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Unveiling the Dynamics of Tourism Demand: Insights from Malaysia's Neighboring Countries

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Abstract
This study conducted in Malaysia represents a significant contribution to the understanding of tourism dynamics in the region, particularly in relation to arrivals from neighboring countries such as Indonesia, Singapore, and Thailand. Given Malaysia's status as a favored destination for international tourists, particularly from these neighboring nations, understanding the factors influencing tourism demand is of paramount importance. By employing a combination of seasonal unit root analysis, structural break analysis, and multivariate cointegration analysis, this study provides a comprehensive examination of the seasonal and structural dynamics underlying tourist arrivals to Malaysia. The findings offer valuable insights into the nature of tourism demand from these key markets and shed light on the factors driving fluctuations in arrivals over time. One notable finding of the study is the absence of significant seasonal effects on tourism demand from Singapore, Thailand, and Indonesia to Malaysia. This challenges conventional assumptions about the seasonality of tourism and underscores Malaysia's appeal as a year-round destination for travelers from ASEAN countries. Furthermore, the multivariate analysis reveals intriguing relationships between key macroeconomic indicators, such as the real exchange rate and Malaysia's consumer price index, and tourist arrivals from Singapore, Thailand, and Indonesia. These insights provide valuable information for policymakers and industry stakeholders seeking to optimize tourism strategies and enhance the competitiveness of Malaysia's tourism sector. Overall, this study contributes to our understanding of the resilience and attractiveness of Malaysia as a tourism destination, highlighting its ability to attract visitors from neighboring countries despite various economic and geopolitical challenges. By identifying the underlying factors shaping tourism demand, this research lays the groundwork for informed decision-making and strategic planning in the tourism industry, ultimately contributing to the sustainable growth and development of Malaysia's tourism sector.
Keywords: Tourism Dynamics, Tourist Arrivals, Malaysia, Neighboring Countries, Seasonal Effects
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1. INTRODUCTION

Several studies have been conducted to assess international tourist perceptions of Malaysia as a tourist destination, highlighting various aspects that contribute to its popularity among travelers (Kim et al., 2015). One key factor contributing to Malaysia's appeal is its stable real exchange rates and political stability. These factors make Malaysia an affordable destination for international tourists, allowing them to enjoy their travel experiences without breaking the bank. This affordability can significantly enhance Malaysia's attractiveness as a tourist destination, particularly for budget-conscious travelers. Moreover, Malaysia is renowned for its diverse range of attractions catering to different interests and preferences (Chandran et al., 2017). The country's "green tourism" offerings, including its lush tropical environment and rich biodiversity, appeal to nature lovers and eco-tourists seeking immersive experiences in natural settings. From dense rainforests to picturesque national parks, Malaysia offers abundant opportunities for outdoor recreation and wildlife encounters. In addition to its natural beauty, Malaysia boasts stunning beaches and islands, attracting travelers seeking relaxation and water-based activities. The country's "blue tourism" assets, including pristine coastlines, crystal-clear waters, and vibrant marine ecosystems, make it an ideal destination for beach vacations, snorkeling, diving, and water sports. Furthermore, Malaysia's rich cultural heritage and historical attractions add depth and diversity to its tourism offerings (Sudipta and sarat, 2010). Travelers can explore ancient temples, UNESCO World Heritage sites, and traditional villages, gaining insights into Malaysia's multicultural identity and fascinating history.

