Does the Covid-19 Pandemic Affect International Tourism in Indonesia?

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Abstract

The tourism sector is one of the sectors most affected by the spread of COVID-19. The policy of restricting the mobilization of citizens caused a major collapse in the tourism sector both at the domestic and international levels. Restrictions on people's mobilization led to the suspension of travel by land, sea and air and if it lasts for a long time, these companies will certainly suffer financially. In this study, the author considers how international tourism in ASEAN Countries is affected by Covid-19 and whether it causally affects each other. Some countries such as Thailand and Vietnam are taking uncertain steps about reopening the economy for business and social operations. ASEAN countries are the focus of this research because ASEAN countries, especially Southeast Asian countries, have a higher increase in COVID-19 cases than other countries. In analyzing the impact of the Covid-19 pandemic on the number of foreign tourist arrivals from ASEAN countries in Indonesia, the author uses data from the Central Statistics Agency (BPS) accessed from https://www.bps.go.id/ and data on the Covid-19 pandemic we access from https://covid.ourworldindata.org/data/latest/owid-covid-latest.csv. The author uses monthly data from the 3rd month period of 2020 to the 12th month of 2022. The dependent variable used in this study is foreign tourist arrivals from ASEAN countries, where the ASEAN countries are Brunei Darussalam, Malaysia, Philippines, Singapore, Thailand, Vietnam, Laos, Cambodia, and Myanmar. While the independent variable is the Covid-19 pandemic which is proxied through four variables, namely: total cases, new cases, new deaths, new vaccinations. Then, the income per capita variable is the control variable in this study.

Keywords: Tourism, Covid-19 pandemic, ASEAN, Tourism recovery, Travelers

INTRODUCTION

In December 2019, Wuhan, a popular city in China, experienced an outbreak of the coronavirus (COVID-19) triggered by the novel coronavirus acute respiratory syndrome. As of April 30, 2020, COVID-19 has affected 3,130,800 people, causing more than 227,000 deaths globally (ECDC, 2020). On January 30, the WHO confirmed the outbreak as a public health emergency of international concern, and on March 11, 2020, it was declared a pandemic. The adverse effects of COVID-19 extend beyond human lives to short-term and long-term economic, social, and political impacts (OECD, Economic Outlook, 2020). ASEAN tourism is cited as one of the sectors impacted both inbound and outbound, due to ASEAN's annual revenue from the tourism sector being around $5.128 trillion and contributing 10% to the global tourism sector (World Travel & Tourism Council, 2020). However, with the spread of COVID-19, the tourism sector has been severely affected. Policies restricting the

mobility of citizens have led to a significant collapse in the tourism sector both domestically and internationally. Restrictions on mobility have resulted in the suspension of travel by land, sea, and air, and if prolonged, these companies will undoubtedly suffer financially. According to UNWTO, the tourism industry is facing the most urgent challenge of the novel coronavirus disease 2019 (COVID-19), which has spread worldwide (World Tourism Organization, 2020a). The global tourism sector is currently the hardest-hit sector due to the COVID-19 pandemic, impacting travel demand and supply in the tourism sector across countries worldwide. According to the World Tourism Organization (2020b, 2020c), the COVID-19 pandemic has caused a 22% decrease in international tourist arrivals in the first three months of 2020 and a decrease of 60–80% by the end of 2020. Moreover, the pandemic's impact has put 100–120 million jobs directly at great risk.

Furthermore, countries like the UK and the US have suspended their trading and travel activities due to mobility restrictions implemented to reduce the rapid spread of Covid-19 in their countries. ASEAN itself generated around $127.3 billion in 2019 (World Travel & Tourism Council, 2020). About 75% of tourists from travel agencies postponed their tickets to Europe and Asian countries, intended for departure in February and March 2020 (World Travel & Tourism Council, 2020). Many holiday destinations in Southeast Asia were booked by international tourists, which were then canceled and rebooked for other destinations such as the Maldives, South Africa, and Australia. Additionally, Consumer News and Business Channel (2020) reported that Hilton suffered losses ranging from $25 to $50 million. Furthermore, in 2019, Vietnam received around 1.45 million visitors from China and decreased by 644,000 during January 2020. The tourism sector in Vietnam is estimated to suffer a $5 billion loss if the outbreak continues into the second quarter of 2020 (Vietnam Times, 2020). Moreover, the Philippines projected a slowdown of 0.3–0.7% in GDP growth (One News, 2020). Restrictions imposed by the US on almost all travel along with the closure of the US-Canada border and the suspension of most visa services have severely disrupted the US economy. The UK has implemented the closure of many parks in an effort to strengthen social distancing measures as done in Italy.

