

The role of cultural distance in boosting international tourism arrivals in ASEAN: a gravity model

by Unggul Heriqbaldi

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The role of cultural distance in boosting international tourism arrivals in ASEAN: a gravity model

Unggul Heriqbaldi, Miguel Angel Esquivias and Kemala Sari Agusti

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Abstract

Purpose – This study aims to explore the role of cultural distance, economic integration, price competitiveness and substitution prices for tourism arrivals between 10 Southeast Asian (ASEAN) countries and 22 other origin countries from 2007 to 2019.

Design/methodology/approach – A panel-data gravity model is applied to estimate tourism demand in the ASEAN region. An index of cultural distance (time-variant) is introduced to examine the role of cultural differences across bilateral partners. Moreover, relative prices and substitution prices are introduced to the gravity equation to estimate price elasticities. Finally, this study tested whether the ASEAN free trade agreements (FTAs) encourage intraregional tourism arrivals. Two-panel regression approaches are used to test the model.

Findings – Cultural distance positively affects tourism inflows, boosting foreign arrivals. Income and price elasticities are important determinants in the demand model for ASEAN. A gain in price competitiveness versus alternative destinations can lead to substitution in destination choice. Meanwhile, geographic distance has a negative impact on arrivals, suggesting that connectivity and transportation are key in boosting tourism inflows in ASEAN. A decline in the disposable incomes of tourists caused by the COVID-19 pandemic may reduce tourism arrivals in the region. However, when currencies in ASEAN weaken, and consumer prices are lower than in other destinations, arrivals in ASEAN will be stimulated. FTAs have facilitated travel intra-ASEAN, which is an advantage over the extra-ASEAN sector.

Practical implications – Cultural heritage could be used in tourism promotion as ASEAN can attract tourists seeking novelty and new excitements. ASEAN countries could create complementary destinations and jointly promote cultural heritage to accelerate the region's recovery. The depreciation of currencies in ASEAN and the gain in relative price competitiveness could attract more tourist visits, helping the region reestablish tourism activities in a postpandemic economy.

Originality/value – The model accounts for three key variables in the gravity approach: cultural distance in ASEAN tourism inflows, the effects of the ASEAN economic community on intraregional tourism, and relative and alternative price competitiveness. This study enriches the literature about tourism-demand approaches in modeling tourism arrivals.

Keywords Cultural distance, International tourism, Gravity model, ASEAN, Price competitiveness, Substitution prices, COVID-19, Trade openness, Tourism development, GDP

Paper type Research paper

Introduction

From 2000 to 2019, international tourism arrivals in the Association of Southeast Asian Nations (ASEAN hereafter) expanded from 38.3 million to more than 143 million. Countries like Cambodia, Myanmar and Vietnam welcomed seven times more tourists in 2019 than 2000. Improvements in transportation, advancements in media and information, growing demand for tourism services in neighboring Asian countries and a more developed tourism sector have spurred global travel trends.

Unggul Heriqbaldi and Miguel Angel Esquivias are both based at the Department of Economics, Universitas Airlangga, Surabaya, Indonesia. Kemala Sari Agusti is a Undergraduate Student at the Department of Economics, Universitas Airlangga, Surabaya, Indonesia.

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CONSUMER BEHAVIOR IN TOURISM AND HOSPITALITY

Research in tourism thus far has been focusing on the demand and supply factors (Habibi, 2017; Yazdi and Khanalizadeh, 2017; Liu *et al.*, 2018b). Previous studies on tourism have recognized factors that help build competitive tourism destinations (Kumar and Dhir, 2020), including branding, intellectual capital, visa schemes and tourism campaigns. Other studies have examined the role of culture in attracting tourists, suggesting that cultural affinity/differences can help determine destinations and influence preferences (McKercher and du Cros, 2003). The link between cultural distance (proximity) and preferences has been studied using economic modeling with gravity approaches (Bi and Lehto, 2018; Petit and Seetaram, 2019). ASEAN countries are rich in cultural heritage and natural sites. Yet, as the area remains vastly unexplored in terms of the role of culture on tourism preference, it opens a question about the importance of cultural diversity in ASEAN's tourism sector. Salinas Fernández *et al.* (2022) note that two of the determinants of competitiveness in tourism are cultural and natural resources accessible in the tourist destinations. This study explores the role of cultural distance on international tourism arrivals in ASEAN. So far, previous studies have not employed the gravity model to examine the role of culture, preferences and substitution prices in ASEAN countries.

