

Revisiting the Role of Corruption and Political Stability in Shaping Malaysia's Tourism Performance: Insights from an ARDL Approach

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ABSTRACT

The focal point of this study is to examine the relationship between Control of Corruption (COC), Political Stability (PSAV) and tourism performance in Malaysia. The primary aim is to identify whether the observed variables significantly affect the arrival of tourists (TA) in Malaysia. To achieve this, the study employs monthly time series data spanning from January 2014 to December 2023. Malaysia is selected as case study due to its corruption scandals and frequent changes in political leadership during this period. Specifically, this study investigates the short- and long-term effects of unemployment (UN), gross fixed capital formation (GFCF), COC, PSAV, government effectiveness (GE) and ROL on the TA in this country. This study adopts a linear ARDL approach to identify short-term and long-term effects between observed variables. The results suggest that COC and PSAV have an important impact on TA, and UN, GFCF, and GE are significant indicating the existence of a long-term relationship while ROL is not significant. This finding underscores the necessity for policymakers to foster economic stability and strengthen the institutional framework to increase the country's attractiveness as a tourist destination in Asia. By

implication, the effectiveness of controlling corruption, stabilizing the political environment, and fostering strong governance can improve tourism performance in Malaysia.

Keywords: control of corruption, political stability, tourist arrivals, linear Autoregressive Distributed Lag (ARDL)

INTRODUCTION

Tourism is defined as the activity of people who travel to and stay in a place outside their normal environment for no more than one consecutive year for leisure, business and other purposes. According to the World Tourism Organization, tourism refers to service activities related to tourists. The tourism industry plays a crucial role in economic development as well as a significant contributor to national income. It is also the largest sector in the global market (Algieri et al., 2017; Sofronov, 2018) driving business growth in hospitality, transportation, entertainment and related industries. The tourism sector often ranks among the top revenue-generating industries for many countries in terms of foreign exchange earnings (Phan et al., 2023), followed by international tourist spending on accommodation, attractions and other services. Globally, tourism remains one of the most dynamic economic sectors. It promotes intercultural understanding, generates employment opportunities, and strengthens to international relations.

Asia has become one of the most popular regions for tourism, with its rich culture, history, and natural beauty attracting visitors worldwide. The region is often known for its tropical beaches, world heritage sites, and traditional festivals. Tourism in Asia also fosters regional relations through cultural exchange and economic cooperation. Nevertheless, the ASEAN region has faced persistent challenges in recovering from the global health crisis caused by the Covid-19 pandemic. To curb the spread of the virus, travel restrictions were imposed in most countries, severely limiting the cross-border movement of tourists. Despite this, the Association of Southeast Asian Nations (ASEAN) has finally experienced a significant revival in tourism, managing a record 39 million tourist visits in 2022, with soaring growth in the following year. According to Tourism-ASEAN Investment (2023), the region recorded 91 million international tourist arrivals in 2023, marking a significant recovery from the sharp decline during the global health crisis.

Malaysia has traditionally led the region in terms of tourist arrivals, attracting millions annually due to its well-developed tourism infrastructure, cultural diversity and natural attractions. Malaysia recorded the second highest tourist arrivals in Southeast Asia after Thailand, with more than 20 million international tourists in 2023, generating RM 71.3 billion in tourist receipts. This is an increase from approximately RM 28 billion in the previous year (Tourism, Malaysia, 2024). Tourism has not only become the biggest contributor to the national economy but also plays a vital role in promoting Malaysia's identity on the global stage. Destinations such as Kuala Lumpur, Langkawi Island, and Sabah, renowned for their natural beauty and cultural diversity, make Malaysia a preferred country for tourists in Southeast Asia (Hanafiah et al., 2016; Yusoh et al., 2023). The sector plays an important role in introducing local culture to the world, promoting unity, and strengthening the rural economy through ecotourism. This growth is the result of government initiatives implemented through the Visit Malaysia Year campaign (Ibrahim, 2016). Print and electronic media, journals and websites can increase the level of public awareness of preferred tourist destinations that can influence their choices and movements (Alzaydi & Elsharnouby, 2023). In general, the pattern of tourist arrivals in Malaysia is influenced by various factors, including travel purpose, travel distance, intended activities, and expenditure (Salleh et al., 2007; Kadir & Karim, 2012; Tan & Soon, 2023).

The increase in tourist arrivals in Malaysia directly positioned the tourism sector as a major contributor to job creation related to tourism. It generates a variety of job opportunities, including tour guides, hotel staff, transport services and souvenir sellers. Furthermore, increased demand for goods and services in tourism, can indirectly create jobs in other sectors such as agriculture, retail, manufacturing and construction. This opportunity provides an important source of income, especially in developing countries with limited employment options (Paramati & Nguyen, 2023). Unemployment is often linked to insufficient investment in the productive sectors. Investments in fixed capital, involving spending on fixed assets such as machines, buildings and infrastructure can enhance production in the tourism industry. Infrastructure investment has been shown to positively impact tourist arrivals in Southeast Asia (Tang & Tan, 2015; Pradhan et al., 2017; Ridzuan et al., 2018). To ensure that investments can be sustained, it is important to emphasize and maintain corruption control and political stability so as to foster investor confidence. Without such investment, tourism development will stagnate, ultimately leading to a decrease in tourist arrivals.

