

Impact of Tourism in Intramuros on the Economic Development of the City of Manila

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Abstract: This research investigates the relationship between tourism and economic development in Intramuros, Manila. The study focuses on three key variables: tourist arrivals, tourist expenditure, and employment in the tourism sector. Using the Fixed Effects model, the research examines both short-term and long-term relationships between these variables and economic development. The findings shed light on the significant impact of tourism on the economic growth of Manila and provide valuable insights for policymakers and stakeholders in the tourism industry.

Keywords: economic development, tourist arrival, tourism expenditure, tourism employment.

1. Introduction

Since the beginning of the 20th century, the City of Manila has gained widespread recognition as a tourist destination. It was referred to as "the Pearl of the Orient" or "Riviera of the Orient" in early travel writing (O'CONNELL 1908:5). (Philippine Tourist Association 1930:3). Comprehensive devastation and the loss of many tourist attractions during the Second World War prevented their reconstruction until that day.

The tourism industry in the capital didn't really start to recover until the late 1970s. The capital hosted the International Monetary Fund conference in 1976 and the World Tourist Organization meeting in 1980, which promoted the development of tourism. Infrastructure growth for the tourism industry accelerated during that time. The primary objective was to establish Metropolitan Manila as the region's leading convention city (source: interview with an official of the Philippine Convention and Visitor Corporation, 2006).

Prior to commencing a study on tourism, it was imperative to examine the concept in detail. The term "tourism" could be delineated in various ways, which prompted the United Nations World Tourism Organization (UNWTO) to undertake a project from 2005 to 2007 aimed at establishing a common glossary of tourism terms. According to the UNWTO, tourism was a social, cultural, and economic phenomenon characterized by the displacement of individuals to countries or locations outside their typical environment for personal or professional motives. These individuals, known as visitors, could be tourists, excursionists, residents, or non-residents, and their activities encompassed certain tourism-related expenses. Based on this

definition, it was evident that tourism was more than just the act of traveling for business or pleasure; it was the amalgamation of activities, services, and industries that comprised the distinct tourist experience.

Tourism emerged as a ubiquitous global activity, evidenced by the fact that there were over 763 million international tourist arrivals in 2004.

As a service industry, tourism comprised numerous tangible and intangible facets. Examples of tangible components included transportation, accommodation, and other elements associated with the hospitality industry. In contrast, intangible elements were linked to the purpose or motivation behind being a tourist, such as rest, relaxation, the desire to connect with new people and cultures, or simply seeking novel experiences.

The significance of tourism lay in its ability to generate income through the consumption of goods and services by tourists, taxation of businesses in the tourism industry, and the potential for employment and economic growth in the sector. Thus, non-governmental organizations and government agencies often endorsed a specific region as a tourist destination and supported the development of the tourism industry in that area.

In this case, the researchers examined Intramuros, Manila. To learn about Manila's rich history, there was no better place to visit than Intramuros. Also known as Old Manila, this area was renowned for its historic landmarks dating back to the Spanish occupation of the Philippines. Due to its old-world charm, both locals and foreigners frequented Intramuros to revisit the past and marvel at centuries-old establishments. The "Walled City" also emerged as a popular destination for tourists, offering a range of activities that catered to those seeking to learn, have fun, and even fall in love.

Tourism was an essential industry that contributed significantly to the economic development of many countries. In the Philippines, tourism had become an important source of revenue for the government, with the promotion of various tourist destinations across the country. According to the Department of Tourism's report, the tourism industry in the country generated P208.96 billion (\$3.68 billion) in revenue in 2022, representing a remarkable increase of 2,465% from 2021. As of the end of the year, there were 2.65 million international visitor arrivals, laying the foundation for a more dynamic 2023. Among the popular tourist destinations in the Philippines was

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Intramuros, Manila. This site offered tourists an opportunity to experience the country's rich culture and history, attracting millions of visitors each year.

