https://doi.org/10.59865/abacj.2024.60

HOW FDI AND OIL PRICES AFFECT SUSTAINABLE TOURISM DEVELOPMENTS: EVIDENCE FROM 24 ASIA-PACIFIC COUNTRIES

Hao Quy Nghiem[1], Khoa Dang Duong[2], Tuan Nhat Pham[3], and Yan-Jie Yang[4,*]

Abstract

This study uniquely estimates how foreign direct investment (FDI) and oil prices influence both short-term and long-term tourism developments using a panel Autoregressive Distributed Lag (ARDL) model. Analyzing a sample of 575 annual observations from 24 Asia-Pacific countries between 1997 and 2020, the study finds that a 1% increase in FDI growth rate leads to a 3.62% short term increase in tourism growth rate. Similarly, a 1% increase in oil price results in a 0.2% increase in tourism growth rate in the current year and 0.14% in the long term. These findings align with existing literature, highlighting the region's advantage in attracting FDI. It is consequently recommended that policymakers establish clear FDI policies for the tourism sector, to improve infrastructure, enhance the competitiveness of local business, and implement macroeconomic policies to manage oil price volatility, promoting sustainable tourism development.

Keywords: Tourism; foreign direct investment; oil prices; Asia Pacific; ARDL.
JEL classifications: F30, F41

1. INTRODUCTION

Tourism is essential in promoting economic development, increasing revenue, job creation, and infrastructure development. Despite the severity of the Covid19 pandemic, the tourism industry accounted for 9.1% of global GDP in 2023 and supported 295 million through employment (WTTC, 2023). In addition to driving the economic progress of nations in the Asia Pacific region (Guzeller & Celiker, 2019), tourism nurtures cultural understanding, supports the preservation of heritage, and provides diverse opportunities for individuals and communities.

The Asia-Pacific region boasts vibrant economies and appealing tourism markets (Sinha & Sengupta, 2022). It is the fastest-growing tourist destination, showcasing various attractions and cultural heritage (WTTC, 2022). Nevertheless, infrastructure disparities persist

[1] Dr. Hao Quy Nghiem is a senior lecturer at the Faculty of Finance and Banking at Ton Duc Thang University, Ho Chi Minh City, Vietnam. His research topics are corporate governance and economics. He is teaching money and financial markets and career orientation seminars. Email: nghiemquyhao@tdtu.edu.vn

[2] Assoc. Prof. Dr. Khoa Dang Duong is a senior lecturer at the Faculty of Finance and Banking at Ton Duc Thang University, Ho Chi Minh City, Vietnam. He obtained a Ph.D. in Finance from Feng Chia University in 2019. His research topics are corporate governance, 17 Sustainable Development Goals, and commercial banks. He is teaching financial management, bank management, research method in finance and international finance courses. Email: duongdangkhoa@tdtu.edu.vn

[3] Mr. Tuan Nhat Pham is currently a PhD candidate at the College of Management at Yuan Ze University, Taoyuan, Taiwan. He obtained a master's degree in Accounting from Ton Duc Thang University, Vietnam. Email: s1089410@mail.yzu.edu.tw

[4,*] Assoc. Prof. Dr. Yan-Jie Yang (Corresponding author) is currently working as a lecturer in the College of Management, Yuan Ze University, Taoyuan, Taiwan. He obtained a Ph.D. in Accounting from National Taiwan University in 2007. Email: yanjie@saturn.yzu.edu.tw

across Asia-Pacific nations, failing to adequately support economic growth, particularly in fostering tourism. This trend highlights the urgent need for investment in various elements of infrastructure, including developing eco-friendly accommodations, transportation networks, and public utilities (Song et al., 2020). Additionally, leveraging innovative technologies in visa processing can significantly improve travel conveniences, thereby stimulating tourism. To achieve these goals, countries in the Asia-Pacific region must actively seek foreign direct investment.

From another perspective, crude oil represents a valuable natural resource that supports economic progress (Zhu et al., 2014). In the Asia-Pacific region, oil consumption varies widely due to the diverse economies and populations of the nations within the region. The Statistical Review of World Energy 2022 data shows that crude oil consumption increased significantly in 2021, reaching 38.35 percent. Many oil-rich countries, such as Malaysia, Kazakhstan, and Vietnam, heavily depend on exporting crude oil to generate substantial revenue, which is used to finance public services, infrastructure development (Heydarian et al., 2018), and economic diversification. Well-developed infrastructure makes it easier and more convenient for tourists to visit different places, encouraging more people to travel (Al-Hallaq et al., 2020). When tourists feel comfortable and well-cared for, they are more inclined to pick and promote a destination, resulting in more significant tourist arrivals. Furthermore, tourism earnings can be reinvested in local communities to enhance living conditions. When local communities profit from tourism, they are more inclined to support and promote tourism-related activities, providing the groundwork for long-term tourism.

However, countries with limited oil reserves that heavily depend on non-renewable energy sources face profound impacts from fluctuations in oil prices. Higher oil prices might cause inflation and lower consumer earnings (Naccache, 2010), resulting in lower consumer spending and travel tourism demand. Furthermore, elevated production costs driven by rising oil prices may lead to reduced output and higher unemployment, indirectly affecting tourism demand (Meo et al., 2018; Al-Mulali et al., 2020).

Prior works of literature have examined the effects of FDI on tourism growth (Al-Hallaq et al., 2020; Song et al., 2020) or the price of oil on tourism growth (Al-Mulali et al., 2020; Heydarian et al., 2018; Parvin, 2022; Qin et al., 2021). Nonetheless, earlier research primarily looked at data from one nation or a group of South Asian nations. This study closes the gaps in the literature by examining the short- and long-term effects of FDI and oil prices on tourist development in Asia-Pacific countries.

