

Digitization Of Tourism And The Economy In Malaysia

Agatha Braun¹

¹Humboldt University of Berlin, German

Abstract

The purpose of this study is to determine how economic growth and tourist revenue collection are related, internet users, and government spending in Malaysia reflects the long-term and short-term effects of factors related to the digital economy and tourism. This study uses the ARDL approach with data from the world bank from 2000 to 2020. We find that in the short term, the previous year's economic growth had a significant positive effect on economic growth this year, but in contrast to tourism income which in the short term had a negative effect on economic growth, Likewise, the internet user variable has a significant negative effect. However, government spending has a significant positive effect on economic growth in Malaysia.

Keywords: Digital economy, tourism, economic growth, malaysia.

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Background

The Corona pandemic has highlighted the importance of digital technology in enabling economic growth, entrepreneurship, the digital age, and the ability to respond quickly to pressing challenges in extraordinary times, and that innovation promotes the language of sustainable and successful tourism in attracting tourists to tourist destinations and encouraging tourism. innovators to create modern promotional ideas for the tourism sector that help it emerge from sudden crises such as the Corona pandemic, which paralyzes sector movement, exposes digital flaws in many systems and causes accelerated digital transformation in all economies (Hantrais, Allin, Kritikos, Sogomonjan, Anand, Livingstone, Williams, & Innes, 2021 ; Viphindrartin, Wilantari, Prabowo, Sasongko, Priyanto, & Bawono, 2021). With a logically optimistic view, we can say that the opportunities available in the hospitality and tourism sector after the Corona crisis outweigh the challenges and risks, as it is expected that we will witness an increase in the demand for tourism and hospitality services, an increase in attracting the attention of a digital audience, a wheel movement activity economy, and rapid advances in technological capabilities, as well as the emergence of many strong initiatives that support the sector's sustainable recovery process, especially given the dependence of modern humans on digital technology in the style and details of their lives (Zielinski & Botero, 2020). From seeking information to completing transactions through communication with their external environment, to practice trading and exchange economic profits from behind its smart screen a way of dealing with various areas of life, including tourism, where and after being digital par excellence, and demonstrating that the adoption of digital solutions has become an urgent need for specialized industrial development and sponsoring innovative businesses, and that technological innovation is the language of

sustainable tourism and is capable of attracting tourists to digitally advanced tourist destinations everywhere (Flórez, Linares, Carrillo, Mendes, & de Sousa, 2022).

It is true that people's desire for tourism has not changed, but they are becoming more cautious than ever, and a clear change has emerged in their behavior and requirements when deciding to travel, as people are more interested in the availability of health precautions at airports (Lew, Cheer, Haywood, Brouder, & Salazar, 2020). Their focus on hygiene and sterilization has increased with the doubling of their internet usage and their interest in online opinions and ratings, in addition to their increased propensity to explore new digital tourist destinations through their smart devices (Faour-Klingbeil, Osaili, Al-Nabulsi, Jemni, & Todd, 2021). This trend is accompanied by new manifestations of digital transformation in the tourism sector, such as the adoption of digital identities and health capsules at digital airports, tourist thermal checks, and the use of self-purifying robots at airports and aircraft, increasing demand for employees with digital and technical skills, and steady growth in the number of remote workers in the tourism and travel sector, which looks set to be growth that will last forever (Aguilar-Castillo, Guerra, Rufo, Rabadan, & Perez-Jimenez, 2021).

The major developments and changes taking place in the world, the tourism economy must be in accordance with the surrounding conditions, and it is necessary to strive for its development and development to ensure that it is surrounded by the best level (Pilving, Kull, Suškevics, & Viira, 2019 ; Murniati & Bawono, 2021). The digital tourism economy accounts for a large part of the country's financial returns and a large part of the financial returns of investors and entrepreneurs (Chapuzet, 2021). Through the significant advancements occurring in the Internet and information technology fields, it becomes imperative for tourism and the tourism sector, in general, to develop and increase their outputs to suit and commensurate with their environment in order to ensure as many tourists as possible and obtain as much income and financial benefits as possible (Eom & Lee, 2022).

