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Tourism-Led Growth in Shandong, China: A Comparison of Inbound and Domestic Tourism

Abstract

This article investigates the impact of internal tourism on economic growth in Shandong, China, by segmenting the analysis into inbound and domestic tourism using the panel IV estimator. The results indicate that internal tourism contributes significantly to the growth of Shandong province, with domestic tourism having a comparatively more significant impact than inbound tourism. In addition to tourism, the study also found that interest and exchange rates hurt growth, while merchandise exports effectively promote economic growth in Shandong. Based on these findings, policymakers should aim to keep interest and exchange rates stable and competitive, adopt an expansionary monetary policy to encourage domestic investment in infrastructure and develop marketing plans to promote domestic tourism. Additionally, private tourism stakeholders should collaborate with public agencies to market and promote local attractions and offer discounted hotel accommodations to attract additional tourist arrivals and stimulate economic growth.

Keywords: domestic tourism, internal tourism, inbound tourism, TLG, Shandong

1. Introduction

According to the United Nations World Tourism Organisation (WTO, 1995), tourism refers to an activity in which people spend time away from their usual residence for less than one year for leisure, business, education, or other travelling purposes. The UNWTO further classified tourism into three forms, namely internal (i.e., domestic plus inbound tourism), national (i.e., domestic plus outbound tourism) and international tourism (i.e., inbound plus outbound tourism). Although there are various forms of tourism, our literature review in the following section finds that most past studies on tourism-led growth (TLG) emphasise the benefits of inbound tourism while downplaying the benefits of domestic tourism in accelerating growth. This might be due to the ability of inbound tourism to attract foreign exchange and tourism tax revenues, besides creating employment opportunities and enhancing consumption spending.

However, inbound tourism has plummeted dramatically in the aftermath of outbreaks of influenza, SARS-CoV, MERS-CoV, and, more recently, the SARS-CoV-2 (or COVID-19) pandemic. Taking the COVID-19 pandemic as an example, international arrivals to the Asia-Pacific region fell nearly 83.4% from 361 million visitors in 2019 to merely 60 million in 2020, according to the Asian Development Bank and UNWTO (2022). Though China is the most visited destination in Asia, international arrivals in China dropped dramatically to 30.40 million visitors from 132.14 million visitors before the pandemic. Considering this recent fragility in international arrivals, policymakers in tourism-reliant countries have started to recognise the benefits of domestic tourism in sustaining local economic growth and development and take proactive steps to ensure its

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continuity (Dalferro, 2022; UNWTO, 2020). UNWTO (2020) found that domestic tourism has recovered from the COVID-19 pandemic much faster than inbound tourism. Moreover, Canh and Thanh (2020) argue that domestic tourism reduces economic vulnerability and is relatively less risky than inbound tourism since it requires a less sophisticated transportation and tourism plan.

Therefore, a review of the economic contribution of internal tourism, both inbound and domestic, on growth is increasingly required. Instead of examining inbound tourism, which has been the subject of dozens of studies in the tourism-growth literature, we contribute to the literature by critically investigating the impacts of internal tourism on the economic growth of Shandong province in China. Specifically, this study employs the balanced panel data of 16 cities in Shandong province from 2010 to 2020. Furthermore, we extend our analysis by disaggregating internal tourism into domestic and inbound tourism to assess and compare their impacts on economic growth. As such, the findings of our study not only validate the TLG hypothesis but, more importantly, through comparative analysis, we provide more persuasive evidence for decision-makers to ascertain effective catalysts for growth. In addition, our study attempts to address the endogeneity issue by applying the panel data IV estimator to obtain a more robust estimate of the impacts of internal tourism on economic growth.

Shandong was chosen as the subject of this study mainly due to its strategic geography, rich cultural history, and many tourist attractions. Shandong Provinces is located on the eastern coast of China and consists of a peninsula and an inland region. There are 16 cities in Shandong, namely Binzhou, Dezhou, Dongying, Heze, Jinan, Jining, Liaocheng, Linyi, Qingdao, Rizhao, Tai'an, Weifang, Weihai, Yantai, Zaozhuang, and Zibo, with a total population of over 101.53 million. There are a variety of famous tourist destinations within Shandong province. The province has 97 national cultural relics units and 397 provincial cultural relics protection units. Moreover, it has seven important national historical and cultural cities, one historical and cultural Chinese village, and seven crucial national historical and cultural towns. Most of the many tourist attractions are found in the coastal areas.

Geographically speaking, the Shandong peninsula is strategically located. Since antiquity, the area has been an important starting point for the East China Sea Silk Road. Along with the advancement of the *Belt and Road Initiative*, the development of coastal cities was prioritised. As a result, China's coastal cities have vigorously developed their tourism industry, eventually promoting Shandong's economy. Moreover, the Shandong peninsula has a golden coastline stretching over 3100 kilometres and is filled with islands and islets rich in marine tourism resources. Coastal cities like Qingdao, Weihai, and Yantai are highly developed for marine tourism, attracting many domestic visitors. Therefore, analysing how internal tourism has driven Shandong's economic growth is essential.

This paper is organised as follows: the next section presents the literature review of the tourism-growth nexus. The methodology and empirical findings are discussed in Section 3 and Section 4, respectively. Finally, the conclusion and policy implications of the present study are provided in Section 5.

2. Literature review

This study attempts to investigate the effects of internal tourism on economic growth empirically. According to the WTO (1995), internal tourism combines inbound and domestic tourism. Inbound tourism refers to the activities of non-citizen tourists in another country, whereas domestic tourism refers to the activities of a citizen tourist within the same country. Internal tourism can, therefore, be defined as the arrival of both international (foreign) and local tourists to a specific destination. The impacts of internal tourism on economic growth will be reviewed based on the source of the markets, namely international (inbound) and domestic. Before delving into a review of past studies, it is essential to clarify the TLG hypothesis. Broadly,

the TLG hypothesis posits that tourism catalyses long-term economic growth. Going deeper, Tang (2022) defines TLG as the ability of travelling activities (tourism sector) to stimulate the host country's economic growth. This can be achieved through the tourism sector's capacity to generate employment opportunities, stimulate consumption spending, contribute to foreign exchange revenue, boost tax revenue, encourage capital investment, and more. Bearing this definition in mind, the TLG hypothesis holds if there is a clear, evident positive causal relationship between the tourism sector and economic growth, irrespective of whether the tourism is inbound or domestic.