Moreover, tourism and hospitality activities from several countries worldwide have also experienced unfavorable movements since the imposition of travel restrictions (Assaf & Scuderi, 2020). Of course, travel by sea and air (especially large cruise ships) has also been restricted, impacting the decline in transportation sector activities and performance (Chinazzi et al., 2020). Several studies on tourism and its contribution to social economy have been conducted, such as the research by Lindberg & Johnson (1997) which states that tourism causes an inbound effect on communities through the economic and social welfare impacts in tourist destination areas (Jordan et al., 2019). According to Richter (2003), infectious diseases are a major factor causing a global tourism collapse. Globalization and urbanization also stimulate the rapid spread of viruses (Hilsenrath, 2021). Therefore, it is important to assess the impact of Covid-19 through variables such as total cases, new cases, new deaths, new vaccinations, and per capita income as control variables.

Based on these factors, this research aims to understand the impact of the Covid-19 pandemic on international tourism, proxied by the number of ASEAN tourist visits to Indonesia. This research is expected to serve as additional reference for policymakers in economic recovery, especially in the tourism sector, through long-term policies. Many previous studies have examined the impact of disasters (such as natural disasters) on tourism (Aliperti et al., 2019; Cró & Martins, 2017; Kuo et al., 2008; Sio-Chong & So, 2020), but not much emphasis has been given on how tourism (inbound tourism) is affected by the Covid-19 pandemic in ASEAN countries, which are considered emerging market countries. Scott and Laws (2006) found that disasters impact changes in business structures and related sectors.

Furthermore, disasters according to Scott & Laws (2006) can reform business networks in disaster-affected areas. In this study, the authors consider how international tourism in ASEAN countries is affected by Covid-19 and whether it causally influences each other. Some countries like Thailand and Vietnam have taken uncertain steps regarding the reopening of their economies for business and social operations. ASEAN countries are the focus of this research because ASEAN countries, especially Southeast Asian countries, have a higher increase in COVID-19 cases compared to other countries. According to Hilsenrath (2021), the pandemic shows a higher negative effect than the growth of the tourism sector, and it is also found that tourist arrivals have a significant impact on the number of Covid-19 cases in various countries.

RESEARCH METHODS

In analyzing the impact of the Covid-19 pandemic on the number of foreign tourists from ASEAN countries visiting Indonesia, the author utilized data from the Central Statistics Agency (BPS) accessed from https://www.bps.go.id/ and Covid-19 pandemic data accessed from https://covid.ourworldindata.org/data/latest/owid-covid-latest.csv. The author employed monthly data from the 3rd month of 2020 to the 12th month of 2022.

The dependent variable used in this study is the number of foreign tourist visits from ASEAN countries, where the ASEAN countries considered are Brunei Darussalam, Malaysia, the Philippines, Singapore, Thailand, Vietnam, Laos, Cambodia, and Myanmar. Meanwhile, the independent variable is the Covid-19 pandemic proxied through four variables, namely: total cases, new cases, new deaths, and new vaccinations. Additionally, the per capita income variable is a control variable in this study.

The author utilized the panel data regression analysis method to estimate the impact of the Covid-19 pandemic on the number of foreign tourists from ASEAN countries visiting Indonesia. The econometric modeling of panel data regression in this study can be described as follows:

$$WA_{it} = \alpha_0 + \beta' PandemiCovid_{it} + \beta_1 VC_{it} + u_{it} \quad (1)$$

Where WA represents foreign tourists in the period of month t and from country i, PandemiCovid is the vector of the Covid-19 pandemic variable proxied with four variables (total cases, new cases, new deaths, new vaccinations) in the period of month t and from country i, VC is the control variable proxied with per capita income in the period of month t and from country i, and u is the error term.