This study contributes to the literature on sustainable tourist development in the following ways. Firstly, we provide a novel contribution by examining the impact of FDI and oil prices on tourism in the Asia-Pacific area. Second, we use a panel ARDL analysis to explore how increases and declines in FDI and oil prices affect tourism in 24 Asian Pacific countries. We apply the Granger causality test to determine the causal relationship between the variables.

The paper is organized as follows: Section 2 displays the literature review. Section 3 describes the data and methods. The empirical findings are provided in Section 4. The discussion is in Section 5, and Section 6 presents the study's conclusion.

2. LITERATURE REVIEW

2.1. The Relationship Between FDI and Tourism

Several studies have demonstrated a positive relationship between FDI and tourism (Xue et al., 2023; Al-Hallaq et al., 2020; Adeola et al., 2020; Mao & Yang, 2016; Song et al., 2020). Al-Hallaq et al. (2020) indicated that FDI positively affects the expansion of Jordan's

tourism sector from 1980 to 2016. Adeola et al. (2020) showed that Africa's FDI inflows and tourist growth were positively correlated. Mao and Yang (2016) found that FDI positively affected Chinese hotels. Song et al. (2020) and Xue et al. (2023) found that inward FDI benefits local tourism.

Environmental issues are essential determinants of tourists' choice of places to visit (Churchill et al., 2020; Prasongthan, 2023). However, negative impacts occur through the transfer of investments by foreign companies that harm the environment (Adeola et al., 2020). As a result, poor environmental conditions have significantly affected visitors' perceptions of satisfaction and are responsible for reducing tourist arrivals in some countries.

FDI is the cause of a rise in energy consumption, which leads to greater environmental pollution, deteriorating air quality, ruining the ecosystem, and negatively affecting tourism (Churchill et al., 2020). Besides this, Qiang et al. (2019) found that environmental deterioration may shorten visitors' stays. According to An et al. (2021), FDI enhances pollution and harms China's environment. Environmental pollution is a cause of decreasing tourist arrivals as visiting regions with dirty air and water puts tourists' health in danger.

Previous research indicates a mixed association between FDI and tourist development. Following the results from Xue et al. (2023) and Adeola et al. (2020), the following hypotheses are proposed:

Hypothesis 1a: FDI growth rate positively impacts tourism development in the short term.

Hypothesis 1b: FDI growth rate positively impacts tourism development in the long term.

2.2. The Relationship Between Oil Price and Tourism

Several studies have found that higher oil prices boost tourism (Katircioglu et al., 2018; Heydarian et al., 2018; Qin et al., 2021). Katircioglu et al. (2018) evaluated how oil price shocks affected tourism in Turkey from 1960 to 2017. They discovered that the first-time oil price shocks boosted visitor arrivals. According to Heydarian et al. (2018), rising oil prices have strongly influenced tourist revenue arrivals in OECD nations. Because rising oil prices produce greater revenue for OECD nations, governments have the means to spend on infrastructure to promote the growth of tourism development. Qin et al. (2021) indicated that travel and leisure stock returns are generally positively impacted by shocks to oil prices in China.

Numerous studies have investigated how oil price changes affect tourism activities negatively (Al-Mulali et al., 2020; Becken, 2011; Parvin, 2022). In particular, Becken (2011) and Naccache (2010) demonstrate that rising oil costs will result in inflation, impact currency rates, and lower consumer earnings. Rising oil prices could lead to output reductions and an increase in unemployment, indirectly reducing tourism demand (Al-Mulali et al., 2020).

Meo et al. (2018) showed that oil prices negatively impact tourism in Pakistan as most industries require large amounts of oil. Oil prices raise the cost of transportation services, causing consumers to limit their trips to save money and lowering tourism demand. This result is aligned with Parvin (2022) in Bangladesh, Al-Mulali et al. (2020) in Malaysia, and Hesami et al. (2020) in oil-exporting countries.

Most of the literature ignores the causal relationship between oil prices and tourism development, focusing primarily on how oil prices affect tourism growth in a given nation. This study bridges the knowledge gap by exploring the causal relationship between these two variables in the Asia Pacific region. Following the theoretical framework between oil prices and tourism, the following hypothesis is proposed.

Hypothesis 2a: Oil price growth rate negatively impacts tourism developments in the short term.

Hypothesis 2b: The oil price growth rate negatively impacts tourism developments in the long term.

2.3. The Relationship Between FDI and Oil Price

The relationship between FDI and oil prices is complex, significantly impacting economic dynamics in oil-dependent economies, especially the Asia Pacific region. Elheddad (2016) highlighted a negative correlation between total FDI and oil prices in the Gulf Cooperation Council nations, indicating that rising oil prices may deter FDI due to increased government revenues and restrictions on foreign investment. Furthermore, Eissa and Elgammal (2020) found that while oil prices correlate positively with FDI, larger oil reserves can decrease FDI as governments may be less motivated to attract foreign capital. The effects of oil price fluctuations on FDI also vary across sectors. According to Alfalih (2024), fluctuations in oil prices draw FDI due to investment opportunities, particularly in the oil sector. Conversely, volatility in oil-dependent sectors may create uncertainty, deterring foreign investment (Udemba, 2019). Finally, Long and Liang (2018) demonstrated that oil price fluctuations have varying effects on domestic inflation rates, which can attract FDI.

3. DATA AND METHODOLOGY

3.1. Data

The data collected related to the Asia-Pacific nations between 1997 and 2020. The oil price variable was obtained from the World Energy Survey, while others were derived from the World Bank Database. We follow Duong et al. (2022) and Le et al. (2023) in excluding observations with inadequate data to compute the required variables. We also followed Tran et al. (2023) in winsorizing the variable at 5% and 95% to address the extreme value issue. The final sample included 575 annual observations from 24 Asia-Pacific countries from 1997 to 2020. Appendix A provides a comprehensive explanation of all variable definitions. Appendix B is a list of the 24 Asia-Pacific countries.