Effective control of corruption and political stability are very important to attract tourists, reflecting the socio-economic health of a country. Corruption and political instability can have a significant impact on tourism through undermining national governance, public safety and international reputation. Corruption is often seen as a significant obstacle to tourism development. It affects various aspects of the country's infrastructure and governance, leading to inefficiency that deter potential visitors. The erosion of public trust and the prevalence of corruption can severely damage a country's reputation as a tourist destination. Tourists are less likely to visit a country that is plagued by corruption, mismanagement or unethical practices. Gössling et al. (2021) found that corruption undermines international trust in public institutions, leading tourists to question the safety, quality, and fairness of their experience. Countries with high levels of corruption tend to experience slower growth in the development of tourism infrastructure, directly affecting tourist arrivals (Dridi, 2022). The political stability of a country is another important determinant of the attractiveness of a destination. Tourists tend to avoid countries experiencing political unrest, conflict or instability due to security concerns and travel disruptions caused by protests, coups or terrorism. Tourist destinations that are peaceful and free from corruption issues are often considered safer and more reliable, making them preferred choices for international tourist destinations.

There is no doubt that the arrival of tourists contributes significantly to economic growth, job creation and cultural exchange. However, these benefits are tied to the political and governance environment of the destination. Corruption control and political stability are two critical factors that influence investor confidence and international reputation. These elements are particularly vital in a sector such as tourism, where the perception of governance and stability directly influences tourist decisions. However, Malaysia's effectiveness in controlling corruption has been inconsistent. According to Transparency International's Corruption Perceptions Index (CPI), Malaysia's ranking has fluctuated over the years, reflecting public concern over high-profile scandals and governance issues. This inconsistency can erode public trust and the country's attractiveness as a tourist destination. Malaysia's tourism industry has been affected by high-profile corruption cases, most notably the 1Malaysia Development Berhad (1MDB) scandal that emerged in 2014, implicating top political leaders and attracting widespread international media attention. Ibrahim and Said (2016) emphasized that such scandals not only damage the country's reputation but also create an image of poor governance that discourage international tourists.

In the past, Malaysia was regarded as one of the more politically stable Southeast Asian countries, able to foster confidence among investors and tourists alike. However, this stability has been challenged in recent years due to changes in government, leadership crises, and growing public dissatisfaction with economic and social issues. Political upheavals and leadership uncertainty during this period have created a perception of instability, potentially deterring tourists. Henderson (2016) states that political protests and negative media coverage surrounding leadership crises can influence tourists' perceptions, especially among those seeking safety and reliability. For example, the Bersih protests received widespread international coverage, painting an image of domestic discontent and unrest that may discourage tourists from visiting.

However, the Malaysian government has demonstrated a firm commitment in addressing corruption through introducing the National Anti-Corruption Plan (NACP) as an effort to combat corruption. A study by Lee and Brahmana (2019) found that such initiatives enhance tourist confidence in the safety and efficiency of tourism destination management. Additionally, the Malaysian Anti-Corruption Commission (MACC) has been strengthened to curb the spread of corrupt practices. The implementation of the Integrity Pact, a major initiative under the National Key Result Area (NKRA) on corruption, aimed at avoiding conflicts of interest, increasing transparency in efficient procurement processes, and reducing the symptoms of corruption. However, challenges still exist in curbing corruption and maintaining effective political administration to sustain continued trust among international tourists.

Between 2014 and 2023, Malaysia faced significant corruption scandals and political unrests. Since this study focuses on this period, it seeks to explore the relationship between corruption control, political stability and tourist arrivals, with the aim of identifying strategies to overcome challenges in addressing past governance issues and in implementing reforms. Although previous studies have established that political instability and corruption negatively affect tourism, further research on this issue is necessary in the Malaysian context to analyse both the short- and long-term relationships between key independent factors and tourist arrivals. These include unemployment, gross fixed capital formation, control of corruption, political stability and absence of violence, government effectiveness and rule of law. The novelty of this study lies in its ability to provide a clear understanding of corruption and political issues in the country and thereby to inform policymakers on the implications of these variables in the long-term.

This paper is structured as follows: The next section presents the literature review on tourist arrivals, followed by the methodology and model specification, and empirical findings. The final section concludes with policy implications.

LITERATURE REVIEW

The previous discussion on tourist arrivals, particularly in relation to corruption control and political stability, provides a strong foundation in choosing the right determinants for the current study. This section thus reviews in depth past literature before presenting a model to rigorously test the long- and short-term relationships that exist between the independent and dependent variables. Emphasis is given on the impact of key factors such as unemployment, gross fixed capital formation, control of corruption, political stability and absence of violence, government effectiveness and rule of law on tourist arrivals. Historically, tourist arrivals have been greatly influenced by the role of macroeconomic conditions and quality of governance.

Tourism is one of the important economic indicators that determine the level of unemployment in a country. Previous studies have explored the dynamics between unemployment and tourist arrivals, often finding a significant negative relationship. Increased unemployment is typically associated with economic and political instability (Enright & Newton, 2004). Tourists, especially from developed countries, are less likely to visit countries with weak economies or unstable politics due to their concerns about unsatisfactory quality of service and experiences, and security linked to high unemployment (Chiu & Yeh, 2017). According to Pratt and Liu (2016), high unemployment rates in developing countries are associated with increased crime against tourists, including cases of robbery and violence. Tourists' perception of risk greatly influences their intention to visit a destination (Sönmez & Graefe, 1998). However, some studies suggest that high unemployment rates can have a positive impact on tourism from low- and middle-income countries as reduced labour and operating costs result in lower prices for accommodation, food, and tourism (Gokovali et al. 2007; Saayman et al. 2012). Chaulagain et al. (2021) found that tourist destinations that offer lower prices tend to attract cost-conscious tourists seeking value for money, allowing them to optimize their travel budgets while enjoying worthwhile experiences (Sönmez & Sirakaya, 2002; Cheng & Chang, 2012).