RESULT

The Estimation Results of the Covid-19 Pandemic's Effect on Tourist Arrivals from ASEAN Countries in Indonesia

Table 1. Statistic Descriptive

Variable	Obs	Mean	Std. Dev.	Min	Max
tourist arrivals	306	6.661	3.109	0	12.796
total case	306	11.697	3.618	2.893	16.953
new case	306	8.912	3.571	0	16.32
new deaths	305	3.818	3.272	0	9.879
new vaccinations	305	6.047	7.192	0	17.865
gdp percapita	306	9.362	1.253	7.877	11.811
fdi/gdp (%)	192	6.821	7.294	-.966	25.725
political stability	192	.046	.953	-2.066	1.493

Table 1 describes the statistical description of the variables in the research model. The average number of foreign tourists arrivals is 6,661 archsinh (people). Meanwhile, the average

for total Covid cases is 11,697 archsinh (people). The average of new cases, number of deaths, and new vaccines from the Covid pandemic are as follows: 8,912; 3,818; 6,047, respectively. The average GDP per capita is 9,362 archsinh (US$). The average share of FDI to GDP is 6.821%, and the average value of estimated political stability is 0.046.

Table 2. The Impact of Covid-19 on Tourist Arrivals Without Control Variables

Variabel	(1) *tourist arrivals*	(2) *tourist arrivals*	(3) *tourist arrivals*	(4) *tourist arrivals*
total case	0.230***			
	(0.025)			
new case		0.101***		
		(0.029)		
new deaths			-0.051	
			(0.035)	
new vaccinations				-0.042***
				(0.013)
Constant	3.968***	5.758***	6.841***	6.898***
	(0.305)	(0.275)	(0.158)	(0.117)
Observations	306	306	305	305
R-squared	0.820	0.778	0.771	0.777
country fixed effect	Yes	Yes	Yes	Yes
control variables	No	No	No	No

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2 shows the results of fixed-effect panel regression estimation of the Covid-19 pandemic's effect on the number of foreign tourist visits from ASEAN countries (Brunei, Cambodia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam) entering Indonesia. Column 1 indicates that the total cases have a statistically significant and positive effect. Similarly, new cases (Column 2) have a statistically significant and positive impact. Meanwhile, new deaths (Column 3) have a statistically insignificant and negative effect. New vaccinations (Column 4) show a statistically significant and negative impact.

In Table 3, we added control variables (GDP per capita, FDI/GDP, and Political Stability) to the estimated model. The results show that total cases have a statistically significant and negative impact (Column 1). On the other hand, new cases, new deaths, and new vaccinations show effects that are statistically insignificant and negative (Columns 2 to 4).

Table 3. The Impact of Covid-19 on Tourist Arrivals with Control Variables

Variabel	(1) *tourist arrivals*	(2) *tourist arrivals*	(3) *tourist arrivals*	(4) *tourist arrivals*
total case	-0.053**			
	(0.023)			
new case		-0.021		
		(0.019)		
new deaths			-0.018	
			(0.021)	
new vaccinations				-0.007
				(0.008)
gdp percapita	-3.086	-3.562	-2.232	-1.672
	(2.359)	(2.375)	(2.288)	(2.462)

fdi/gdp (%)	0.008	-0.003	0.010	0.007
	(0.055)	(0.055)	(0.053)	(0.053)
political stability	2.319**	2.574**	2.244**	2.002**
	(0.992)	(1.000)	(0.956)	(0.992)
Constant	35.274	39.422*	26.724	21.482
	(21.905)	(22.066)	(21.250)	(22.885)
Observations	192	192	191	191
R-squared	0.951	0.950	0.954	0.954
country fixed effect	Yes	Yes	Yes	Yes
control variables	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4. The Impact of Covid-19 on Tourist Arrivals: The Role of GDP per Capita

Variabel	(1) *tourist arrivals*	(2) *tourist arrivals*	(3) *tourist arrivals*	(4) *tourist arrivals*
total case	0.626***			
	(0.224)			
gdp percapita	-1.401	-3.274	-1.958	-0.799
	(2.371)	(2.381)	(2.289)	(2.630)
total case x gdp percapita	-0.076***			
	(0.025)			
political stability	2.190**	2.440**	2.153**	1.790*
	(0.970)	(1.003)	(0.955)	(1.017)
fdi/gdp (%)	0.021	-0.007	0.024	0.016
	(0.054)	(0.055)	(0.054)	(0.054)
new case		0.194		
		(0.164)		
new case x gdp percapita		-0.023		
		(0.018)		
new deaths			0.236	
			(0.178)	
new deaths x gdp percapita			-0.028	
			(0.019)	
new vaccinations				0.056
				(0.067)
new vaccinations x gdp percapita				-0.007
				(0.007)
Constant	19.693	36.781*	24.072	13.254
	(22.013)	(22.112)	(21.267)	(24.489)
Observations	192	192	191	191
R-squared	0.953	0.950	0.954	0.954
country fixed effect	Yes	Yes	Yes	Yes
control variables	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4 presents the estimation results of the Covid-19 pandemic effect through interaction with GDP per capita. The interaction between total cases and GDP per capita shows a statistically significant and negative impact. Meanwhile, the interaction between other Covid-19 variables and GDP per capita shows results that are statistically insignificant. On the other hand, in Table 5, we interact Covid-19 variables with FDI. The estimation results show that only the interaction between new vaccinations and

