



Tourism and Trade in Malaysia: Evidence from Malaysia's Trading Partners

Fateh Habibi^{a,*} 

a. Department of Economics, Faculty of Humanities and Social Sciences, University of Kurdistan, Sanandaj, Iran.

* Corresponding author

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Abstract

As an important economic sector, the international tourism industry has many social, cultural, and economic impacts on the destination country's economy. In Malaysia, tourism is recognised as a key driver of economic growth. Trade openness, in turn, can act as an important catalyst for the expansion of the tourism industry. This study investigates causal relationships between tourism and trade openness using aggregated variables—total international tourist arrivals to Malaysia and trade (merchandise and services)—for Malaysia's five largest trading partners: China, the United States, Japan, Singapore, and Thailand. The results show bidirectional causality between international tourist arrivals in Malaysia and openness to both merchandise and services trade. Overall, the findings indicate that further trade liberalisation with Malaysia's major trading partners can promote growth and development in the tourism sector, particularly in the cases of Malaysia–Singapore and Malaysia–Thailand trade relations.

Keywords: Granger causality, Malaysia, openness, tourism, trade components.

JEL Classification: C13, F14, Z32.

Introduction

Tourism plays an important role in the development of many countries and has been expanding significantly in recent years. Tourism has become one of the leading contributors to foreign exchange earnings globally, prompting the use of the term “tourism exports” to describe international visitor spending as a form of export revenue (Azmi et al., 2023).

These economic sectors are associated with positive externalities, including increased tourism receipts, higher competition, improved economic growth, job creation, and poverty reduction (Zhao and Xia, 2019). Proponents of tourism claim that the expansion of tourism reflects broader globalisation trends. Globalisation

has facilitated the free movement of goods and services, thereby simplifying foreign trade. Thus, emerging economies have shifted their focus from traditional sectors to modern sectors such as trade and tourism, driven by globalisation and the higher productivity of these sectors. Malaysia has been acknowledged as one of the most open economies in the world, due to its successful implementation of a free trade regime and open foreign investment policy. In 2020, the country's trade openness measured as the ratio of total trade to gross domestic product (GDP) stood at approximately 147% (World Bank, 2024).

International trade affects the economy by creating jobs, higher GDP, and greater GDP per capita. The world trading system has become progressively open and competitive over the past few years. Tariffs are reduced in both developed and developing countries (Wong and Tang, 2010). Open markets are characterised by the absence of man-made barriers to the cross-border movement of productive factors, such as goods, services, capital, and labour. The Open Markets Index (OMI) comprises four key components: observed openness to trade, trade policy, foreign direct investment (FDI) openness, and trade-related infrastructure. According to the 2022 Global Index of Economic Openness, Malaysia ranked 22nd (ICC, 2023).

Before its independence in 1957, Malaysia's economy relied heavily on primary commodities, particularly tin, rubber, palm oil, and petroleum products. Investment in the manufacturing sector has been a key driver of Malaysia's economic growth. The shift in focus from agriculture to manufacturing sectors, coupled with a rapid increase in manufacturing, has contributed substantially to this growth. Over time, the manufacturing sector has evolved from labour-intensive to increasingly capital-intensive and high technology industry. Following the decline in oil revenues and the global economic recession of the mid-1980s, the Malaysian government placed greater emphasis on developing the tourism industry. The Ministry of Culture, Arts and Tourism was established in 1987 and was later upgraded to the Ministry of Tourism in 2004 (Habibi et al., 2009).

Between 2005 and 2015, international tourist arrivals in Malaysia increased by approximately 62.5% (see Table 1). Despite the global financial crisis, tourist arrivals in Malaysia continued to grow. In October 2009, arrivals rose by 14.3% to 2,078,485, compared with 1,818,304 in the same month in 2008 (New Straits Times, 4 January 2010). From January to October 2009, total arrivals increased by 7.2% to 19.45 million, up from 18.14 million over the same period in 2008. Thus, while global tourist numbers declined, Malaysia experienced a rise in tourist arrivals. This trend was driven primarily by an increase in European tourists and, in particular, tourists from the Middle East.

Table 1. International Tourist Arrivals in Malaysia (1980-2021)

Year	International Tourist Arrivals
1980	2.07
1985	2.93
1990	7.08
1995	7.02
2000	10.22
2005	16.43
2010	24.58
2014	27.48
2015	25.72
2016	26.76
2017	25.95
2018	25.83
2019	26.10
2020	4.33
2021	0.13
2022	10.06

Source: Ministry of Tourism Malaysia.