2.1. Review of inbound tourism impact on growth

Inbound tourism, as an "invisible export," has been acknowledged by researchers to impact economic growth positively (Tang, 2022). This is mainly due to the earnings from tourism expenditure, which are reinvested into the host nation's economy by importing capital goods. The increase in capital goods can then lead to the creation of further commodities and services, which in turn contributes to economic expansion. Furthermore, the demand generated by tourists for accommodation, food, transportation, and other services increases spending on goods and services, creating employment opportunities and increasing income. Taken together, the incremental changes that result from these processes eventually positively impact the host country's economy. Moreover, some scholars have found that the relationship between inbound tourism and economic growth can be expressed through different channels. For example, international tourism may contribute to economic growth by increasing competition between local firms and corresponding businesses in other international tourist destinations, thereby enhancing efficiency and facilitating the exploitation of scale economies at a local level.

Our survey of past studies found that the impact of inbound tourism on economic growth has been studied extensively, with relevant research dating back to the late 19th century. From the 70s to the 90s, the rapid development of tourism stimulated an upsurge in research on inbound tourism, which was derived mainly from the export-led growth hypothesis since tourism is an export of services. Ghali (1976) and Archer (1984) retrospectively tested the contribution of tourism to economic growth in Hawaii and Barbados using the Ordinary Least Squares (OLS) estimator. They found that tourism contributes significantly to the economy of Hawaii and Barbados. To provide a sound justification for the tourism-growth nexus, Modeste (1995) borrowed the two-sectors Feder's growth model as a theoretical framework to explain the relationship between inbound tourism and economic growth in Barbados, Anguilla, and Antigua and Barbuda. Modeste's study employed the pooled OLS regression to estimate the economic impacts of tourism on these selected Caribbean economies. Like those of Ghali and Archer, the study concluded that tourism sector growth has a significant positive effect on economic development.

Following Balaguer and Cantavella-Jorda (2002), a large group of scholars began to pay attention to the direction of the Granger causality between inbound tourism and economic growth (see Brida et al., 2016). Dritsakis (2004), Lee and Hung (2010), Tang and Tan (2015a), and Su et al. (2021) are among the examples of studies that deal with the Granger causality between inbound tourism and economic growth in Mauritius, Singapore, Malaysia, and China, respectively. These studies found evidence of Granger causality from tourism to long-term economic growth, which led to the popularisation of the TLG hypothesis. Additionally, Tang and Ozturk (2017) examined the tourism-growth nexus in Egypt using the generalised variance decomposition approach. Their study found that inbound tourism is more impactful than physical capital in explaining economic growth, particularly in the long term, because multi-dimensional sectors generate the impact of tourism. Indeed, some recent studies such as Usmani et al. (2021) and Pulido-Fernández and Cárdenas-García (2021) that used panel Granger causality and structural equation modelling (SEM) approaches also attested that tourism is an essential driver for growth, even though they found evidence of two-way causality. This indicates that the nexus between inbound tourism and economic growth is not

a simple one-way causal relationship but may also be mutually promoted. Ironically, many past studies found that international tourism does not influence economic growth (Bento, 2016; Akadiri et al., 2020; Lee, 2021; Gričar et al., 2021).

Given the lack of consensus among past studies, some researchers offered new research avenues for the TLG hypothesis by investigating the stability, threshold (non-linear), and/or moderating effects of inbound tourism on economic growth. For instance, Tang and Tan (2013, 2015b) and Tang and Abosedra (2016) proposed using the recursive- and rolling-based Granger causality tests to re-investigate the hypothesis because they claimed that the appearance of controversial findings on TLG could be attributed to the stability of its causal relationship. Moreover, a cross-sectional study by Chui and Yeh (2017) with data from 84 countries discovered a non-linear tourism effect. The study concluded that the expansion of tourism does not monotonically generate economic growth as the impact depends on the stage of development of the tourism sector. Similarly, Wang (2012) also confirmed the presence of a non-linear effect of tourism in promoting economic growth but found that the impact of tourism is moderated by the degree of exchange rate depreciation. More recently, Tang and Tan (2018) employed the investment-savings (IS) framework and the dynamic generalised method of moments (GMM) estimator to examine the TLG hypothesis across 167 countries from 1995-2013. Astonishingly, their findings not merely supported the hypothesis but also highlighted that the impact of tourism on economic growth varies across income groups, degrees of political stability, and corruption control because of absorptive capacity.

2.2. Review of the impact of domestic tourism on growth

In addition to the studies of international (inbound) tourism, other studies within the TLG literature have focused on the role of domestic tourism in boosting local economic growth. However, in our review of past TLG literature, little empirical research was found to have investigated the economic impact of domestic tourism despite its stability and centrality in accelerating growth. In a descriptive study, Archer (1978) highlighted several benefits of domestic tourism for the local economy. It facilitates the transfer of wealth within a state, boosting employment and earnings in tourist regions. The multiplier effect often spreads these benefits widely across the local economy. Moreover, domestic tourism can support local crafts and open markets for local goods, such as vegetables and milk. Local people often staff the domestic tourism industry and rely heavily on local markets.

Moreover, Goh et al. (2014) argued that domestic tourism promotes more balanced regional development and economic growth than international tourism. This is because the spatial distribution of domestic tourists is less imbalanced than inbound tourists, allowing for a more even spread of economic benefits across regions. Hence, domestic tourism contributes to socially and economically sustainable regional development. Both, the World Travel & Tourism Council WTTC (2018) and Chiang (2012) also found that domestic tourism has a more direct impact on the local economy than international tourism, as spending by domestic tourists remains within the country, generating employment and expanding the domestic tourism industry. Additionally, domestic tourism can jumpstart secondary sectors like retail, as tourists often buy souvenirs and local goods, which supports local businesses. Domestic tourism also enhances cultural awareness and historical preservation, contributing to the national identity and future tourism.