Fiscal weaknesses in government investment in tourism infrastructure can reduce a destination's attractiveness, disrupt comfort and make travel more difficult (Buhalis, 2000). Gross Fixed Capital Formation reflects the level of national investment in infrastructure development that supports tourism. There is a significant positive relationship between infrastructure investment and tourist arrivals, since investment in airports, roads, accommodation and public facilities improves accessibility (Huybers & Bennet, 2003; Tugba & Huseyin, 2010; Chou & Chen, 2011; Seetanah, 2011). Furthermore, Papatheodorou (2006) highlights that efficient and modern infrastructure enhances the quality of tourist experience, satisfaction and destination competitiveness. Therefore, a well-developed tourism sector requires sustained infrastructure development to attract more tourists, and thereby drive long-term growth (Dwyer et al. 2010; Tugba & Huseyin, 2010). Nevertheless, excessive investment in luxury infrastructure, such as theme parks, high-end entertainment facilities and hotels can deter low-budget tourists, even if the quality is high (Pratt, 2015). In addition, rapid tourism development has a negative impact on the environment, resulting in air and water pollution and the destruction of natural habitats which can ultimately reduce tourism arrivals (Gössling, 2002; Sharpley, 2009; Balmford et al, 2009). Gössling et al. (2008), revealed that tourists increasingly prefer destinations that promote sustainable development and environmental protection.

To ensure effective national infrastructure development, it is crucial that government funds for the tourism sector, be managed in a transparent manner and fairly free of corruption. Saha and Yap (2015) found that countries with efficient anti-corruption measures attract more tourists. Tiwari and Joshi (2015) further showed that countries with strong anti-corruption policies instil confidence in the safety, integrity and fairness of the destination. Furthermore, strong governance assists the country in building a country's reputation as a reliable and professional tourist destination, attracting both leisure and business travellers (Lankford, 2001; Croes & Rivera, 2015). In comparison, corruption erodes tourists' trust in legal and regulatory systems (Makanyeza et al., 2016). Liu et al. (2014) also noted that tourists tend to choose countries that are free from corruption. High-corruption countries often experience reduced number of tourists due to negative perceptions on safety and protection. Furthermore, tourists may have to pay high hidden costs due to corruption, such as additional fees, hidden taxes or illegal payments. This consequently creates dissatisfaction, causing them to choose more transparent destinations (Saha & Yap, 2015; Azam et al., 2017). Croes and Rivera (2015) also noted that widespread corruption in the administrative

system will hinder tourism development by diverting away public funds intended for infrastructure and services, thus reducing overall quality.

Tourists generally prefer destinations that guarantee safety, are free from violence and are politically stable, which are their main concerns regardless of actual threats (Hall and O'Sullivan, 1996). Raza et al. (2020) found that political instability has a negative impact on tourist arrivals, especially in countries that frequently experience government changes, protests or security issues. Similarly, Drakos and Kutan, (2003) stated political instability is negatively correlated with short-term tourist arrivals, creating concerns on safety. Countries experiencing political instability often struggle to restore their image, even after the situation has improved, resulting in long-term negative impact on tourism. Therefore, political stability can be considered a key prerequisite for sustainable tourism (Croes and Ridderstaat, 2017). According to Neumayer (2004), politically stability destinations attract a significant increase in tourist arrivals due mainly to perceptions of safety, low crime rates, and minimal violence.

Government effectiveness in addressing corruption and political issues plays a crucial role in shaping a sustainable national tourism landscape, enhancing the quality of public services and policy implementation. Dutta et al. (2021) found a strong positive relationship between government effectiveness and international tourist arrivals, suggesting that countries prioritizing tourism in their policy formulation, and maintaining an efficient administrative system are more likely to attract and retain tourists. Governments that are effective in implementing proactive tourism strategies through promotion, providing incentives and reducing bureaucratic barriers such as visa restrictions, have recorded significant increases in the number of tourist arrivals (Li et al., 2021). Furthermore, government efficiency in planning and managing tourism administration can enhance the overall tourist experience (Zhang et al., 2022). Conversely, failure of government effectiveness can hinder tourist growth, especially when tourism policies are not properly implemented. Lin and Simmons, (2022) stated that destinations affected by financial leakage and weak governance experienced significant declines in tourist arrivals. Inefficiencies in service delivery, such as delays in immigration, limited public transportation and poor disaster management, reflect government's ineffectiveness, creating negative tourist experience and reduced likelihood of repeat visits (Kim et al., 2021).

Effective governance can be demonstrated through the strength of a country's rule of law. The consistent application of legal frameworks creates a predictable and secure environment for

tourists. Nunkoo et al. (2013) emphasized that the rule of law is the foundation of sustainable tourism development, safeguarding both tourists and host communities. High compliance with the rule of law enhances trust and perceptions of safety, thus increasing tourist arrivals. This finding is in line with Zhou et al. (2023), who discovered that tourists are more likely to choose destinations with strong safety records and low crime rates, especially for short-term visitors. Similarly, such visitors are also attracted to quick legal responses to incidents such as theft or assault, which may consequently improve destination appeal (López-Guzmán & Martín, 2022). In the long term, adherence to the rule of law can help shape a positive image of the country as a stable and tourist-friendly destination. Williams et al. (2023) showed that countries that maintain high scores on the rule of law index for over a decade experienced continuous increase in tourist arrivals. Furthermore, strict laws to protect cultural heritage, preserve ecosystems and regulate sustainable development may attract tourists interested in exploring cultural diversity and rich natural resources (Müller & Kietzmann, 2021; Wang & Huang, 2022; Zhang & Xie, 2023).