According to the World Travel and Tourism Council (WTTC, 2018), the travel and tourism industry in Malaysia is expected to contribute approximately 13.7% (US\$40 billion) to gross domestic product (GDP); it has become one of the largest services sectors in the economy. As a service industry that relies on support from other sectors, tourism can stimulate rapid growth across multiple areas of the Malaysian economy. For example, tourism development can increase domestic demand for construction, transportation, wholesale and retail trade, as well as for the equipment and instruments required to support tourism-related activities. Visitor exports constitute a key component of the direct contribution of travel and tourism. In 2019, visitor exports accounted for 9.3% of total exports (WDI¹, 2020). It has been regarded as one of the most important sectors providing an opportunity for economic growth.

However, the openness of Malaysia's tourism sector to international trade renders it vulnerable to external shocks, such as epidemics and the disappearance of MH370. In 2003, economic performance was adversely affected by the outbreak of severe acute respiratory syndrome (SARS) in the region (Kuo et al., 2008). In 2015, following the disappearance of MH370 in April, MAS cut 10 flights from

¹. World Development Indicators

Shanghai to Sabah, while China Southern Airlines has canceled 22 flights from Shenzhen and Chinese budget carrier Spring Airlines has axed 44 flights from Shanghai (Circosta, 2015). According to Ministry of Tourism Malaysia in April 2015, there was a drop of 35.6%, 33.1% and 21.3% in tourist arrivals from Brunei Darussalam, Japan and China respectively. International tourist arrivals in October 2003 and April 2015 declined by 44% and 15%, respectively, compared with the previous year. The outbreak of the COVID-19 pandemic led to an 83.4% decrease in inbound tourist arrivals to Malaysia in 2020 relative to 2019. In 2021, the number of tourist arrivals fell further to 0.13 million, down from 4.33 million in 2020. Tourism was among the most severely affected sectors, due to disruptions in demand caused by travel restrictions and the closure of international borders by most countries (Ministry of Tourism Malaysia, 2021).

According to Table 2, international tourism receipts in Malaysia increased from US\$5.9 billion in 2000 to US\$22 billion in 2019, at an average annual growth rate of 8.4%. Over the same period, the share of tourism receipts in GDP has grown at an average annual rate of 0.6%. Table 2 also shows that the contribution of international tourism receipts to total exports of goods and services increased from 5.2% in 2000 to 9.31% in 2019, representing an average annual growth rate of 4%. Malaysia is the 20th largest export economy in the world. In 2021 the GDP of Malaysia was US\$ 372 billion. The top export destinations of Malaysia are Singapore (15%), China (13%), the United States (10.5%), Japan (8.3%) and Thailand (5.8%).

Some of the more open Asian countries in terms of visas receive a particularly large proportion of exports from Travel & Tourism. In 2019 more than half of all service exports were likely to be generated by Travel & Tourism in Asian countries. In Malaysia tourism receipts account for just 60% of all service exports. Some of this growth in export performance may be attributable to business travel flows. But it is also clear that despite the large contribution to exports from the Travel and Tourism sector there remains significant room for further development in Malaysia if more facilitative tourism policies are pursued (Atlas Media, 2020).

Table 2. The Contribution of Tourism to Malaysian GDP and Exports Earning

Year	GDP (billion US\$)	Tourism Receipts (billion US\$)	Tourism Receipts % of GDP	Exports of goods and services (billion US\$)	Tourism Receipts % of Goods and Services
2000	93.79	5.87	6.26	112.37	5.23
2001	92.78	7.63	8.22	102.44	7.45
2002	100.85	8.08	8.02	109.22	7.47
2003	110.20	6.80	6.17	117.85	5.73
2004	124.75	9.18	7.36	143.93	6.38
2005	143.53	10.39	7.24	162.05	6.44
2006	162.69	12.28	7.55	182.52	6.73
2007	193.55	17.95	9.27	205.49	8.73
2008	230.81	18.55	8.04	229.66	8.07
2009	202.26	17.23	8.52	184.90	9.25
2010	255.02	19.62	7.69	221.69	8.84
2011	297.95	21.34	7.16	254.02	8.40
2012	314.44	21.71	6.90	249.35	8.71
2013	323.28	23.28	7.20	244.49	9.53
2014	338.06	24.47	7.24	249.47	9.81
2015	301.35	19.19	6.37	209.29	9.16
2016	301.26	19.68	6.53	201.16	9.79
2017	319.11	20.31	6.36	223.42	9.08
2018	358.79	21.78	6.07	245.97	8.86
2019	365.28	22.20	6.08	238.38	9.31
2020	337.01	3.39	1.00	207.04	1.63
2021	372.70	0.05	0.01	256.78	0.00

Source: Research findings.