The importance of the digital tourism economy is that it is one of the main entrances to the world of profit, so there are many websites for digital tourism on the Internet, which individuals visit in search of the tourist destinations they want to go to, and through these sites, individuals achieve a lot. financial benefits, income, and large returns, as well as real tourism investment projects in the field, this tourism website is considered an electronic tourism investment project as important for investors themselves, important for the economy, important for tourists themselves, and also for the country in general (Pencarelli, 2020).

Many benefits from the digital tourism economy or the electronic tourism economy, which is usually considered as one of the main entrances to the world of economics and the world of business and finance, through tourism investment projects carried out on land and in the virtual Internet world and through the profits achieved through recreational activities offered to tourists, the largest number of tourists from different regions of the world is obtained, and the largest number of financial returns and financial benefits that will help achieve goals and develop the economy (Cueto, Frisnedi, Collera, Batac, & Agaton, 2022). More specifically, economic and economic achievements in general are usually various projects, be it investment, tourism, commercial or even service projects that will make a profit and work on the development and development of the local economy, and help reduce debt. countries and increase the level of the country's Trade Balance, and all of the above are increasing and developing through the achievement of high and good levels of digital tourism (Somoza-Medina, & Monteserín-Abella, 2021).

The role of digital technology in enabling economic growth and entrepreneurship and the ability to respond quickly and flexibly to the challenges of an emergency crisis is extraordinary as we mentioned at the outset and draws the attention of tourism companies to the need to follow a proactive marketing approach that maintains the spotlight and momentum of their activities during a crisis and enable them to Utilize digital technology to find innovative solutions, by analyzing data to identify target audiences and prepare optimal marketing strategies to promote their tourism services in an effective way that ensures their continuation of activities in similar emergency crises, as evidenced by numerous studies on tourism trends and tourist behavior (Bawono, 2021 ; Chapuzet & Bawono, 2021).

After the beginning of the crisis was extinguished, and there are signs the world is recovering from its effects, that will make tourism and the choice of tourists when deciding to choose their destination completely different in the future (Villacé-Molinero, Fernández-Muñoz, Orea-Giner, & Fuentes-Moraleda, 2021). There is a clear harmony and close relationship between the future of digital tourism and between technology and the openness of knowledge through the acquisition of information via the Internet, search and booking of tourist destinations and attractions, and with that, according to the behavior of new individuals or tourists, it is necessary to draw features of the future. digital tourism (Sánchez-Teba, García-Mestanza, & Rodríguez-Fernández, 2020). The purpose of this study is to determine how economic growth and tourist revenue collection are related, internet users, and government spending in Malaysia reflects the long-term and short-term effects of factors related to the digital economy and tourism.

Research Method

This study uses the ARDL approach with data from the world bank from 2000 to 2020. We adopt the Cobb-Douglas system of equations in estimating the control variables that we use which is also developed from the Cobb-Douglas production function equation which is mathematically simple as follows:

$$Y = f(X1, X2)$$

Where Y is production output, X1 is production input and X2 is production input. In this study, we examine the role of the digital economy in influencing production output, where nationally, production output is an indicator of economic performance. We use time-series data so that we develop the equation as follows :

$$\Delta \ln Y_t = \beta_0 + \beta_1 \Delta \ln TRE_t + \beta_2 \Delta \ln DE_t + e_t$$

Where t is time series, β is constant, Δ is a change of variable, Ln is natural log, TRE is tourism revenue, DE is the digital economy, and e is the error term.

The DE variable based on previous research can be developed into 2 variables that form the influence of DE on production output. These variables are the internet user variable as a mechanism for using digital technology facilities in DE, and government expenditure in building infrastructure which has an impact on the use of digital technology and also has an impact on production output. So based on the development of the DE variable, we develop the following equation

$$\Delta \ln Y_i = \beta_0 + \beta_1 \Delta \ln TR_t + \beta_2 \Delta \ln IU_t + \beta_3 \Delta \ln GE_t + e_{it}$$

Where IU is an internet user, GE is a government policy that is reflected in government expenditure.