METHODOLOGY

To achieve the objectives of this study, the Autoregressive Distributed Lag (ARDL) approach, introduced by Pesaran and Shin (1999), is employed. This method is commonly used to analyse dynamic relationships in time series data within a single-equation framework (Kripfganz & Schneider, 2023). The ARDL approach is used to study short- and long-term relationships by re-parameterizing the model into the Error Correction Model (ECM) (Beh & Lee, 2020). In this study, the independent variables include unemployment, gross fixed capital formation, control of corruption, political stability and absence of violence, government effectiveness, and rule of law, while the dependent variable is tourist arrivals. An Augmented Dickey-Fuller (ADF) test is conducted to determine the stationarity of the data series, identifying whether the variables are stationary at level (1(0)) or become stationary after first differentiating (1(1)). The F-Bound cointegration test is then conducted to assess the presence of long-run relationships among the variables. After establishing cointegration, the ARDL model was employed to estimate the long-run coefficients of the variables, while the ECM is applied to analyse short-run dynamics and the speed of adjustment to equilibrium. Within the ARDL framework, it is essential that the series should not exhibit an integration of the second order (1(2)), as this would invalidate the F-statistics and critical values established by Pesaran et al., (2001). These critical values are specifically

calculated for series with integration order of I(0) or I(1), or a combination of both (Pesaran et al., 2001), for the ARDL approach to remain valid and effective for modelling.

DATA COLLECTION

The study utilizes annual data spanning from 2014 to 2023, with the sample period determined by data availability. The annual data were converted into monthly frequency using EViews 12 to obtain higher-frequency data. The variable, Tourist Arrivals (TA), measured in millions of persons, was sourced from Tourism Malaysia. Data on Unemployed Persons (UN), in thousands, and Gross Fixed Capital Formation (GFCF), in million MYR, were sourced from the Department of Statistic, Malaysia. Data for Control of Corruption (COC), Political Stability and Absence of Violence (PSAV), and Government Effectiveness (GE) were provided by the World Bank and expressed in percentiles. The Rule of Law (ROL) was sourced from the World Bank as estimation. The description of these variables is presented Table 1.

Table 1: Data description

Variables	Descriptions	Measurement	Sources
TA	Tourist Arrivals	Millions	Tourism, Malaysia
UN	Unemployed Persons	Thousand	Department of Statistics, Malaysia
GFCF	Gross Fixed Capital Formation	MYR Millions	Department of Statistics, Malaysia
COC	Control of Corruption	Percentile	World Bank
PSAV	Political Stability and Absence of Violence	Percentile	World Bank
GE	Government Effectiveness	Percentile	World Bank
ROL	Rule of Law	Estimate	World Bank

MODEL SPECIFICATION

The objective of this study is to examine the impact of corruption and political stability on tourism performance in Malaysia over the past decade. According to Adhikari & Chen (2011), Kumar et al. (2014, 2015) and Saleh et al. (2019), total factor productivity (TFP) is a crucial indicator of economic growth. It is estimated using a production function that captures the relationship between

inputs (typically labour) and outputs. This study adopts the Cobb Douglas production function (Cobb and Douglas, 1928), a productivity model initially developed to account for TFP, which is proxied by Tourist Arrivals, labour by Unemployed Persons and capital by Gross Fixed Capital Formation. The relationship is presented in Equation (1).

$$TA_t = f (UN_t, GFCF_t) \quad (1)$$

where, TA represents the Tourist Arrivals, UN is Unemployed Person and GFCF is Gross Fixed Capital Formation. t is the study period from 2014 until 2023.

However, prior studies have demonstrated that additions by other macroeconomic factors can also influence productivity not only by capital and labour (Solow, 1957; Abugamea, 2017). To account for other variables of interest, equation (1) is re-specified in formulating equation (2). Control of Corruption (COC), Political Stability and Absence of Violence (PSAV), Government Effectiveness (GE), Rule of Law (ROL) are included in tourism productivity.

$$TA_t = f (UN_t, GFCF_t, COC_t, PSAV_t, GE_t, ROL_t) \quad (2)$$

From equation 2, the general estimation modelling is transformed in to linear form as follows:

$$TA_t = \zeta_0 + \pi_1 UN + \pi_2 GFCF + \pi_3 COC + \pi_4 PSAV + \pi_5 GE + \pi_6 ROL + \mu_t \quad (3)$$

where α is the intercept, π_1 to π_6 are the coefficients, while μ is an error term.

The linear model proposed in eq. (3) will be estimated using Eviews (Version 16) software. Specifically, the estimated modelling will follow the testing procedure proposed by two main articles written by Rambeli et al. (2021, 2024) These studies serve as methodological references for systematically implementing and comprehending the ARDL modelling framework. In the next subsection, there will be detailed explanations and statistical testing process of each stage of the ARDL framework model.