The theoretical models exploring the impact of culture on tourism include "self-image congruity theory, arousal theory, and cultural theory of risk" (Zhang *et al.*, 2019). The self-image assumes that tourists visit destinations that mirror their own culture and values (Beerli *et al.*, 2007). Arousal theory suggests that tourists are driven by novelty, with new excitements motivating the intention to visit (Lee and Crompton, 1992; McKercher and du Cros, 2003). The cultural theory of risk assumes that tourists compare their social structures with their destinations, associating a risk based on cultural differences (Douglas, 2002). This study explores whether cultural differences could be associated with affinity, novelty or aversion to travel to the ASEAN region.

Previous research has explored the role of cultural differences in tourists' intention to travel. Ng *et al.* (2007) noted that Australian tourism outflows are negatively correlated with cultural distance, suggesting a high inclination toward cultural diversity. Meanwhile, Ahn and McKercher (2015) found significant but moderate effects of cultural distance on tourist influx in Hong Kong. Fourie and Santana-Gallego (2013) also believe that cultural affinity is an important driver of international tourism in most regions but Asia. Similarly, estimating a gravity equation for a sample of 12 OECD countries, Petit and Seetaram (2019) support that cultural affinity encourages tourists to visit and spend more on the destinations. Using an augmented gravity equation for a sample of 32 countries, Zhang *et al.* (2019) found that cultural aspects can be a pull or a push factor depending on the origin and destination country. In another study using the augmented gravity model, Bi and Lehto (2018) found that Chinese tourists may be open to cultural differences. Lim and Giouvriss (2020) noted that culture plays a significant pull factor in South Korea, as Asian tourists are driven by aspects related to the Korean Hallyu (music, fashion, film, etc.).

Results have been inconclusive, partly because tourism preferences and travelers' behavior toward cultural values differ across countries. Culture can capture the tangible and intangible heritage, both endowed naturally or socially, due to language, art, values, forms of social interaction and traditions, among others. Countries prefer cultural aspects that separate them (Konya, 2006). Likewise, Felbermayr and Toubal (2010) noted that countries with cultural similarities could be more inclined to exchange goods and services as barriers are lower. They also proposed a construct to measure cultural proximity within the gravity framework, finding clear evidence of the role of culture in international flows of goods and services (tourism). This suggests that cultural affinity among countries needs to be considered when exploring determinants of trade (or tourism) flows. In other words, cultural diversity in regions with cultural distance as a driver or divider of tourism flows, like the ASEAN, offers an empirical gap for further exploration. We aim to provide insights into the role of culture in the ASEAN as a driver of tourism demand.

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In this research, a panel-data gravity model is applied to explore the demand factors for bilateral tourism in the ten ASEAN countries from 22 origin countries between 2007 and 2019. The tourists' incomes were proxied by gross domestic product (GDP), the market size by population, transportation cost/connectivity by geographic distance and price competitiveness by both relative and substitution prices. We also incorporated an index of cultural distance between ASEAN countries and partners to capture the impact of cultural value differences on tourism arrivals. The index captures the differences in trust, respect, freedom and obedience. Therefore, distance is both geographic and cultural in this study, as proposed in earlier studies (Petit and Seetaram, 2019). A set of dummy variables was also used to test whether free trade agreements (FTA) in ASEAN motivates intraregional tourism arrivals. The regression results were compared using a generalized least square and Poisson pseudo-maximum likelihood (PPML).

After more than two decades of regional economic integration (ET) in the ASEAN (Chang *et al.*, 2011; Wong *et al.*, 2011; Purwono *et al.*, 2022), the question remains whether the integration efforts have also supported the tourism sector. We incorporate a dummy variable to capture whether intra-ASEAN tourism is supported by the regional liberalization of goods, services and capital under the ASEAN FTA, compared to trips to extra-ASEAN. The ASEAN region covers ten economies – Indonesia, Malaysia, the Philippines, Thailand, Singapore, Vietnam, Cambodia, Laos, Myanmar and Brunei.

This study contributes to the literature in four aspects. First, we provide evidence for the role of cultural distance in ASEAN tourism inflows. Tourists could display preference towards similar or diverse cultures. Previous studies employ dummy variables to proxy cultural affinity across countries – often through a common language and borders (Khadaroo and Seetanah, 2008; Fourie and Santana-Gallego, 2013). Such practices suffer from the time invariability of the dummy variables and the limitations that binary variables impose because they assume symmetry across countries (Petit and Seetaram, 2019). We include cultural distance measurement – which is time-varying at the country level – and use subcomponents that may provide additional insights into the role of cultural values.

A second contribution is examining the effects of ET on tourism flows in the ASEAN, where intratrade liberalization has been at the center of the regional plan. Several studies have considered the role of FTA in Asia on trade applications (Handoyo *et al.*, 2021; Purwono *et al.*, 2022), but few studies focus on the role of free trade on tourism flows in the ASEAN.