FDI has a statistically significant and positive impact.

Table 5. The Impact of Covid-19 on Tourist Arrivals: The Role of FDI

Variabel	(1) *tourist arrivals*	(2) *tourist arrivals*	(3) *tourist arrivals*	(4) *tourist arrivals*
total case	-0.063*			
	(0.037)			
fdi/gdp (%)	-0.003	-0.009	0.015	-0.001
	(0.063)	(0.057)	(0.053)	(0.053)
total case x FDI	0.002			
	(0.005)			
gdp percapita	-3.301	-3.725	-2.666	-4.177
	(2.453)	(2.402)	(2.329)	(2.752)
political stability	2.353**	2.623***	2.388**	2.448**
	(0.999)	(1.007)	(0.967)	(1.010)
new case		-0.032		
		(0.030)		
new case x FDI		0.002		
		(0.004)		
new deaths			-0.041	
			(0.031)	
new deaths x FDI			0.003	
			(0.003)	
new vaccinations				-0.019*
				(0.010)
new vaccinations x FDI				0.002**
				(0.001)
Constant	37.350	40.998*	30.785	44.968*
	(22.839)	(22.328)	(21.634)	(25.629)
Observations	192	192	191	191
R-squared	0.951	0.950	0.954	0.955
country fixed effect	Yes	Yes	Yes	Yes
control variables	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In Table 6, we interacted the Covid-19 pandemic variables with political stability. The estimation results indicate that there is no interaction that is statistically significant.

Table 6. Dampak Covid-19 terhadap Kedatangan Wisatawan: Peran Stabilitas Politik

Variabel	(1) *tourist arrivals*	(2) *tourist arrivals*	(3) *tourist arrivals*	(4) *tourist arrivals*
total case	-0.049**			
	(0.023)			
political stability	3.353***	2.592**	2.240**	1.999**
	(1.181)	(1.018)	(0.962)	(0.995)
total case x political stability	-0.061			
	(0.038)			
gdp percapita	-2.877	-3.561	-2.238	-1.572
	(2.353)	(2.382)	(2.298)	(2.522)
fdi/gdp (%)	-0.009	-0.004	0.011	0.006
	(0.056)	(0.057)	(0.053)	(0.053)

new case		-0.020		
		(0.020)		
new case x political stability		-0.003		
		(0.026)		
new deaths			-0.018	
			(0.021)	
new deaths x political stability			0.001	
			(0.026)	
new vaccinations				-0.007
				(0.008)
new vaccinations x political stability				-0.002
				(0.010)
Constant	33.291	39.417*	26.783	20.546
	(21.846)	(22.127)	(21.344)	(23.446)
Observations	192	192	191	191
R-squared	0.951	0.950	0.954	0.954
country fixed effect	Yes	Yes	Yes	Yes
control variables	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

DISCUSSION

The Impact of Cumulative Covid-19 Cases on the Number of ASEAN Tourist Arrivals

Based on the previous analysis, there is an interesting finding where the number of cases has a positive relationship with the number of ASEAN tourist arrivals. Looking at Table 7, it can be understood that the increase in cases continues over time, but by the end of 2021, the cases had temporarily declined, meaning that the number of cases did not significantly increase until the beginning of 2022. Then, examining Table 8, the number of tourists from ASEAN countries visiting Indonesia did indeed drastically decrease in 2021, but in 2022, the number of tourists increased again, surpassing the number of tourists in 2020. The positive relationship between the number of Covid-19 cases and the number of ASEAN country tourists may be due to the trend of increasing cases and tourist numbers simultaneously, so when the cumulative number of cases increases, at the same time, tourists visiting Indonesia are also experiencing an increase. This may also be due to foreign tourists, especially from neighboring countries of Indonesia, 'escaping' from their home countries when their home countries are experiencing an increase in the number of Covid-19 cases. It's possible that when the increase in Covid-19 cases in Indonesia is not significant, foreign tourists choose Indonesia as their vacation destination.