This study contributes to the existing literature in the following ways:

Firstly, this study extends the empirical literature in tourism economics by exploring the pattern between tourism and the trade openness to merchandise and services trade by means of a causality approach, since the available empirical evidence is limited for both tourism–trade openness (export, import) linkages and the Malaysia tourism sector.

Secondly, this study also investigates causal relationships at a disaggregated, country-specific level by analyzing tourist arrivals in Malaysia from each of its top five trading partners in relation to Malaysia's trade openness with those same countries. Such disaggregation provides further knowledge on whether the

direction of causality between tourism and trade openness is meaningful or not across Malaysia's major trading partners.

Thirdly, Malaysia is one of the top tourist destinations in the Asia-Pacific region with a fast-growing tourism industry. Since 2000, Malaysia has improved its tourist position from the 17th most visited destination in the world to the 13th in 2019 (WTO, 2020). Malaysia received more than 26 million international tourist arrivals and 22.2 billion US\$ tourism receipts in 2019.

Fourthly, trade can stimulate business travel, which in turn may generate more leisure trips. Expanding on this mechanism, exports can enhance a country's brand image in importing countries, thereby encouraging more visitors to travel to the exporting country. Moreover, imports that cater to tourists' needs may also contribute to an increase in tourist arrivals.

Finally, the proposed relationship between tourism and trade operates through multiple channels. First, the arrival of inbound tourists can bolster export and import performance by reducing transaction costs, shaping tourists' preferences, and improving the international image of the host country. Second, inbound tourists may identify new markets and subsequently foster additional imports as a result of their tourist arrivals.

The rest of the paper is organized into 5 sections. Section 2 presents the literature review. Section 3 presents the research methodology and data source. Results and discussion are presented in Section 4. Finally policy implication and conclusion are presented in section 5.

Literature Review

The association between international trade and tourism can be understood through the diffusion and gravity theories. Diffusion theory places the tourism sector at the core of international trade, positing that international tourists purchase local goods and services, thereby increasing exports in the host country and imports in the tourists' country of origin. Consequently, tourist expenditures on local products and services enhance the host nation's international receipts. Proponents of this theory argue that the linkage between exports and tourism generates a multiplier effect that influences the trade balance. Moreover, diffusion theorists contend that tourism is inherently developmental, yielding spillover benefits for other economic sectors such as agriculture and transport. Notably, the gravity model reinforces diffusion theory by suggesting that the tourism–trade nexus is stronger when countries share common characteristics (Garidzirai, 2022).

This foundational assumption has spurred a growing body of research exploring potential linkages between tourism and trade. Empirically examining this relationship, Brahmhatt and Menezes (2013) theorize that, beyond their individual roles as drivers of growth and development, trade and tourism are interconnected. Subsequent research supports a complementary relationship between the two, mediated by reductions in transaction costs (Santana-Gallego et al., 2016). However, some studies suggest that some people may travel to a country instead of importing from that country (Azmi et al., 2023).

Research on the relationship between tourism and trade has given way to studies on the effects of migration on trade. Migration studies have established two key principles with implications for trade: first, migration reduces transaction costs between two countries (Steingress, 2018); second, migrants retain preferences for products from their home countries (Zhang, 2020). Scholars examining the tourism–trade linkage have focused on these principles. Aradhyula and Tronstad (2003) propose that international tourist arrivals reduce market failures arising from information gaps in foreign markets.

By serving as conduits of information on foreign demand preferences, tourists help bridge information asymmetries, thereby enhancing firm productivity and regional efficiency. This costless information exchange enables host-country businesses to produce for international markets. Similarly, Madaleno et al. (2019) find that visitors act as informal marketing representatives for products manufactured in the host country and will lead to increased demand for those products in their home country.

Tourism can also reduce non-traditional trade costs through mechanisms such as development of transport infrastructure and reducing cultural distances – thereby reducing costs associated with research into standards and foreign transport. Employing an extended gravity model of trade, Santana-Gallego et al. (2016) demonstrate that growth in tourism significantly increases the volume of bilateral trade. Conversely, cost reductions stemming from trade liberalization may also stimulate travel, while increased tourist arrivals can prompt infrastructure development.