3.2. Model Construction

The analysis method followed Meo et al. (2018) and Gohar et al. (2022) in examining the relationship between FDI, oil prices, exchange rates, urbanization, trade, and tourism. The equation used, was:

$$TOUR_{i,t} = \beta_0 + \sum_{k=1}^{p}(\beta_1 FDI_{i,t-k}) + \sum_{k=0}^{q}(\beta_2 OP_{i,t-k}) + \sum_{k=0}^{r}(\beta_3 ER_{i,t-k}) + \sum_{k=0}^{s}(\beta_4 URB_{i,t-k}) + \sum_{k=0}^{u}(\beta_5 TRA_{i,t-k}) + u_{i,t} \quad (1)$$

where:
TOUR = Tourism (% growth of tourist arrivals)
FDI = Foreign direct investment (% growth of GDP)
OP = Oil prices (% growth of spot crude prices)
ER = Exchange rate (% growth of official exchange rate)
URB = Urban population (% growth annual)
TRA = Trade (% growth of GDP)

The research model included tourism, FDI, oil prices, exchange rates, urbanization, and trade. Appendix A provides the definitions for all variables.

3.3. Estimation Methods

The ARDL method was used to explore both the short-term and long-term relationships. This estimation method is particularly beneficial for studying economic or social phenomena that incorporate short-term fluctuations and long-term patterns (Al-Mulali et al., 2020; Parvin, 2022). Importantly, even with small data sets, the ARDL method demonstrates excellent performance (Parvin, 2022). Furthermore, this method provides for critical checks such as the limits test for cointegration, which aids in determining the stability of the long-term relationships among the analyzed variables (Gohar et al., 2022; Meo et al., 2018).

In the preliminary data analysis, a combination of descriptive statistics and the correlation matrix was used to assess the dataset meticulously. This comprehensive examination aimed to identify any variables requiring removal and to ascertain the absence of multicollinearity among the retained variables. Following this, a unit root test was conducted to evaluate whether any series exhibited integration at the second difference level, ensuring the time-series properties of the data were adequately addressed.

This was followed by a critical step involving determining the lag length for the model. This process is pivotal for achieving optimal model specifications. To establish the most suitable lag for the model, the Johansson Cointegration test was employed. This test is a robust tool for identifying the optimal lag value essential for the subsequent ARDL estimations.

In the final stages of the analysis, the two-way causal relationship between the variables was explored. To thoroughly examine causation, the Granger causation test was used. Employing this multimodal analytical method was expected to reveal the complex relationships and causal dynamics between the variables under consideration, thus contributing to a more complete understanding of their relationships within the studied context.

4. EMPIRICAL RESULTS

4.1. Descriptive statistics

Table 1 Descriptive Statistics

Variable	Obs.	Mean	Std.	Min	Max
TOUR	576	5.7935	25.9124	-93.6169	327.1574
FDI	576	-0.6641	15.4050	-261.2602	74.2954
OP	576	7.1055	28.4013	-47.0552	58.5717
ER	576	4.1025	16.4748	-15.2649	293.7908
URB	576	2.1636	1.3338	-1.6891	7.0090
TRA	576	0.0071	0.0892	-0.3546	0.3335

Note. Table 1 presents the descriptive statistics. The sample spans the years 1997–2020 and comprises 24 Asia-Pacific nations. Appendix A contains all variable definitions. Source: author calculation.

Table 1 reports that the average growth rate of tourist arrivals among the Asia-Pacific countries from 1997 to 2020 was 5.79%. In contrast, the average FDI growth rate was -0.66, indicating that the net FDI inflow of the Asia-Pacific region reduced by 0.66% in the period 1997-2020. Furthermore, the average growth rate of crude oil prices was 7.10%, highlighting a significant upward trend in crude oil prices within the Asia-Pacific region during the same period.

4.2. Pearson Correlation Matrix

Table 2 Pearson Correlation Matrix

	FDI	OP	ER	URB		VIF
FDI	1					
OP	0.078305	1				1.303163
ER	0.01394	-0.17137	1			1.098355
URB	-0.096125	0.044777	-0.023959	1		1.002466
TRA	-0.011879	0.418284	0.150873	0.003133	1	1.292209

Note. The sample spans from 1997 to 2020 and comprises 24 Asia-Pacific nations. Appendix A contains all variable definitions. Source: author calculation.

Table 2 shows the correlation matrix of the research data set. From this table, it can be seen that the correlation coefficients were all less than 0.6, indicating that there is no multicollinearity. We also conducted the VIF test, with results showing that the oil price variable had the highest VIF value at 1.3. Therefore, multicollinearity is not an issue in this study (Duong *et al*., 2022; Tran et al., 2023; Nguyen et al., 2024).