Third, we contribute to the tourism demand models by incorporating price competitiveness, i.e. relative prices and substitution prices, in a gravity approach. A number of studies incorporate bilateral exchange rates or indicators of relative prices between origin and destination countries (Zhang *et al.*, 2019; Ibragimov *et al.*, 2021). However, gravity models have provided less attention to the role of substitution prices when modeling tourism demand. Besides, indicators of relative prices using consumer prices or bilateral exchange rates alone are often inadequate to measure price competitiveness (Seetaram *et al.*, 2016; Dogru *et al.*, 2017). We provide substitution prices based on the top alternative destinations of each origin country. Our approach avoids symmetric assumptions that may arise from defining a single indicator of alternative prices as a global proxy for substitution prices.

It is also important to note that the COVID-19 pandemic has crippled the tourism sector globally, so countries need to recalibrate their operations and redirect their strategies (Esquivias *et al.*, 2021; Salinas Fernández *et al.*, 2022). Looking into price and income elasticities can approximate the potential decline in tourism arrivals derived from the economic slowdown and changes in consumer prices across countries (Xie and Tveterås, 2020). A contraction in GDP worldwide and a sharp reduction in trips are expected to change the competitiveness of tourism destinations (Lim and Won, 2020; Papanikos, 2020). Cultural distance, intra-ASEAN integration and other demand variables incorporated in the model can offer insights into designing systems in the postpandemic area.

Methodology

This study adopts the gravity model to test the links between cultural distance and tourism inflows in ASEAN. Earlier studies have found that tourism flows can be modeled as bilateral flows (Khadaroo and Seetanah, 2008). The gravity model could measure trade (tourism) flows and the effects of ET (Morley *et al.*, 2014; Harb and Bassil, 2018; Handoyo *et al.*, 2021). Gravity models based on panel data can capture multilateral resistance, signaling relationships between alternative destinations (Harb and Bassil, 2018). Similarly, the role of income, prices, transport cost and other noneconomic factors can adequately be modeled with the gravity approach (Khadaroo and Seetanah, 2008; Fourie and Santana-Gallego, 2013; Zhang *et al.*, 2019; Ibragimov *et al.*, 2021).

The general empirical specification of the gravity model is represented as follows:

$$Tou_{ij} = \alpha \frac{(Y_i)^{\alpha_1} (Y_j)^{\alpha_2}}{(Dis_{ij})^{\alpha_3}} \quad (1)$$

where the destination country (recipient) is captured by i and the origin country by j . Tou_{ij} indicates the flows of tourists between countries i and j , Y_i and Y_j account for the economic size of partners, and Dis_{ij} is the geographical distance between countries. A theoretical examination by Anderson and Van Wincoop (2003) suggests that the gravity model can cover multiple fields dealing with cross borders activities and integration.

As equation (1) is reformulated into an extended version for tourism, it can model tourism arrivals as a function of income (GDP), market size (population Pop), geographic distance (Dis as a proxy for transport cost, e.g. Huang *et al.*, 2012) and an additional set of variables (Table 1). In the tourism literature, demand, income, population and distance are the most commonly used determinants (Song and Li, 2008) as they are precise proxies for income, market size and transportation. However, using geographic distance as a measure of transportation cost has limitations. Seetaram (2010) pointed out that although some strong correlation may exist between distance and airfare, in panel data settings where distance remains unchanged, the relative cost may also remain unchanged over time. Seetaram (2010) also noted that the cost per mile across regions differs and is subject to distinct variations. As such, the interpretation of distance needs to be taken with caution. It is certainly not an adequate proxy for transport price. Still, the link between distance and travel cost can provide some approximation to the role of travel fare and connectivity, which is crucial in tourism (Khadaroo and Seetanah, 2008).

We introduce additional variables to capture the role of cultural distance ($CULTRDS$):

$$CULTRDS_{ij} = \sum_{d=1}^4 \left\{ (I_{di} - I_{dj})^2 / V_d \right\} / 4 \quad (2)$$

where $CULTRDS_{ij}$ indicates the cultural distance between the destination and origin country (i and j) as a weighted value of the index (I) from four dimensions (d): trust (Tru), respect (Res), freedom ($Free$) and obedience (Obd); and V_d indicates the index variance in the d dimension. The four dimensions (Tru_i , Res , $Free$ and Obd) were adopted from the World Value Survey. The measurement of the cultural distance index follows the study by Kogut and Singh (1988). The larger the difference between cultural values, the larger the distance between cultures. The lower the index, the larger the cultural affinity. We also regard cultural distance as a separate index and compute the difference in the four dimensions between the destination and origin country for Tru_{ij} , Res_{ij} , $Free_{ij}$ and Obd_{ij} .