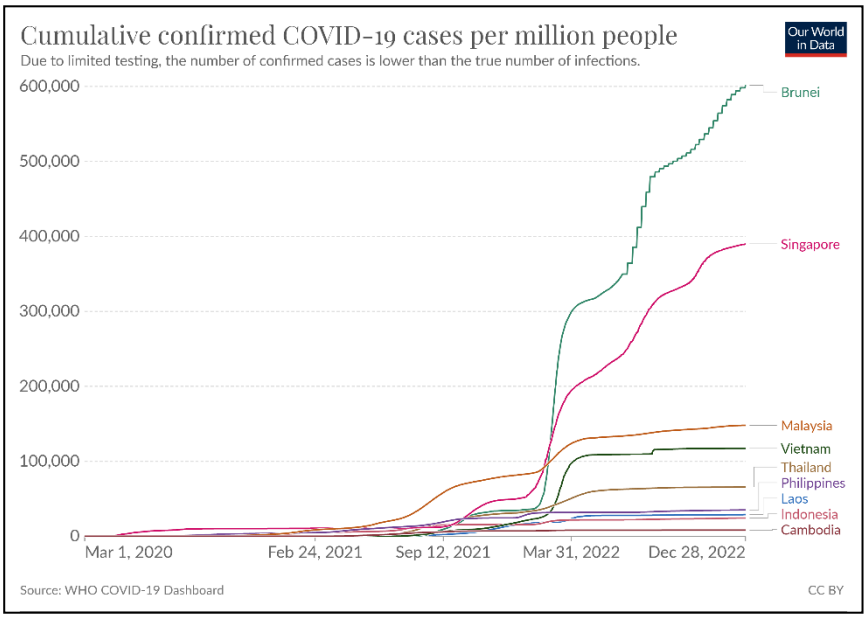


Figure 1. The Trend of Total Covid-19 Cases in Indonesia
Source: Our World in Data

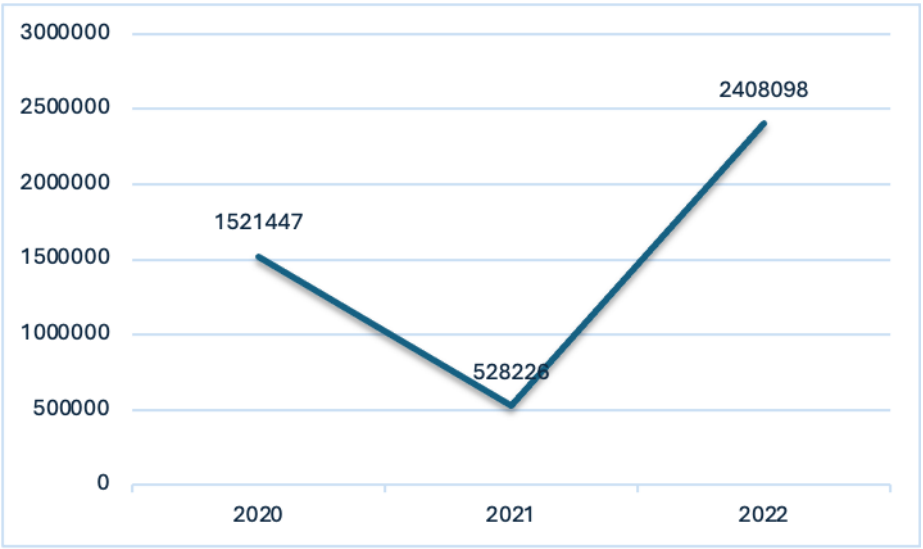


Figure 2. The number of tourists from ASEAN countries to Indonesia
Source: BPS

This positive relationship can also be interpreted as Indonesia's rapid recovery capability compared to other ASEAN countries, enabling it to attract foreign tourists again, especially from ASEAN countries. The Indonesian government, through the National Economic Recovery Program (PEN), allocated Rp3.8 trillion to the tourism sector to revive and restore locations to be more comfortable and better for receiving various tourists. This is what enabled Indonesia's tourism sector to survive despite the crisis in 2021.

