the accommodation establishment, variable costs of the accommodation establishment, the number of employees of the accommodation establishment, the capital size of the accommodation establishment, the factor of whether the tourist is domestic or foreign, and the factor of Covid - 19 epidemic, the rest 11.96% due to other factors. Among these factors, the Covid - 19 epidemic has the greatest inverse impact to revenue of the tourist accommodation establishment. On the basis of the research results we propose solutions to maintain and increase revenue of tourist accommodation establishments in Laocai province in the incoming time.

Introduction

Covid 19 has badly affected all aspects of the global socio-economic life, of which tourism is one of the most seriously affected industries. In 2020 Vietnam's tourism revenue lost about $US23 billion, with international visitors reducing by over 80%, domestic tourists decreasing by over 50% and about 95% international travel businesses suspending their operating. The great Covid-19 pandemic had a profound and comprehensive impact, changing the entire strategy, plan and structure of the tourism industry.

Lao Cai is a natural endowed province in the Northern mountainous regions of Vietnam. Located in the province is Sapa - a tourist place that is voted as "the meeting of heaven and earth",

one of the most attractive destinations on the planet. In 2019, the international tourists visiting Sapa reached over 17 million; the domestic tourists reached nearly 4 million. However, since about the end of 2019 and the beginning of 2020 up to now, due to the breakouts of Covid-19 epidemic, the number of visitors to Lao Cai decreased by nearly 70% resulting in the fact that the province's tourism revenue also deceased by 70% in the same period. Especially, in 2020 Laocai tourism faced many difficulties with the total number of tourism visitors plummeting: compared to 2019, the number of international visitors only reached 15%, the number of domestic tourists only reaches 38% (Suanmali, 2014).

Table 1. Number and turnover of accommodation establishments in Lao Cai province

	Unit	Year 2018	Year 2019	Year 2020	Comparison (%)		
					2019/ 2018	2020/ 2019	Average 2018-2020
Number of accommodation establishments	establishment	641	747	503	116,54	67,336	88,584
Turnover of accommodation establishments	million VND	594.396	666.881	191.795	112,19	28,76	56,804
State owned	million VND	2.089	2.143	1.021	102,58	47,643	69,911
Non-state owned	million VND	378.690	428.071	124.055	113,04	28,98	57,235
Foreign Investment enterprise	million VND	213.617	236.667	66.719	110,79	28,191	55,886

Source: Department of Culture, Sports and Tourism of Laocai province

Table 1 shows that on average the number of accommodation establishments in Lao Cai province in the period of 2018-2020 decreased by 11,416% each year; in particular, in 2020 that indicator decreased by 33,664% compared to 2019. In the same period, on average the turnover of the accommodation establishments decreased by 43,169%. Due to the Covid-19 epidemic, the turnover of accommodation establishments in 2020 decreased by 71.24% compared to 2019 in all businesses irrespective of State owned enterprises, Non-state owned enterprises or Foreign investment sector.

The decline in turnover of accommodation establishments in Laocai is huge. This is a serious problem for the tourism industry of the province. To find solutions to overcome this problem, it is essential to measure and analyze the impact of factors (including Covid-19) affecting tourism revenue of this province.

Literature Review

The Covid-19 epidemic is an infectious epidemic caused by the Corona SARS-CoV-2 virus strain, with the causing agent being virus SARSCoV-2. The epidemic is taking place on the global scale causing acute respiratory infections in human and showing to spread from person to person through respiratory droplets that humans sneeze, cough or exhale. Starting in December 2019, with the first outbreak recorded in Wuhan city in central China, the epidemic has spread worldwide rapidly with symptoms: fever, cough and difficulty breathing. These symptoms may appear 2 to 14 days after exposure to the source of the disease until the onset of illness; The virus causes fever and can damage the respiratory tract and has a very high mortality rate.