In addition, following Dogru *et al.* (2017), we use two price indicators. First, we use relative price (R_Price_{ij}), which indicates the relative level of prices between countries i and j , proxied by the consumer price index (CPI) of i and j adjusted by the exchange rate ($EXRATE$) between countries:

Table 1 Variables and data sources

Variable	Description	Source
Arrivals from 2007 to 2019 (Tou)	Number of international tourist arrivals from the origin country to the destination country in year t	ASEAN Statistics Data Portal, UNWTO
Gross domestic product (GDP)	Real GDP (per country) in current US\$ (annual data)	World Bank (World Development Indicator)
Population size (Pop)	Total population (inhabitants)	World Bank (World Development Indicator)
Distance (Dis)	Distance between partner countries	http://distanceworld.com
Cultural distance (CLTRDS)	Cultural Distance index based on four dimensions: trust, respect, freedom and obedience	World Value Survey
Trust (Tru)	Cultural dimension: Trust	
Respect (Res)	Cultural dimension: Respect	
Freedom (Free)	Cultural dimension: Freedom	
Obedience (Obd)	Cultural dimension: Obedience	
Exchange rate (EXRATE)	The annual bilateral exchange rate between destination and country of origin	International Monetary Fund (IMF)
Relative prices (R_{Price})	The annual cost of living in the destination country (consumer price index, CPI) relative to the CPI of the origin country. The bilateral exchange rate adjusts the ratio of CPIs	World Bank (Global Economic Monitor)
Substitution prices (SPEX)	The cost of living in the destination country (CPI) relative to the CPI in four competing destinations based on the top visited countries by the origin country (j)	World Bank (Global Economic Monitor) and Statistics Data Portal, UNWTO
Economic integration ET_1	$ET_1 = 1$ when origin i and destination j are members of ASEAN in year t , zero otherwise	
ET_2	$ET_2 = 1$ when origin i is a member of ASEAN and destination j is not in year t , zero otherwise	
Dummy variables for a year t (γ_t)	$D_{2007} = 1$ if flows are recorded during year 2007, zero otherwise (similar for years 2008–2019)	
Countries (α_i and λ_j , destination and origin country, respectively)	ASEAN members (10): Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam Non-FTA Member countries (22): Australia, Arab Rep., Bangladesh, Belgium, Brazil, China, Canada, Egypt, France, Germany, Hong Kong SAR, Iceland, India, Italy, Japan, Korea, Mexico, Netherlands, Nigeria, Norway, New Zealand, Pakistan, Russian Federation, Spain, Switzerland, Turkey, UK and the USA	

$$R_{Price_{it}} = \frac{CPI_{it}}{(CPI_{it}) \times EXRATE} \quad (3)$$

Second, we compute an indicator of substitution prices (SPEX) between destination country i and four major alternative destinations to country j . Alternative destinations were selected based on the top four (TOP_1, \dots, TOP_4) tourist destinations of country j . To illustrate, the top four countries visited by Australians (origin country i) were Thailand ($TOP_{1,i}$), New Zealand ($TOP_{2,i}$), the USA ($TOP_{3,i}$) and Indonesia ($TOP_{4,i}$). The $SPEX_{it}$ indicator compares the price in the origin country i at time t (CPI_{it}) relative to the prices of four alternative destinations j ($CPI_{TOP1, \dots, TOP4}$) adjusted by the exchange rate (EXRATE):

$$SPEX_{it} = \frac{CPI_{it}}{[(CPI_{TOP1,j} + CPI_{TOP2,j} + CPI_{TOP3,j} + CPI_{TOP4,j})_t \times 25\%] \times EXRATE} \quad (4)$$

Dogru *et al.* (2017) suggest that relative prices (R_{Price}) and substitution prices (SPEX) adjusted by exchange rate are suitable proxies. It is expected that relative prices will be negative following the law of price elasticity. As for substitution prices (SPEX), a positive coefficient will indicate that destinations are substitutes, meaning that a loss in price competitiveness in the destination country i can lead to tourists moving to alternative destinations that are more price-competitive (proxied by CPI from TOP_1 to TOP_4). Meanwhile, a negative coefficient for SPEX will indicate that destinations are complementary (Esquivias *et al.*, 2021).

Furthermore, we incorporate the effect of ET via three dummy variables. ET_1 indicates if the country of origin and destination are ASEAN members. ET_2 means if the country of origin is a member (ASEAN), but the destination is not. A positive ET_1 indicates that ET has supported inflows of tourists at a larger-than-usual rate. In addition, dummy variables are also introduced as control variables to accommodate specific country effects and time fixed effects. These function as a proxy for multilateral resistance (Ibragimov et al., 2021):

$$\ln Tou_{ijt} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln Pop_{it} + \beta_4 \ln Pop_{jt} + \beta_5 \ln Dis_{ij} + \beta_6 \ln R_Price_{ijt} + \beta_7 \ln SPEX_{it} + \beta_8 \ln CLTRDS_{ij} + \beta_9 ET_{1ijt} + \beta_{10} ET_{2ijt} + \alpha_i + \lambda_j + \gamma_t + u_{ijt} \quad (5)$$

where \ln denotes natural logs of the variables, i and j indicate touristic destination and country of origin, respectively, and t is time. A specific country's effects are shown by α_i and λ_j , destination and origin country, respectively, time effect (year) is presented in γ_t , and the error term is u_{ijt} .