4.3. Unit Root Test

Table 3 Unit Root Test

	Dickey-Fuller test		Phillips-Perron test	
Variables	t-Statistic	P-value	t-Statistic	P-value
TOUR	<0.0001***	At level (0)	<0.0001***	At level (0)
FDI	<0.0001***	At level (0)	<0.0001***	At level (0)
OP	<0.0001***	At level (0)	<0.0001***	At level (0)
ER	<0.0001***	At level (0)	<0.0001***	At level (0)
URB	<0.0001***	At level (0)	0.0434**	At level (0)
TRA	<0.0001***	At level (0)	<0.0001***	At level (0)

Note. The sample is from 1997 to 2020 and comprises 24 Asia-Pacific nations. Appendix A contains all variable definitions. ***, **, and * represent significance at the 1%, 5%, and 10% levels respectively. Source: author calculation

Pesaran *et al*. (2001) suggested that it is possible to apply the ARDL method for stationary series at I(0) or I(1) or a combination of these two situations. However, Engle and Granger (1987) report that for traditional cointegration methods, all variables in the model must be stationary at the same level. Ibrahim (2015) also pointed out a limitation of the ARDL method. The method cannot be used if there are stationary series at I(2) as the F-statistic will be invalid. The augmented Dickey-Fuller and Phillips-Perron test were used to determine whether a variable was integrated at I(0) or I(1), consistent with the study of Meo et al. (2018) and Gohar et al. (2022). All variables were found to be stationary at I(0), according to the results of the two tests in Table 3. Thus, the bounds-testing technique could be implemented in the following step.

Bahmani-Oskooee and Bohl (2000) stated that optimum lag is sensitive to long-term relationships. Dormann and Griffin (2015) pointed out that not using the optimal lag, either too low or too high, cannot capture the critical information from the model. Results from running the lag step for the model are presented in Table 4. This reports that two possible lag values are 1 and 2. However, the AIC value suggests that the optimal lag value is two (Gohar et al., 2022; Meo *et al*., 2018).

Table 4 Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-8096.801	NA	1.09E+08	35.5386	35.59285	.55997
1	-7522.128	1131.703	10311318	33.176	33.55570*	.32557*
2	-7483.941	74.19739	10213666*	33.16641*	33.87157	.44419
3	-7471.198	24.42334	11312741	33.26841	34.29904	3.6744
4	-7441.085	56.92435	11612940	33.29423	34.65032	.82842
5	-7383.777	106.8242*	10583155	33.20078	34.88232	.86317

Note. The sample spans from 1997 to 2020 and comprises 24 Asia-Pacific nations. Appendix A contains all variable definitions. ***, **, and * represent significance at the 1%, 5%, and 10% levels respectively. Source: authors compilation.

4.4. ARDL Estimations

Table 5 Short-term estimation results from ARDL

Variable	Coefficient	T-Statistic
COINTEQ01	-0.8647	-6.5169
D(TOUR(-1))	0.0442	0.3656
D(FDI)	3.6165*	1.8683
D(FDI(-1))	1.0937	0.7895
D(OP)	0.2023**	2.3995
D(OP(-1))	0.1667***	3.0846
D(ER)	3.5958	1.4485
D(ER(-1))	1.4689	0.7038
D(URB)	24.3078**	2.2063
D(URB(-1))	-1.0088	-0.1007
D(TRA)	-50.7585*	-1.6987
D(TRA(-1))	-22.6680	-0.9521
C	8.8129	4.2719

Note: The sample spans from 1997 to 2020 and comprises 24 Asia-Pacific nations. Appendix A contains all variable definitions. ***, **, and * represent significance at the 1%, 5%, and 10% levels respectively. Source: authors compilation.

Table 5 reports the short-term ARDL test results. Except for the exchange rate, the results show that, in the short run, most of the model variables impact tourism. The study indicates that FDI, oil prices, and urbanization, positively and significantly affect tourism in the Asia-Pacific countries, while trade was found to negatively impact tourism.

Table 5 reports a positive relationship between FDI and tourism growth. The coefficient of FDI is 3.61, and there is statistical significance. This finding implies that a 1% increase in FDI growth rate leads to a 3.61% increase in tourism growth rate at the 10% significance level for the current year. This finding supports hypothesis 1a, and aligns with Mao and Yang (2016), Song et al. (2020), and the existing theoretical framework regarding the link between FDI and tourism.

Table 5 also indicates a positive impact of oil prices on tourism. The coefficient of oil price is 0.20, and there is statistical significance. This finding suggests that a 1% increase in oil price growth rate leads to a 0.2% increase in tourism growth rate in the short run and vice versa. The finding is significant at the 5% level for the current year and is consistent with Hesami et al. (2020), Heydarian et al. (2018), Qin et al. (2021), and the existing theoretical

framework regarding the relationship between oil prices and tourism. Oil prices significantly influence short-term tourist arrivals through various economic spillover effects, particularly in oil-exporting countries in the Asia Pacific. An increase in oil prices boosts government revenues, enabling enhanced investments in infrastructure, job creation, and improvements in tourism services (Hesami et al., 2020). These developments enhance destination accessibility and attractiveness, increasing tourist arrivals (Katircioglu et al., 2018; Heydarian et al., 2018). The findings therefore fail to support hypothesis 2a, which states that the oil price growth rate negatively impacts tourism developments in the short term.

Additionally, similar to the study of Naidu (2017), these results show that urbanization positively impacts tourism. Most urban consumers are more willing to pay for travel (Naidu, 2017). The findings imply that a 1% increase in urbanization growth rate leads to a 24.3% increase in tourism growth rate at the 5% significance level for the current year. The findings also show no impact of exchange rates on tourism in the short term, which is similar to the results of Tang et al. (2016). This finding implies that tourists are not concerned about changes in tour pricing due to volatility in exchange rates.

In contrast, a 1% increase in the trade to GDP growth rate ratio leads to a 50.6% decrease in tourism growth rate at the 10% significance level for the current year. When imports rise, consumers spend more on goods and services than travel (Turner & Witt, 2001).