Surugiu and Surugiu (2013) employed the Johansen-Juselius cointegration and Granger causality tests to investigate the tourism growth nexus in Romania. Their findings suggest that domestic tourism significantly boosts long-term economic growth. Bento (2016) discovered similar results in Portugal, with uni-directional Granger causality from domestic tourism to economic growth. Moreover, a panel data study of 79 countries across 2002-2017 delivered by Canh and Thanh (2020) showed that domestic

tourism does not cause significant economic vulnerability because it is relatively stable and less risky than international tourism.

Lee (2021) compared the impacts of international and domestic tourism on China's GDP using the bounds test for cointegration. Consistent with Chiang's (2012) assertion, the study found that domestic tourism has a more significant long-term economic impact, as international markets contribute only about 20% of total tourism receipts in China. Bowden (2005) noted that domestic tourism benefits poorer regions due to its local market orientation. Nonetheless, Wang et al. (2021) found that domestic tourism does not Granger-cause economic growth, though its development heavily depends on economic growth, supporting the growth-driven tourism hypothesis. Similarly, Gričar et al. (2021) found a uni-directional Granger causality from economic growth to domestic tourism in Montenegro but no causal relationship in Slovenia, rejecting the TLG hypothesis in both countries.

Regarding provincial and city-level studies, Xie et al. (2010) analysed the economic impact of domestic tourism in Zhangjiajie city using the growth decomposition method. They found that the impact of domestic tourism on local income grows steadily over time. Wu et al. (2022) found that domestic tourism significantly contributed to Guangdong province's economy, though its impact decreased from 2.5% in 2019 to 1.20% in 2020 due to COVID-19.

In summary, we can conclude that earlier studies do not consistently support the TLG hypothesis. Despite numerous TLG studies in developed and developing countries, including China, research on domestic TLG at the provincial level is scarce. Hence, the economic contribution of domestic tourism has been underemphasised, even though it was acknowledged by the WTTC (2018). This research addresses these gaps by comparing the roles of inbound and domestic tourism (internal tourism) in provincial economic growth.

3. Methodology and data

The primary goal of this study is to empirically explore the influence of internal tourism on economic growth in Shandong, China. We adopt the open economy investment-savings (IS) macroeconomic model proposed by Tang and Tan (2018). Our analysis includes interest rates, exchange rates, and goods exports as control variables to examine the impact of internal tourism on output growth. The IS model is fundamentally a real market macroeconomic model that seeks to elucidate the relationship between interest rates and output growth by assuming other factors to be exogenous. It postulates that higher interest rates increase investment costs, reducing output growth, thus indicating a negative correlation between interest rates and output. Tang and Tan (2018) augmented the IS model by explicitly incorporating exogenous variables – goods exports and tourism- which are anticipated to positively influence growth by generating employment, stimulating consumption, encouraging infrastructure investment, and earning foreign exchange revenue (Tang, 2022). Moreover, the exchange rate is another crucial variable in the TLG literature (e.g., Balaguer & Cantavella-Jorda, 2002; Dritsakis, 2004; Tang & Abosedra, 2016) due to its impact on economic growth via tourism and exports. Therefore, the log-linear growth model used in this study is as follows:

$$\ln \text{GDP}_{it} = \beta_0 + \beta_1 R_t + \beta_2 \ln \text{XG}_{it} + \beta_3 \ln \text{ER}_t + \beta_4 \ln \text{INT}_{it} + \mu_{it} \quad (1)$$

where \ln denotes the natural logarithm, the subscript i represents cities in Shandong province, and the subscript t represents time. Therefore, the data may change across time and city. GDP_{it} represents the per capita real GDP in a specific city in Shandong. XG_{it} is the per capita real export of goods in a specific city in Shandong. R_t and ER_t represent real interest rate and real exchange rate in China, respectively. INT_{it}

represents internal tourism measured by domestic and international tourist arrivals in a specific city in Shandong. μ_{it} is the disturbance term covering both time-specific (γ_t) and city-specific (λ_i) effects, while β_s represents the estimated coefficients. We hypothesise the effects of the review variables on economic growth as $\beta_1 < 0$, $\beta_2 > 0$, $\beta_3 < 0$, and $\beta_4 > 0$.

Furthermore, we estimate the model using the fixed effect (FE) and random effect (RE) regression approach to account for city- and/or time-specific effects. However, interest rates and μ_{it} are likely correlated due to the endogenous nature of interest rates (R) and output (GDP) in IS-LM macroeconomic theory. Due to this endogeneity, standard FE and RE regressions using the OLS estimator may produce biased results. To address this, we will use the instrumental variables (IV) estimator, namely the two-stage least squares (2SLS)¹. Following the internal instrumental strategy of Reed (2015) and McKnight and Weir (2009), we will employ lagged endogenous variables as instruments. This approach is akin to the method by Anderson and Hsiao (1982). In the first-stage regression, the endogenous variable R_t is regressed on its lagged values and exogenous covariates (W_{it}) as below:

$$R_t = \theta_0 + \delta_j R_{t-j} + \theta_j W_{it} + \varepsilon_{it} \quad (2)$$

In the second-stage regression, we will use the predicted values of \hat{R}_t obtained from the first-stage regression instead of the original values of the endogenous variable R_t . Furthermore, various diagnostic tests, including the Hausman specification test, the Sargan-Hansen over-identification J -test, and Pesaran's cross-dependency (CD) test, will be conducted to validate the accuracy of the estimation.