In addition, equation (5) is modified by breaking down the cultural distance index (CLTRDS) into four subcomponents: Trust (Tru), Respect (Res), Freedom (Free) and Obedience (Obd) to see the disaggregated effect of each variable. The bilateral cultural distance for each subcomponent is computed similarly to CLTRDS in equation (2):

$$CLTRDS_{ij^d} = I_{dj} - I_{di} \quad (6)$$

where $CLTRDS_{ij^d}$ indicates the cultural distance in the d dimension between the origin and destination country (i and j). In some empirical studies, cultural distance has been considered to examine tourism inflows in different geographies (Yang and Wong, 2012; Zhang et al., 2019). The popularity of tourism destinations is influenced by a set of heritage assets in the form of culture, natural resources, values, traditions and the people's characters:

$$\ln Tou_{ijt} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln Pop_{it} + \beta_4 \ln Pop_{jt} + \beta_5 \ln Dis_{ij} + \beta_6 \ln R_Price_{ijt} + \beta_7 \ln SPEX_{it} + \beta_8 \ln Tru_{ij} + \beta_9 \ln Res_{ij} + \beta_{10} \ln Free_{ij} + \beta_{11} \ln Obd_{ij} + \beta_{12} ET_{1ijt} + \beta_{13} ET_{2ijt} + \alpha_i + \lambda_j + \gamma_t + u_{ijt} \quad (7)$$

The detail of the variables is shown in Table 1. The data includes tourism inflows from and to the ten ASEAN countries from 2007 to 2019. The data on tourism arrivals is obtained from the United Nations World Tourism Organization (UNWTO).

We use the GLS random effects as an estimation technique, which is commonly used for panel data models in the tourism research paradigm (Zhang et al., 2019). As an alternative approach, to test the robustness of our estimation, we use the PPML of Silva and Tenreyro (2006), which is widely used in gravity models for trade but seldom used in models for tourism inflows. The PPML is an efficient instrument for handling zero data flows and accounts for heteroskedasticity in the data, often found in panel models. We provide several estimations to test the stability of the model by including or removing country and time fixed effects (α_i , λ_j and γ_t).

Result and discussion

Table 2 shows the descriptive statistics. The results from the gravity model (Table 3) indicate that cultural distance positively affects tourism inflows when incomes (GDP), market size (Population or Pop), geographic distance (Dis), relative prices (R_{Price}) and substitution prices ($SPEX$) come into play. Cultural differences (CLTRDS) between ASEAN countries and foreign partners can drive larger tourism arrivals. A 1% increase in cultural difference between the origin and destination country could lead to 0.41% (FGLS model) to 0.66% (PPML model) of larger arrivals. Positive magnitude in cultural differences signal that travelers may seek novelty when traveling to ASEAN, which could be driven by differences in spaces, objects, environment, people and social structures, as commonly noted (Ahn and McKercher, 2015; Bi and Lehto, 2018). This is in line with scape-seeking approaches

Table 2 Descriptive statistics

Variable	Mean	SD	Min	Max
lnTou	10.623	2.292	2.639	16.45
lnGDP	27.175	1.698	22.458	30.538
lnGDP	25.322	1.572	22.458	27.817
lnPop	17.601	1.688	12.649	21.058
lnPop	16.921	1.791	12.835	19.416
lnDis	8.393	0.935	5.935	9.869
lnR Price	-2.316	4.781	-10.553	10.154
ln SPEX	-2.304	4.751	-10.274	9.991
CLTRDS	0.462	0.217	0.001	0.901
Tru	0.216	0.153	0.002	0.708
Res	0.173	0.152	0.001	0.69
Free	0.193	0.145	0.004	0.5
Obd	0.208	0.19	0.003	0.5
ET ₁	0.262	0.44	0	1
ET ₂	0.738	0.44	0	1