Table 6 Long-term Estimation Results from ARDL

Variable	Coefficient	T-Statistic
FDI	0.1251	1.2298
OP	0.1467***	3.1762
ER	-0.1121*	-1.7386
URB	-2.6528***	-2.7994
TRA	57.2297***	3.6961

*Note: The sample spans from 1997 to 2020 and comprises 24 Asia-Pacific nations. Appendix A contains all variable definitions. ***, **, and * represent significance at the 1%, 5%, and 10%, levels respectively. Source: authors compilation.*

Table 6 shows the results of the long-term ARDL test. The long-term FDI coefficient results identify a positive link between FDI and tourism growth, but this is not statistically significant. The results indicate that there is no impact of FDI on tourism demand as nationals from the Asia-Pacific region desire the tourism sector to grow sustainably while also protecting the environment, attracting higher FDI inflows in the long term, causing pollution through technology transfer, and reducing the number of tourist arrivals (An et al., 2021; Qiang et al., 2019). The results align with those of Willem and Nair (2006), who found no relationship between FDI inflows and tourist arrivals in Caribbean countries, and do not support hypothesis 1b.

The results shown in Table 6 indicate that oil prices positively impact tourism in the long run (Hesami et al., 2020; Qin et al., 2021). In the long term, rising oil prices can positively influence tourist arrivals, particularly in oil-exporting countries. Increased oil revenues provide governments with the financial resources to invest in tourism infrastructure, including transportation, accommodation, and recreational facilities (Song et al., 2020). These investments enhance the overall quality and accessibility of tourist destinations, making them more appealing to a broader range of travellers (Hesami et al., 2020; Heydarian et al., 2018). Moreover, as economic growth accelerates due to heightened oil revenues, consumer confidence and incomes typically increase, encouraging domestic and international travel (Turner & Witt, 2001). Although initial increases in travel costs may deter some tourists,

sustained economic benefits and improved infrastructure create a more robust and attractive tourism sector, ultimately driving a long-term increase in tourist arrivals (Dhaoui et al., 2017). These findings fail to support hypothesis 2b.

Additionally, trade has a positive and significant relationship with tourism (Leitão, 2010). Surprisingly, the exchange rate and urban population have a significant negative affect on tourism in the long term (Naidu et al., 2017). Short-term data do not show a negative impact of exchange rates on tourism. However, the results become more significant when we examine this issue over an extended period.

4.5. Granger Causality Test

Table 7 Panel Granger Causality Results

Null Hypothesis	F-Statistic	Causality
FDI → TOUR	0.015	No
TOUR → FDI	0.00513	No
OP → TOUR	7.57302***	Yes
TOUR → OP	0.85909	No
ER → TOUR	1.39174	No
TOUR → ER	0.0733	No
URB → TOUR	0.36943	No
TOUR → URB	1.08872	No
TRA → TOUR	4.94231***	Yes
TOUR → TRA	0.13433	No

Note. The sample is from 1997 to 2020 and comprises 24 Asia-Pacific nations. Appendix A contains all variable definitions. ***, **, and * represent significance at the 1%, 5%, and 10%, levels respectively. Source: authors compilation.

Table 7 displays the Granger causality test findings. The findings show no correlation between FDI and tourism (Khoshnevis Yazdi et al., 2017); there is no causal relationship between exchange rate, urbanization, and tourism. Additionally, the results shown in Table 7 demonstrate that oil prices positively impact tourism. An increase in oil prices can stimulate growth and increase investment in tourism (Hassani et al., 2021; Heydarian et al., 2018). Similarly, the findings suggest that trade also positively impacts tourism (Leitão, 2010) as trade can boost local product sales and lower shipping costs between the sending and destination countries.

5. DISCUSSION

Table 5 presents the findings of the short-term ARDL test, which suggests a positive relationship between FDI and tourism growth. At a significance level of 10%, a 1% rise in the FDI growth rate results in a 3.61% increase in the tourism growth rate in the current year. In the short term, FDI is crucial in enhancing the tourism sector by facilitating significant capital inflows that can be swiftly allocated to improve infrastructure and services (Al-Hallaq et al., 2020). This immediate injection of capital enables the rapid development of essential amenities, such as hotels, transportation networks, and tourist attractions, thereby increasing the appeal of destinations to potential visitors (Al-Hallaq et al., 2020). Furthermore, FDI often introduces international brands and expertise, which can elevate service quality and enhance marketing strategies. The presence of established hotel chains and tour operators tends to attract tourists seeking familiarity and reliability, resulting in an almost instantaneous boost in tourist

arrivals (Tang et al., 2007). Additionally, FDI creates employment opportunities, providing immediate income for local communities (Hesami et al., 2020). This influx of jobs stimulates local economies and fosters a conducive environment for further investment and sustainable tourism growth. This result supports hypothesis 1a, which aligns with the findings of Mao and Yang (2016) and Song et al. (2020) and the theoretical framework that establishes a connection between FDI and tourism.

Table 5 also shows the positive effect of oil prices on tourism growth. A 1% rise in oil price growth rate results in a 0.2% increase in tourism growth rate in the short term, and vice versa. The economic progress of the Asia-Pacific countries primarily depends on oil. Oil prices therefore have a significant influence on short-term tourist arrivals, particularly within oil-exporting nations in the Asia-Pacific region, due to various economic spillover effects. An increase in oil prices leads to higher government revenues, which facilitates enhanced investments in infrastructure, job creation, and improvements in tourism services (Hesami et al., 2020). These advancements improve both accessibility and attractiveness of destinations, boosting tourist arrivals (Katircioglu et al., 2018; Heydarian et al., 2018; Al-Hallaq et al., 2020). In addition, when tourists perceive comfort and quality of care, they are more likely to select specific destinations, contributing to further tourism development (Katircioglu et al., 2018). Moreover, tourism revenues can be reinvested into local communities, improving living conditions. When local populations benefit from tourism, their willingness to support and advocate for tourism-related initiatives increases, establishing a foundation for sustainable tourism growth. This finding is consistent with the theoretical frameworks established by Heydarian et al. (2018) and Qin et al. (2021), indicating the positive relationship between oil prices and tourism growth. Consequently, our findings do not support Hypothesis 2a, which posits that the growth rate of oil prices negatively impacts short-term tourism development.

