


Research Article

Malaysia's Tourist Arrivals Amidst The COVID-19 Pandemic

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Abstract: *The economy of a country depends on various industries such as manufacturing, agriculture, construction, communication, energy, healthcare, and tourism. All these industries contribute a lot to the economic growth. Thus, the tourism industry plays an essential part in contributing to the economic sector in a country. The tourism industry faces many challenges, which include the most recent pandemic and the spread of the COVID-19 virus. Therefore, this research studied the trend of international tourist arrivals in Malaysia and their arrivals during two periods, before and after the COVID-19 pandemic. The main goal of this research is to assist in the preparation of recovery from various parties, such as tourists, tourism managers, and the government. In this research, the data obtained were from Tourism Malaysia for monthly international arrivals from January 2000 until March 2022. The findings of this research were based on a time frame study that highlights before and after of the COVID-19 pandemic, where the pandemic happened in March 2020, as Malaysia enforces its lockdown, and the tourism industry is most affected. The trend pattern observed shows a drastic decline in 2020 after the pandemic declaration. The impact of the COVID-19 pandemic was measured by using a paired sample test using Wilcoxon signed-rank test. It was conducted on the number of international tourists from before and after March 2020, the start of lockdown in Malaysia. The findings of this study showed that the COVID-19 pandemic has significantly impacted tourist arrivals in Malaysia.*

Keywords: COVID-19; tourism; Wilcoxon signed-rank test.

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1. INTRODUCTION

A nation's economic sector is significantly influenced by the tourism industry. Puah, Jong, Ayob, and Ismail (2018) have shown that an increase in tourist arrivals or capital investment does lead to an increase in the country's GDP. The Department of Statistics Malaysia (DOSM) reported a GDP worth of RM 1,416,604.8 million and gross value added of tourism industries (GVATI) worth RM 199,354.9 million from the tourism industry that contributed towards Malaysia's national income in the year 2020. This paper focusing on the impact of COVID-19 towards tourism industry in Malaysia.

Meanwhile, in December 2019, China reported an outbreak of a type of pneumonia with unclear aetiology (Pneumonia of unknown cause – China, 2020). The US Centers for Disease Control

and Prevention C.D.C (2020) identified a seafood store in Wuhan as the potential epicentre of the outbreak in early January 2020. This new virus was named as a novel coronavirus, 2019-nCoV, or widely known as COVID-19. As a result of the virus's escalated spread and seriousness, the World Health Organization W.H.O (2020) stated on November 30, the COVID-19 outbreak was declared a global health emergency of international concern. Nevertheless, Malaysia was also majorly impacted by the outbreak. On January 25, 2020, the first COVID-19 case in Malaysia was confirmed, involving three Chinese residents who entered Johor Bharu, Malaysia, via Singapore on January 23, 2020 (Foo, Chin, Tan, & Phuah, 2021).

Figure 1 shows the trend of daily COVID-19 cases in Malaysia that had case spikes and is currently receding as of April 2022.

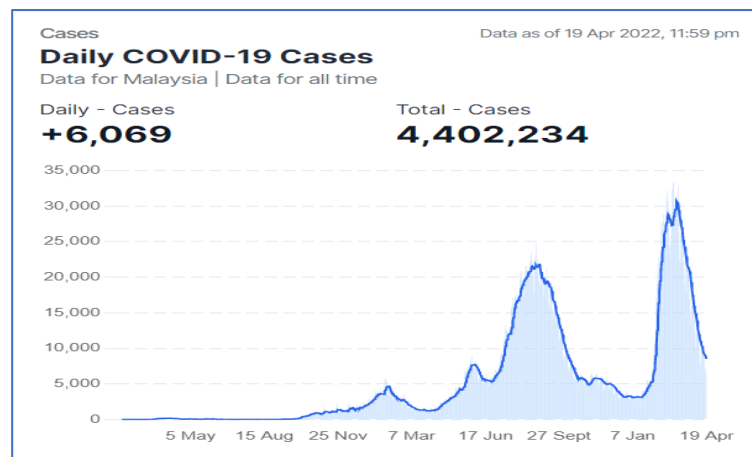


Figure 1: Daily COVID-19 Cases in Malaysia
Source: Ministry of Health Malaysia (COVIDNOW, 2022)

The pandemic of the millennium, COVID-19, has caused almost every government on the globe fighting to stop the disease from spreading. Quarantines, lock downs, social isolation, and movement limitations are examples of extreme measures implemented by governments. These actions have caused closures all over the world, including borders, hotels, airlines, restaurants, and most of the businesses and educational buildings. Not only that, almost every individual has been forced to learn to rely on technology for life's continuity. While lock downs and other methods are acknowledged as effective COVID-19 control strategies, their consequences are very big for the country, especially towards the tourism industry (Kalok, Sharip, Abdul Hafizz, Zainuddin, & Shafiee, 2021).