Note: Observations = 3,861

Table 3 Results of gravity model for FGLS and PPML

Variables	FGLS (1)	(2)	PPML (3)	(4)	(5)	(6)
lnGDP _i	1.054*** (0.0276)	1.071*** (0.0274)	1.02*** (0.0289)	1.04*** (0.0285)	1.01*** (0.0290)	1.104*** (0.0287)
lnGDP _j	0.848*** (0.0275)	0.894*** (0.0285)	0.818*** (0.0303)	0.869*** (0.0319)	0.815*** (0.0304)	0.865*** (0.0322)
lnPOP _i	-0.238*** (0.0233)	-0.243*** (0.0230)	-0.220*** (0.0228)	-0.233*** (0.0220)	-0.219*** (0.0228)	-0.233*** (0.0220)
lnPOP _j	-0.0703*** (0.0257)	-0.0577** (0.0257)	-0.0509* (0.0273)	-0.0332 (0.0278)	-0.0481* (0.0273)	-0.0290 (0.0279)
lnDist _{ij}	-1.561*** (0.0408)	-1.563*** (0.0403)	-1.42*** (0.0519)	-1.43*** (0.0522)	-1.42*** (0.0519)	-1.143*** (0.0521)
lnR _{Price_{ij}}	-0.640** (0.308)	-0.710* (0.305)	-0.623** (0.290)	-0.746*** (0.284)	-0.491 (0.333)	-0.581* (0.327)
ln _{SPEX_{it}}	0.593* (0.311)	0.664** (0.307)	0.584** (0.293)	0.710** (0.286)	0.452 (0.335)	0.546* (0.330)
CLTRDS _{ij}	0.413*** (0.123)		0.660*** (0.154)		0.659*** (0.155)	
Tru _{ij}		-0.660*** (0.171)		-0.646*** (0.149)		-0.667*** (0.149)
Res _{ij}		0.650*** (0.181)		0.828*** (0.164)		0.869*** (0.165)
Free _{ij}		-2.341*** (0.314)		-2.30*** (0.282)		-2.31*** (0.282)
Obd _{ij}		2.306*** (0.247)		2.58*** (0.244)		2.58*** (0.244)
ET _{1it}	0.573*** (0.0807)	0.597*** (0.0816)	0.656*** (0.090)	0.688*** (0.092)	0.654*** (0.090)	0.689*** (0.092)
Time fixed effects					Yes	Yes
Constant	-21.45*** (0.697)	-23.00*** (0.759)	-8.73*** (0.897)	-10.60*** (0.982)	-8.76*** (0.910)	-10.61*** (0.998)
Chi2	5,200.6	5,421.5				
Prob > Chi2	0.000	0.000				
Akaike crit. (AIC)	11,472.003	11,394.205				
Pseudo log-likelihood			-7134.8072	-7124.1823	-7133.675	-7125.5174
R ²			0.59	0.62	0.60	0.61

Notes: Standard errors in parentheses. *, ** and *** indicate significance at the 10, 5 and 1% level, respectively

where tourists search for physically and socially different environments (Lehto, 2013). The greater the cultural differences, the more tourists experience the rich and unique culture, tradition, heritage and history. Our results suggest that ASEAN could capitalize on cultural differences as a driver for tourism. Table presents the index of cultural distance (CLTRDS) between the ten ASEAN countries and the five top countries visiting in 2019. A larger index (closer to one) indicates a larger cultural distance, while a lower (closer to zero) indicates higher cultural affinity.

Besides looking into the aggregate variable for cultural distance (CLTRDS), we also observe four specific subcomponents as a proxy of cultural distance. The findings show that trust (Tru), respect (Res) and obedience (Obd) are individually significant determinants of tourism arrivals, indicating that tourists value cultural differences in this area. Such behavior is partly explained by the arousal theory (Litvin, 2008). However, freedom (Free) and trust (Tru) are negative and significant, suggesting that differences in perceptions of freedom and trust values may discourage visits. This suggests that while tourists search for novelty and escape, they may be less tolerant of a lack of trust and freedom constraints (at least in comparison with the degree of freedom they experienced at home). Tourists may avoid destinations with many restrictions or where they cannot trust the residents. This is contrary to Ghollipour *et al.* (2014), stating that the lack of personal freedom of individuals in their own country might motivate people to seek personal freedom abroad.

Concerning the core variables in the gravity model, we find that income from the origin countries (GDP_{*i*}) is a significant (positive) factor in the tourism demand model. The literature often considers that income (GDP) is positively related to tourism inflows (Ibragimov *et al.*, 2021; Rosselló-Nadal and He, 2020). GDP proxies purchasing capability (GDP country of origin) and the expectation that the destination country will be able to provide quality services (GDP destination country).

The GDP variable for the country of origin *i* can be interpreted as income elasticity. In our results, the income elasticity of GDP_{*i*} is slightly above 1, suggesting that an increase in income by 1% may increase trips on a greater proportion (more than 1%). The results suggest that tourism is a luxury good. Considering the large number of developing countries included in the sample, i.e. ten ASEAN, China, India, Russia, Mexico, Egypt and Turkey, among others (see Table 1), it is understandable that tourism is a luxury rather than a basic need. The results align with previous studies covering developing Asian countries, stating that tourism is a luxury good (Esquivias *et al.*, 2021).