To protect the health of people and community groups, governments around the world have implemented a series of measures including: travel restrictions; quarantine blockades; declaring the state of emergency; ordering curfew; imposing social distancing; cancelling crowded events; closing schools; suspending service facilities and businesses that are less important; encouraging people to raise awareness of disease prevention by themselves; restricting going out; at the same time

transforming the way of doing business, learning and working from the traditional model to the online form. The implementation of measures to deal with the epidemic has caused undesirable negative effects on the global economy, with the tourism industry being hit hardest.

According to the Vietnamese Accounting Standards System No. 14: *"Revenue is the total value of economic benefits that an enterprise gains in the accounting period, arising from normal business and production activities of an enterprise, contribute to the development of equity."* Revenue of businesses include profits earned from service provision, sales, financial income, and internal operating profits or unusual revenue.

A tourist accommodation establishment is an establishment that rents out rooms and beds and provides other services to guests. Types of tourist accommodation facilities include: hotels, tourist village, tourist villas, tourist motels, housing with rooms for tourists to rent… Thus, the revenue of an accommodation establishment is all profits that will be obtained or have obtained from the tourist accommodation services provided by it for one year. Thus, the revenue of an accommodation establishment is all the profits that will be obtained or obtained from the provision of accommodation services to tourists for one year.

Relevant Research Works

Up to now, the correlation between the Covid - 19 epidemic and the tourism industry is still very new and research on this correlation is not much yet. In contrast, there are plenty of research on tourism and tourism business enterprises. Hereafter are some of them.

Trinh Thanh Thuy (2005) researched on the potential and current status of tourism development of Sapa, Laocai, Vietnam and proposed solutions to sustainably develop the tourism industry of Sapa. Among the major solutions there are: raising awareness of people, implementing the planning of accommodation establishments, developing community tourism models...

Lin, L. (2008), in the research work "A review of entrepreneurship research" gave an assessment on the development of social enterprises in the field of Tourism - Hotel Management to get a deeper insight into the potentials as well as operating process of these enterprises. The research showed that if social enterprises of this kind exist then it is necessary to promote their ability to attract and retain guests from natural landscapes, friendly people and the amenities of guaranteed accommodation...

Dang Trung Kien (2020) researched on some factors affecting the community tourism development in the Northwestern subregion of Vietnam and pointed out 8 factors that affect tourism development, including: attractiveness of the tourist destination; accessibility to the tourist destination; the comfort of the tourist destination; the participation of local people; local people's knowledge and skills in tourism; community leaders; the support of organizations in the community; cooperation and support from outside the community.

Suthathip Suanmali (2014) pointed out that the convenience of the tourist destination is one of the important factors to attract tourists, retain long-term visitors at tourist destinations, thereby increasing revenue of local tourism service businesses. The research specifically analyzes a number of indicators related to the destination's amenities: the system of accommodation facilities in terms of public toilets, security, internet services ...

Hang, T.T.B, Huy, D.T.N et al (2020) stated that Tourism, airline, hotel are industries those can be affected much by environment and social risks. Vietnam hotel, entertainment, airline & tourism industries are growing fast and contributing much to the economic development and have been affected by inflation.

Some research works related to the Covid -19 epidemic: Vu Quynh Nam et al (2020) researched on the impact of factors on join-interest groups of Mesona chinensis benth growers in Thachan district, Caobang province, Vietnam using the Binary Logistic model. The analysis results confirmed that the covid-19 factor has the greatest impact on the association participation of Mesona chinensis benth growers in 2020.

Nguyen Quang Thuan (2020) studied the impact of the COVID-19 pandemic and some policy solutions for Vietnam in the incoming period and confirmed that Covid -19 pandemic is a strong medical shock impacting all aspects of the world economy. The global growth and the growth of many countries and regions fall negative; the global trade and investment decline; workers lose their jobs; unemployment rates soar ... Among economic industries the tourism and service sectors are affected hardest. In Vietnam, in the first 6 months of 2020, the revenue from accommodation and food services decreased by 18.1% compared to the same period in 2019; the revenue of the travel tourism fell by 53.2% making the most severely affected sector by the COVID-19 epidemic and social distancing measures.