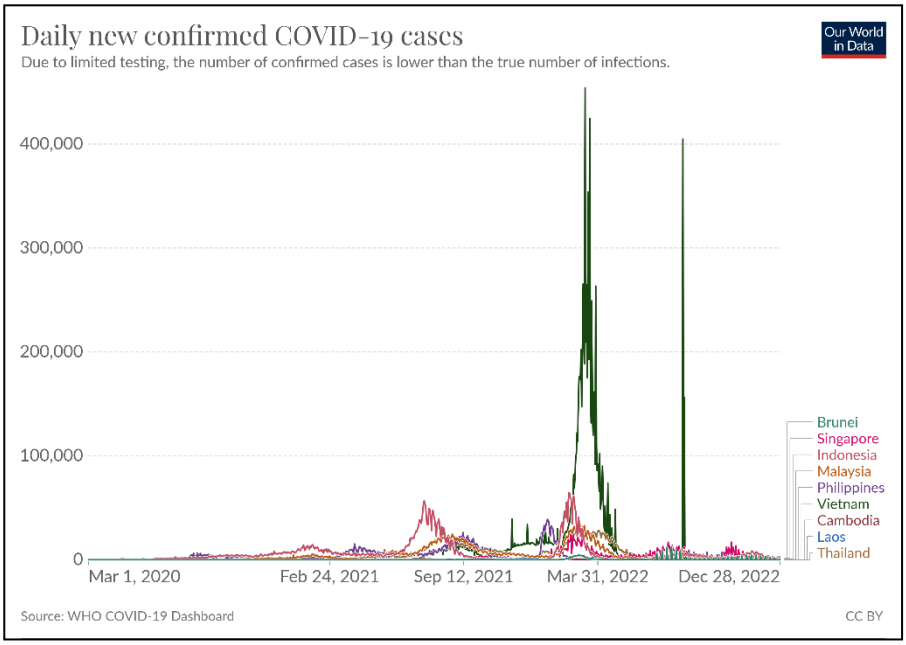
The relationship between the number of Covid-19 cases and the number of tourist arrivals was found to be different when involving several control variables such as GDP per capita, FDI/GDP, and Political Stability. It turns out that the number of cases has a negative impact on

the arrival of foreign tourists from ASEAN. It cannot be denied that various travel restrictions imposed by the Indonesian government and other ASEAN countries significantly hindered the arrival of foreign tourists to Indonesia. These restrictions were implemented to suppress the spread of Covid-19 cases, as all countries were focused on handling the health crisis experienced by all ASEAN countries and even the world at that time. These restrictions also affected various economic activities, leading to a decline in income, including foreign investment. The number of Covid-19 cases is an indicator used to assess the extent of Covid-19 virus spread in a country, so it is understandable that it reduces the number of tourists visiting Indonesia, especially tourists from ASEAN countries. The negative impact of the number of Covid-19 cases on the number of tourists is also supported by more specific analysis when the number of cases is interacted with GDP. As previously explained, various countries' restriction policies hinder economic activities, ranging from small businesses to exports and imports.

The Impact of New Covid-19 Cases on the Number of ASEAN Tourist Arrivals

The number of new Covid-19 cases, based on the analysis results, was found to be significant only in regressions that did not involve control variables. Its impact was found to be positive on the number of tourist arrivals from ASEAN countries. As explained earlier, when the number of new cases is low, it does not necessarily increase tourist visits (see Tables 9 and 10). This is likely due to the movement restrictions imposed by governments in ASEAN countries, particularly Indonesia. Therefore, it is not surprising that there is a positive relationship between the number of new Covid-19 cases and the number of tourist arrivals from ASEAN countries. The variable of new case numbers was not found to be significant when analyzed together with control variables or specifically interacted with some of those control variables.