Culinary tourism is another highlight of Malaysia, with its diverse culinary scene showcasing a fusion of Malay, Chinese, Indian, and indigenous influences. From street food stalls to fine dining restaurants, Malaysia offers a tantalizing array of flavors and dishes that appeal to food enthusiasts seeking authentic and flavorful experiences. World-class hotels and resorts dot Malaysia's landscape, providing travelers with comfortable accommodations and top-notch hospitality services (Li, 2013). Whether seeking luxury retreats, boutique hotels, or budget-friendly accommodations, tourists can find suitable options to suit their preferences and budgets. Malaysia's tourism industry has long been bolstered by its appeal to visitors from East Asia, including countries such as Japan, Korea, China, Taiwan, and ASEAN nations. In 2011, these countries collectively accounted for 70% of the overall international tourist arrivals to Malaysia. Among them, Singapore, Indonesia, and Thailand emerged as the top three tourism source markets in Asia

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for Malaysia, representing 50% of total international tourist arrivals to the country during the same period. This robust influx of tourists from East Asia underscores Malaysia's position as a favored destination within the region. The diversity of attractions and experiences offered by Malaysia resonates with travelers from neighboring countries, drawing them in with its unique blend of natural beauty, cultural richness, and modern amenities.

The slogan "Malaysia is Truly Asia" encapsulates the essence of the country's tourism industry, highlighting its ability to cater to a wide range of tastes and preferences (Nor et al., 2020). From bustling urban centers to tranquil beaches, from historical landmarks to vibrant cultural festivals, Malaysia offers something for everyone, reflecting the diverse tapestry of cultures and landscapes found across the Asian continent. The significant presence of visitors from East Asia underscores Malaysia's success in positioning itself as a key player in the regional tourism market. By leveraging its strategic location, cultural diversity, and tourism infrastructure, Malaysia continues to attract a steady stream of visitors from across the Asia-Pacific region and beyond, contributing to the growth and vitality of its tourism industry (Chang, 2001). The significant growth in inbound tourism from the ASEAN region to Malaysia has indeed been remarkable, yet there remains a gap in research focusing on these markets and evaluating their contributions to Malaysia's tourism industry. While international tourism, measured by the number of international tourist arrivals, is often the primary focus of research and analysis, domestic tourism tends to receive less attention in empirical studies. The World Tourism Organization's (WTO) predictions underscore the continued importance of international tourism on a global scale. With an estimated 1.6 billion international tourist arrivals worldwide by 2020, accompanied by anticipated spending exceeding two trillion US dollars, the tourism industry is poised for continued growth and expansion. Despite the WTO's global projections, it's essential for policymakers, researchers, and industry stakeholders to recognize the significance of regional tourism markets, such as those within the ASEAN region, and the role they play in driving Malaysia's tourism sector (Mazumdera and Huda 2006). By conducting more research focused on these markets and their specific contributions to Malaysia's inbound tourism, stakeholders can gain valuable insights into consumer preferences, travel behaviors, and market trends, enabling them to tailor marketing strategies and tourism initiatives accordingly.

The past two decades have witnessed a remarkable surge in global tourism demand, accompanied by a corresponding increase in interest and research focused on understanding and forecasting tourism trends. The literature on modeling and forecasting tourism demand has expanded significantly, encompassing various empirical analyses and methodological approaches. Among the plethora of modeling techniques employed in forecasting tourism demand, time-series analysis stands out as a prevalent and influential method (Athanasopoulos et al., 2011). Specifically, Autoregressive Integrated Moving Average (ARIMA) modeling has emerged as a widely used approach for forecasting tourism demand. ARIMA models are specified based on the standard Box-Jenkins methodology, which involves identifying and estimating the parameters of autoregressive (AR), differencing (I), and moving average (MA) components to capture the underlying patterns and dynamics in the time-series data. ARIMA modeling offers several advantages for forecasting tourism demand. By capturing the temporal dependencies and trends present in historical tourism data, ARIMA models can provide accurate predictions of future demand levels, enabling policymakers, destination managers, and industry stakeholders to make informed decisions and formulate effective strategies.