Augmented Dickey-Fuller Unit Root Test

To determine the stationarity of the time series data, this study employed the Augmented Dickey-Fuller (ADF) Unit Root Test developed by Dickey and Fuller (1976). The test will be conducted to assess the order of integration at two levels; the level form and the first difference, analysing both models with intercept and with trend and intercept. The Akaike Information Criterion (AIC) was employed to determine the optimal lag length in selecting the model. The Augmented Dickey-Fuller (ADF) test will be compared with the critical values obtained from the estimation results to evaluate the stationarity of the variables, with ADF known for its robustness (Davidson & MacKinnon, 2004). The hypotheses can be identified by the unit root as follows:

$H_0 : \delta = 0$ Null hypothesis (failed to reject H_0 , series is non-stationary, has unit root)

$H_1 : \delta \neq 0$ Alternatives hypothesis (reject H_0 , series stationary, no unit root)

By confirming the integration order, the ADF test allows the appropriate application to identify long-run relationships among the variables.

Bound Cointegration Test

The bound cointegration test is an essential procedure in the ARDL framework to determine the presence of a long-run relationship among variables. It compares the computed F-statistic with lower and upper bounds, assuming all variables are $I(0)$ and $I(1)$, respectively (Pesaran et al., 2001). If the F-statistic exceeds the upper critical value, it indicates the existence of long-term cointegration. On the other hand, if the F-statistic falls below the lower critical value, long-term cointegration is rejected. If the F-statistic lies between the two critical values, the null hypothesis of no cointegration among the parameters cannot be rejected and the result is inconclusive (Qodirov et al., 2024). The hypotheses of the bound test are as follows:

$H_0 : \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = \delta_7 = 0$ (no cointegration, long run relationship does not exist)

$H_1 : \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq \delta_6 \neq \delta_7 \neq 0$ (has cointegration, long run relationship exist)

ARDL Long Run Model

Once cointegration is confirmed, Equation (4) is estimated, to examine the long-run relationships among the dependent and independent variables. The ARDL model is specified from Equation (3). The purpose of this step is to estimate the long-term coefficients and assess the significance of the variables. It aims to determine the negative or positive relationship between Unemployed Persons (UN), Gross Fixed Capital Formation (GFCF), Control of Corruption (COC), Political Stability and Absence of Violence (PSAV), Government Effectiveness (GE), Rule of Law (ROL) on Tourist Arrivals in Malaysia. The ARDL model used in this study can be written as follows:

$$\Delta TA_t = \alpha_0 + \sum_{i=1}^p \beta_1 \Delta TA_{t-i} + \sum_{i=1}^q \beta_2 \Delta UN_{t-i} + \sum_{i=1}^r \beta_3 \Delta GFCF_{t-i} + \sum_{i=1}^s \beta_4 \Delta COC_{t-i} + \sum_{i=1}^t \beta_5 \Delta PSAV_{t-i} +$$

$$\sum_{i=1}^u \beta_6 \Delta GE_{t-i} + \sum_{i=1}^v \beta_7 \Delta ROL_{t-i} + \delta_1 TA_{t-1} + \delta_2 UN_{t-1} + \delta_3 GFCF_{t-1} + \delta_4 COC_{t-1} + \delta_5 PSAV_{t-1} + \delta_6 GE_{t-1} + \delta_7 ROL_{t-1} + \mu_t$$

(4)

where, Δ is the first difference operator; δ_1 to δ_7 depict the long-term relationship between the variables, while the coefficient β_1 to β_7 , with the summation signs, represents the short-term dynamics of the variables. The optimal lag length for dependent and independent variables are p and q, respectively and α is the constant.

ARDL Short Run Model

Following the identification of long-term relationships, the short-term casualty is analysed to determine the speed of adjustment within the model. The following Error Correction Model (ECM) in Equation (5) is employed to determine the short-run dynamics:

$$\Delta TA_t = \alpha_0 + \sum_{i=1}^p \beta_1 \Delta TA_{t-i} + \sum_{i=1}^q \beta_2 \Delta UN_{t-i} + \sum_{i=1}^r \beta_3 \Delta GFCF_{t-i} + \sum_{i=1}^s \beta_4 \Delta COC_{t-i} + \sum_{i=1}^t \beta_5 \Delta PSAV_{t-i} +$$

$$\sum_{i=1}^u \beta_6 \Delta GE_{t-i} + \sum_{i=1}^v \beta_7 \Delta ROL_{t-i} + \phi ECT_{t-1} + \mu_t$$

(5)

ECT is the error correction term that measures the speed of adjustment toward equilibrium and ϕ is the corresponding estimate.

Diagnosis statistical tests

Diagnostic tests are used to assess the accuracy and stability of the models. These tests include: (i) the Breusch-Godfrey Serial Correlation LM test to check for serial correlation in the residuals, (ii) the Jarque-Bera normality test to ensure residuals of the model are normally distributed, (iii) the Breusch-Pagan-Godfrey test to detect heteroscedasticity in the residuals, and (iv) Ramsey RESET test to detect functional form misspecification.

EMPIRICAL FINDINGS

The ARDL model was employed to analyse the long and short-run relationships between tourist arrivals in Malaysia and the independent variables (unemployment, gross fixed capital formation, control of corruption, political stability and absence of violence, government effectiveness, rule of law). The F-Bound test confirmed the cointegration among the variables. Upon establishing cointegration, ARDL model was employed to estimate the long-run coefficients of the variables, and the ECM regression was employed to analyse short-run dynamics and the speed of adjustment to equilibrium.