According to the World Tourism Organization, the Philippines ranked 32nd in the world for international tourism arrivals in 2019, with a total of 8.2 million tourists. This number was expected to increase in the coming years as the government continued to promote various tourist destinations in the country, including Intramuros.

Prior to the pandemic, the tourism industry played a significant role in the continuous progress of the Philippine economy. Over the past ten years, the country's tourism direct gross value added (TDGVA) in current prices rose by nearly five times, from P460 billion (5.7 percent of GDP) in 2008 to P2.5 trillion (12.8 percent of GDP) in 2019 as shown in figure 1. This growth was fueled by considerable developments in tourism infrastructure, particularly in airports, land transport, and hotels during the said period. The gross value added of tourism industries (GVATI), which covered all establishments in tourism industries, regardless of whether they catered to tourists or not, reached P3.3 trillion in 2019. Accommodation services, food and beverage services, and transport services comprised almost 60 percent of the total industry's gross value added. In 2019, GVATI's level represented 16.9 percent of the country's GDP.

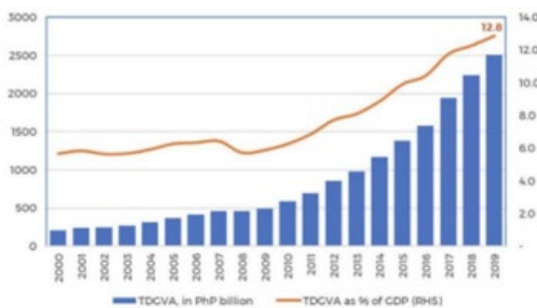


Fig. 1. Source: Philippine statistics authority

Despite the importance of tourism to Manila's economy, there was a lack of research on its economic impact. While previous studies had explored the economic impact of tourism in the Philippines, there was a need to examine the specific impact of tourism in Intramuros, Manila on the economic development of the city.

One of the most prominent theories was the tourism-led growth theory, which suggested that the growth of the tourism industry could lead to an increase in economic development. This theory was first introduced by Richard Butler in 1980 and later developed by authors such as M. Lanza and D. Pigliaru. The theory was based on the idea that tourism could create employment opportunities, generate income for local businesses, and stimulate infrastructure development.

The concept of sustainable development was officially defined in the Brundtland Report in 1987, and the definition included the idea of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs, which was relevant to this research. The theory

of sustainable tourism development aligned with this concept by emphasizing the importance of promoting sustainable tourism that benefited the local community and environment in the long run.

Therefore, this study aimed to investigate the impacts of tourism in Intramuros on the economic development of the city of Manila. The specific objectives were as follows:

- Assessed the correlation between the number of tourist arrivals in Intramuros and economic development.
- This study aimed to investigate whether there was a significant positive correlation between the number of tourist arrivals and economic development. Through this analysis, the study sought to provide insights into the potential economic benefits of tourism as a driver of economic development in Intramuros, Manila.
- Quantified the contribution of tourism expenditure in Intramuros to the overall economic development of Manila.
- Identified the key areas of tourism expenditure within Intramuros.
- Evaluated the direct and indirect employment opportunities created by the tourism sector in Manila, with a specific focus on Intramuros.
- Analyzed the relationship between tourism employment and economic development. This study aimed to examine the extent to which tourism employment contributed to the development of the local economy.

In summary, this study was significant because it sought to fill the gap in research on the economic impact of tourism in Intramuros, Manila. Moreover, the study provided valuable insights into the challenges and opportunities faced by the tourism industry in the sites and identified potential strategies for promoting sustainable tourism. By applying relevant theories to the study, the researchers hoped to gain a better understanding of the relationship between tourism and economic development in the city of Manila. Prior to the pandemic, the tourism industry played a significant role in the continuous progress of the Philippine economy.