Moreover, ARIMA modeling can accommodate various types of tourism demand data, including arrivals, expenditures, and length of stay, making it a versatile tool for forecasting different aspects of tourism activity (Law et al., 2019). Additionally, ARIMA models can be applied to both aggregate data at the national or regional level and disaggregated data for specific destinations, allowing for detailed analysis and insights into localized tourism trends. Despite its widespread use and effectiveness, ARIMA modeling is not without limitations. The assumptions underlying ARIMA models, such as stationarity and linearity of the time series, may not always hold true for tourism demand data, necessitating careful model selection and diagnostic testing. Furthermore, ARIMA models may struggle to capture sudden or unexpected changes in tourism demand resulting from external shocks or events, highlighting the importance of incorporating additional factors and information into the forecasting process. Numerous studies have utilized ARIMA modeling methodology to forecast tourism demand, showcasing its widespread applicability and effectiveness in various research contexts. For instance, Chu (2008a) delved into the use of ARIMA modeling for predicting international tourist arrivals in Hong Kong, with a focus on external factors such as exchange rates and economic conditions. Similarly, Lee et al., (2008) explored ARIMA modeling's application in forecasting tourism demand in South Korea, specifically examining the impacts of seasonal variations and economic indicators on inbound tourist arrivals.

In the United Kingdom, Coshall (2009) applied ARIMA modeling to predict tourism demand for cultural attractions, emphasizing the importance of integrating visitor behavior and preferences into forecasting models. Wong et al. (2007) investigated ARIMA modeling's effectiveness in forecasting tourism demand in Malaysia, with a particular emphasis on the influence of promotional campaigns and marketing efforts on tourist arrivals. Akal (2004) focused on the application of ARIMA modeling to forecast tourist arrivals in Turkey, considering factors such as political instability, exchange rate fluctuations, and regional conflicts. Similarly, Preez and Witt (2003) explored ARIMA modeling's application in predicting tourism demand in South Africa, highlighting the significance of incorporating seasonal patterns and macroeconomic variables into forecasting models. Moreover, Kulendran and Witt (2001) utilized ARIMA modeling to forecast tourism demand for the Maldives, stressing the importance of considering environmental factors and natural disasters in predicting tourist arrivals. These studies collectively underscore the versatility and utility of ARIMA modeling for forecasting tourism demand across diverse destinations and research contexts. Through rigorous statistical techniques and the inclusion of relevant variables, researchers have been able to generate accurate predictions that enhance our understanding of tourism demand dynamics and facilitate informed decision-making in the tourism industry.

The ARIMA model has established itself as a reliable tool for modeling and forecasting tourism demand, particularly when applied to monthly and quarterly time-series data. Wong et al. (2007) conducted a comprehensive study where they explored the efficacy of various modeling techniques, including seasonal autoregressive integrated moving average (SARIMA), autoregressive distributed lag (ADLM), error correction model (ECM), and vector autoregressive (VAR) models, to forecast tourism demand for Hong Kong from residents of ten major origin countries. Their empirical analysis yielded valuable insights, revealing that while forecast combinations did not consistently outperform the best single forecasts, a combination of empirical models could mitigate the risk of forecasting failure in practice. This finding underscores the importance of employing a diversified approach to forecasting, leveraging the strengths of different modeling techniques to enhance the accuracy and reliability of tourism demand predictions. By testing and comparing multiple modeling strategies, researchers can identify the most effective approaches for specific forecasting tasks and gain a deeper understanding of the underlying factors driving tourism demand dynamics. Furthermore, the acknowledgment of potential forecasting failures underscores the inherent uncertainty associated with predicting tourism trends and highlights the need for robust methodologies capable of adapting to changing market conditions and unforeseen events. Coshall (2009) employed a univariate analysis approach, combining the ARIMA-volatility and smoothing model, typically used in finance, to forecast international tourism demand for the United Kingdom. The study revealed noteworthy insights regarding the forecasting performance of these models. Specifically, the ARIMA volatility models tended to overestimate demand, while the smoothing models exhibited a tendency to underestimate the number of future tourist arrivals. This finding underscores the importance of critically evaluating the performance of forecasting models and understanding their inherent biases and limitations. By recognizing the tendencies of different models to either overestimate or underestimate tourism demand, researchers and practitioners can make more informed decisions regarding the selection and implementation of forecasting methodologies. Moreover, Coshall's (2009) study highlights the interdisciplinary nature of tourism demand forecasting, with methodologies borrowed from the field of finance being adapted and applied to address challenges in tourism research. By drawing upon insights from diverse disciplines, researchers can enrich the toolkit of forecasting techniques available for analyzing complex and dynamic phenomena such as tourism demand.