Unit Root Test

Table 2 : Augmented Dickey-Fuller (ADF) of Unit Root Test

Variables	At Level		First Difference	
	Intercept	Trend and Intercept	Intercept	Trend and Intercept

TA	-1.648695 [12] (0.4546)	-1.540237 [12] (0.8101)	-8.581510 [12] (0.0000)***	-8.578279 [12] (0.0000)***
UN	-1.755731 [12] (0.4008)	-1.735709 [12] (0.7291)	-7.232879 [12] (0.0000)***	-7.265083 [12] (0.0000)***
GFCF	-2.425791 [12] (0.1370)	-2.474133 [12] (0.3403)	-4.205414 [11] (0.0010)***	-4.212517 [11] (0.0060)***
COC	-1.720365 [12] (0.4182)	-2.093381 [12] (0.5433)	-3.600657 [12] (0.0073)***	-5.658615 [11] (0.0000)***
PSAV	-2.010361 [12] (0.2821)	-2.830281 [12] (0.1896)	-4.478038 [12] (0.0004)***	-4.455140 [12] (0.0027)***
GE	-0.716862 [12] (0.8372)	-1.212964 [12] (0.9024)	-4.339786 [12] (0.0006)***	-4.252513 [12] (0.0054)***
ROL	-0.269611 [12] (0.9246)	-1.246249 [12] (0.8952)	-4.443963 [12] (0.0004)***	-4.327737 [12] (0.0042)***

Source: Calculated by using EViews 14 Software

Note: The value in brackets [] is the number of lag lengths that follows Akaike's Information Criterion (AIC)

**** indicates at 1% significance level*

Table 2 presents the results of the ADF test, including the level form and first difference. The significance level of the p-value was determined using MacKinnon (1996) to assess the probability of accepting or rejecting the null hypothesis. The findings indicate that the variables, COC, PSAV, GE, ROL, and TA are non-stationary at the level form, thus the null hypothesis of a unit root can be accepted. It shows that the t-statistics are greater than the critical values. For instance, the ADF test statistics for TA at level form of intercept are -1.648695 (p= 0.4546) and -1.5540237 (p= 0.3101) with trend and intercept where both p-values are greater than 0.01 at lag 12. This indicates that the variable has a unit root and is not stationary at level form. However, after first differencing, the test statistic becomes -8.581510 (p=0.0000) for intercept, and -8.578279 (p=0.0000) for trend and intercept indicating significance at the 1% level. This allowed TA to be used in the ARDL model. Similarly, time series data for UN, GFCF, COC, PSAV, GE and ROL are non-stationary at the level form but become stationary after first differencing, in line with prior research highlighting the importance of testing for stationarity to avoid the variables integrated at 1(2) being used ensuring invalid results because the ARDL approach is not designed to handle variables integrated of order two or higher.

Bound Cointegration Test

Table 3: Results of ARDL Bound Test

Test statistic	Value	Significance level	Bound critical values	
			I(0)	I(1)
F-statistic k	11.71017*** 6	10%	1.99	2.94
		5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Source: Calculated by using EViews 14 Software

*Note: *** indicates at 1% significance level respectively*

Table 3 simplifies the bound test results to determine the presence of long-run cointegrating relationship between the dependent and independent variables by comparing the F-statistic value against the critical values (Narayan, 2005). Subsequently, the ARDL bounds test approach is applied with the optimal lag order at $k = 6$, which was selected according to the AIC. The ARDL null hypothesis of no cointegration is tested against its alternative of extant co-integration. The findings show that the F statistic (11.71017) is higher than upper and lower bounds and significantly exceeds the critical value of 2.88 and 3.99 at significance levels 1%, respectively. It provides strong evidence to reject the null hypothesis of no cointegration at 99 percent significance. This suggests that the variables demonstrate strong long-term relationships, indicating that changes in the independent variables have a long-term effect on tourist arrivals.

ARDL Long Run Result

Table 4: The estimated for ARDL Long-run Model

Variables	Coefficient	t-Statistic
UN	-8.447895	-10.39193***
GFCF	11.61426	9.692934***

COC	0.188986	7.231864***
PSAV	-0.088605	-7.992225***
GE	-0.152594	-7.758306***
ROL	1.326469	1.333211
C	-61.94977	-3.580415***

Source: Calculated by using EViews 14 Software

*Note: *** indicates at 1% significance level respectively*

Table 4 presents the long-run dynamic results of the relationship between dependent and independent variables to determine whether TA has a positive or negative relationship with UN, GFCF, COC, PSAV, GE and ROL in Malaysia. The long-run estimation indicates that COC and GFCF positively impact TA, while UN, PSAV and GE show negative effects. In other words, a 1% increase in COC and GFCF leads to an increase of 0.19 and 11.61 respectively in TA. In contrast, a 1% rise in UN, PSAV and GE reduces 8.45, 0.09 and 0.15 in TA, respectively. The finding emphasizes that controlling corruption and investing in infrastructure is important to increase tourist arrivals. Corruption control can reduce it, positively affecting the development of tourism, improving the country's reputation through fostering transparency and trust, thus attracting the arrival of tourists (Ahmad & Haleem, 2021). Likewise, infrastructure investment improves accessibility and the overall tourist experience, leading to increased arrivals. (Yap & Saha, 2013).