We utilize the ARDL approach to estimate the equations we have established in this study with secondary data from the global bank. The ARDL method is a regression technique that concurrently takes into account the lag of the independent and dependent variables. We may examine the long-term and short-term relationships using this approach.

Result and Discussion

Table 1 displays descriptive data based on the study's variables.

Table 1. Descriptive Statistics

	EG	IU	TRE	GE
Mean	4.559798	57.81279	7.836961	18.38538
Median	5.332139	56.30000	8.706124	18.23193
Maximum	8.858868	89.55501	9.805688	21.67131
Minimum	-5.646940	21.38473	1.632174	15.82582
Std. Dev.	3.173540	19.12861	1.965412	1.576107
Skewness	-1.961798	-0.184270	-1.615946	0.329760
Kurtosis	6.695058	2.249091	5.674933	2.512911
Jarque-Bera	25.41705	0.612226	15.40035	0.588195
Probability	0.000003	0.736303	0.000453	0.745204
Sum	95.75576	1214.068	164.5762	386.0929
Sum Sq. Dev.	201.4271	7318.072	77.25689	49.68225
Observations	21	21	21	21

The results of descriptive statistics are expressed in terms of mean, min, max, and Std Dev. EG Mean 4,559, EG Min -5,646, EG Max 8,858, EG Std Dev 3,173. GE Mean 18,385, GE Min 15,82, GE Max 21,67, GE Std Dev 1,57 and so on. EG is Malaysia’s economic growth, TRE is revenue receipts from tourism, IU is internet users, and GE is government expenditure.

A stationary test should be done before utilizing the ARDL model to predict the value. By analyzing the error component, which includes any chance of autocorrelation if the series is not stationary, Augmented Dickey-Fuller (ADF) may determine whether the series is not stationary. The following are the outcomes:

Table 2. ADF Test

Variable	Unit Root	The ADF Test stat.	Prob.	Description
Economic Growth (EG)	Level	-3.865447	0.0089	Stationer
Internet user (IU)	Level	-1.014848	0.7271	
	First Diff	-4.177608	0.0049	Stationer

Government Expenditure (GE)	Level	-2.409957	0.1516	
	First Diff	-4.844344	0.0012	Stationer
Tourism revenue (TRE)	Level	-1.849589	0.3475	
	First Diff	-2.745116	0.0851	
	Second Diff	-4.032201	0.0075	Stationer

The TRE data is stationary in the second difference, when compared to the EG data in the original data, the IU and GE data are stable at the first difference. Since all the data are stationary, we can proceed with the estimation of ARDL.

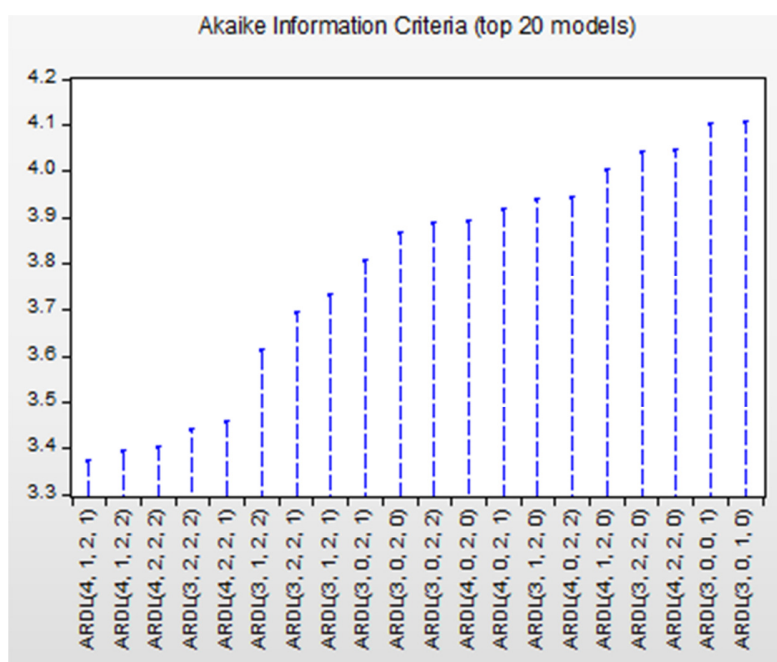


Figure 1. Optimum Lag Test

Optimal lag testing is performed to determine which lag is appropriate for use in the next test; as shown in the picture above, 4,1,2,1 lag is the most recommended.