2. Literature Review

A. Number of Tourist Arrival

The number of tourist arrivals serves as a key indicator of the Philippines' attractiveness as a tourism destination and reflects the effectiveness of its tourism promotion efforts. Despite the challenges posed by the COVID-19 pandemic, the country has managed to maintain a substantial influx of tourists. The Philippines has implemented various strategies to attract tourists, such as marketing campaigns, infrastructure development, and visa facilitation. These initiatives have contributed to the steady growth in tourist arrivals over the years, making tourism a significant driver of economic activity/

According to Caynila, Luna, and Milla (2022), the number of tourist arrivals in the Philippines plays a crucial role in the country's external payments position and overall economic development. It is worth noting that the tourism sector, along

with overseas Filipino remittances and business process outsourcing, supports sustained foreign exchange inflows. This indicates the importance of tourism in generating revenue and contributing to the country's foreign exchange reserves. Moreover, the diverse attractions found in Manila and Cebu, as mentioned earlier, contribute to the high number of tourist arrivals. Manila, being the capital city and a cultural and economic hub, welcomes a considerable number of tourists each year. The city's key attractions, such as Manila Ocean Park, Intramuros, and the National Theater, contribute to its popularity among tourists (Yatra, 2022). Similarly, Cebu's strategic and economic importance, along with its own attractions, attracts a significant influx of visitors (PrejagHolidays, 2023). Furthermore, it is noteworthy that Manila, as one of the key destinations in the Philippines, attracts over 1 million tourists each year (Yatra, 2022). This significant number of tourist arrivals highlights the city's appeal and its ability to cater to a diverse range of travelers. The consistent influx of over 1 million tourists annually demonstrates the city's ability to provide a fulfilling and enriching experience for visitors. This steady stream of tourist arrivals not only contributes to the city's economy but also supports the growth of local businesses in the hospitality, retail, and entertainment sectors.

Manila's status as a bustling metropolis and a cultural hub makes it an attractive destination for both leisure and business travelers. The city's vibrant atmosphere, historical sites, and cultural offerings create a unique experience that draws tourists from around the world. As a result, the number of tourist arrivals in Manila adds to the overall tourism figures of the Philippines, solidifying the country's position as a desirable travel destination. Tourist arrivals not only contribute to the country's economy but also have a multiplier effect on various sectors, such as hospitality, transportation, retail, and food services. The growth in tourist arrivals leads to job creation and income generation for the local population. It also encourages further investment in infrastructure and tourism-related services to accommodate the increasing number of tourists.

Ho1: There is no significant relationship between Intramuros' Number of Tourist Arrival and Manila's economic development

B. Tourism Expenditure

The concept of tourism expenditure plays a crucial role in economic statistics and serves as a significant indicator for the tourism industry, policy makers, marketers, and researchers. It is the total amount of money spent on consumption by a tourist or someone traveling on their behalf throughout their vacation to a place and while they are physically present there (UNSTATS, 2006). It is strongly suggested that this definition be used in the compilation of economic statistics relating to tourism. An integral part of the demand for tourism is "visitor consumption expenditure," which is the total amount of money spent on products and services by visitors or on their behalf while they are at a place. It is in line with the idea of "final consumption" in the National Accounts system, and it does not matter what kind of consumer is being considered (UNSTATS,

2006).

In the context of the Philippines, tourism has become an increasingly significant contributor to the country's economy. According to data from the Philippine Statistics Authority, tourism's share in the nation's economy rose to 5.2% in 2021, up from 5.1% in 2020. This growth can be attributed to the relaxation of travel restrictions and improved Covid-19 vaccination rates. In 2021, domestic tourism expenditures experienced a notable increase of 38.7%, amounting to PHP 782.5 billion (USD 14.2 billion). However, this figure remains lower than the PHP3.1 trillion (USD 56.3 billion) spent in 2019. Conversely, foreign expenditures declined significantly by 79% to PHP 27.6 billion (USD 500 million) in 2021, mainly due to travel restrictions (Colliers, 2022).