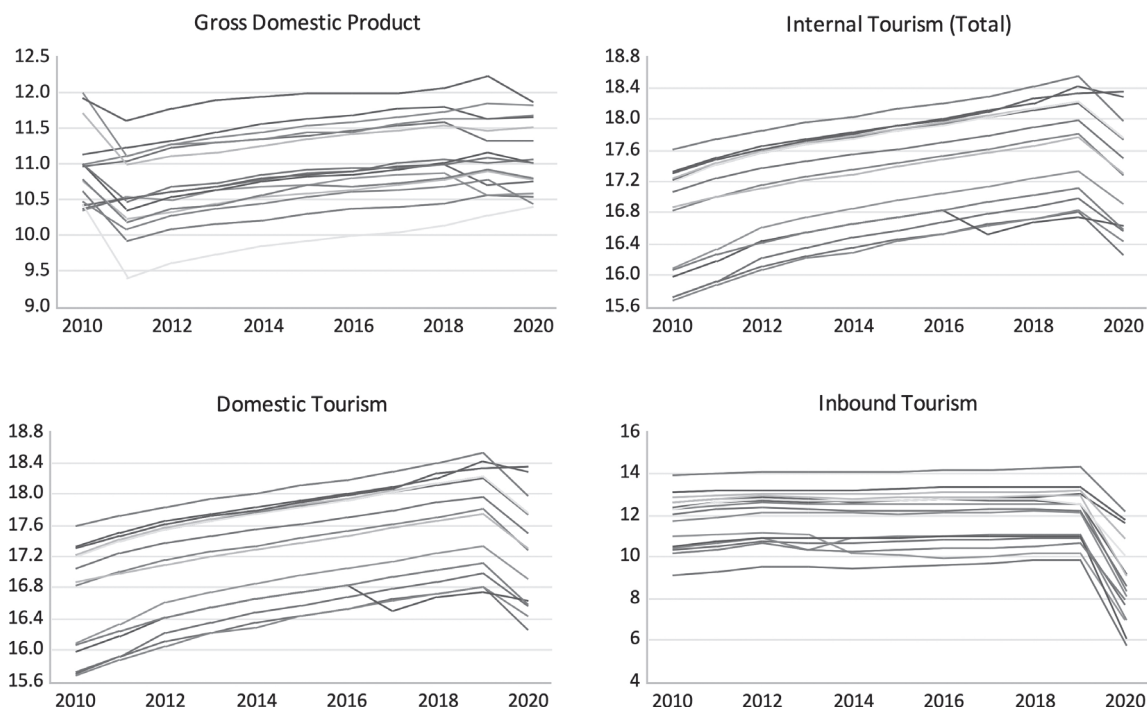
To investigate the contribution of the tourism sector to Shandong's economy, we employ balanced annual panel data from 2010 to 2020 across 16 cities in Shandong province: Binzhou, Dezhou, Dongying, Heze, Jinan, Jining, Liaocheng, Linyi, Qingdao, Rizhao, Tai'an, Weifang, Weihai, Yantai, Zaozhuang, and Zibo. Data on per capita real GDP, per capita real exports of goods, and tourist arrivals were collected from various issues of the *Shandong Statistical Yearbook* by China Statistics Press. Moreover, the World Bank collected data on real bank lending rates and real effective exchange rates from the *World Development Indicators* (WDI). Table 1 and Figure 1 show each variable's descriptive statistics and time series plots.

Table 1
Descriptive statistics and unit of measurement

Variables	Unit of measurement	Mean	SD	Min	Max
lnGDP	Per capita real GDP (log)	10.938	0.553	9.395	12.226
Interest rate, R	Real bank lending rate (%)	2.523	0.795	1.006	3.678
Exports, lnXG	Per capita real export of goods (log)	6.768	1.117	4.572	9.562
Exchange rate, lnER	Real effective exchange rate (log)	4.757	0.079	4.605	4.868
Internal Tourism, lnINT					
Total	Total tourist arrivals (log)	17.277	0.689	15.672	18.543
Domestic	No. of domestic tourist arrivals (log)	17.271	0.688	15.667	18.528
Inbound	No. of foreign tourist arrivals (log)	11.645	1.620	5.704	14.348

¹ Although the dynamic panel GMM estimator is widely used in applied research to account for the endogeneity problem, this approach is typically more suitable for panel analyses involving large samples, particularly those with a large cross-sectional dimension (N). This rationale is supported by evidence from Monte Carlo studies, such as those conducted by Roodman (2009) and Bowsher (2002), which tend to focus on scenarios with N = 100 panels. Given this study encompasses only N = 16 panels, the static panel IV estimator is relatively more appropriate than the dynamic panel GMM estimator.

Figure 1
Time series plots of GDP and tourist arrivals in Shandong, China



4. Empirical results and discussions

In this section, we present the estimation strategy and discuss our findings. Table 2 shows the results of both fixed and random effects IV estimations using different internal tourism variables, namely domestic and inbound tourism. Before interpreting the impacts on economic growth in Shandong, we examine the diagnostic tests to choose between FE-IV and RE-IV estimations. We find that the F-statistics in both FE-IV and RE-IV estimations are highly significant, suggesting that all the specified models fit the data well. Moreover, we find that the R-squares statistics for FE-IV are higher, ranging from 0.712 to 0.980, suggesting that the estimation performance of FE-IV is better than RE-IV.

Table 2
The results of panel data analysis of Shandong's growth model

Variables	Fixed Effect IV				Random Effect IV			
	[1]	[2]	[3]	[4]	[1]#	[2]	[3]#	[4]
Constant	10.781*** (0.000)	16.997*** (0.000)	10.757*** (0.000)	13.742*** (0.000)	10.671*** (0.000)	16.921*** (0.000)	10.651*** (0.000)	13.574*** (0.000)
Interest rate	-0.100*** (0.000)	-0.195*** (0.000)	-0.099*** (0.000)	-0.158*** (0.000)	-0.099*** (0.000)	-0.193*** (0.000)	-0.098*** (0.001)	-0.154*** (0.000)
Exports	0.073 (0.097)	0.078 (0.153)	0.074 (0.096)	0.092** (0.042)	0.082** (0.011)	0.097** (0.046)	0.082** (0.011)	0.105** (0.014)
Exchange rate	-0.473 (0.076)	-0.862** (0.011)	-0.471 (0.077)	-0.684** (0.013)	-0.468 (0.070)	-0.854** (0.010)	-0.466 (0.071)	-0.670** (0.015)
Internal tourism (Total)	0.131** (0.027)	-	-	-	0.132*** (0.007)	-	-	-
Domestic	-	-0.136 (0.190)	0.132** (0.028)	-	-	-0.143 (0.134)	0.133*** (0.007)	-
Inbound	-	0.047*** (0.001)	-	0.033*** (0.000)	-	0.049*** (0.001)	-	0.033*** (0.000)