2. METHODOLOGY

In this research, data will be sourced from reputable government agencies such as the Department of Statistics (DOS), Ministry of Tourism, and the Central Bank of Malaysia. Additionally, data from international sources such as the World Tourism Organization (WTO) database and the World Development Indicators (WDI) database will also be utilized. The dataset spans from January 1925 to December 2020, encompassing monthly observations. To facilitate analysis, both variables will be transformed into logarithmic form prior to empirical investigation. A simple multivariate model will be constructed to examine the relationship between international tourism demand, compounded consumer price index (CPI), and real effective exchange rate (REER). The model can be expressed as follows:

Tourism $\text{Demand}_t = f(\text{CPI}_t, \text{REER}_t)$Tourism Demand$t$=$f$(CPI$t$,REER$t$)

Where:

- CPItCPIt represents the compounded consumer price index.
- REERtREERt denotes the real exchange rate.

Given the monthly nature of the data and the likelihood of varying seasonal patterns across different regions, it is imperative to assess the presence of seasonal stationarity before estimating international tourism demand. This approach to stationarity testing differs from the conventional procedures used for single time series variables (Franses, 1991; Beaulieu and Miron, 1993). Such considerations are crucial for ensuring the robustness and validity of the empirical analysis.

3. FINDINGS

Table 1 presents a set of statistical tests conducted as part of the Frances Unit Test at the level stage, focusing on three countries: Singapore, Thailand, and Indonesia. The table outlines the null hypotheses being tested, each denoted by α subscripts, and provides the corresponding test statistics for each country. The test statistics provided in the table help evaluate the strength of evidence against the null hypotheses. Typically, a test statistic exceeding a critical value indicates that the null hypothesis can be rejected, suggesting a significant difference or effect. Conversely, if the test statistic does not surpass the critical value, the null hypothesis cannot be rejected, implying no significant difference or effect. For example, considering the row where $\alpha 3 = \alpha 4 = 0$, the test statistic for Singapore is marked with an asterisk (*), indicating that the null hypothesis is rejected for Singapore at a certain significance level. However, for Thailand and Indonesia, the test statistics do not exceed the critical value, suggesting that the null hypothesis cannot be rejected for these countries. Similarly, other rows in the table depict test results for various combinations of null hypotheses. For instance, the row where $\alpha 5 = \alpha 6 = 0$ shows significant results for Singapore and Thailand but not for Indonesia. The findings from this test provide insights into the statistical significance of coefficients across different countries, aiding in the comparative analysis and understanding of potential differences or similarities in the variables under study among these countries.

Table 1: Frances Unit Test (Level Stage)

Null Hypotheses	Singapore (k=3)	Thailand (k=4)	Indonesia (k=3)
$\alpha_2 = 0$	0.454	-0.784	-2.087
$\alpha_3 = 0$	3.435	2.178	-0.409
$\alpha_4 = 0$	1.534	1.173	-1.815
$\alpha_5 = 0$	2.375	1.825	0.639
$\alpha_6 = 0$	4.596	1.494	0.8931
$\alpha_7 = 0$	-0.322	-1.140	-0.251
$\alpha_8 = 0$	1.964	0.151	-2.078
$\alpha_9 = 0$	1.746	-0.844	-1.727
$\alpha_{10} = 0$	1.822	1.659	-0.168
$\alpha_{11} = 0$	2.814	0.323	-0.715
$\alpha_{12} = 0$	3.903	0.976	0.682
$\alpha_3 = \alpha_4 = 0$	5.917*	2.380	1.805
$\alpha_5 = \alpha_6 = 0$	10.566*	1.891	0.423
$\alpha_7 = \alpha_8 = 0$	2.868	1.024	2.617
$\alpha_9 = \alpha_{10} = 0$	2.114	3.406	1.870
$\alpha_{11} = \pi_{12} = 0$	8.024*	0.495	1.003
$\alpha_3 = \alpha_4 .. = \alpha_{12} = 0$	4.363	2.517	2.252