As for population, we find that the size of the country of origin (Pop_{*i*}) has a negative effect on tourism. The variable of the population is often associated with the market size. The negative sign could mean fewer trips from large countries to ASEAN (compared to other countries) or signal that large countries' arrivals are expanding slower than smaller countries. Alternatively, a negative result may strengthen the argument that purchasing power capability rather than population size alone matters as noted in the case of Chinese outbound tourism (Bi and Lehto, 2018; Xie and Tveterås, 2020). The destination country's population (Pop_{*j*}) also indicates a negative effect on tourism. In the ASEAN region, smaller countries such as Singapore, Malaysia and Thailand attract more tourists than larger countries (Indonesia, Vietnam and the Philippines).

Distance (Dist_{*ij*}), a proxy for transportation cost, has a negative impact on arrivals, suggesting that competitive transport cost and efficient connectivity are important factors in attracting more tourists to the ASEAN region. The ASEAN region could capitalize on tourism activities with regional partners, taking advantage of short distance, regional connectivity and visa schemes between partners to remain competitive destinations in terms of prices (Chang *et al.*, 2011; Liu *et al.*, 2018a, 2018b; Muryani *et al.*, 2020).

The relative prices (R_{Price}) indicate a negative relationship with tourism arrivals. An increase in prices in the destination country relative to the country of origin can reduce foreign arrivals. Similarly, an improvement in prices in the destination, whether due to lower relative consumer prices or a weaker currency, indicates that prices are an important device to attract foreign travelers. An increase in prices of 1% in destination countries can decrease demand from 0.62% to 0.71%. ASEAN countries have remained competitive destinations in terms of prices (Chang *et al.*, 2011; Liu *et al.*, 2018a, 2018b; Muryani *et al.*, 2020). Differences in relative prices from the origin countries seem to benefit the ASEAN countries, increasing tourism arrivals as destinations become more attractive, in line with earlier studies (Xie and Tveterås, 2020; Esquivias *et al.*, 2021; Seetaram *et al.*, 2016).

Regarding substitution prices (SPEX), our results indicate that a gain in relative price competitiveness in the destination country can attract more arrivals from other main tourist destinations. In other words, foreign visits will increase as prices become more competitive compared to alternative tourist destinations. A 1% gain in destination prices relative to choices will increase foreign arrivals from 0.58% to 0.71%. On the contrary, tourists may shift to alternative destinations if the destination country loses price competitiveness. As an impact of the rebound strategy from the pandemic, price competition globally is expected to increase (Bakar and Rosbi, 2020). The ASEAN countries could take advantage of their lower tourism-service prices to attract tourists once borders reopen. Besides, the number of countries in high-income regions has seen increasing pressure on domestic prices, suggesting that they are losing price competitiveness.

13 Incomes and prices are essential components in shaping demand for tourism activities (Yazdi and Khanalizadeh, 2017; Barman and Nath, 2019; Gössling, Scott, and Hall, 2020). By looking at the income and price elasticities, authorities may consider whether policies should be directed toward price or nonprice factors such as service, quality, safety, attractions and amenities. Another alternative is that ASEAN countries maybe join forces and serve international tourists with complementary destinations. They can also promote cultural heritage and avoid price-competing policies.

Finally, we tested the role of trade agreements and regional integration (ET) in tourism inflows. Significant and positive results were obtained. The variable of ET_1 is positive, signaling a FTA in the ASEAN region (free movement of goods, services and capital) has a positive effect on tourism arrivals. Following Handoyo *et al.* (2021), the coefficient for ET_1 can be presented in percentage terms as $[\exp(ET_1 - 1) \times 100]$. ET_1 indicates that the ET promoted intraregional tourism flows at a faster (65%–74%) rate than usual (compared to countries without agreements). Previous studies examining the links between trade and tourism have also identified positive linkages between tourism and trade in other regions (Santana-Gallego *et al.*, 2016; Tang, 2021). On the other hand, the results also indicate that intra-ASEAN tourism is growing faster than trips to extra-ASEAN destinations. Our findings support earlier studies highlighting the rapid intraregional tourism flows (Liu *et al.*, 2018a, 2018b) (Table 4).

Policy implications

By looking at the income and price elasticities, authorities may consider whether policies should be directed toward price or nonprice factors such as service, quality, safety, attractions and amenities. ASEAN countries maybe join forces and serve international tourists with complementary destinations. They can also promote cultural heritage and avoid price-competing policies. Nine of the top ten origin countries are within Asia and Oceania, so strengthening regional tourism could support a faster recovery process. However, it is important to note that the complementarity destination strategy within ASEAN has not been proven empirically (Chang *et al.*, 2011), except in studies such as that of Esquivias *et al.* (2021) where Indonesia, Malaysia, Thailand and Singapore were found to be complementary destinations for some countries. In other words, a single-ASEAN strategy is unlikely to work well for all countries. Nevertheless, the region can promote common values supporting complementarity in culture (Wong *et al.*, 2011).

