

# POISSON PSEUDO MAXIMUM LIKELIHOOD (PPML) FOR STUDYING THE IMPACT OF GOVERNANCE ON INTERNATIONAL TOURISM: A CASE STUDY OF ASEAN\*

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## Abstract

Over the past decade, international tourism has become one of the important international competitions. At the same time, society has paid more attention to the dimension of governance, making the level of governance an important factor in tourists' decision-making. This study aimed to analyze the impact of governance indicators on tourism demand in six ASEAN countries during 1995-2019 from the perspectives of origin and destination countries using the Pseudo Poisson Maximum Likelihood (PPML) estimation method.

The study found that the Pseudo Poisson Maximum Likelihood (PPML) can be used appropriately to study international tourism competition. The study concluded that 1) ASEAN is a good destination for international tourists. 2) The number of tourists traveling to ASEAN destinations based on income factors. 3) Cultural and linguistic similarities affect the number of tourists traveling to ASEAN. 4) Political conditions, the role of governance in implementing policies and regulations in one's own country are driving factors

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in deciding to travel to ASEAN destinations. If a more peaceful and stable political environment is created, the number of tourists will tend to increase.

**Keywords:** Governance, International Tourism, ASEAN

## Introduction

Governance is an important aspect of any country's socio-political system. Economic growth and development are mostly dependent on governance policies and initiatives. It is a known fact that a country with good governance attracts investments and fosters strong economic conditions. On the other hand, tourism is a key sector that alleviates poverty, creates jobs and develops local economies in many countries. Tourism is considered a tool for economic growth and social development. Tourism has contributed almost USD 1.7 trillion of total export revenues in 2018 (UNWTO, 2020) and considered an important sector to six major ASEAN economies - Indonesia, Malaysia, Philippines, Thailand, Singapore and Vietnam. Tourism industries in these countries are booming and there are several factors that affect its overall tourism growth and development. In several studies, the effectiveness of governance structures are linked to the success and development of tourism destinations.

Governance or political system is perceived as one of the key determinants of tourism demand. The choice of six ASEAN countries has been considered due to the absence of studies about the impact of governance to their respective tourism industries. Using Poisson Pseudo Maximum Likelihood (PPML) estimation method fills the gap in analyzing the impact of governance on tourism in an ASEAN setting.

ASEAN, a political and economic union and a trading bloc comprises ten Southeast Asian member states. The Southeast Asian region is home to 630 million people, diverse cultures and hundreds of languages, dialects and



religions (Forbes, 2014). ASEAN's combined GDP of US\$3 trillion comprises almost 3.5% of the world's GDP, while ASEAN 6 has a combined GDP of US\$2.87 trillion or 95.4% of ASEAN's total GDP in 2020 (World Bank, 2020). ASEAN 6 has generated US\$ 149.4 billion or 94.3% combined tourism receipts of ASEAN's total in 2019 (World Bank, 2019). The study covers the six major economies of ASEAN (Association of Southeast Asian Nations) namely: Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam for the period 1995 – 2019.

## Objectives

### Objectives

The study aims to analyze the impacts of governance indicators on tourism demand in six ASEAN countries for the period 1995 – 2019, from the perspective of origin and destination countries using Poisson Pseudo Maximum Likelihood (PPML) estimation method.

## Expected Outcomes

This study expects to contribute to literature since there are only a few studies about governance and tourism, specifically in an ASEAN setting. This study is considered first in using PPML estimation method for six major ASEAN economies. Previous studies have deeply analyzed the governance role to tourism either in terms of a single country or a region. However, the role of governance on tourism has not been studied based on dual perspectives – with reference to tourist generating countries and tourist receiving countries. Researchers have mostly focused on the economic perspectives of tourism while literature about the role of governance on tourism is still scarce. With the exception of the study of Tang (2018) that analyzed the relationship of governance quality and tourism in the case of Malaysia, it has not taken into consideration both perspectives, origin and destination. None of the studies has



been analyzed on the role of governance to tourism from different countries in terms of income level (low, lower-middle, upper-middle and high), which are applied to six major ASEAN countries and this study provides novelty in literature. The relationship between governance and tourism provides insights into the factors that influence tourism in ASEAN 6.

Accordingly, this study emphasizes governance from various countries and its impact to tourism, which supports key targets of UN SDGs 12 and 16. SDG 12 is all about sustainable consumption and production patterns, by means of developing and implementing tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products while SDG 16 entails the promotion of peaceful and inclusive societies for sustainable development, provision of access to justice for all and building effective, accountable and inclusive institutions at all levels by means of: promoting the rule of law at the national and international levels and ensuring equal access to justice for all; reducing corruption and bribery in all their forms; developing effective, accountable and transparent institutions at all levels; ensuring public access to information and protecting fundamental freedoms, in accordance with national legislation and international agreements; and promoting non-discriminatory laws and policies for sustainable development (United Nations, 2022).