Tourist satisfaction serves as a vital metric for measuring a destination's planning and marketing efforts in the tourism industry. It is also a key factor influencing destination competitiveness, as it impacts destination choice, revisit intentions, and destination loyalty. Higher levels of tourist satisfaction lead to positive word-of-mouth recommendations, attracting new tourists and enhancing a destination's reputation. This, in turn, increases acceptance of higher prices, resulting in higher profitability for the destination (D'Urso et al., 2020). In studying tourists' expenditure behavior and its determinants, research can be categorized into macro-level and micro-level studies. Micro-level studies, which constitute the majority, employ various approaches to model tourists' expenditure behavior and quantify the impact of expenditure determinants (D'Urso et al., 2020).

Understanding and analyzing tourism expenditure is vital for assessing the economic impact of tourism on a national level, monitoring sector-specific effects, and informing policymakers, marketers, and researchers in the industry. By examining visitor consumption expenditure, both domestically and internationally, countries can develop strategies to maximize the positive effects of tourism and address challenges that may arise, such as travel restrictions and fluctuations in expenditure patterns. Moreover, by prioritizing tourist satisfaction, destinations can improve their competitiveness, attract more visitors, and generate higher profits, contributing to the sustainable development of the tourism industry.

Ho2: There is no significant relationship between Intramuros' Tourism Expenditure and Manila's economic development

C. Employment in the Tourism Sector

The tourism industry plays a vital role in stimulating economic growth and employment opportunities, positioning itself as one of the largest and rapidly expanding sectors worldwide. Sustainable tourism practices have the capacity to uplift communities, alleviate poverty, and generate economic and social advantages in the countries being visited. Additionally, tourism has a ripple effect on various sectors such as accommodation, food services, agriculture, retail, and transportation, contributing to economic diversification, cultural enrichment, and job creation (International Labor Organization, 2022).

The importance of the tourism sector is evident in the Sustainable Development Goals (SDGs), particularly in SDGs 8, 12, and 14, which include specific targets related to tourism. It is worth noting that women, young people, and migrant workers make up a significant portion of the tourism workforce, highlighting the significance of tourism-related jobs for these demographic groups. Micro, small, and medium-sized enterprises play a crucial role in providing employment within the tourism industry and employ a substantial number of workers (International Labor Organization, 2022). Despite its beneficial effect, the tourism sector faces challenges in terms of providing acceptable work conditions. The rapidly evolving nature of tourism, influenced by digitalization, demographic shifts, globalization, and climate change, necessitates proactive measures to guarantee decent working conditions, fair wages, social protection, and opportunities for skill development for the workforce.

In assessing the employment landscape in the tourism industries, it is evident that tourism activities contribute significantly to economic activity in most countries (World Tourism Organization, 2014). Globalization has further integrated the world economy, leading to increased trade, investment, financial flows, and information exchange. Employment within the tourism sector is diverse, encompassing various activities, establishments, employment contracts, and working arrangements. It provides both a source of money and the opportunity to get job experience, which contributes to both social inclusion and personal growth (World Tourism Organization, 2014). However, employment patterns in tourism exhibit notable regional and seasonal variations. Understanding employment in tourism is crucial for analyzing productive activities and assessing the quality of tourism products and services.

In the Philippines, the tourism industry accounted for approximately 11.1 percent of total employment in 2021, showcasing its significant contribution to the country's workforce (Statista, 2022). However, the percentage of people finding work in tourism-related businesses has been going down since 2019. This downturn makes it necessary to pay attention to and take aggressive steps toward addressing the issues encountered by the tourism industry in order to assure continued job creation and economic progress.

Ho3: There is no significant relationship between Intramuros' Employment in the tourism sector and Manila's economic development

D. Synthesis

Tourist arrivals, tourism expenditure, and employment in the tourism sector are vital components that contribute to the economic development of a country. The Philippines has implemented effective strategies to attract tourists, leading to steady growth in arrivals. This influx generates revenue, supports foreign exchange reserves, and stimulates economic activity. Understanding tourism expenditure helps assess the economic impact and develop effective strategies. Employment in the tourism sector plays a crucial role in job creation and economic diversification. Addressing challenges and ensuring

decent work conditions and skill development opportunities are essential for sustained growth. Overall, these interconnected factors contribute significantly to the economic development of a country.