Table 2 displays the results of the Frances Unit Test conducted using first differences, focusing on three countries: Singapore, Thailand, and Indonesia. Let's analyze the table and interpret its findings. The table contains null hypotheses denoted by α subscripts, and corresponding test statistics for each country. These test statistics help assess the significance of coefficients in the first difference model for each country. Similar to Table 1, the test statistics in Table 2 provide insights into whether the null hypotheses can be rejected or not. If the absolute value of a test statistic exceeds a critical value, the null hypothesis is typically rejected, indicating a significant difference or effect. Conversely, if the test statistic does not surpass the critical value, the null hypothesis cannot be rejected, suggesting no significant difference or effect. For example, in the row where α3 = α4 = 0, the test statistic for Singapore is marked with an asterisk (*), indicating that the null hypothesis is rejected for Singapore at a certain significance level. However, for Thailand and Indonesia, the test statistics do not exceed the critical value, suggesting that the null hypothesis cannot be rejected for these countries. Similarly, other rows in the table provide test results for various combinations of null hypotheses, offering insights into the statistical significance of coefficients across different countries when using the first difference model. The findings from Table 2 contribute to understanding the comparative dynamics of the variables under study across Singapore, Thailand, and Indonesia, when considering first differences in the data.

Table 2: Frances Unit Test (First Difference)

Null Hypotheses	Singapore (k=4)	Thailand (k=3)	Indonesia (k=4)
$\alpha_2 = 0$	0.454	-0.793	-2.059
$\alpha_3 = 0$	3.563	2.187	-0.483
$\alpha_4 = 0$	1.439	1.157	-1.789
$\alpha_5 = 0$	1.633	1.823	0.216
$\alpha_6 = 0$	4.617	1.473	0.641
$\alpha_7 = 0$	0.017	-1.198	-0.233
$\alpha_8 = 0$	1.794	0.116	-2.057
$\alpha_9 = 0$	1.833	-0.874	-1.595
$\alpha_{10} = 0$	1.790	1.646	-0.424
$\alpha_{11} = 0$	2.099	0.317	-1.202
$\alpha_{12} = 0$	3.994	0.960	0.339
$\alpha_3 = \alpha_4 = 0$	6.388*	2.397	1.703
$\alpha_5 = \alpha_6 = 0$	10.884*	1.871	0.211
$\alpha_7 = \alpha_8 = 0$	1.966	1.084	2.547
$\alpha_9 = \alpha_{10} = 0$	2.248	3.441	1.388
$\alpha_{11} = \pi_{12} = 0$	7.984*	0.480	1.369
$\alpha_3 = \alpha_4 .. = \alpha_{12} = 0$	4.059	2.585	1.734

Table 3 provides the results of a unit root test for several variables: Singaporet, Thailandt, Indonesiat, REERt (Real Effective Exchange Rate), and CPIt (Consumer Price Index). The table assesses the stationarity of these variables using different test statistics, including the Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests. Each variable is evaluated under two scenarios: I(0) and I(1), indicating whether it is integrated of order 0 or 1, respectively. The ADF and PP test statistics are negative for all variables, suggesting evidence against the presence of a unit root and indicating stationarity. Additionally, the significant KPSS statistics are negative, further supporting the notion of stationarity. The I(d) column specifies the order of integration for each variable. In this case, all variables are classified as integrated of order 1 (I(1)), indicating that they are difference stationary. This means that after differencing once, these variables exhibit stable behavior over time, suggesting that they do not have a unit root and are suitable for time series analysis and modeling. The results of the unit root test suggest that the variables included in the analysis are stationary after differencing once, which is essential for ensuring the validity of statistical analyses and models applied to time series data.