Previous studies have usually considered trade as an explanatory variable in tourism demand models. Habibi (2017) identified international trade as a significant predictor of tourism demand, suggesting a causal direction from trade to tourism. In addition to long-run relationships, Chaisumpunsakul and Pholphirul (2018) show fluctuations in tourism demand can be predicted using trade openness.

Studies using disaggregated data on the relationship between tourism and trade provide meaningful knowledge. Aradhyula and Tronstad (2003) found a unidirectional relationship from agribusiness tourism to trade between USA and Mexico. In contrast, Fischer and Gil-Alana (2009) and Gil-Alana and Fischer (2010) reported no long-run relationship between wine trade and tourism. Madaleno et al. (2019) attribute the advertising influence of tourists, which acts as marketing channels for local food products.

The impact of tourism on trade occurs through greater access to international markets, which increases competition and provides access to lower prices of goods and services.

First, the preference channel is highlighted by Marrocu and Paci (2011), who argue that tourism flows provide local firms with an important and relatively costless source of information about the preferences of consumers in international markets. This information may enable firms to develop and supply new products tailored to foreign demand. Similarly, Brau and Pinna (2013) maintain that international travel facilitates a two-way exchange of information concerning both locally available products and foreign consumer preferences. In this regard, Quinn (2009) examines how exposure to foreign products and cultures through mass media and tourist visits can influence consumers' preferences for imported goods. Second, the transaction-cost channel is identified by Kulendran and Wilson (2000), who demonstrate that successful business trips can directly stimulate export and import flows in subsequent periods. In addition, leisure tourists may discover potential business opportunities during their visits, thereby generating further international commercial transactions. Third, tourism may promote international trade through the market-size channel. Khan et al. (2005) argue that tourism expands the market for goods and services because international visitors purchase food, souvenirs, transportation, and other products in the host country. Since some of these goods and inputs may need to be imported, tourism can contribute to increased international trade.

There has been a growing interest in analysing the relationship between international trade and tourism in recent years. Azmi et al. (2023) examined the relationship between tourism and international trade in India and SAARC countries using panel cointegration tests over the period of 1997 to 2018. Their findings indicate that rising trade is expected to increase business travel, which in turn promotes leisure trips, thereby establishing a robust linkage between exports and tourism. Conversely, the positive impact of imports on tourism may be explained

by the tendency of destination countries that offer products aligned with tourists' home-country preferences to attract more tourists.

Garidzirai (2022) investigated the impact of tourism on trade in BRICS countries using the panel autoregressive distributive model (P-ARDL). The results showed that tourist arrivals significantly affect export receipts and economic growth. Therefore, the policy recommendation is that greater coordination and coherence of trade and tourism policies should be promoted in BRICS countries.

Ongan and Gocer (2020) examined the causal relationships between trade and tourism in NAFTA countries over the period of 1997:M12 to 2017:M02 using ARDL methods. The findings indicate a reciprocal interaction between trade and tourism, suggesting that each can promote the other. Furthermore, causality test results indicate that the causality of tourism on trade is stronger than its reverse effect.

Kumar et al. (2019) investigated the nexus of trade, economic growth, and international tourism using the wavelet-based analysis to capture the time–frequency-based lead–lag dynamics from January 1999 to February 2018. The results showed that there are long-term relationships between increased trade and tourist inflows (in terms of income), as well as between tourist income and economic growth.

Caliskan et al. (2019) investigated the relationship between incoming tourists and import and export volumes in Turkey and 13 Silk Road countries through Panel ARDL. The results indicated that despite differences in short-term and long-term relations, tourist flows and international trade are related, highlighting that international trade is important for tourism development. Moreover, the results show that tourism is related to both imports and exports in the short term. However, tourist arrivals are influenced only by imports in the long term.

Chaisumpunsakul and Pholphirul (2018) analyzed the relationship between international trade and international tourism demand using a dataset of 207 trade partnership countries of Thailand. The share of short-term and long-term foreign tourism in trade was 0.046% and 0.807%, respectively. The results also show that imports from tourists' origin countries to Thailand also increased the demand for short-term and long-term tourism by 0.029 and 0.592, respectively.

Kadir and Jusoff (2010) analyzed the relationship and causality between tourism receipts, exports, imports and total trade of Malaysia, over the period of 1995:1 through 2006:4. This study showed that there is a one-way causality from exports to tourism receipts. The causality test also showed a one-way causal effect from imports to tourism revenues and total trade to tourism receipts.