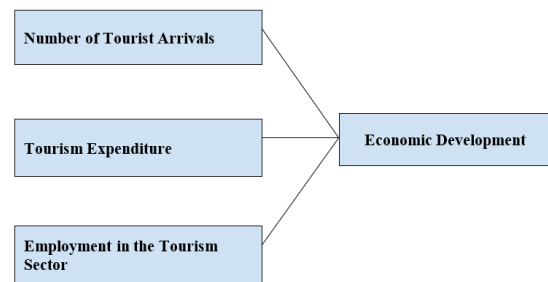


Fig. 2. Research simulacrum

3. Methodology

In this study, the researchers employed a Fixed Effects econometric approach to thoroughly examine the influence of tourism in Intramuros on the economic growth of Manila. The research aimed to explore the relationship between key variables: the number of tourist arrivals, tourism expenditure, and employment in the tourism sector. The Fixed Effects methodology was chosen for its capability to account for unobserved heterogeneity across cross-sectional units, providing a more nuanced understanding of how tourism impacts the economic dynamics of the city.

The data that was used in this study was secondary data obtained from the sources below.

Variables Measurement

- *Tourist arrivals:* The researchers used data from the world bank to track the number of international and/or domestic tourists. This data could be measured on a yearly basis.
- *Tourism expenditure:* The researchers used data from the world bank to estimate the amount of money spent by tourists in a particular country. This could include spending on accommodation, food and drink, transportation, and other tourist-related expenses.
- *Tourism employment:* The researchers used data from the World Bank to estimate the number of people employed in the tourism sector in a particular country. This could include both direct and indirect employment.
- *Economic development:* The researchers used data from the world bank to capture economic development in Intramuros, Manila.

The econometric model utilized in this investigation is a Fixed-effects model. This model, tailored for this study, enables a comprehensive assessment of the interplay between economic development and tourism in Intramuros, Manila. The Fixed Effects model is particularly suitable as it addresses unobserved entity-specific effects, allowing for a more precise estimation of the impact of tourism-related variables on the economic growth of Intramuros. The formula for the Fixed Effects model is:

$$\text{Economic Development}_{it} = \beta_0 + \beta_1 \times \text{Tourist Arrivals}_{it} + \beta_2 \times \text{Tourism Expenditure}_{it} + \beta_3 \times \text{Tourism Employment}_{it} + \alpha_i + u_{it}$$

Where,

- Economic Development_{it} is the dependent variable for unit i at time t.
- β₀ is the intercept term.
- β₁, β₂, β₃ are the coefficients associated with the respective independent variables.
- Tourist Arrivals_{it}, Tourism Expenditure_{it}, Tourism Employment_{it}, are the independent variables for unit i at time t.
- α_i represents the fixed effect for unit i, capturing time-invariant characteristics.
- u_{it} is the error term

The adoption of the Fixed Effects model is motivated by its ability to control for unobserved heterogeneity across entities, providing a more accurate depiction of the relationship between tourism and economic development. In the context of this study, where the goal is to understand the specific and nuanced channels through which tourism influences the economy, the Fixed Effects model offers a robust framework.

With its entity-specific intercepts, the Fixed Effects model ensures a more in-depth analysis of the complex dynamics between tourism and economic growth in Intramuros. It allows us to disentangle the effects of individual entities and explore the statistical significance and direction of influence of key tourism-related variables on the economic development of Intramuros.