Tabel 3. ARDL Bounds Test

	Worth	Signif.	I.(0)	I.(1)
F-stat.	3.520881	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Asymptotic: n=1000

The top limit value at the 5% level is exceeded by the model's F-statistical value of 3.520881, and even greater than the upper limit value at the 2.5 percent, according to the results of the ARDL model's Limit Test in Table 4. This indicates that the four factors investigated in this

research, namely economic growth, revenue from tourists, internet users, and government expenditure are cointegrated over time, or all four variables move in the same direction.

Tabel 4. ARDL Analysis Results

	Coef.	Std. Error	t-Stat.	Prob.*
EG(-1)	0.591607	0.364794	1.621759	0.1658
EG(-2)	-0.769306	0.258499	-2.976053	0.0309
EG(-3)	-1.032091	0.218450	-4.724603	0.0052
EG(-4)	0.620150	0.355077	1.746524	0.1412
IU	-0.296741	0.135971	-2.182377	0.0809
IU(-1)	0.443217	0.204528	2.167026	0.0825
TRE	1.042635	0.222005	4.696442	0.0054
TRE(-1)	-0.935049	1.018452	-0.918108	0.4007
TRE(-2)	-2.057890	0.661363	-3.111588	0.0265
GE	-2.085269	0.436004	-4.782681	0.0050
GE(-1)	2.193149	0.931127	2.355369	0.0651
C	13.75521	12.17814	1.129501	0.3099
R-squared	0.956938	Adjusted R-squared		0.862201

The modified ARDL model's R-squared and R-squared values were 0.95 and 0.86, respectively. The ARDL model's adjusted R-squared value of 0.86 suggests that each independent variable, including government expenditure, internet usage, and tourism-related revenue, can account for 86 percent of the variance in the dependent variable, economic growth. This demonstrates how well the research paradigm works for research.

Judging from the ARDL estimation results, the variable IU(-1) has a coefficient value of 0.443 which indicates that the internet user factor is a factor that affects economic growth. For example, an increase in the rate of internet users by 1% would explain the increase in Malaysia's economic growth of 44.3 percent. This demonstrates that as the number of internet users rises, so will economic growth, this happens because the increase in infrastructure that drives digitization by government spending will make digitization in many sectors happen, as is the case in the tourism sector, which will ultimately drive the tourism revenue.

Table 5. Analysis Results In The Long Term And Short Term

	Coef.	Std. Error	t-Stat.	Prob.
C	13.75521	12.17814	1.129501	0.3099
EG(-1)*	-1.589639	0.665061	-2.390216	0.0624
IU(-1)	0.146476	0.135384	1.081934	0.3287
TRE(-1)	-1.950304	1.324108	-1.472919	0.2008
GE(-1)	0.107880	0.662432	0.162855	0.8770
D(EG(-1))	1.181246	0.428280	2.758114	0.0399
D(EG(-2))	0.411940	0.368294	1.118509	0.3142
D(EG(-3))	-0.620150	0.355077	-1.746524	0.1412
D(IU)	-0.296741	0.135971	-2.182377	0.0809

D(TRE)	1.042635	0.222005	4.696442	0.0054
D(TRE(-1))	2.057890	0.661363	3.111588	0.0265
D(GE)	-2.085269	0.436004	-4.782681	0.0050

From the table above, the relationship between the variables EG and IU(-1) has a significant positive effect, but the relationship variable between EG and TRE is significant negative, meaning that in Malaysia in the short term an increase in internet users will spur the development of the digital economy and lead to economic growth significantly. Furthermore, income from tourism has a negative effect on economic growth in the short term in Malaysia.

Conclusion

We found that in the short term, the previous year's economic growth had a significant positive effect on this year's economic growth, however, it was different with tourism revenues which in the short term had a negative effect on economic growth, as well as the internet user variable which had a significant negative effect. However, government spending has a significant positive effect on economic growth in Malaysia.

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