Table 6 presents the long-term ARDL test results, which suggest an insignificant impact of FDI on tourism growth in the Asia-Pacific region. The desire for sustainable growth in the tourism sector and environmental protection drives nations in the Asia-Pacific region to attract higher FDI inflows. However, such flows can lead to pollution through technology transfer and environmental pollution that damages health and is a cause of reduced tourist arrivals (An et al., 2021; Qiang et al., 2019; Derindag et al., 2023). Additionally, strong competition among tourist attractions and increased market saturation in certain Asia-Pacific countries can diminish the long-term benefits of FDI for local tourism development (Perić & Radić, 2016). The impact of FDI is further constrained by varying policies related to its attraction and allocation to industries outside of tourism (Elheddad et al., 2020). As a result, the Asia-Pacific region's tourism industry will not be significantly impacted by FDI in the long term. These findings contrast those of Adeola et al. (2020) and Al-Hallaq et al. (2020), and fail to support hypothesis 1b.

Furthermore, as can be seen in Table 6 oil prices have a long-term positive effect on tourism (Heydarian et al., 2018; Qin et al., 2021). Over time, a 1% rise in the growth rate of oil prices results in a 0.14% increase in tourism growth rate, and vice versa. In the long term, rising oil prices can positively influence tourist arrivals, particularly in oil-exporting countries. Increased oil revenues provide governments with the financial resources to invest in tourism infrastructure, including transportation, accommodation, and recreational facilities (Song et al., 2020). These investments enhance the overall quality and accessibility of tourist destinations, making them more appealing to a broader range of travelers (Hesami et al., 2020; Heydarian et al., 2018). Moreover, as economic growth accelerates due to heightened oil revenues, consumer confidence and incomes typically increase, encouraging domestic and international travel (Turner & Witt, 2001). Although initial increases in travel costs may deter some tourists, the sustained economic benefits and improved infrastructure create a more robust and attractive tourism sector, ultimately driving a long-term increase in tourist arrivals (Dhaoui et al., 2017).

Thus, these findings also fail to support hypothesis 2b, which is that the oil price growth rate negatively impacts tourism developments in the long term.

6. CONCLUSIONS

This study is the first to investigate how FDI and oil prices affect tourism growth in Asia-Pacific countries. We used the Granger causality test and the ARDL panel to examine 575 yearly data from 24 Asia-Pacific nations between 1997 and 2020. Our study has the following results. There is a strong positive link between FDI and tourism in the short term. However, FDI has an insignificant impact on tourism in the long term. Secondly, there is a positive and significant relationship between oil prices and tourism in the short and long term.

These findings have practical implications for governments in developing their tourism industry. In the short term, policymakers must define clear FDI policies in tourism, ensuring measures to upgrade infrastructure, and improve the competitiveness of domestic enterprises which develop tourism. In addition to these measures, regional governments should eliminate complex tourism procedures to attract foreign investments. Investors can increase short-term investment in tourism in countries attracting FDI. In the long term, policymakers should prioritize developing strategies to enhance connectivity within tourism infrastructure. This suggestion includes improving transportation networks and ensuring better accessibility to tourist destinations, particularly in Asia-Pacific countries that heavily rely on oil revenues. Furthermore, promoting sustainable tourism practices while avoiding excessive oil exploitation is crucial, as this can lead to price shocks that adversely affect oil revenues. Such approaches will contribute to economic growth and foster the sustainability of the tourism sector. Finally, the study contributes valuable knowledge to the academic literature to better understand the complex relationships between FDI, oil prices, and tourism in the Asia-Pacific region.

This study acknowledges several limitations. Firstly, the results are constrained by data limitations. The analysis focuses on the effects of FDI and oil prices on the tourism sector in the Asia Pacific region as a whole rather than examining each country individually, particularly developing and low-income nations, thus overlooking nation-specific effects. Additionally, the method employed may be limited due to potential structural breaks in a long sampling period, while no second-generation panel unit root test was conducted. Future research should explore the relationship between macroeconomic variables and tourism in the Asia Pacific region, considering other macroeconomic factors such as employment, unemployment, inflation, and poverty. It is crucial to analyze how oil prices and foreign direct investment influence tourism, considering each country's unique economic circumstances within the region.

REFERENCES

Adeola, O., Boso, N., Osabutey, E. L., & Evans, O. (2020). Foreign Direct Investment and Tourism Development in Africa. *Tourism Analysis, 25*(4), 395-408.

Adrangi, B., Chatrath, A., Macri, J., & Raffiee, K. (2018). US Diesel Fuel Price Responses to the Global Crude Oil Supply and Demand. *Annals of Financial Economics, 13*(04), 1-25.

Alfalih, A. A. (2024). The impact of oil prices, foreign direct investment and trade openness on unemployment rates in an oil-exporting country: The case of Saudi Arabia. *Heliyon, 10*(3).

Al-Hallaq, S. S., Athamneh, A. B., & Suleiman, H. M. (2020). The impact of foreign direct investment on the growth of the tourism sector in Jordan (1980–2016). *Journal of Public Affairs, 20*(2), 1-9.

Al-Mulali, U., Gholipour, H. F., & Al-hajj, E. (2020). The non-linear effects of oil prices on tourism arrivals in Malaysia. *Current Issues in Tourism*, *23*(8), 942-946.

An, T., Xu, C., & Liao, X. (2021). The impact of FDI on environmental pollution in China: evidence from spatial panel data. *Environmental Science and Pollution Research*, *28*(32), 44085–44097.