Meanwhile, high unemployment signifies economic instability, that can discourage tourism due to concerns on safety. Political instability and violence impede tourism by creating an unsafe environment. Rauf et al, (2023), discovered that unrest significantly reduces tourist inflows. In addition, ineffective governance results in inadequate infrastructure and services, which reduces the quality of tourist experience and the attractiveness of a destination (Khan et al., 2021). The coefficients for UN, GFCF, COC, PSAV and GE are statistically significant at 1% confidence level, whereas ROL is not significant. The rule of law becomes insignificant in the long run when centralized authority erodes the legal institutions for private interests (Hayek, 1944), suggesting that a weak legal framework, lacking clarity and certainty, hinder the tourism industry (Coros & Lupu, 2015).

ARDL Short Run Result

Table 5: The estimated for ARDL Long-run Model

Dependent Variable: D(TA)

Selected Model: ARDL (1,2,12,11,2,6,11)

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob
D(UN)	-7.955403	1.054883	-7.541503	0.0000***
D(UN(-1))	-1.575709	0.908391	-1.734615	0.0883*
D(GFCF)	9.805725	1.391745	7.045633	0.0000***
D(GFCF(-1))	-7.468469	1.575907	-4.739156	0.0000***
D(GFCF(-2))	-3.841184	1.508992	-2.545530	0.0137**
D(GFCF(-3))	1.643566	2.036225	0.807163	0.4230
D(GFCF(-4))	-2.927677	2.109339	-1.387959	0.1706
D(GFCF(-5))	-3.034531	1.966420	-1.543175	0.1284
D(GFCF(-6))	4.869582	2.072577	2.349530	0.0223**
D(GFCF(-7))	-1.657291	2.087356	-0.793966	0.4306
D(GFCF(-8))	-1.508539	1.809681	-0.833594	0.4081
D(GFCF(-9))	6.860816	1.422185	4.824137	0.0000***
D(GFCF(-10))	0.907408	1.515672	0.598684	0.5518
D(GFCF(-11))	4.333363	1.165751	3.717229	0.0005***
D(COC)	0.117410	0.038607	3.041173	0.0036***
D(COC(-1))	-0.129073	0.037175	-3.472011	0.0010***
D(COC(-2))	-0.199005	0.037852	-5.257397	0.0000***
D(COC(-3))	0.002195	0.043890	0.050002	0.9603
D(COC(-4))	-0.034662	0.040861	-0.848289	0.3999
D(COC(-5))	0.036505	0.040024	0.912075	0.3656
D(COC(-6))	-0.002613	0.039979	-0.065357	0.9481
D(COC(-7))	-0.016529	0.038447	-0.429921	0.6689
D(COC(-8))	-0.021552	0.038050	-0.566411	0.5734

D(COC(-9))	-0.090993	0.036495	-2.493288	0.0156**
D(COC(-10))	-0.087189	0.036554	-2.385183	0.0205**
D(PSAV)	-0.066008	0.028623	-2.306122	0.0248**
D(PSAV(-1))	0.051640	0.027431	1.882554	0.0650*
D(GE)	0.099166	0.068121	1.455734	0.1510
D(GE(-1))	0.311390	0.072626	4.287603	0.0001***
D(GE(-2))	0.195047	0.061779	3.157161	0.0026***
D(GE(-3))	-0.369451	0.058259	-6.341506	0.0000***
D(GE(-4))	-0.308237	0.066080	-4.664622	0.0000***
D(GE(-5))	-0.360164	0.066425	-5.422124	0.0000***
D(ROL)	-8.623085	3.610898	-2.388072	0.0203***
D(ROL(-1))	-11.93063	3.686243	-3.236529	0.0020***
D(ROL(-2))	-1.164034	3.301946	-0.352530	0.7258
D(ROL(-3))	20.64569	3.467996	5.953204	0.0000***
D(ROL(-4))	18.54288	3.829017	4.842727	0.0000***
D(ROL(-5))	18.29269	3.963391	4.615415	0.0000***
D(ROL(-6))	-0.369251	1.621921	-0.227662	0.8207
D(ROL(-7))	1.135639	1.541172	0.736867	0.4643
D(ROL(-8))	0.537074	1.564959	0.343187	0.7327
D(ROL(-9))	5.182501	1.477864	3.506750	0.0009***
D(ROL(-10))	4.890724	1.527175	3.202464	0.0022***
CointEq(-1)	-0.807238	0.078632	-10.26604	0.0000***

Source: Calculated by using EViews 12 Software

*Note: *** indicates at 1% significance level respectively*

Based on Table 3, the ARDL short-run coefficients model indicated the mixed effects of COC and ROL, fluctuating between negative and positive values. Nevertheless, COC has a significant negative affect on TA in the short term; where a 1% increase in COC reduces TA by 0.2% at lag 2. Although, reducing corruption typically improves tourism by enhancing the country's attractiveness, reliability, and infrastructure (Basso et al., 2019; Saeed et al., 2022) the immediate impacts may be disruptive. Where initially, anti-corruption policies may hinder tourism