Table 2 (continued)

Diagnostic tests								
R-squares	0.978	0.980	0.978	0.980	0.713	0.743	0.712	0.735
F-statistics	224.963*** (0.000)	236.207*** (0.000)	224.898*** (0.000)	245.901*** (0.000)	40.164*** (0.000)	41.191*** (0.000)	40.160*** (0.000)	45.371*** (0.000)
Hausman test	5.24 (0.732)	1.71 (0.995)	5.15 (0.742)	0.480 (0.999)	-	-	-	-
Sargan-Hansen test	1.810 (0.178)	0.009 (0.924)	1.830 (0.176)	0.001 (0.969)	2.333 (0.127)	0.015 (0.903)	2.350 (0.125)	0.011 (0.915)
Pesaran CD test	1.275 (0.202)	-0.498 (0.618)	1.303 (0.193)	-0.430 (0.667)	2.018** (0.044)	-0.373 (0.708)	2.044** (0.041)	-0.330 (0.741)
Obs.	144	144	144	144	144	144	144	144
No. of city	16	16	16	16	16	16	16	16
Time effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note. *** and ** denote statistical significance at the 1% and 5% levels, respectively. # represents Driscoll-Kraay's (1998) standard-errors are used to address the cross-sectionally dependency. Figure in the parenthesis (.) indicates the p-values.

However, the Hausman specification test cannot reject the null hypothesis at the 5% significance level, implying that RE-IV estimation is more efficient than FE-IV despite higher R-squares in FE-IV. Therefore, we base our interpretations on the RE-IV regression results.² Furthermore, the Sargan-Hansen test for over-identification consistently fails to reject the null hypothesis at the 5% significant level, demonstrating that our choice of the instrumental set for RE-IV is appropriate. Given the geographical proximity of the cities, the cities under investigation may be correlated. Therefore, we perform the Pesaran (2021) CD test. As per our expectation, the test deduces that the estimated residuals of the RE-IV regression, particularly the growth model with total internal tourism (Model 1) and its sub-category – domestic tourism (Model 3) – are cross-sectionally dependent. To address this, we apply the robust standard errors proposed by Driscoll and Kraay (1998).

After verifying the regression model and addressing the issue, we examine the impacts of internal tourism (i.e., domestic and inbound tourism) on economic growth by controlling for interest rates, merchandise exports, and exchange rates. Consistent with macroeconomic theory and previous studies (e.g., Tang & Tan, 2018; Tang et al., 2019), our results reveal that interest rates negatively affect economic growth in Shandong. A one percentage point increase in interest rates is associated with approximately a 10% to 19% decline in economic growth. This is not surprising because interest rates represent the cost of borrowing. Therefore, a rise in interest rates, for example, resulting from a change in monetary policy, would stifle investment expenditure and ultimately harm economic growth.

We find that economic growth in Shandong province reacts negatively to exchange rates, and this relationship is statistically significant at the 5% level. As reported in Table 2, for every 1% increase in exchange rate, Shandong's economic growth declines by approximately 0.670% to 0.854%. This indicates that a strong appreciation of the Chinese currency – the renminbi – will retard economic growth in Shandong. The appreciation of the Chinese currency makes domestic goods for exports more expensive and imported goods cheaper. Consequently, demand for imported goods grows. This explains the negative effect on economic growth, which results from an appreciation of the Chinese currency due to a trade deficit (i.e., imports greater than exports).

² In addition to interest rates, some argue that tourism might be another source of endogeneity problems due to the potential bi-directional Granger causality between tourism and economic growth, as discovered in past empirical studies. Bearing this in mind, we conducted the Durbin-Wu-Hausman (DWH) endogeneity test on both domestic and inbound tourism variables. The computed DWH statistics for domestic and inbound tourism are (1.315, p -value = 0.2533) and (0.241, p -value = 0.6242) respectively. Clearly, these statistics do not provide sufficient evidence to reject the null hypothesis of exogeneity at the 5% significance level, suggesting that the tourism variables are not purely endogenous. Hence, we consider our model specification and estimation strategies to be appropriate.

In support of this claim, we find that merchandise exports contribute significantly to Shandong's economy by approximately 0.082% and 0.105% for every 1% increase in exports. Promoting exports uplifts economic growth because it helps to expand the market size for businesses and capitalise on economies of scale (Helpman & Krugman, 1985). Furthermore, it also enhances efficiency, the diffusion of technology, and the ability to import capital and intermediate goods (Grossman & Helpman, 1991; Balassa, 1978; Chenery & Strout, 1966). As such, the positive impact of exports on economic growth in Shandong is demonstrable. This also supports the export-led growth hypothesis, consistent with Tang and Abosedra (2019) and other studies in China (e.g., Yao, 2006; Kwan & Kwok, 1995).

In 2009, China surpassed Germany as the world's largest exporting nation, and since 2014, it has been the world's largest trading nation in terms of total trade (Ma, 2022). With a large population, well-developed infrastructure, and a favourable business environment, China has attracted significant foreign investment, becoming a global manufacturing hub. As a result, *The Economist* (2021) described China as the “world's factory”, producing a wide range of products, including electronics, textiles, toys, furniture, and many other consumer goods. Many global companies, including Apple, Nike, and Walmart, rely heavily on Chinese manufacturers for their supply chains. Of the many provinces in China, Shandong is the fourth central province to play a very significant role in exporting a wide range of products to the world, from agriculture to manufacturing-related products, including foods, machinery, garments, and chemicals. Despite the COVID-19 pandemic, Shandong's exports reached US\$189 billion in 2020 and increased by approximately 44.1% to US\$272.2 billion in 2021 (Hong Kong Trade Development Council, 2022). Therefore, our findings that exports significantly promote the economic growth of Shandong, China, are credible.