4. Results and Discussion

A. Data Gathered

The researchers' comprehensive investigation into the dynamics between tourism-related factors and economic development, researchers meticulously collected data spanning the years 1995 to 2020 from ten diverse countries. The selected nations, namely the Philippines, Thailand, Vietnam, Malaysia, Indonesia, Singapore, Hong Kong, Korea, the United States, and Japan, represent a broad spectrum of economic and cultural contexts. This rich and varied dataset, meticulously curated with key indicators including tourist arrivals, tourism expenditure, employment in the tourism sector, and the respective Gross Domestic Product (GDP) of each country, was intended to offer a holistic understanding of the intricate relationships between tourism and economic development across diverse geopolitical landscapes.

Importantly, the wealth of insights gained from this global dataset is not confined to the borders of the countries studied. Rather, it serves as a valuable framework for drawing implications for localized contexts, such as Intramuros in Manila, Philippines. By leveraging the diverse experiences and patterns observed in these ten countries, our study is poised to provide a contextualized understanding of how tourism impacts economic development, with Intramuros serving as a microcosm. The dataset's broad applicability enhances the generalizability of the researchers' findings, offering valuable

insights that extend beyond national boundaries and contribute to a more nuanced comprehension of the potential impact of tourism on the economic dynamics of historically significant and culturally rich locales like Intramuros.

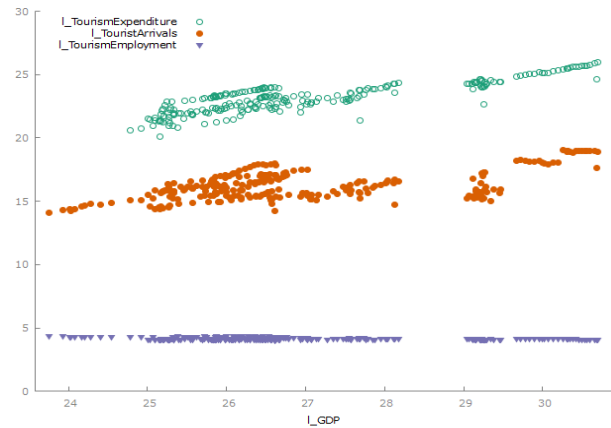


Fig. 1. X-Y Scatter plot graph

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Model 5: Fixed-effects, using 238 observations
Included 10 cross-sectional units
Time-series length: minimum 16, maximum 26
Dependent variable: l_GDP

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	coefficient	std. error	t-ratio	p-value
const	5.46141	2.34986	2.324	0.0210 **
l_TourismExpendi-	0.582215	0.0393478	14.80	4.71e-035 ***
l_TouristArrivals	0.170287	0.0408386	4.170	4.35e-05 ***
l_TourismEmploy-	1.28576	0.583533	2.203	0.0286 **

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Mean dependent var 27.05493 S.D. dependent var 1.61456
Sum squared resid 11.76897 S.E. of regression 0.228705
LSDV R-squared 0.980948 Within R-squared 0.769287
LSDV F(12, 225) 965.4141 P-value(F) 4.8e-186
Log-likelihood 20.10339 Akaike criterion -14.20678
Schwarz criterion 30.93274 Hannan-Quinn 3.985259
rho 0.737325 Durbin-Watson 0.588678

Joint test on named regressors -
Test statistic: F(3, 225) = 250.079
with p-value = P(F(3, 225) > 250.079) = 2.33728e-71

Test for differing group intercepts -
Null hypothesis: The groups have a common intercept
Test statistic: F(9, 225) = 291.836
with p-value = P(F(9, 225) > 291.836) = 8.79093e-119

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Fig. 2. Panel data analysis with fixed effects model

The variables have been visually represented in X-Y scatter plots, with GDP serving as the X-Axis and three key tourism-related variables—Expenditures, Arrivals, and Employment—mapped on the Y-Axis. A notable observation emerges from the Arrivals and Expenditures plots, where points distinctly form an upward slope, indicating a positive relationship with GDP. In contrast, the Employment plot does not exhibit a pronounced pattern, suggesting a less apparent linear relationship.