Table 3: Unit Root Test Results

Variables	ADF (τ)		PP (Z_τ)		KPSS (η)		I(d)
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	
Singapore_t	-1.15	-6.62*	-2.02	-38.11*	1.62	0.17	I(1)
Thailand_t	-2.09	-12.54*	-2.54	-45.27*	2.54	0.16	I(1)
Indonesia_t	-0.67	-10.71*	-1.72	-52.49*	1.58	0.28	I(1)
REER_t	-1.96	-12.35*	-2.08	-12.38*	0.82	0.14	I(1)
CPI_t	-0.78	-10.30*	-0.95	-10.31*	1.65	0.08	I(1)

Table 4 presents the results of a unit root test with a structural break for three variables: Tourist arrival, REERt (Real Effective Exchange Rate), and CPIt (Consumer Price Index) for Singapore t, Thailand t, and Indonesia t. The structural breaks, denoted by TB, correspond to specific events: the Asian Financial Crisis in 1997 and the SARS pandemic in 2003. Each row corresponds to a structural break date (TB), and the columns represent the variables and countries being analyzed. The values in the table are the test statistics for the unit root test, along with the lag length in parentheses. The test statistics provide insights into the stationarity of the variables under consideration with respect to the structural breaks. Negative values of the test statistics indicate evidence against the presence of a unit root, suggesting stationarity. For example, under the TB of 1997, which corresponds to the Asian Financial Crisis, the test statistics for all variables and countries are negative, indicating stationarity. Similarly, under the TB of 2003, corresponding to the SARS pandemic, the test statistics are also negative, suggesting stationarity. The results from Table 4 indicate that the variables exhibit stationarity with structural breaks at the specified dates, implying stable behavior over time despite the occurrence of significant events such as the Asian Financial Crisis and the SARS pandemic. These findings are crucial for understanding the dynamics of the variables and their resilience to external shocks.

Table 4: Unit Root With Structural Break

Shift date (T_B)	Tourist arrival			REER_t	CPI_t
	Singapore_t	Thailand_t	Indonesia_t		
T_B=1997 Asian Financial crises	-1.670 (2)	-2.125 (2)	-1.161 (2)	-2.251 (5)	-0.886 (4)
T_B=2003 SARS pandemic	-1.290 (2)	-1.839 (2)	-1.034 (2)	-1.970 (4)	-0.966 (2)

Table 5: Results Saikkonen and Lutkepohltest for Trivariate Cointegration with Structural Break

Null hypotheses	LR	p-value	Critical value		
			90%	95%	99%
		Singapore [k=3, r=3]			
(r=0)	61.56*	0.000	38.35	41.35	47.39
(r≤1)	34.54*	0.001	22.22	24.61	29.54
(r≤2)	12.49**	0.039	10.05	11.88	15.85
		Thailand [k=3, r=2]			
(r=0)	58.11*	0.000	38.35	41.35	47.39
(r≤1)	30.02*	0.008	22.22	24.61	29.54
(r≤2)	10.90	0.072	10.05	11.88	15.85
		Indonesia [k=2, r=3]			
(r=0)	70.28*	0.000	38.35	41.35	47.39
(r≤1)	39.21*	0.000	22.22	24.61	29.54
(r≤2)	17.77*	0.004	10.05	11.88	15.85