Our empirical findings thus far suggest that the control variables are statistically significant in explaining growth. Since the nexus of internal tourism and growth is the primary focus of the present study, special attention will be given to our findings about the effects of internal tourism on economic growth in Shandong. Shandong's economy responded positively (0.132) to increased internal tourism. However, their impacts are not consistently significant when internal tourism is segmented into domestic and inbound tourism, as shown in Model 2. Given the significant correlation (0.618) between domestic and inbound tourism, this inconsistency likely arises from a collinearity issue. To address this, we estimate the effects of domestic and inbound tourism on economic growth using a separate model. Their impacts on Shandong's economy remain consistently positive and statistically significant at the 1% level (see Models 3 and 4). As such, our empirical results suggest that both segments of internal tourism – inbound and domestic – have a favourable impact on economic growth in Shandong. Our results are qualitatively following the findings of Surugiu and Surugiu (2013). Nonetheless, they contrast slightly with Bento's (2016) and Lee's (2021) conclusions, who claimed that Portugal and China's economic growth is driven only by domestic tourism.

Furthermore, even though we find that both domestic and inbound tourism contribute significantly to growth, our results indicate that the effects of domestic tourism on growth are much more significant than inbound tourism. Comparatively, a 10% growth in domestic tourism – domestic tourist arrivals – tends to boost the economy of Shandong province by approximately 1.33%, whereas inbound tourism – the arrival of international tourists – contributes merely about 0.33% to 0.49%. Considering this, our findings suggest domestic tourism is a more viable economic growth catalyst than inbound tourism, particularly in Shandong province. A plausible explanation for this is raised by Scarlett (2021) and Canh and Thanh (2020), who found that domestic tourism is relatively stable and reduces economic vulnerability. In the context of China, Lee (2021) also concluded that domestic tourism has a more promising economic impact on growth. Chiang (2012) also found that domestic tourism contributes more than 80% of tourism revenue in China. Moreover, Goh et al. (2014) and Bowden (2005) concluded that domestic tourism is more likely to positively impact poor regions and be more equally distributed across the given area in China because inbound tourists are

more likely to visit mega-cities. These explanations may help explain why the impact of domestic tourism on economic growth is relatively more significant than inbound tourism.

5. Conclusion and policy implications

In this study, we augment the existing TLG literature by investigating the effect of internal tourism on economic growth in Shandong, China, using the panel IV estimator. To enhance the robustness of the study and gather more precise information for policymaking, we further segment the analysis of internal tourism into inbound and domestic tourism. By doing so, we are not only affirming the impact of internal tourism on growth in general, but we are also able to compare the effects of each segment of internal tourism on growth.

The results of our study consistently demonstrate that internal tourism contributes significantly to the economic growth of Shandong province. The same conclusions are reached even when the data is segregated into inbound and domestic tourism. This helps to surmise that the TLG hypothesis remains valid at the provincial level, particularly in Shandong. Though both segments of internal tourism are pro-growth, Shandong province's economy is comparatively more dependent on domestic rather than inbound tourism. In addition to our findings regarding tourism, our results also highlight that control variables, such as interest and exchange rates, harm growth. However, merchandise exports effectively promote economic growth in Shandong, which vindicates the export-led growth hypothesis. These findings have several important policy implications for uplifting economic growth at the provincial level, mainly through tourism channels.

Given our findings, policymakers should ensure that interest and exchange rates are both stable and competitive to minimise financial risks and boost domestic investment and merchandise exports in Shandong province. Furthermore, an expansionary monetary policy could help to stimulate economic growth in Shandong province because lower interest rates provide opportunities for domestic investment in infrastructure, particularly those that facilitate the tourism industry, such as lodging, reliable transportation and communication systems, recreational parks, cultural and artistic amenities, and others. If this suggestion is adhered to, demand for inbound and domestic tourism can be effectively uplifted, leading to economic expansion in Shandong.

In addition, policymakers and tourism-related stakeholders, including State-Owned Enterprises (SOE), should develop marketing plans that can effectively promote domestic tourism, as this segment of internal tourism may be less vulnerable to external shocks such as travel barriers and exchange rate volatility. Indeed, our findings also demonstrate that domestic tourism is more promising in accelerating growth than inbound tourism. Although both inbound and domestic tourism slumped during the COVID-19 pandemic, domestic tourism is recovering faster and more steadily than inbound tourism (UNWTO, 2020). Indeed, Cheng (2022) and Tan (2022) also highlight that domestic tourism earnings in China have returned to approximately 60.6% of the pre-pandemic level. In contrast, statistics from the UNWTO tourism dashboard illustrate that China's inbound tourism earnings in 2021 will be US\$11.3 billion, which is merely 31.6% of pre-pandemic earnings. Domestic tourism is perceived as more sustainable; therefore, initiatives to boost domestic tourism are essential. With that aim in mind, policymakers should continue to market domestic tourism and provide financial incentives and subsidies, such as waiving highway tolls and railway ticket prices, particularly during public holidays, to encourage domestic tourists to travel across cities and provinces in China. Furthermore, private tourism stakeholders should also collaborate with government agencies, including the Ministry of Culture and Tourism, in marketing, re-branding, and promoting attractions, especially local attractions, through social media platforms, communications campaigns, and discounts for hotel accommodation to attract additional tourist arrivals and stimulate economic growth.