## **Literature Review**

Governance is crucial in implementing any national government's programmes and initiatives. Governance has a significant effect in sustaining economic growth and development (Ahmad & Saleem, 2014). It is described as "the traditions and institutions by which authority in a country is exercised, that includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and



implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them” (Kaufmann, Kraay and Mastruzzi , 2010). This explains the perspectives of having sound policies as well as economic and social interactions (Ahmad & Saleem, 2014). It also represents the rules that determine the people’s behavior. Some of the key principles of governance include participation, inclusion, equality, rule of law and responsibility (Detotto, Giannoni & Goavec, 2020). There are six dimensions of governance, and these are: government effectiveness, political stability and the absence of violence/terrorism, rule of law, control of corruption, regulatory quality and voice and accountability (World Bank, 2020). In the world of politics, governance is often a matter of forming a common will of various interests. It is a system of rules that govern and regulate actions of political and social actors and shape the political direction of social and economic relations based on a policy tool that emphasizes cooperation or non-coercion (Ungsuchaval, 2021).

Given the importance of governance as a determinant of tourism demand, an in-depth analysis was emphasized based on six indicators (in both origin and destination countries) using PPML estimation method. These six indicators represent the independent variables while the number of international tourist arrivals as the dependent variable. The impacts of these indicators on tourism based on the number of tourist arrivals was analyzed to assess the relationship between governance and tourism in six major ASEAN economies. Santos Silva & Tenreyro (2006) have approved that PPML estimator is the best approach to estimate the gravity model as compared with other alternatives such as OLS, NLS, PPML or Tobit. Besides, PPML estimator yields consistent results and deals with zero observations in the sample and prevents heteroscedasticity in the model (Santana-Gallego & Paniagua, 2022; Yerdelen Tatoglu & Gul, 2019; Santos Silva & Tenreyro, 2006). Hence, this study builds panel data of six Southeast Asian countries from 1995 to 2019. Panel data



include observations across entities and periods, from origins and destinations. In this case, PPML estimator was found appropriate in estimating panel data based on gravity model as recommended by many scholars mentioned above.

## Methodology

Secondary data shall be applied in this study. Data shall be compiled from different sources. World Governance Indicators (WGI) provide six main governance dimensions that show the government's perception in terms of political stability, control of corruption, governance effectiveness, voice and accountability, rule of law and regulatory quality. These aggregate indicators are based on over 30 data sources covering perceptions about governance from a large number of survey respondents and expert assessments worldwide (Kaufmann, Kraay & Mastruzzi, 2010). The Worldwide Governance Indicators (WGI) are a research dataset that summarizes the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. Data were gathered from a number of survey institutes, think tanks, non-governmental organizations, international organizations and private sector firms (World Bank, 2021).

The number of tourist arrivals to six ASEAN countries from 190 countries are collected from the United Nations World Tourism Organization (UNWTO). This variable shall be used to reflect tourism demand in six ASEAN countries. The study aims to analyze the impact of governance indicators on tourism demand in six ASEAN countries from the perspective of origin and destination countries, for the period 1995-2019. Reference shall be made to a set of panel data that include origin- and destination-related governance indicators throughout the period. Based on recent studies (Ibragimov et al., 2021; Faber & Goubert, 2019) Pseudo-Poisson Maximum Likelihood (PPML) estimation shall be used to estimate the model. This estimation is found to be one of the



appropriate estimations in terms of reducing heteroscedasticity and high goodness of fit as well as dealing with time-invariant variables in the model (Santos Silva & Tenreyro, 2006). STATA 17 is a known statistical application to estimate a wide variety of data types especially panel data thus, STATA shall be used to estimate the PPML model. The research is to be completed for a period of 12 months.

## Results

This study takes the first step in providing a comprehensive investigation exploring the influence of governance quality on international tourist arrivals to six ASEAN countries from 124 countries of origin for the period 1995-2019 using the gravity model with application of PPML statistical estimation technique. The key findings show that ASEAN 6 as a destination is found to be normally a good destination for international tourists. Tourists are income elastic, the more income, the greater the volume of tourists visiting ASEAN 6 destinations. Colonial ties, sharing a common border between origin and destination countries, low transport costs and cultural & linguistic similarity influence the number of tourist arrivals to ASEAN 6.

Governance indicators reveal tourists are highly concerned about the corruption level, political conditions, governance role in implementing policies and regulations in their own countries as a push factor to decide whether to travel to ASEAN 6 destinations. Political stability of the destination is the only factor found statistically significant. Establishing a higher level of peaceful and stable political environment in ASEAN 6 destinations tend to increase the volume of tourist arrivals by 3%.



## Discussion

The finding that Tourists are income elastic, the more income, the greater the volume of tourists visiting ASEAN 6 destinations. is consistent with the study of Kaufmann, Kraay and Mastruzzi (2010) who explained the economic and social interactions with citizens and the state. The findings on cultural and linguistic similarities that influence the number of tourists choosing to travel to ASEAN are also consistent with the study.