Wong and Tang (2010) examined the causal relationships between total tourist arrivals and trade components (merchandise and services) in Singapore using aggregated variables. The results of this study indicate that trade openness acts as an important catalyst for tourism sector growth. Also, tourism sector development may encourage host countries to engage in more international trade. Additionally, the study underscores the importance of liberalizing Singapore's services sector to enhance merchandise trade openness, given that services constitute a substantial share of goods-related trade.

Methodology and Data

In the existing literature, empirical studies on tourism demand have typically proxied tourism growth using indicators such as tourist arrivals, length of, and tourism receipts. Owing to data constraints, the present study uses tourist arrivals to Malaysia from its five major trading partners—China, the United States, Japan, Singapore, and Thailand. Data on international tourist arrivals were obtained from the Ministry of Tourism. Data on Malaysia's trade with these five partners was sourced from the Ministry of Investment, Trade and Industry. Prior to analysis in EViews, all variables were transformed into natural logarithms, as the resulting coefficients can be directly understood as elasticities.

Tourism-related variables—denoted as total international tourist arrivals in Malaysia (TA_{Malaysia}) and country-specific tourist arrivals ($TA_{\text{Malaysia-j}}$)—were sourced from the Ministry of Tourism, Malaysia. Data on openness to both merchandise and services trade were obtained from the Department of Statistics, Malaysia.

Disaggregated by Trade Components

- Openness to Merchandise Trade (OMT_{Malaysia})

$$OMT_{\text{Malaysia}} = \left[(Exported\ goods_{\text{Malaysia}} + Imported\ goods_{\text{Malaysia}}) / GDP_{\text{Malaysia}} \right] \times 100 \quad (1)$$

- Openness to Services Trade (OST_{Malaysia})

$$OST_{\text{Malaysia}} = \left[(Exported\ services_{\text{Malaysia}} + Imported\ services_{\text{Malaysia}}) / GDP_{\text{Malaysia}} \right] \times 100 \quad (2)$$

Disaggregated by country

- Total Trade Openness (TO_{Malaysia})

$$TO_{\text{Malaysia}} = \left[(total\ exports_{\text{Malaysia}} + total\ imports_{\text{Malaysia}}) / GDP_{\text{Malaysia}} \right] \times 100 \quad (3)$$

where j represents Malaysia's top five partners (Singapore, China, Japan, Thailand, and the United States).

This study employs the non-causality test procedure developed by Toda and Yamamoto (1995) to examine potential linkages between total international tourist arrivals in Malaysia (TA) and two dimensions of trade openness—openness to merchandise trade (OMT) and openness to services trade (OST)—as well as the interactions between country-specific tourist arrivals in Malaysia ($TA_{\text{Malaysia-}j}$) and bilateral trade openness between Malaysia and each partner country j ($OT_{\text{Malaysia-}j}$). One of the main advantages of the Toda-Yamamoto approach is that it does not require pre-testing for stationarity (i.e., whether series are $I(0)$, $I(1)$, or $I(2)$) or cointegration prior to conducting the causality analysis (Toda and Yamamoto, 1995).

As noted by Shan and Pappas (2000), the conventional F-test within a regression framework—commonly used in standard Granger causality procedures to assess whether certain parameters are jointly zero—is invalid when variables are integrated, as the test statistic no longer follows a standard distribution. Alternatively, using first-differenced series to ensure stationarity [$I(0)$] in a vector autoregression (VAR)-based Granger causality test may cause model disruption due to loss of long-run information. The widespread adoption of the modified Wald (MWALD) test proposed by Toda and Yamamoto (1995) is primarily attributed to its methodological simplicity and robustness.

The standard Granger causality test, which is based on VAR, may be biased due to the loss of long-run information if the first-differenced series are used [to ensure stationarity, $I(0)$]. The rationale of using the widely applied MWALD test (Toda and Yamamoto, 1995) is its simplicity. More formally, the Toda–Yamamoto non-causality testing procedure involves four main stages:

1. Specifying the vector autoregressive (VAR) model.
2. Selecting the optimal lag length for the VAR model.
3. Estimating the augmented VAR model.
4. Conducting the non-causality analysis using the modified Wald (MWALD) test proposed by Toda and Yamamoto (1995).