Data and Methodology

Methods of data collection: Both secondary and primary data sources are utilized. Secondary data are gathered from reports of the Department of Culture, Sports and Tourism of Lao Cai province; primary data are collected from interviews with accommodation establishments. The sample size is determined by the Slovil formula (1984), with n = 503 and defined as 223 interviewees.

Analytical method: Descriptive statistical method is used to analyze the current status of production and business activities of accommodation establishments in Lao Cai province. The method of multivariate regression analysis through the Cobb-Douglas production function is used to analyze the effects of factors on the turnover of accommodation establishments in the province. The general production function takes the form of the formula (1).

$$Y = f(X_j) \quad (1)$$

Where: Y is the output;

Xj are the inputs;

f denotes Y as a function of the inputs Xj.

The production function model analyzing the factors that affect the revenue of accommodation is as the follow:

$$LnY = LnA + b1LnX1 + b2Ln X2 + b¬3Ln X3 +$$
$$b4Ln X4 + b5D1 + b6D2 + U$$

Table 2. Summary of the variables in the model

Variable	Interpret variable content	Unit	Expectation mark
Dependent variable			
REVENUE (Y)	Revenue from the establishment's accommodation service during the year	Million VND	
Independent variables			
FC (X$_1$)	All of the fixed costs that the accommodation must pay for the year: land tax (or land rental) / year; depreciation of assets and tools ...	Million VND	-
VC (X$_2$)	All variable costs of the accommodation establishment: electricity and water costs; labor costs; cost of materials ...	Million VND	-
L (X$_3$)	Number of employees of the establishment	Person	-
C (X$_4$)	Capital size of accommodation establishment (total capital source of investment establishment)	Million VND	-
DKNĐ (D1)	Value gets "1" if the tourist is domestic and get "0" if the tourist is foreign		+
CS (D2)	Factor Covid-19 disease		-

Results

The results of analyzing the survey data of 223 accommodation establishments in Laocai province on factors affecting the revenue of accommodation establishments through the Cobb-douglas regression model are as the follows:

Table 3. Results of regression analysis of factors affecting the revenue of accommodation establishments in Lao Cai province.
(Coefficientsa regression test)

Variables		Not standardized regression coefficient		Standardized regression coefficient	Value t	Statistical significance	Collective statistics	
		B	Standard error	Beta			Tolerance	VIF
1	Constant	3.181	.380		11.223	.000		
	D1	.289	.041	.175	2.223	.002	.702	1.983
	D2	-.493	.022	.088	1.065	.000	.890	1.862
	lnX1	-.242	.040	.086	1.077	.013	.904	1.123
	lnX2	-.201	.019	.168	2.372	.022	.962	1.199
	lnX3	-.102	.025	.300	4.129	.001	.892	1.248
	lnX4	-.067	.034	.108	1.798	.012	.872	1.421
Adjusted R Square = 0,8804								

a. Dependent Variable: lnY

Based on the results of the regression model estimation, we see that 6 variables included in the model are statistically significant (variables X1, X2, X3, X4, D1, D2 have Sig. <0.05). In the study, the KMO, Anova and residual variance tests are guaranteed to be passed.

Adjusted R Square coefficient (Adjusted R Square) is 0.8804, which makes sense 88.04% of the change in revenue of accommodation

establishments in Lao Cai province is explained by factors: cost fixed costs, variable costs, number of accommodation workers, capital size of accommodation establishments, foreign visitors, epidemic factors, the remaining 11.96% are due to other factors.

From the above analysis we have the following regression model:

$$LnY = 3,181 + 0,242LnX1 + 0,201LnX2 + 0,102LnX3 + 0,067LnX4 + 0,289\ D1 + 0,493\ D2 + Ui$$

The regression Model Shows

The variable of Fixed cost (X1) has the coefficient -0,242, inversely related to the turnover variable (Y). Specifically, when other factors remain unchanged, if the establishment's fixed cost increases by 1 million VND, the turnover will decrease by 0.242%.