The finding that the governance indicators reveal that tourists are highly concerned about the level of corruption, political conditions, and the role of governance in implementing policies and regulations in their own countries, which are the driving factors in deciding to travel to ASEAN 6 destinations, is consistent with the studies of both Detotto, Giannoni and Goavec (2020) and the World Bank (2020) who found a relationship between citizens' behavior and governance environment factors such as participation, equality, rule of law, accountability, and control of corruption in that society.

The finding that political stability is statistically significant, and creating a more peaceful and stable political environment in ASEAN 6 destinations tends to increase tourist arrivals by 3 percent is consistent with the study of Ungsuchaval (2021) who explained that in the world of politics, Good governance is often about the creation of shared will among interests, a system of rules that govern and control the actions of political and social actors, and determines the political direction of social and economic relations through policy instruments that emphasize cooperation.

## Recommendation

Based on results, we suggest that policy makers must implement and strengthen anti-corruption measures and enhance transparency to improve governance in origin countries to build confidence and trust among citizens, since



this indicator influences their willingness to travel to ASEAN 6 destinations. Political stability both at origin and destination countries have been found statistically significant to the development of tourism in ASEAN 6. Efforts such as implementing rules and policies that contribute to political stability and peace within ASEAN 6 and origin countries must be prioritized in order to improve tourism development. Government bodies must enhance tourism regulations and conduct regular reviews to update and keep it aligned with the changing global trends.

Since colonial ties, sharing a common border between origin and destination countries, travel costs and cultural and linguistic similarity influence the number of tourist arrivals to ASEAN 6, government initiatives and programmes are necessary to be undertaken. Investments in transportation infrastructure and networks are crucial to make ASEAN 6 more accessible and cost-effective. With reference to cultural and linguistic similarity, marketing activities such as language programmes or cultural exchange would deepen cross cultural understanding and dialogue and enhance cultural heritage appreciation and preservation. Moreover, bilateral or multilateral agreements would boost regional cooperation in various aspects, especially in tourism, not only the six countries but the whole ASEAN region. ASEAN 6 must also emphasize the importance of source markets as well as emerging markets and create strategies that benefit member countries' tourism industries. Creating a safe, stable and favorable environment for international tourists would not only attract more visitors but future investments for the region's sustainable tourism growth and development.

## References

- Ahmad, Z. & Saleem, A. (2014). Impact of governance on human development. *Pakistan Journal of Commerce and Social Sciences*. 8(3), 612-628. Johar Education Society, Pakistan (JESPK): Lahore ISSN: 2309 -8619



- Detotto, C., Giannoni, S. & Goavec, C. (2020). Does good governance attract tourists? *Tourism Management* 82. DOI: <https://doi.org/10.1016/j.tourman.2020.104155>
- Faber, B., & Gaubert, C. (2019). Tourism and economic development: Evidence from Mexico's coastline. *American Economic Review*, 109 (6), 2245–2293.
- Forbes. (2014). *Defining The Six Tiger Countries of Southeast Asia: Workforce Characteristics And Talent Management Implications*. Retrieved from: <https://www.forbes.com/sites/sylviavorhausersmith/2014/04/15/defining-the-six-tiger-countries-of-southeast-asia-workforce-characteristics-and-talent-management-implications/?sh=5332f53d32e6>
- Ibragimov, K., Perles Ribes, J. & Rodriguez, A. R. (2021). Measuring Tourism Flows: The Asian Case. *Turizam* 25 (4), 178 – 200 DOI: <https://doi.org/10.5937/turizam26-29008>
- Kaufmann, D., Kraay, A. & Mastruzzi, M. (2010). The Worldwide Governance Indicators: A Summary of Methodology, Data and Analytical Issues. *World Bank Policy Research Working Paper No. 5430*. Retrieved from: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1682130](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130)
- Santana-Gallego, M., & Paniagua, J. (2022). Tourism and migration: Identifying the channels with gravity models. *Tourism Economic*, 28 (2), 394–417. DOI: <https://doi.org/10.1177/1354816620972597>
- Santos Silva, J. & Tenreyro, S. (2006). The log of gravity. *The Review of Economics and Statistics*. 88 (4), 641-658.



Tang, C. F. (2018). The Impacts of Governance and Institutions on Inbound Tourism Demand: Evidence from a Dynamic Panel Data Study. *Asia Pacific Journal of Tourism Research* 23 (10), 1000–1007. DOI: <https://doi.org/10.1080/10941665.2018.1513052>.

Ungsuchaval, T. (2021). Governance 101: Governance 101: Meanings and Variations. Thammasat University Publications: Bangkok. ISBN 978-616-488-303-1

United Nations (2022). United Nations Sustainable Development Goals. Retrieved from: <https://sdgs.un.org/goals>

United Nations World Tourism Organization (2020). Compendium of Tourism Statistics dataset [Electronic], UNWTO: Madrid. Retrieved from: <https://www.e-unwto.org/>

World Bank (2020). World Bank Population Data. Retrieved from: <https://data.worldbank.org/indicator/SP.POP.TOTL>

World Bank (2021). GDP World Bank national accounts data, and OECD National Accounts data files. Retrieved from: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>