Some ASEAN partners (China, Japan and South Korea) rank high in long-term orientation (Kumar and Dhir, 2020), suggesting that service, access, infrastructure and experience are important in catering services for high-income countries. By contrast, efforts to increase intra-ASEAN tourism flows should focus on travel campaigns, collectivism efforts, shorter – more frequent trips, and meaningful travel (Ooi, 2019) as ASEAN countries rank low in indulgence, long-term orientation and competitiveness. Such results highlight the importance of identified cultural values in travelers as it shapes attitude, behaviors, preferences and motivations (Kumar *et al.*, 2019).

Table 4 Cultural distance between each ASEAN country and top 5 partners

ASEAN country	Origin country	Culture distance	ASEAN country	Origin country	Culture distance
Brunei	China	0.63	Myanmar	Thailand	0.26
	Australia	0.65		Japan	0.34
	UK	0.70		China	0.53
	Singapore	0.68		Singapore	0.36
	USA	0.70		Korea	0.55
Cambodia	China	0.62	Philippines	China	0.61
	Vietnam	0.70		USA	0.43
	USA	0.71		Australia	0.56
	France	0.79		Canada	0.45
Indonesia	Thailand	0.66	Singapore	Korea	0.64
	UK	0.50		China	0.37
	China	0.65		India	0.36
	Singapore	0.46		Indonesia	0.46
	USA	0.54		Australia	0.50
Laos	Japan	0.46	Thailand	Japan	0.26
	Thailand	0.66		China	0.36
	China	0.62		Russia	0.11
	Vietnam	0.58		India	0.52
	Japan	0.71		Malaysia	0.19
Malaysia	USA	0.70	Vietnam	Korea	0.66
	Singapore	0.46		China	0.41
	Korea	0.69		Korea	0.58
	China	0.49		Japan	0.30
	Thailand	0.19		USA	0.38
	India	0.70		Thailand	0.20

Note: Cultural distance values range from 0 (highest cultural affinity) to 1 (largest cultural difference)

Cultural values often proxied through art, music, architecture, traditions and social structures can facilitate tourism by influencing tourists' perceptions of the destination and motivations to travel. In line with the literature of cultural distance (Dong and Truong, 2020; Walters et al., 2021), our findings suggest that the cultural background of tourists matters as it affect how people think, believe, feel, act and decide on travel and leisure issues. Understanding cultural differences can help better recognize preferences for leisure and travel in the ASEAN.

Conclusion

This study examines the influence of cultural distance on the tourism demand in ASEAN countries. A gravity model using a panel data set was used to model tourism demand among ten ASEAN countries and 22 non-ASEAN tourist origins. The model includes core variables capturing the role of income, population size, distance (a proxy of transport cost), relative prices, substitution prices and dummy variables to test the role of regional integration. FGLS and PPML estimation techniques were used to validate the results.

This paper finds that cultural distance positively impacts tourism demand in ASEAN countries. The results show that tourism visits are not only motivated by economic factors like income, prices and transportation costs but also cultural differences. Therefore, promotional campaigns and sectoral efforts should consider cultural values. The ASEAN region could benefit from its rich cultural heritage and local values as tourists may look for novelty and cultural experiences in the ASEAN countries. The literature has shown different ways of capturing the role of culture. We use cultural values as a proxy for cultural preferences.

Similarly, tourism arrivals are significantly influenced by the income level of tourists (income elastic), with tourism considered a luxury good. Relative prices hold a negative sign indicating that a loss in relative prices (price competitiveness) may decrease tourism arrivals (Lu et al., 2018). On the contrary, substitution prices suggest that gains in price competitiveness compared to alternative

top destinations could lead to larger inflows of tourists in ASEAN (substitution effect taking place). Geographic distance suggests that transport (cost-connectivity) is an important determinant of arrivals signaling that connectivity and cost remain vital to encourage trips.

The high impact of income on tourism arrivals found in the results suggests that declining purchasing power among foreign tourists due to the COVID-19 pandemic and the global economic slowdown could hamper tourism inflows in ASEAN countries. On the other hand, price competitiveness could attract more foreign tourists as the ASEAN region remains competitive in both price levels (low-moderate inflation) and weak domestic currencies (compared to other regions).

Finally, promoting a more integrated free flow of goods, services, and capital will support tourists' mobility in the ASEAN region. Traveling in the intra-ASEAN region has expanded faster than travel to the extra-ASEAN area, suggesting that the implementation of the ASEAN FTA has contributed to more rapid growth in intraregional tourism flows. Regional ASEAN tourism, if integrated effectively, may help the recovery process in the post-pandemic world.

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Corresponding author

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