In the first stage, the VAR model is specified to examine potential causal relationships between total international tourist arrivals in Malaysia—and country-specific tourist arrivals from partner country j —and trade openness. Trade openness is measured both by its components, namely merchandise-trade openness and services-trade openness, and by bilateral trade openness between Malaysia and each of its major trading partners. The baseline VAR system relating total

international tourist arrivals in Malaysia (TAt) to openness to merchandise trade (OMTt) and openness to services trade (OSTt) can be specified as:

$$\ln TA_t = \alpha_0 + \alpha_{1i} \sum_{i=1}^k \ln OMT_{t-i} + \alpha_{2i} \sum_{i=1}^k \ln OST_{t-i} + \alpha_{3i} \sum_{i=1}^k \ln TA_{t-i} \quad (4)$$

$$\ln OMT_t = b_0 + b_{1i} \sum_{i=1}^k \ln TA_{t-i} + b_{2i} \sum_{i=1}^k \ln OST_{t-i} + b_{3i} \sum_{i=1}^k \ln OMT_{t-i} \quad (5)$$

$$\ln OST_t = c_0 + c_{1i} \sum_{i=1}^k \ln OMT_{t-i} + c_{2i} \sum_{i=1}^k \ln TA_{t-i} + c_{3i} \sum_{i=1}^k \ln OST_{t-i} \quad (6)$$

where k denotes the optimal lag length selected in step 2, and ϵ_{jt} are white-noise error terms. This system forms the basis for subsequent MWALD-based non-causality testing between tourism arrivals and the two dimensions of trade openness.

Tourist arrivals from country j and openness to trade between Malaysia and country j :

$$\ln TA_{\text{Malaysia}-jt} = d_0 + d_{1i} \sum_{i=1}^n \ln TO_{\text{Malaysia}-jt-1} + d_{2i} \sum_{i=1}^n \ln TA_{\text{Malaysia}-jt-1} \quad (7)$$

$$\ln TO_{\text{Malaysia}-jt} = e_0 + e_{1i} \sum_{i=1}^n \ln TA_{\text{Malaysia}-jt-1} + e_{2i} \sum_{i=1}^n \ln TO_{\text{Malaysia}-jt-1} \quad (8)$$

Step 2 entails determining the optimal lag length for the vector autoregression (VAR) model. The optimal lag length is identified as the order that jointly minimizes standard information criteria—namely the Akaike information criterion (AIC), the Schwarz Bayesian criterion (SBC), and the Hannan–Quinn information criterion (HQC)—and is further supported by the likelihood ratio (LR) test statistic. The optimal lag length for the augmented VAR($k+dmax$) model can be determined, where k represents the order of the lag length and $dmax$ is the maximum order of integration suspected within the system.

After the preferred VAR($k+dmax$) is estimated via ordinary least squares (OLS) in Step 3, the modified Wald (MWALD) test is conducted. Rejection of the null hypothesis that these coefficients are jointly zero provides evidence of a causal relationship. For example, in Equation (4), the null hypothesis of non-causality from $\ln OMT$ to $\ln TA$ (that is, $a_{11} = a_{12} = \dots = a_{1n} = 0$) is rejected if the a_{1n} are jointly significantly different from zero.

Results and Discussion

Table 3 reports the results of Granger non-causality tests, which reveal a bidirectional causal linkage among openness to merchandise trade (OMT),

openness to services trade (OST), and tourism arrivals (TA). Specifically, causality runs from OMT and OST to TA, consistent with the proposition that greater openness in merchandise and services trade fosters tourism development in Malaysia. This relationship may operate through two channels: first, trade liberalisation in goods and services can stimulate business travel, a key component of tourism activity; second, the resultant reductions in prices, enhancements in quality, and expansion of product variety associated with trade liberalisation may attract higher inflows of international tourists to the country.

Table 3. Results of Granger-causality test Based on Toda-Yamamoto

VAR (k + d _{max}) = 2	MWald	Result
Null hypothesis		
(1) OMT and TA		
OMT $\nrightarrow$ TA	2.757 (0.014)**	OMT $\leftrightarrow$ TA
TA $\nrightarrow$ OMT	2.540 (0.048)**	
(2) OST and TA		
OST $\nrightarrow$ TA	2.477 (0.004)***	OST $\leftrightarrow$ TA
TA $\nrightarrow$ OST	3.143 (0.0254)**	
(3) OMT and OST		
OMT $\nrightarrow$ OST	-0.634 (0.736)	OST $\rightarrow$ OMT
OST $\nrightarrow$ OMT	-0.135 (0.0762)*	

Source: Research findings.

Note: $\nrightarrow$ = does not Granger-cause, $\rightarrow$ = Granger-cause and $\leftrightarrow$ = bidirectional causal relationship. The figures in parentheses are p-values.

*, **, and *** denote significance at 10%, 5%, and 1% levels.