Variable cost variable (X2) has the coefficient of -0,201, inversely related to the turnover variable (Y). Specifically, when other factors remain unchanged, if the variable cost increases by 1 million VND, the turnover will decrease by 0.201%.

The variable of number of employees (X3) has the coefficient of -0,102, inversely related to the turnover variable (Y). Specifically, when other factors remain unchanged, if the number of employees of the accommodation establishment increases by 1 person, the turnover will decrease by 0.12%.

The variable of capital size (X4) has the coefficient of -0.067, inversely related to the turnover variable (Y). Specifically, when other factors remain unchanged, if the capital size increases by 1 million VND then the turnover will decrease by 0.067%.

The dummy variable of Domestic visitor (D1) has the coefficient of +0,289 which is positively related to the turnover variable (Y). Specifically, when other factors remain constant, establishments with domestic tourists will have a turnover 33.51% higher than those with foreign visitors.

The dummy variable Covid-19 (D2) has the coefficient of -0.493, inversely related to the turnover variable (Y). Specifically, when other

factors are unchanged, during the Covid -19 pandemic, the turnover of the accommodation establishments surveyed in Lao Cai province decreased by 63.72% compared with the absence of the epidemic.

Conclusion

The Laocai economy in general and the Laocai tourism industry in particular are facing many difficulties and challenges caused by the Covid - 19 epidemic. In 2020, the number of visitors to Lao Cai reached about 2 million, decreasing by 66% compared to 2019; the total revenue from tourists reached about 6,300 billion VND, decreasing by over 70% compared to 2019; the number of accommodation establishments closing or operating moderately accounted for nearly 70%. The Cobb-Douglas production function results also show that the impact of factors on the revenue of accommodation establishments in Laocai province is strongly influenced by the following factors: fix costs of the accommodation establishment, variable costs of the accommodation establishment, number of employees of the accommodation establishment, size of the accommodation establishment, whether the tourist is domestic or foreign, and the Covid-19 epidemic. In particular, the factor of the Covid-19 epidemic has the greatest impact on the revenue of accommodation establishments.

Solution

In order to maintain business activities and increase revenue for accommodation establishments in Laocai province during the Covid - 19 pandemic period, it is necessary to synchronously implement the following solutions: Firstly, it is necessary to strictly comply with State regulations on measures to prevent the Covid-19 epidemic in order to minimize the impact of the epidemic on the economy and the tourism industry.

Second, it is necessary to have a strategy to expand the tourism market for domestic tourists in the current period, encourage domestic tourism with domestic tourism demand stimulus packages: discounts on accommodation and other tourism services in order to attract domestic tourists.

Third, there should be measures such as tax exemption and reduction, reduction of service charges on electricity, water, ... to minimize the variable costs of production and business operating of accommodation establishments in order to help them survive and thrive during the epidemic period.

Fourth, accommodation establishments need to have appropriate policies on using labor in the epidemic period, minimizing the number of employees in order to maintain their operation.

Fifth, accommodation establishments also need to pay attention to reducing the size of capital in their production and business processes in order to preserve their capital and maintain their production and business activities.

Recommendations to the People's Committee of Lao Cai Province

Firstly, the province should have a drastic policy in the prevention of the Covid-19 epidemic: policies on epidemic prevention, policies on handling violations in entry, isolation and avoiding isolation ...

Second, there should be measures to support accommodation establishments to maintain their operations through policies such as tax exemption, reduction of land rent, environmental tax and related service fees ...

Third, the province needs to develop a separate policy of its own to encourage and attract domestic tourists such as focusing on the deployment and development of applications to connect the information systems of the state management and administration on tourism for local governments and enterprises; building Smart City Scheme; building Smart Tourism Portal; building software's for accommodation management; forming data warehouses and websites for tourism advertisement and promotion ...

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