Bahmani-Oskooee, M., & Bohl, M. T. (2000). German monetary unification and the stability of the German M3 money demand function. *Economics letters*, *66*(2), 203-208.

Becken, S. (2011). A critical review of tourism and oil. *Annals of Tourism Research*, *38*(2), 359-379.

Churchill, S. A., Pan, L., & Paramati, S. R. (2020). Air pollution and tourism: Evidence from G20 countries. *Journal of Travel Research*, *61*(2), 223-234.

Derindag, O. F., Maydybura, A., Kalra, A., Wong, W. K., & Chang, B. H. (2023). Carbon emissions and the rising effect of trade openness and foreign direct investment: Evidence from a threshold regression model. *Heliyon*, e17448.

Dhaoui, A., Sekrafi, H., & Ghandri, M. (2017). Tourism demand, oil price fluctuation, exchange rate and economic growth: Evidence from ARDL model and Rolling window Granger causality for Tunisia. *Journal of Economic and Social Studies*, *7*(1), 5-27.

Dormann, C., & Griffin, M. A. (2015). Optimal time lags in panel studies. *Psychological methods*, *20*(4), 489–505.

Duong, K. D., Nguyen, S. D., Phan, P. T. T., & Luong, L. K. (2022). How Foreign Direct Investment, Trade Openness, and Productivity Affect Economic Growth: Evidence From 90 Middle-income Countries. *Scientific Papers of the University of Pardubice. Series D, Faculty of Economics & Administration*, *30*(3).

Eissa, M. A., & Elgammal, M. M. (2020). Foreign direct investment determinants in oil exporting countries: Revisiting the role of natural resources. *Journal of Emerging Market Finance*, *19*(1), 33-65.

Elheddad, M., Thapa-Parajuli, R., & Alharthi, M. (2020). Foreign direct investment (FDI) and natural resources: Blessing or curse? Empirical evidence from the Gulf Cooperation Council (GCC). *Journal of Reviews on Global Economics*, *9*, 232-241.

Engle, R. F., & Granger, C. W. J. (1987). Co-integrationCo-integration and error correction: Representation, estimation, and testing. *Econometrica*, *55*(2), 251–276.

Fauzel, S. (2020). FDI and tourism futures: a dynamic investigation for a panel of small island economies. *Journal of Tourism Futures*, 7(1), 98-110.

Gohar, R., Bhatty, K., Osman, M., Wong, W. K., & Chang, B. H. (2022). Oil prices and sectorial stock indices of Pakistan: Empirical evidence using bootstrap ARDL model. *Advances in Decision Sciences*, *26*(4), 1-27.

Guzeller, C. O., & Celiker, N. (2019). Bibliometrical analysis of Asia Pacific Journal of Tourism Research. *Asia Pacific Journal of Tourism Research*, *24*(1), 108–120.

Hassani, H., Ghodsi, M., Huang, X., & Silva, E. S. (2021). Is there a causal relationship between oil prices and tourist arrivals?. *Journal of Applied Statistics*, *48*(1), 191-202.

Hesami, S., Rustamov, B., Rjoub, H., & Wong, W. K. (2020). Implications of oil price fluctuations for tourism receipts: the case of oil exporting countries. *Energies*, *13*(17), 4349.

Heydarian, S., Rafiy, H., Hajian, M., & Rahnam, A. (2018). The impact of oil price fluctuations on tourism demands of OECD countries. *Tourism Today*, *17*(2018), 163-180.

Ibrahim, M. H. (2015). Oil and food prices in Malaysia: A non-linear ARDL analysis. *Agricultural and Food Economics*, *3*(1), 1–14.

Katircioglu, S., Katircioglu, S., & Altun, O. (2018). The moderating role of oil price changes in the effects of service trade and tourism on growth: the case of Turkey. Environmental *Science and Pollution Research*, *25*(35), 35266–35275.

Khoshnevis Yazdi, S., Nateghian, N., & Sheikh Rezaie, N. (2017). The causality relationships between tourism development and foreign direct investment: an empirical study in EU countries. *Journal of Policy Research in Tourism, Leisure and Events*, *9*(3), 247-263.

Le, A. N. N., Pham, H., Pham, D. T. N., & Duong, K. D. (2023). Political stability and foreign direct investment inflows in 25 Asia-Pacific countries: the moderating role of trade openness. *Humanities and Social Sciences Communications*, *10*(1), 1-9.

Leitão, N. C. (2010). Does trade help to explain tourism demand? The case of Portugal. *Theoretical and Applied Economics*, *3*(544), 63-74.

Long, S., & Liang, J. (2018). Asymmetric and nonlinear pass-through of global crude oil price to China's PPI and CPI inflation. *Economic research-Ekonomska istraživanja*, *31*(1), 240-251.

Mao, Z. E., & Yang, Y. (2016). FDI spillovers in the Chinese hotel industry: The role of geographic regions, star-rating classifications, ownership types, and foreign capital origins. *Tourism Management*, *54*(2016), 1-12.

Meo, M. S., Chowdhury, M. A. F., Shaikh, G. M., Ali, M., & Masood Sheikh, S. (2018). Asymmetric impact of oil prices, exchange rate, and inflation on tourism demand in Pakistan: new evidence from non-linear ARDL. *Asia Pacific Journal of Tourism Research*, *23*(4), 408-422.

Naccache, T. (2010). Slow oil shocks and the "weakening of the oil price–macroeconomy relationship". *Energy Policy, 38(5),* 340–2345.

Naidu, S., Chand, A., & Pandaram, A. (2017). Exploring the nexus between urbanization, inflation and tourism output: empirical evidences from the Fiji Islands. *Asia Pacific journal of tourism research*, *22*(10), 1021-1037.