Due to the graveness of COVID-19 spread and the declaration of a pandemic by WHO, Malaysia's government was quick to take action, and the prime minister at the time, Prime Minister Tan Sri Muhyiddin Yassin, enforced a Movement Control Order (MCO) on March 18, 2020, to reduce the spread of COVID-19 cases (Chronology of MCO phases in the country, 2021). This MCO has been prolonged and on-going until May 12, 2021, followed by the Conditional MCO and Recovery MCO. Those impacts on Malaysia's tourism industry included tourism employment, outbound tourism expenditure, domestic tourism expenditure, inbound tourism expenditure, gross value added of tourism industries (GVATI) and tourism direct gross domestic product (TDGDP) drastically decreased during the pandemic.

2. METHOD & MATERIAL

In order to determine the impact of the global pandemic, which was COVID-19, on the tourism industry, the data sets used were obtained from Tourism Malaysia, which covers international tourist arrivals. The variable intended to find out if there was any significant impact on the international tourist arrivals before and after COVID-19 circulated are BCOVID_Int and ACOVID_Int that will be paired for

the same sample that stands for before and after COVID-19 pandemic. The dates in comparison for these variables are from April 2018 to March 2020 for BCOVID_Int and from April 2020 to March 2022 for ACOVID_Int as the lockdown in Malaysia started in March 2020. Both variables have a time span of 24 months to represent international tourist arrivals before and after the pandemic. The description of variables is shown in Table 1.

Table 1. Description of Variables.

Variables Name	Type of Variables	Description
BCOVID_Int	Numeric	Number of monthly international tourist arrivals from April 2018 to March 2020
ACOVID_Int	Numeric	Number of monthly international tourist arrivals from April 2020 to March 2022

2.1 Wilcoxon Signed- Rank Test

A dependent sample test was used to compare the difference between two variables for the same subject. This research used this non-parametric test to determine the significant difference on international tourist arrivals in Malaysia pre-pandemic and post-pandemic. The first step was to test the normality of international tourist arrivals before and after the pandemic, which was done using the Shapiro-Wilk test. In the case where the normality assumption was violated, a non-parametric analysis using the Wilcoxon signed-rank test was conducted. This research has used this method on the monthly international tourist arrival data sets in order to determine the significant difference on the tourism industry of international tourist arrivals. First, the values were assigned ranks based on the difference of values in each pair of data. These ranks are signed with a positive or negative sign to identify variables with higher or lower values. Then, the test statistics to be compared with the p-value were calculated using the formula:

$$Z = \frac{\min(|W + |, |W - |) - \mu_W}{\sigma_W}$$

where, W = The sum of ranks (positive or negative)

μ_W = The mean of W

σ_W = The standard deviation of W

The p-value is obtained from the z-score table and compared against the significance value of 0.05. This output supports the decision in determining the significant difference between pre-pandemic and post-pandemic international tourist arrivals in Malaysia.

3. FINDINGS

The number of tourist arrivals before and after COVID-19 were represented by two variables, which are BCOVID_Int (April 2018 - March 2020) and ACOVID_Int (April 2020 - March 2022) respectively. The normality assumption of tourist arrivals for variables BCOVID_Int and ACOVID_Int was tested using the Shapiro-Wilk normality test. In order to investigate the normality for both variables, the Shapiro-Wilk normality for both variables were examined.

Table 2: Mean value and Shapiro-Wilk Test

Variable	Mean	Statistic	df	Sig.
BCOVID_Int	2068598.96	0.697	24	0.000
ACOVID_Int	13835.33	0.746	24	0.000

From Table 2, the mean of both variables shows a significant difference between before and after the COVID-19 spread. This proves that the average number of international tourist arrivals was higher before the COVID-19 pandemic. Furthermore, the Shapiro-Wilk test shows that both variables are not normal because the significant p-values for both variables are less than 0.05.

The Wilcoxon signed-rank test was conducted to compare the tourist arrivals before and after COVID-19 occurred. The result of the Wilcoxon signed-rank test is displayed in Table 3.

Table 3: Wilcoxon Signed-Rank Test

	Z	Asymp.Sig.(2-tailed)
ACOVID_Int – BCOVID_Int	-4.285714	0.000

Based on Table 3, the Wilcoxon z-score is -4.2857. The test detected 24 negative ranks, where BCOVID_Int is higher than ACOVID_Int for all 24 pairs of data. A Wilcoxon signed rank test showed that the COVID-19 pandemic did cause a statistically significant change in the number of international tourist arrivals, as the p-value was less than 0.05 (p = 0.000). So, there is a significant difference in international tourist arrivals in Malaysia between pre-pandemic and post-pandemic.

4. DISCUSSION

Finally, it is proven that the COVID-19 pandemic created a big impact on tourist arrivals in Malaysia. The difference between before and after the COVID-19 pandemic shows a huge decrease in the number of tourist arrivals. This finding supports previous literature that talked about the problems, such as failure to provide services, flight cancellations, borders closed off and loss of tourism or travel related jobs (Rahman et al., 2021; Ibn-Mohammed et al., 2021; Uğur & Akbıyık, 2020; Škare et al., 2021).

5. CONCLUSION

This research was conducted to determine the significant difference in international tourist arrivals in Malaysia between pre-pandemic and post-pandemic. The Wilcoxon signed-rank test was applied to a 24-month sample of tourist pairs before and after the COVID-19 pandemic. This research concluded that there was a significant difference in the number of tourists before and after the pandemic. Hence, Malaysia should continue its efforts to promote the beauty of the country’s tourism.

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