Moreover, the reverse causality from tourism arrivals (TA) to openness to merchandise trade (OMT) and openness to services trade (OST) can be explained by the fact that the growth in the tourism industry is instrumental in the opening up of merchandise and service trade through an increase in the consumption of domestic goods by international tourists (direct effect), as well as an increase in the consumption of foreign goods by tourism-related industries in the domestic economy (indirect effect). The analysis in Table 3 suggests that there is a positive relationship between the openness to services trade and the openness to merchandise trade. Specifically, an increase in openness to services trade (OST) is

associated with a subsequent increase in openness to merchandise trade (OMT). This relationship may be explained by two mechanisms: first, a substantial share of services in Malaysia is traded in conjunction with goods, implying that expansions in services trade are closely linked to merchandise trade flows; second, growth in services trade can attract foreign direct investment (FDI) inflows, which in turn facilitate the expansion of merchandise trade through forward and backward linkages in global value chains.

Table 4. Results of Granger-causality Test Based on Toda-Yamamoto by Country

VAR (k + d _{max}) = 2	MWald	Result
Null hypothesis		
Malaysia - Singapore		
TO _{Malysis-Singapore} $\nrightarrow$ TA _{Malaysia- Singapore}	0.007 (0.038)**	TO $\leftrightarrow$ TA
TA _{Malaysia- Singapore} $\nrightarrow$ TO _{Malysis-Singapore}	1.471 (0.073)*	
Malaysia - China		
TO _{Malysis-China} $\nrightarrow$ TA _{Malaysia- China}	1.857 (0.504)	TA $\rightarrow$ TO
TA _{Malaysia- China} $\nrightarrow$ TO _{Malysis-China}	2.013 (0.0254)**	
Malaysia - USA		
TO _{Malysis-USA} $\nrightarrow$ TA _{Malaysia- USA}	0.043 (0.846)	TO $\nrightarrow$ TA
TA _{Malaysia- USA} $\nrightarrow$ TO _{Malysis-USA}	0.097 (0.1762)	
Malaysia - Japan		
TO _{Malysis-Japan} $\nrightarrow$ TA _{Malaysia- Japan}	0.440 (0.184)	TO $\nrightarrow$ TA
TA _{Malaysia- Japan} $\nrightarrow$ TO _{Malysis-Japan}	0.382 (0.129)	
Malaysia - Thailand		
TO _{Malysis-Thailand} $\nrightarrow$ TA _{Malaysia- Thailand}	1.557 (0.043)**	TO $\leftrightarrow$ TA
TA _{Malaysia- Thailand} $\nrightarrow$ TO _{Malasyia-Thailand}	0.430 (0.048)**	

Source: Research findings.

Note: $\nrightarrow$ = does not Granger-cause, $\rightarrow$ = Granger-cause and $\leftrightarrow$ = bidirectional causal relationship. The figures in parentheses are p-values.

*, **, and *** denote significance at 10%, 5%, and 1% levels.

In this section, the results of Granger non-causality tests using country-level data indicate that the interplay between trade openness and tourist arrivals varies across Malaysia's major trading partners (Table 4). According to the findings in Table 7, the Granger causality tests reveal no statistically significant relationship between trade and tourism for Malaysia's partnerships with the United States and Japan. Furthermore, as shown in the table, the null hypothesis that trade openness

(TO) does not Granger-cause tourist arrivals (TA) cannot be rejected at the 5% significance level for Malaysia's partnerships with Singapore, China, and Thailand. In contrast, for other partner countries, trade exerts a positive and statistically significant effect on tourist arrivals. These findings contradict the hypothesis that trade serves as a substitute for tourism; instead, they support the view that trade and tourism are complementary. The results of this study are consistent with prior studies that found a positive effect of trade on tourism (Azmi et al., 2023; Kumar et al., 2019).

Trade (exports and imports) is identified as a significant determinant of tourist arrivals. One of the reasons for the positive effect of exports on tourism is that products in foreign markets increase the visibility and national image, thereby attracting tourists. Moreover, exports generate business travel in the short term, which over time may translate into leisure travel as familiarity with the destination increases. Although the impact of imports on tourism is relatively smaller than that of exports, destination countries can offer goods that meet tourists' preferences and thereby stimulate travel demand. Also, exports from partner countries (which constitute imports for Malaysia) increase exporters' incomes, subsequently increasing their demand for international tourism. Finally, infrastructure development to facilitate trade may also contribute to higher tourist inflows to Malaysia.