Figure 3. Number of Daily New Cases of Covid-19 2020-2022



Source: Our World in Data

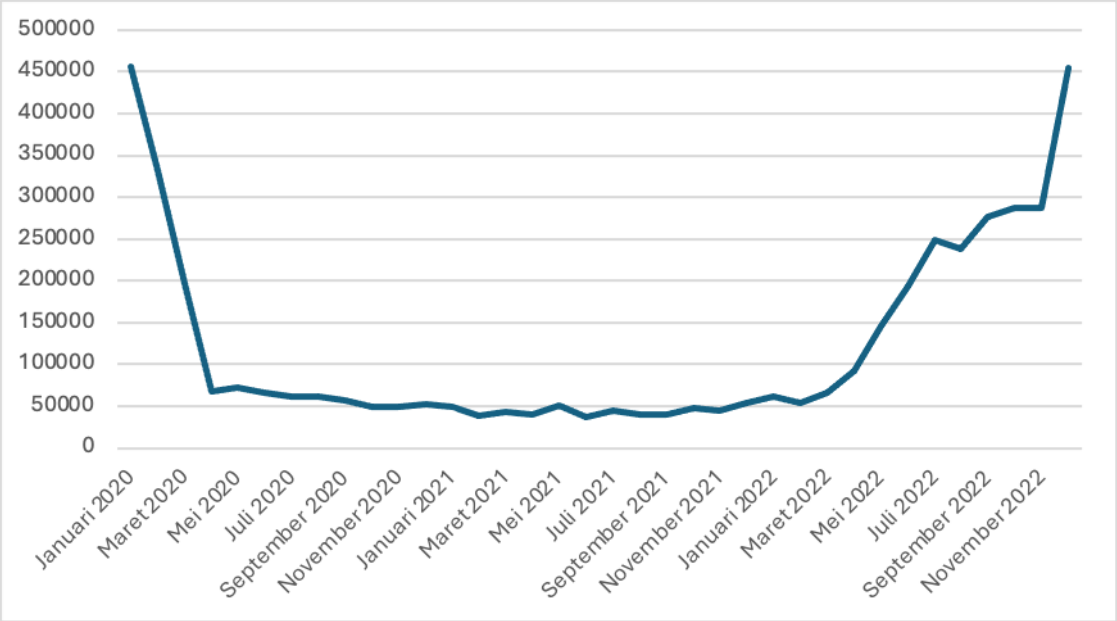


Figure 4. Number of ASEAN Tourist Visits to Indonesia per Month

The Impact of New Covid-19 Deaths on the Number of ASEAN Tourist Arrivals

From various stages of analysis conducted, no significance was found in the variable of new death count on tourist arrivals. This may be due to the irrelevance of deaths when associated with tourist visits because in fact, deaths due to Covid-19 contribute very little to the overall mortality rate in Indonesia. According to WHO (2019), some of the leading causes of death in Indonesia include stroke, heart disease, diabetes, and tuberculosis (see Table 11). Similarly, in Malaysia, the leading cause of death is coronary heart disease (Setyorini, 2023). Data from WHO in 2012 also indicate that deaths in Southeast Asia are most commonly caused by non-communicable diseases. Non-communicable diseases are often caused by unhealthy behaviors or lifestyles. Therefore, Covid-19, being a novel virus, contributes only minimally to the overall causes of death in ASEAN, so when associated with the number of ASEAN tourist arrivals in Indonesia, it also does not have a significant impact.