The lack of a clear linear pattern in the Employment plot does not necessarily negate the significance or existence of a relationship with GDP. This suggests that while the scatter plot might not reveal a straightforward linear association, the data supports the notion that changes in Tourism Employment contribute meaningfully to variations in GDP.

Several factors could contribute to the absence of a clear linear pattern in the Employment plot, including the possibility of a non-linear relationship, the influence of unaccounted variables, or the need for alternative modeling approaches beyond the linear framework. Consequently, the observed scatter plot does not imply a lack of significance for Tourism Employment in relation to GDP.

In summary, the comprehensive analysis acknowledges the

visual patterns observed in the scatter plots and recognizes the complexity inherent in the relationship, possibly beyond the constraints of a linear model. This nuanced interpretation encourages further exploration and consideration of alternative modeling techniques to capture the intricate dynamics between Tourism Employment and economic development in Intramuros, Manila.

B. Interpretation

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Coefficient

Constant (const):

- Coefficient: 5.46141
- Interpretation: The estimated constant term represents the average level of the dependent variable (l_GDP) when all independent variables are zero. In this context, it provides a baseline for economic development in Intramuros, Manila. The positive coefficient (5.46141) suggests that, on average, the economic development is positive when all other independent variables are zero. *It is statistically significant at the 5% level (p -value = 0.0210).*

$l_TourismExpenditure$:

- Coefficient: 0.582215
- Interpretation: A one-unit increase in the logarithm of tourism expenditure is associated with an estimated increase of 0.582215 units in the logarithm of GDP. This positive coefficient suggests that higher tourism expenditure is associated with higher economic development in Intramuros. *This coefficient is highly statistically significant (p -value < 0.0001).*

$l_TouristArrivals$:

- Coefficient: 0.170287
- Interpretation: A one-unit increase in the logarithm of tourist arrivals is associated with an estimated increase of 0.170287 units in the logarithm of GDP. This positive coefficient indicates that a higher number of

tourist arrivals is linked to increased economic development. *This coefficient is statistically significant (p -value = 4.35e-05).*

$l_TourismEmployment$:

- Coefficient: 1.28576
- Interpretation: A one-unit increase in the logarithm of tourism employment is associated with an estimated increase of 1.28576 units in the logarithm of GDP. This positive coefficient suggests that higher employment in the tourism sector is associated with higher economic development. *This coefficient is statistically significant (p -value = 0.0286).*

Model Fit

- Mean Dependent Variable: The mean of the dependent variable (l_GDP) is 27.05493.
- Standard Deviation of Dependent Variable: The standard deviation of l_GDP is 1.614456.
- Sum Squared Residuals: The sum of squared residuals is 11.76887, indicating the overall goodness of fit of the model.
- R-squared:
 - LSDV R-squared: 0.980948 (Overall fit)
 - Within R-squared: 0.769287 (Within-entity fit)
 - These R-squared values indicate the proportion of variability in the dependent variable explained by the model.

Goodness of Fit Tests

- LSDV F-Statistic: $F(12, 225) = 965.4141$, with an extremely low p -value (4.8e-186), indicating that the model has a high overall fit.
- Log-likelihood, Akaike, Schwarz, and Hannan-Quinn Criteria: These are information criteria used for model selection. Lower values are preferred. The presented values indicate the trade-off between goodness of fit and model complexity.
- Rho (ρ): The estimated correlation of the individual-specific effects is 0.737325, suggesting a moderate correlation between these effects and the independent variables.
- Durbin-Watson Statistic: 0.588678, which is less than 2, indicating potential positive autocorrelation in the residuals.

Relevant Tests

Joint Test on Named Regressors ($l_TourismExpenditure$, $l_TouristArrivals$, $l_TourismEmployment$):

- Test Statistic: $F(3, 225) = 250.079$
- p -value: 2.33728e-71
- Interpretation: The joint test assesses whether at least one of the independent variables significantly contributes to the model. *The extremely low p -value suggests that the group of regressors is collectively significant.*

Test for Differing Group Intercepts:

- Null Hypothesis: The groups (cross-sectional units) have a common intercept.