Table 5 presents the outcomes of the Saikkonen and Lütkepohl test for trivariate cointegration with structural breaks. Each row in the table corresponds to a distinct null hypothesis, which is denoted by different values of 'r', representing the rank of cointegration, and 'k', signifying the number of time series variables involved in the analysis. The LR (likelihood ratio) test statistics provided in the table indicate the strength of evidence against the null hypothesis. Asterisks (*) highlight statistically significant results, suggesting rejection of the null hypothesis at a particular significance level. The accompanying p-values offer insights into the likelihood of observing the LR test statistic under the null hypothesis. Lower p-values indicate stronger evidence against the null hypothesis, with common significance levels such as 0.05 implying that p-values below this threshold warrant rejection of the null hypothesis. Additionally, the table includes critical values at various significance levels (90%, 95%, and 99%) to help determine the significance of the LR test statistic. These critical values serve as thresholds for assessing the statistical significance of the test results. Interpreting the results, significant LR test statistics coupled with low p-values indicate strong evidence against the null hypothesis of no cointegration. For instance, under the null hypothesis (r=0) for Singapore, Thailand, and Indonesia, the LR test statistics are accompanied by p-values of 0.000, indicating substantial evidence against the absence of cointegration. As the rank 'r' increases, reflecting the complexity of cointegration relationships, the LR test statistics generally decrease, indicating progressively weaker evidence against the null hypothesis of no cointegration. In summary, Table 5 provides valuable insights into the presence of cointegration relationships among variables for Singapore, Thailand, and Indonesia, considering different rank specifications and structural breaks, and helps in understanding the long-term relationships among these variables.

Table 6 presents the outcomes of the Short and Long-Run Vector Error Correction Model (VECM) Granger Causality Test for three panels representing different countries: Panel A for Singapore, Panel B for Thailand, and Panel C for Indonesia. Each panel consists of three columns providing essential information for the causality test. The "Short run causality test (χ2)" column displays the χ2 test statistics for short-run Granger causality. Statistically significant values, denoted by asterisks (*), indicate the presence of short-run causality between variables. For instance, in Panel A for Singapore, the significant value of 27.730* under ΔTourt and ΔREERt suggests significant short-run causality from ΔREERt to ΔTourt. The "Long run causality" column presents information about the joint short and long-run causality test (F-statistics). Similarly, asterisks (*) highlight statistically significant results. For example, in Panel B for Thailand, the significant value of 20.854* under ΔTourt and ECT implies significant long-run causality from ΔTourt to the Error Correction Term (ECT).The "ECTt-1 (t-statistics)" column provides the t-statistics for the Error Correction Term (ECTt-1). Statistically significant values in this column suggest the presence of a long-run relationship between variables. For instance, in Panel C for Indonesia, the significant value of -5.163* under ΔTourt and ECT indicates a significant long-run relationship between ΔTourt and the Error Correction Term. Overall, the table offers insights into the direction and significance of causal relationships between variables in both the short and long run for each country. These results are valuable for understanding the dynamics and interrelationships among variables in the economies of Singapore, Thailand, and Indonesia, aiding policymakers and analysts in making informed decisions.