Nguyen, H. T., Le, A. N. N., Le, H. V., & Duong, K. D. (2024). Foreign direct investment and employments in Asia Pacific nations: The moderating role of labor quality. *Heliyon*, 10(9).

Parvin, R. (2022). The Asymmetric Impacts of Crude Oil Prices, Inflation, the Exchange Rate, Institutional Quality, and Trade Balance on Tourist Arrivals in Bangladesh: A Non-linear ARDL Model Approach. *Pertanika Journal of Science & Technology*, *30*(1), 781-800.

Perić, J., & Radić, M. N. (2016). FDI-led tourism growth hypothesis: Empirical evidence from Croatian tourism. *European Journal of Tourism, Hospitality and Recreation*, *7*(3), 168-175.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, *16*(3), 289–326.

Prasongthan, S. (2023). Exploring tourists' responsible behavior: evidence from Thailand. *ABAC Journal*, *43*(3), 26-45.

Qiang, M., Shen, M., & Xie, H. (2019). Loss of tourism revenue induced by coastal environmental pollution: a length-of-stay perspective. *Journal of Sustainable Tourism*, *28*(4), 550-567.

Qin, Y., Chen, J., & Dong, X. (2021). Oil prices, policy uncertainty and travel and leisure stocks in China. *Energy Economics*, *96* (2021), 105112.

Raza, S. A., Sharif, A., Wong, W. K., & Karim, M. Z. A. (2017). Tourism development and environmental degradation in the United States: evidence from wavelet-based analysis. *Current Issues in Tourism*, *20*(16), 1768-1790.

Samimi, A. J., Sadeghi, S., & Sadeghi, S. (2013). The relationship between foreign direct investment and tourism development: evidence from developing countries. *Institutions and Economies, 5* (2) 59-68.

Selvanathan, S., Selvanathan, E. A., & Viswanathan, B. (2012). Causality between foreign direct investment and tourism: Empirical evidence from India. *Tourism Analysis*, *17*(1), 91-98.

Sinha, M., & Sengupta, P. P. (2022). FDI inflow, ICT expansion and economic growth: An empirical study on Asia-pacific developing countries. *Global Business Review*, *23*(3), 804-821.

Song, C., Shi, S., Chen, J. M., & Li, X. (2020). Does inward FDI affect outward FDI in tourism in China? *Tourism Economics*, *26*(2), 344-349.

Tang, J., Sriboonchitta, S., Ramos, V., & Wong, W. K. (2016). Modelling dependence between tourism demand and exchange rate using the copula-based GARCH model. *Current Issues in Tourism*, *19*(9), 876-894.

Tang, S., Selvanathan, E. A., & Selvanathan, S. (2007). The relationship between foreign direct investment and tourism: empirical evidence from China. *Tourism economics*, *13*(1), 25-39.

Tran, V. H., Lu, N. P., Le, N. T. P., & Duong, K. D. (2023). How Do Foreign Direct Investment and Economic Growth Affect Environmental Degradation? Evidence from 47 Middle-Income Countries. *Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration*, *31*(1), 1671

Turner, L. W., & Witt, S. F. (2001). Factors influencing demand for international tourism: Tourism demand analysis using structural equation modelling, revisited. *Tourism economics*, *7*(1), 21-38.

Udemba, E. N. (2019). The triangular nexus causality among economic growth, trade, FDI and Oil Price: time series analyses of Nigeria. *OPEC Energy Review*, *43*(4), 470-491.

Willem te Velde, D., & Nair, S. (2006). Foreign direct investment, services trade negotiations and development: the case of tourism in the Caribbean. *Development Policy Review*, *24*(4), 437-454.

World Travel & Tourism Council (2022). Asia-Pacific 2022 Annual Research: Key Highlights.

World Travel & Tourism Council (2023). Asia Pacific Travel & Tourism sector set to recover by nearly 40%, reveals WTTC report.

Xue, C., Tu, Y. T., Ananzeh, M., Aljumah, A. I., Trung, L. M., & Ngo, T. Q. (2023). The role of economic conditions and sustainable rural development on the sustainability of tourism development: evidence from China. *Environmental Science and Pollution Research*, *30*(11), 30588-30602.

Zhu, H. M., Li, R., & Li, S. (2014). Modelling dynamic dependence between crude oil prices and Asia-Pacific stock market returns. *International Review of Economics & Finance*, *29*(214), 208-223.

Appendix A Variable Definitions

Notation	Variable	Series name	Unit	Source	Researcher(s)
Dependent variable					
TOUR	Tourism	International tourism, number of arrivals	Number of tourist arrivals	WDI	Meo *et al*. (2018)
Independent variables					
FDI	Foreign direct investment	Foreign direct investment, net inflows	% of GDP	WDI	Duong *et al*. (2022); Tran et al. (2023); Nguyen et al. (2024)
OP	Oil price	Spot crude prices	$/bbl	WES	Meo *et al*. (2018)
Control variables					
ER	Exchange rate	Official exchange rate. `	LCU per US$, period average	WDI	Naidu *et al*. (2017)
URB	Urbanization	Urban population growth	annual %	WDI	Naidu *et al*. (2017)
TRA	Trade growth	Trade	% of GDP	WDI	Derindag *et al.* (2023)

Note. All the variables are in growth rate form

Appendix B 24 Asia-Pacific Countries

Bangladesh	India	Macao SAR, China	Sri Lanka
Cambodia	Iran, Islamic Rep.	Malaysia	Thailand
China	Japan	Mongolia	Tonga
Cyprus	Kazakhstan	Nepal	Turkey
Fiji	Korea, Rep.	Philippines	Vanuatu
Hong Kong SAR, China	Kuwait	Singapore	Vietnam