References

- Akadiri, S.S., Eluwole, K.K., Akadiri, A.C., & Avcı, T. (2020). Does causality between geopolitical risk, tourism and economic growth matter? Evidence from Turkey. *Journal of Hospitality and Tourism Management*, 43, 273-277. <https://doi.org/10.1016/j.jhtm.2019.09.002>
- Anderson, T.W., & Hsiao, C. (1982). Formulation and estimation of dynamic models using panel data. *Journal of Econometrics*, 18(1), 47-82. [https://doi.org/10.1016/0304-4076\(82\)90095-1](https://doi.org/10.1016/0304-4076(82)90095-1)
- Archer, B. (1978). Domestic tourism as a development factor. *Annals of Tourism Research*, 5(1), 126-141. [https://doi.org/10.1016/0160-7383\(78\)90007-5](https://doi.org/10.1016/0160-7383(78)90007-5)
- Archer, E. (1984). Estimating the relationship between tourism and economic growth in Barbados. *Journal of Travel Research*, 22(4), 8-12. <https://doi.org/10.1177/004728758402200402>
- Asian Development Bank, & World Tourism Organization. (2022). *COVID-19 and the future of tourism in Asia and the Pacific*. <https://dx.doi.org/10.22617/TCS220110-2>
- Balaguer, J., & Cantavella-Jordá, M. (2002). Tourism as a long-run economic growth factor: The Spanish case. *Applied Economics*, 34(7), 877-884. <https://doi.org/10.1080/00036840110058923>
- Balassa, B. (1978). Export and economic growth: Further evidence. *Journal of Development Economics*, 5(2), 181-189. [https://doi.org/10.1016/0304-3878\(78\)90006-8](https://doi.org/10.1016/0304-3878(78)90006-8)
- Bento, J.P.C. (2016). Tourism and economic growth in Portugal: An empirical investigation of causal links. *Tourism and Management Studies*, 12(1), 164-171. <https://doi.org/10.18089/tms.2016.12117>
- Bowden, J. (2005). Pro-poor tourism and the Chinese experience. *Asia Pacific Journal of Tourism Research*, 10(4), 379-398. <https://doi.org/10.1080/10941660500363710>
- Brida, J.G., Cortes-Jimenez, I., & Pulina, M. (2016). Has the tourism-led growth hypothesis been validated? A literature review. *Current Issues in Tourism*, 19(5), 394-430. <https://doi.org/10.1080/13683500.2013.868414>
- Canh, N.P., & Thanh, S.D. (2020). Domestic tourism spending and economic vulnerability. *Annals of Tourism Research*, 85, Article 103063. <https://doi.org/10.1016/j.annals.2020.103063>
- Chenery, H.B., & Strout, A.M. (1966). Foreign assistance and economic development. *American Economic Review*, 56(4), 679-733. <https://www.jstor.org/stable/1813524>
- Cheng, E. (2022, September 13). China's tourism revenue reached 60% of pre-Covid levels this holiday weekend. *CNBC Newsletters*. <https://www.cnn.com/2022/09/13/chinas-tourism-revenue-was-below-pre-covid-2019-levels-amid-lockdowns.html>
- Chiang, M.H. (2012). The changing role of tourism in China's economy. *Journal of China Tourism Research*, 8(2), 207-223. <https://doi.org/10.1080/19388160.2012.677372>
- China is the world's factory, more than ever. (2021, September 8). *The Economist*. <https://www.economist.com/finance-and-economics/2021/09/08/china-is-the-worlds-factory-more-than-ever>
- Chiu, Y.B., & Yeh, L.T. (2017). The threshold effects of the tourism-led growth hypothesis: Evidence from a cross-sectional model. *Journal of Travel Research*, 56(5), 625-637. <https://doi.org/10.1177/0047287516650938>
- Dalferro, A. (2022). *We Travel Together? Assessing Domestic Tourism during the COVID-19 Pandemic in Thailand*. ISEAS Perspective No. 68, ISEAS Yusof Ishak Institute.
- Driscoll, J.C., & Kraay, A.C. (1998). Consistent covariate matrix estimation with spatially dependent panel data. *Review of Economics and Statistics*, 80(4), 549-560. <https://doi.org/10.1162/003465398557825>
- Dritsakis, N. (2004). Tourism as a long-run economic growth factor: An empirical investigation for Greece using causality analysis. *Tourism Economics*, 10(3), 305-316. <https://doi.org/10.5367/0000000041895094>
- Ghali, M.A. (1976). Tourism and economic growth: An empirical study. *Economic Development and Cultural Change*, 24(3), 527-538. <https://doi.org/10.1086/450895>
- Goh, C., Li, H., & Li, M. (2014). A comparative analysis of domestic and international tourism spatial distribution: Trends and impacts. *Journal of China Tourism Research*, 10(4), 388-413. <https://doi.org/10.1080/19388160.2014.906933>