Although the results of the causality test between these variables do not apply to all countries, the results reveal bidirectional causality between tourist arrivals (TA) and trade openness (TO) for the Malaysia–Singapore and Malaysia–Thailand pairs. This result corroborates prior evidence that greater trade openness between Malaysia and each of these partners can stimulate tourism growth in Malaysia. A possible explanation is that Singapore and Thailand are not only among Malaysia's largest trading partners but also its closest geographical neighbours among major partners, a combination that appears to facilitate and reinforce tourism flows to the host country.

Therefore, the results of this study indicate that international trade leads to international tourist arrivals. This finding aligns with those of Kulendran and Wilson (2000), Khadir and Jusoff (2010), and Wong and Tang (2010), where unidirectional causation was found from real trade to tourist arrivals in the cases of Australia, Malaysia and Singapore, respectively. The reverse causality from $TA_{\text{Malaysia-China}}$ to $TO_{\text{Malaysia-China}}$ also lends support to the argument that rising tourist arrivals from China to Malaysia may prompt the host country to pursue greater bilateral trade openness.

Conclusion and Policy Implication

This study investigates causal relationships between trade openness and tourism in Malaysia using both aggregate and country-level data, employing the Toda–Yamamoto (1995) non-causality test. Trade openness can promote tourism by enhancing efficiency through heightened international competition, which provides lower prices, greater product variety, and improved quality for international tourists. The evidence suggests that increases in total trade, as well as in exports and imports, contribute to growth in the tourism sector, thus attracting more international tourists—consistent with the view that a substantial share of tourist arrivals is business-related. As a result, growth in tourism-related investment and capacity further stimulates international tourist arrivals. Given that business travel constitutes a significant component of the tourism sector in all countries, these dynamics underscore the complementary relationship between trade openness and tourism development.

The empirical results reveal that, there is bidirectional causality between tourist arrivals (aggregated) and openness to merchandise and services trade; and openness to services trade does Granger-cause openness to merchandise trade (See Figure 1). The growth of the tourism industry can also lead to further trade liberalization through increased international tourist spending in the host country. Furthermore, growth in international trade is associated with an increase in international tourist arrivals to Malaysia. As noted by Shan and Wilson (2001) and Kulendran and Wilson (1998), argue that of foreign tourists into a host country tends to enhance its international image with respect to its goods and services, thereby creating additional trade opportunities. In 2018, 55.5% of tourists visited Malaysia for recreational purposes, while 19.8% traveled to visit friends and relatives, and 15.8% cited business and shopping purpose (Tourism Malaysia, 2020). Hence, future economic policy should focus more on tourism and trade related activities in order to generate more foreign exchange earnings for Malaysia. Besides, in order to increase and sustain the growth of tourism sector, more attention should be given to the business tourism since this category of tourism has shown higher growth rate.

Conversely, a growth of tourism activity in Malaysia can foster greater openness to merchandise and services trade. This is because tourism is a highly value-added sector requiring a wide array of supporting goods and services; increases in international tourist arrivals are conducive to enhancing trade openness. However, when examined at the country level, the pattern of causality varies across Malaysia's major trading partners. The results show that greater trade

liberalization does not necessarily lead to more tourist arrivals. But it is an important catalyst for the growth of the tourism sector particularly in the case of Malaysia-Singapore and Malaysia-Thailand trade. Causal evidence suggests that trade openness plays an important role in the development of the tourism industry, as reflected in the fact that Singapore and Thailand also serve as huge trading partners.

The practical implications of this study emphasize the importance of coordinated cooperation between the trade and tourism sectors. Given that both sectors play a very important role as major drivers of economic growth. Since trade has a stronger impact on tourism for Malaysia's major partners, policies aimed at expanding Malaysia's regional trade portfolio are likely to significantly increase tourism inflows. Policymakers are emphasizing improving trade relations, for example, improving transportation infrastructure, creating a regional common market, etc.

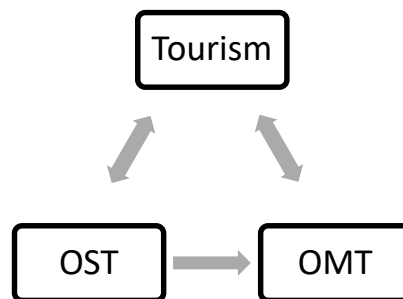


Figure 1. The Relationship between Tourism Arrivals (TA) to Openness to Merchandize Trade (OMT) and Openness to Services Trade (OST) in Malaysia

Source: Research findings.

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