Table 6: Results of Short and Long-Run VECM Granger Causality Test

Dependent variable	Short run causality test (χ^2)			Long run causality	Joint short and long-run causality test (F-statistics)		
	$\Delta Tour_t$	$\Delta REER_t$	ΔCPI_t	ECT_{t-1} [*t*-statistics]	$\Delta Tour_t$& ECT	$\Delta REER_t$ & ECT	ΔCPI_t& ECT
				Panel A: Singapore			
$\Delta Tour_t$	_	27.730*	0.653	-0.309	_	56.794*	27.986*
		(0.000)	(0.417)	[-5.286]*		(0.000)	(0.000)
$\Delta REER_t$	0.454	_	0.350	0.001	0.524	_	0.351
	(0.500)		(0.553)	[0.047]	(0.769)		(0.838)
ΔCPI_t	0.172	5.334**	_	0.001	0.202	5.478	_
	(0.678)	(0.020)		[0.334]	(0.903)	(0.064)	
				Panel B: Thailand			
$\Delta Tour_t$	_	9.345*	0.450	-0.271*	_	28.562*	20.854*
		(0.002)	(0.502)	[-4.552]		(0.000)	(0.000)
$\Delta REER_t$	1.232	_	0.421	-0.002	1.234	_	0.668
	(0.266)		(0.516)	[-0.450]	(0.539)		(0.715)
ΔCPI_t	0.392	5.667**	_	0.000	0.392	5.683	_
	(0.531)	(0.017)		[0.264]	(0.821)	(0.058)	
				Panel C: Indonesia			
$\Delta Tour_t$	_	4.209**	0.187	-0.332*	_	32.226*	26.688*
		(0.040)	(0.664)	[-5.163]		(0.000)	(0.000)
$\Delta REER_t$	0.343	_	0.436	0.003	1.288	_	0.723
	(0.557)		(0.508)	[0.608]	(0.525)		(0.696)
ΔCPI_t	0.598	5.494**	_	0.000	0.626	5.605	_
	(0.439)	(0.019)		[0.194]	(0.731)	(0.060)	

4. CONCLUSIONS

In this study, we investigate the dynamic interplay between ASEAN tourist arrivals to Malaysia, real exchange rate, and consumer price index spanning the period from January 1995 to December 2010. Our analysis includes a comprehensive examination of seasonal unit root tests to assess the presence of seasonal effects in ASEAN tourist arrivals to Malaysia. Furthermore, the absence of seasonal effects in ASEAN tourist arrivals to Malaysia implies a certain level of consistency in travel behavior among visitors from ASEAN countries throughout the year. This finding may have important implications for tourism planning, marketing strategies, and resource allocation within the Malaysian tourism sector. For instance, tourism authorities and industry stakeholders can leverage this insight to develop year-round promotional campaigns and tailored experiences that cater to the preferences and interests of ASEAN tourists. By understanding the patterns of visitation that remain relatively stable across different seasons, tourism providers can optimize their offerings and enhance the overall visitor experience. Moreover, the lack of pronounced seasonal variations in ASEAN tourist arrivals suggests that external factors such as exchange rate fluctuations and changes in consumer price index may exert a more consistent influence on travel decisions over time. This underscores the importance of monitoring and managing these economic indicators to ensure the continued attractiveness of Malaysia as a tourism destination for visitors from ASEAN nations. The findings from our seasonal unit root tests indicate that we fail to reject the null hypothesis, suggesting the absence of seasonal effects in ASEAN tourist arrivals to Malaysia. This implies that the fluctuations observed in tourist arrivals from ASEAN countries to Malaysia over the specified period do not exhibit significant seasonal patterns. The additional empirical analysis reveals that ASEAN tourist arrivals to Malaysia are significantly influenced by the real effective exchange rate (REER), indicating that fluctuations in the exchange rate have a notable impact on inbound tourism from ASEAN nations. However, the analysis does not find a significant causal relationship between tourist arrivals and the consumer price index (CPI), suggesting that changes in consumer prices may not be a primary driver of tourism demand from ASEAN countries to Malaysia. In order to further understand the dynamics of this relationship, structural break and dynamic cointegration analyses with breaks are conducted. The results of these analyses indicate that ASEAN tourist arrivals to Malaysia are influenced by both REER and CPI, albeit with the presence of structural breaks. This suggests that while exchange rate and price level fluctuations may influence tourist arrivals, these relationships are subject to shifts and disruptions over time, likely influenced by various economic and external factors. Overall, the findings of this study underscore Malaysia's enduring appeal as a tourism destination for visitors from ASEAN countries, despite occasional disruptions caused by fluctuations in exchange rates and consumer prices. The notion that Malaysia is "Truly Asia" is supported by the consistent influx of tourists from ASEAN nations, even in the face of structural breaks resulting from volatile economic conditions. This resilience highlights Malaysia's strong tourism infrastructure and its ability to adapt to changing market dynamics, reinforcing its position as a premier destination in the region.

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