- Test Statistic: $F(9, 225) = 291.836$
- p-value: $8.79093e-119$
- Interpretation: The extremely low p-value indicates strong evidence against the null hypothesis, suggesting that entities have different intercepts. This supports the use of fixed effects to account for entity-specific variations.

The joint test and the test for differing group intercepts provide statistical evidence that the independent variables (tourism-related factors) collectively and individually have a significant impact on economic development in Intramuros, Manila. The low p-values in these tests support the validity of the Fixed-effects model, indicating that accounting for entity-specific effects is crucial for an accurate understanding of the relationship between tourism variables and economic development. The overall model fit, as indicated by the F-statistic and R-squared values, suggests that the chosen model effectively captures the variation in the dependent variable. The tests for differing group intercepts reinforce the appropriateness of the Fixed-effects model in addressing unobserved heterogeneity and providing more accurate estimates of the relationships within the dataset.

Null Hypothesis

1. *Ho1: There is no significant relationship between Intramuros' Number of Tourist Arrival and Manila's economic development.*

Findings:

The regression models, both Random-effects (GLS) and Fixed-effects, show a statistically significant positive relationship between the logarithm of tourist arrivals ("*I_TouristArrivals*") and economic development.

Conclusion:

Reject Ho1. There is evidence of a significant positive relationship between the number of tourist arrivals in Intramuros and Manila's economic development.

2. *Ho2: There is no significant relationship between Intramuros' Tourism Expenditure and Manila's economic development.*

Findings:

The Fixed-effects model includes the variable "*I_TourismExpenditure*," and its coefficient is statistically significant.

Conclusion:

Reject Ho2. There is evidence of a significant positive relationship between tourism expenditure in Intramuros and Manila's economic development.

3. *Ho3: There is no significant relationship between Intramuros' Employment in the tourism sector and Manila's economic development.*

Findings:

The regression models include the variable "*I_TourismEmployment*," and its coefficient is statistically significant.

Conclusion:

Reject Ho3. There is evidence of a significant positive relationship between employment in the tourism sector in Intramuros and Manila's economic development.

In summary, based on the analysis results, all three null hypotheses are rejected. The study provides evidence supporting significant positive relationships between the number of tourist arrivals, tourism expenditure, employment in the tourism sector, and economic development.

5. Conclusion and Recommendations

The study systematically addresses various objectives to understand the intricate relationship between tourism-related factors and economic development in Intramuros, Manila, employing Fixed-effects models. Regression analyses reveal compelling findings. Firstly, the positive and statistically significant coefficients for "*I_TouristArrivals*" establish a robust correlation between the number of tourist arrivals and economic development, suggesting that increased tourist arrivals positively influence economic growth in Intramuros. Furthermore, the Fixed-effects model, incorporating "*I_TourismExpenditure*," demonstrates that tourism expenditure significantly contributes to overall economic development. The fixed-effects model suggests that tourism expenditure, tourist arrivals, and tourism employment are statistically significant predictors of GDP.

In the realm of employment dynamics, the analysis highlights the inclusion of "*I_TourismEmployment*" in the Fixed-effects model, which yields a statistically significant positive relationship with economic development. This implies that tourism-related employment, both direct and indirect, plays a crucial role in fostering economic growth in Intramuros. These findings collectively provide robust evidence supporting the positive correlations between tourist arrivals, tourism expenditure, employment, and economic development.

Despite the study not directly providing insights into specific areas of tourism expenditure within Intramuros, a recommendation is made for further research or surveys to obtain a more detailed breakdown. In conclusion, the study successfully achieves its objectives by presenting evidence of positive correlations between various tourism-related variables and economic development. These insights contribute significantly to the researchers' understanding of the economic benefits of tourism in Intramuros, offering a nuanced perspective on the region's economic dynamics.

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