- Gričar, S., Bojnec, Š., Karadžić, V., & Vulić, T.B. (2021). Tourism-led economic growth in Montenegro and Slovenia. *Economic Research-Ekonomska Istraživanja*, 34(1), 3401-3420. <https://doi.org/10.1080/1331677X.2021.1875858>
- Grossman, G.M., & Helpman, E. (1991). *Innovation and growth in the global economy*. MIT Press.
- Helpman, E., & Krugman, P. (1985). *Market structure and foreign trade*. MIT Press.
- Hong Kong Trade Development Council (2022, July 28). Shandong: Market profile. *HKTDC Research*. <https://research.hktdc.com/en/data-and-profiles/mcpc/provinces/shandong>
- Kwan, A.C.C., & Kwok, B. (1995). Exogeneity and the export-led growth hypothesis: The case of China. *Southern Economic Journal*, 61(4), 1158-1166. <https://doi.org/10.2307/1060747>
- Lee, C.G. (2021). Tourism-led growth hypothesis: International tourism versus domestic tourism – Evidence from China. *International Journal of Tourism Research*, 23(5), 881-890. <https://doi.org/10.1002/jtr.2450>
- Lee, C.G., & Hung, W.T. (2010). Tourism, health and income in Singapore. *International Journal of Tourism Research*, 12(4), 355-359. <https://doi.org/10.1002/jtr.755>
- Ma, Y. (2022, December 14). Export trade in China – Statistics and facts. *Statista*. <https://www.statista.com/topics/1456/export-in-china/#topicOverview>
- McKnight, P.J., & Weir, C. (2009). Agency costs, corporate governance mechanisms and ownership structure in large UK publicly quoted companies: A panel data analysis. *Quarterly Review of Economics and Finance*, 49(2), 139-158. <https://doi.org/10.1016/j.qref.2007.09.008>
- Modeste, N.C. (1995). The impact of growth in the tourism sector on economic development: The experience of selected Caribbean countries. *Economia Internazionale / International Economics*, 48(3), 375-385.
- Pesaran, M.H. (2021). General diagnostic tests for cross-sectional dependence in panels. *Empirical Economics*, 60(1), 13-50. <https://doi.org/10.1007/s00181-020-01875-7>
- Pulido-Fernández, J.I., & Cárdenas-García, P.J. (2021). Analyzing the bidirectional relationship between tourism growth and economic development. *Journal of Travel Research*, 60(3), 583-602. <https://doi.org/10.1177/0047287520922316>
- Reed, W.R. (2015). On the practice of lagging variables to avoid simultaneity. *Oxford Bulletin of Economics and Statistics*, 77(6), 897-905. <https://doi.org/10.1111/obes.12088>
- Scarlett, H.G. (2021). Tourism recovery and the economic impact: A panel assessment. *Research in Globalization*, 3, Article 100044. <https://doi.org/10.1016/j.resglo.2021.100044>
- Su, Y., Cherian, J., Sial, M.S., Badulescu, A., Thu, P.A., Badulescu, D., & Samad, S. (2021). Does tourism affect economic growth of China? A panel Granger causality approach. *Sustainability*, 13, Article 1349. <https://doi.org/10.3390/su13031349>
- Surugiu, C., & Surugiu, M.R. (2013). Is the tourism sector supportive of economic growth? Empirical evidence on Romanian tourism. *Tourism Economics*, 19(1), 115-132. <https://doi.org/10.5367/te.2013.0196>
- Tan, S.L. (2022, August 15). China's domestic tourism is on track to bounce back from pandemic lows, say Fitch Rating. *CNBC Newsletters*. <https://www.cnbc.com/2022/08/15/chinas-domestic-tourism-on-track-to-rebound-from-pandemic-fitch-ratings.html>
- Tang, C.F. (2022). Tourism-led growth, In D. Buhalis, (Ed.), *Encyclopedia of tourism management and marketing* (pp. 494-497). Edward Elgar Publishing. <https://doi.org/10.4337/9781800377486.tourism-led.growth>
- Tang, C.F., & Abosedra, S. (2016). Tourism and growth in Lebanon: New evidence from bootstrap simulation and rolling causality approaches. *Empirical Economics*, 50(2), 679-696. <https://doi.org/10.1007/s00181-015-0944-9>
- Tang, C.F., & Abosedra, S. (2019). Logistics performance, exports, and growth: Evidence from Asian economies. *Research in Transportation Economics*, 78, Article 100743. <https://doi.org/10.1016/j.retrec.2019.100743>
- Tang, C.F., & Ozturk, I. (2017). Is tourism a catalyst of growth in Egypt? Evidence from Granger non-causality and the generalised variance decomposition analysis. *Anatolia*, 28(2), 173-181. <https://doi.org/10.1080/13032917.2017.1283635>
- Tang, C.F., & Tan, E.C. (2013). How stable is the tourism-led growth hypothesis in Malaysia? Evidence from disaggregated tourism markets. *Tourism Management*, 37, 52-57. <https://doi.org/10.1016/j.tourman.2012.12.014>

- Tang, C.F., & Tan, E.C. (2015a). Does tourism effectively stimulate Malaysia's economic growth? *Tourism Management*, 46, 158-163. <https://doi.org/10.1016/j.tourman.2014.06.020>
- Tang, C.F., & Tan, E.C. (2015b). Tourism-led growth hypothesis in Malaysia: Evidence based-upon regime shift cointegration and time-varying Granger causality techniques. *Asia Pacific Journal of Tourism Research*, 20(sup 1), 1430-1450. <https://doi.org/10.1080/10941665.2014.998247>
- Tang, C.F., & Tan, E.C. (2018). Tourism-led growth hypothesis: A new global evidence. *Cornell Hospitality Quarterly*, 59(3), 304-311. <https://doi.org/10.1177/1938965517735743>
- Tang, C.F., Cheah, Y.K., & Chua, S.Y. (2019). Does educational tourism significantly influence economic growth? Evidence from a macro-econometric modelling. *International Journal of Business and Society*, 20(3), 924-935.
- United Nations World Tourism Organization. (2020). *UNWTO briefing note – Tourism and COVID-19, Issue 3: Understanding domestic tourism and seizing its opportunities*. <https://doi.org/10.18111/9789284422111>
- Usmani, G., Akram, V., & Praveen, B. (2021). Tourist arrivals, international tourist expenditure, and economic growth in BRIC countries. *Journal of Public Affairs*, 21(2), Article e2202. <https://doi.org/10.1002/pa.2202>
- Wang, Y., Wang, L., Liu, H., & Wang, Y. (2021). The robust causal relationships among domestic tourism demand, carbon emissions, and economic growth in China. *SAGE Open*, 11(4), 1-14. <https://doi.org/10.1177/21582440211054478>
- Wang, Y.S. (2012). Threshold effects on development of tourism and economic growth. *Tourism Economics*, 18(5), 1135-1141. <https://doi.org/10.5367/te.2012.0160>
- World Tourism Organisation. (1995). *Collection of tourism expenditure statistics: Technical manual no.2*.
- World Travel & Tourism Council. (2018). *Domestic tourism: Importance and economic impact*.
- Wu, D.C., Cao, C., Liu, W., & Chen, J.L. (2022). Impact of domestic tourism on economy under COVID-19: The perspective of tourism satellite accounts. *Annals of Tourism Research Empirical Insights*, 3, Article 100055. <https://doi.org/10.1016/j.annale.2022.100055>
- Xie, F., Lacher, R.G., & Nepal, S.K. (2010). Economic impacts of domestic tourism in the rural developing world: A case study of Zhangjiajie city, China. *Tourism Review International*, 14(1), 29-42. <https://doi.org/10.3727/154427211X12954639814894>
- Yao, S. (2006). On economic growth, FDI and exports in China. *Applied Economics*, 38(3), 339-351. <https://doi.org/10.1080/00036840500368730>

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