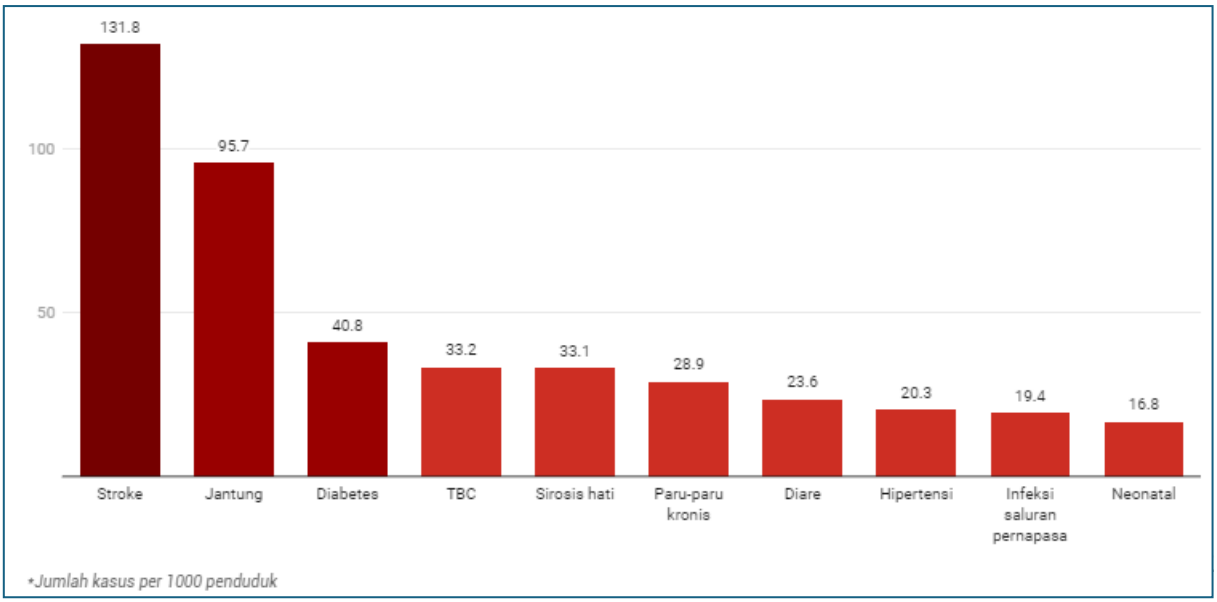


Figure 5. 10 Biggest Causes of Death in Indonesia
Source: WHO

The Impact of New Vaccinations on the Number of ASEAN Tourist Arrivals

From the data analysis, it is evident that the number of new vaccinations has a significant negative impact on the number of tourist arrivals. This indicates that the higher the number of new vaccinations, the fewer ASEAN tourists visit Indonesia. It is important to emphasize that when vaccinations were initially introduced, there was still much debate within society, and the vaccination rollout was not initially effective, coinciding with strict travel restrictions. Regulations related to vaccination and domestic or international travel at that time also faced various controversies. Vaccination was also implemented gradually, with individuals required to receive two doses before undertaking domestic or international travel. This consequently deterred ASEAN tourists from visiting Indonesia due to the considerable waiting time for the entire ASEAN population. Additionally, it is worth noting that many individuals were hesitant to receive the second dose due to perceived side effects or concerns arising from the experiences of others.

Despite the negative impact on the number of tourist arrivals in Indonesia, an interesting finding is that the interaction between the number of new vaccinations and the FDI variable has a positive and significant effect on the number of ASEAN tourist arrivals in Indonesia. This may be attributed to the close association between vaccination efforts and foreign investment, as not all countries were capable of producing effective vaccines, prompting international transactions by governments, particularly investments in cross-border healthcare to prioritize public health. With substantial government investment, particularly by ASEAN countries, in healthcare, particularly in vaccination programs, this creates significant opportunities for individuals to resume activities, including traveling abroad for leisure or business purposes. The number of ASEAN tourist arrivals in Indonesia is expected to increase as various countries successfully implement vaccination programs.

CONCLUSION

Covid-19 has indeed had a tremendous impact on international tourism activities in ASEAN, particularly for Indonesia itself. Despite the cumulative increase in Covid-19 cases across various ASEAN countries, the number of tourists coming to Indonesia actually increased because, at that time, the number of Covid-19 cases in Indonesia was not as high as in other countries. This situation was taken advantage of by various foreigners to avoid Covid-19, and the same applies to the number of new Covid-19 cases. However, the high number of cases associated with GDP actually had a negative impact on ASEAN tourists' arrivals in Indonesia. The high number of cases forced ASEAN communities to close or restrict their economic activities, thereby hindering ASEAN people from traveling abroad, especially to Indonesia.

Furthermore, the number of new deaths caused by Covid-19 did not significantly affect the number of ASEAN tourists arriving in Indonesia because Covid-19 deaths are only a small part of various causes of death in ASEAN countries, where non-communicable diseases should be the main concern. As for the number of new vaccinations, it had a negative effect on ASEAN tourists' arrivals in Indonesia because vaccination is a new thing and it garnered both support and opposition from the public, causing concerns about traveling abroad. However, Foreign Direct Investment (FDI) turned the effect of vaccination into a positive one on tourist arrivals because of significant investments between countries in the healthcare sector, where each country is currently focused on saving its citizens. The high investment in healthcare, especially in vaccination, is also driven by increased demand from the public as they need to have good immunity before engaging in various activities, including domestic and international travel.

Based on the findings and discussions presented in this study, researchers suggest that the government should oversee various efforts to increase the number of ASEAN tourists arriving in Indonesia. Although the Covid-19 storm has passed, it does not eliminate the threat for ASEAN communities to face various other dangerous viruses that can affect the economy and lead to pandemics or endemics. This study also suggests that future research could use other relevant variables regarding the number of ASEAN tourist arrivals in Indonesia.

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