temporarily due to policy changes, long-term benefits are however anticipated. Similar findings reported by Jiang & Zhao (2023), showed that in the short-term, stringent anti-corruption policies may temporarily disrupt certain sectors before yielding positive outcomes. Compared to COC, ROL exerts a more consistent positive impact on TA, where a 1%, increase in ROL raises TA by 20.65% at lag 3. The positive and significant effect of the ROL on TA emphasizes the importance of legal security and a predictable environment for tourism growth in the short term. Elgazzar et al. (2020) highlight the role of the ROL as an important determinant of tourism flow, as travellers seek destinations where property rights and security are guaranteed. In addition, Gössling et al. (2021) assert that the ROL fosters trust in tourism infrastructure and tourist protection, enhancing tourism inflows. GFCF and GE display balanced impact, positively and negatively influencing TA. GFCF reflects investment in infrastructure, which can promote tourism in the long-term (Chou & Chen, 2023). However, in the short-term, benefits may be limited since large-scale projects require time to complete or funds may be directed to areas that do not directly support tourism. Czerny et al. (2023) found that large-scale construction projects can even temporarily disrupt tourism, as the construction process itself can deter tourists. Positive effects usually appear only after the project is completed. The balanced impact of GE may indicate varying policy priorities affecting tourism outcomes in different contexts. Bertella & Tontodonati (2021) argue that effective governance contributes to a stable environment for business, including tourism, though its impact depends on the alignment of government objectives with the needs of the tourism industry. As for UN, negative impact occurs at lag 1: a 1.00% increase in unemployment, leads to TA reduction by 1.58%. Additionally, the result shows that the error correction term is statistically significant and negative (-0.807238), indicating the existence of a long-term relationship (cointegration) between the explanatory variables and TA, suggesting that a speed of adjustment is needed to reach equilibrium in the long-term. Hosseini et al. (2021) argue that economic and governance factors have long-term effects on tourism, despite short-term deviations. The adjustment speed of 0.807238 shows that most imbalances are corrected in each period, indicating a strong correction mechanism towards equilibrium.

Diagnosis Statistical Test

Table 6: Results of Diagnostic Tests for ARDL

Diagnostic Checking	p-value
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Serial Correlation	0.1290
Normality	0.175280
Heteroscedasticity (Breusch-Pagan-Godfrey)	0.0573
Ramsey	0.0603

The diagnostic tests for the ARDL model in Table 6 confirm that the model satisfies key econometric assumptions, ensuring its reliability for analysis. The series correlation test yields a p-value 0.1290, indicating no evidence of serial correlation in the residuals. This satisfies an essential condition for unbiased and efficient parameter estimates, as highlighted by Pesaran et al. (2001). Jarque and Bera (1980) emphasized that a normal distribution of residuals strengthens the validity of statistical inferences. The normality test produces a p-value of 0.175280, suggesting that the residuals are normally distributed. For heteroscedasticity, the Breusch-Pagan-Godfrey test reports a p-value of 0.0573, failing to reject the null hypothesis of no heteroscedasticity. This confirms that the model's residuals show constant variance, thus meeting this assumption. Furthermore, the Ramsey RESET test showed a p-value of 0.0603, indicating that the model is correctly specified, with no significant omitted variable bias. Ramsey (1969) asserted that specification testing is crucial for model reliability. These results indicate that the ARDL model is robust and reliable and meets essential diagnostic criteria.

CONCLUSIONS

This study assesses the determinants of tourist arrivals to Malaysia from 2014 to 2023 through adopting the Autoregressive Distributed Lag (ARDL) model to analyse the dynamic relationship between TA and independent variables including UN, GFCF, COC, PSAV, GE, and ROL. The results indicate mixed effects, with both positive and negative influences on TA from the observed variables, either in the short-run or long-run. COC has a negative impact in the short-run due to preventive measures disrupting existing systems and creating adjustment challenges. Nevertheless, when more transparent governance is established, COC exerts a positive long-term impact. Conversely, PSAV has a positive impact in both the short- and long-run, reflecting its role in fostering a sustainable tourism industry. Meanwhile, UN consistently exerts a negative impact on tourist arrivals in both the short- and long-run. Although the ROL is not significant in the long-

run, it is nevertheless significant in the short-run, showing immediate effects. Although its importance remains fundamental, the ROL is often neglected in the long-run. By implication, it is clear that the government needs to strengthen COC, increase capital formation, and address UN issues as well as GE to support sustainable tourism growth. This can be achieved by increasing transparency in public spending, encouraging investment in tourism infrastructure and creating tourism-related jobs. In addition, implementing a consistent tourism policy and strengthening law enforcement to ensure PSAV, GE, and the ROL are vital for the development of a strong tourism industry in Malaysia. Overall, this study emphasizes the importance of addressing economic, institutional, and governance factors in driving the country's tourism industry in Malaysia.

Future research could be extended by incorporating additional institutional, economic, and geopolitical determinants that influence Malaysia's tourism sector. In particular, the inclusion of a geopolitical risk index would provide valuable insights into how international conflicts, diplomatic relations, or regional instability affect tourist arrivals. Time series approaches beyond the conventional ARDL framework, such as nonlinear ARDL, threshold models, or Markov-switching techniques, could be employed to capture asymmetric and regime-dependent dynamics. Future studies may also consider the application of structural break tests and rolling window estimations to detect shifts in the relationship between governance indicators and tourism flows. Since this study employs aggregate tourist arrivals, subsequent research could model disaggregated series, distinguishing between domestic and international arrivals, to capture heterogeneous responses. Comparative time series analysis across sub-periods, particularly before and after major policy changes or global shocks, would also yield valuable insights. Extending the sample period beyond 2023 is important to evaluate the sustainability and persistence of policy reforms in the tourism sector. The integration of additional macroeconomic variables such as exchange rates, inflation, and interest rates into the time series framework could further enhance the robustness of results. Moreover, testing for causality through advanced methods such as the Toda-Yamamoto approach or frequency-domain causality tests may provide deeper insights into the directional linkages between tourism and its determinants. Overall, future studies should aim to establish a comprehensive econometric framework that accounts for governance, institutional quality, and geopolitical risk as critical drivers of Malaysia's sustainable tourism growth.

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