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Trend Analysis on Share of Tourism Gross Fixed Capital Formation to Total Gross Fixed Capital Formation

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Abstract: *This study analyzed the share of tourism gross fixed capital formation to total gross fixed capital formation using data from the Philippine Tourism Satellite Account of the Department of Tourism for the period 2012-2022. Data were analyzed using linear regression analysis. The study found that TGFCF initially rose during the mid-2010s but declined in later years, notably dropping in 2020 and 2021 due to the pandemic's impact on tourism. However, the graph alone can't explain these fluctuations definitively. The regression analysis showed a negative correlation between the year and TGFCF share but found the year variable to be statistically insignificant. This suggests that year alone is not a strong predictor of TGFCF changes, indicating other unaccounted factors influence tourism capital formation. Future research should consider additional variables like government policies, tourism trends, and economic conditions to gain a more comprehensive understanding of this phenomenon.*

Keywords: Philippine Tourism, Trend Analysis, Total Gross Fixed Capital Formation

I. INTRODUCTION

Tourism is a multifaceted and pivotal sector in the global economy, contributing significantly to the economic growth and development of many nations. In the Philippines, a Southeast Asian archipelago known for its breathtaking natural beauty, cultural diversity, and warm hospitality, tourism plays an increasingly vital role. The allure of pristine beaches, vibrant festivals, and historical sites has made the Philippines a top destination for travelers from around the world. Consequently, understanding the dynamics of tourism-related economic activities and investments becomes paramount in harnessing the full potential of this sector.

This research embarks on a comprehensive exploration of the share of Tourism Gross Fixed Capital Formation (TGFCF) as a percentage of Total Gross Fixed Capital Formation (GFCF) in the Philippines. Capital formation is a cornerstone of economic development, and within this context, TGFCF represents investments specifically channeled into the tourism sector. The study focuses on a considerable timeframe, spanning from 2012 to 2022, to provide an in-depth understanding of the long-term trends and fluctuations in the share of TGFCF, offering valuable insights into the evolving landscape of the Philippine tourism industry.

The Philippine tourism sector has undergone transformative shifts during this period, facing numerous challenges, not least of which is the global COVID-19 pandemic. Understanding how capital investments in tourism have responded to these challenges is essential for policymakers, investors, and industry stakeholders. This research aims to elucidate whether there are discernible patterns and correlations between the year and the share of TGFCF and, in doing so, to provide a basis for informed decision-making.

To accomplish these objectives, the study employs a two-fold methodology: first, visual analysis through line graphs to illustrate historical trends, and second, statistical analysis utilizing linear regression to assess the relationship between the year and the share of TGFCF. Through these analytical lenses, we seek to decipher the underlying factors driving the fluctuations in capital investments within the tourism sector. Furthermore, we acknowledge the limitations of our analysis, recognizing that the share of TGFCF may be influenced by a myriad of factors beyond the scope of this study, including government policies, global economic conditions, and shifts in tourist preferences.

Ultimately, this research aspires to contribute to a nuanced and data-driven comprehension of how capital formation within the tourism sector has evolved in the Philippines over the past decade. In doing so, it seeks to offer a valuable resource for policymakers, investors, and all those vested in the sustainable growth and prosperity of Philippine tourism.

II. LITERATURE REVIEW

The gross fixed capital formation within the tourism industry is distinct from the concept of tourism demand. There exists no direct correlation between tourists and the acquisition of capital by the tourism sector. Rather, tourists utilize the services facilitated by this capital, which is procured and maintained by the industry itself. To illustrate, an airline purchases aircraft, while passengers buy tickets to access transportation services. While the airline relies on its aircraft to serve passengers, it is not the passengers who engage in acquiring the aircraft from the manufacturer. Consequently, the gross fixed capital formation within the tourism industry, although crucial, exerts only an indirect influence on measures of tourism demand and tourism value added (TVA) (OECD, 1998).

Gross fixed capital formation (GFCF) emerges as a vital additional component essential for analyzing the tourism industry comprehensively. GFCF encompasses both the capital invested in tourism-specific assets within the tourism industry and capital investments in other assets not considered tourism-specific. GFCF serves as a dynamic indicator, allowing for the measurement of trends in new fixed investments, which is often more feasible than gauging the accumulated fixed capital stock. Additionally, transactions involving non-produced non-financial assets (such as land) and non-produced intangible assets (such as landing rights or trademark rights) may carry significance in a broader analytical context (United Nations Statistics Division, 2009).

In the Latin American and Caribbean regions, the tourism sector plays a substantial role in contributing to GDP earnings, even though this contribution may not be fully reflected in domestic income and product accounts across most countries. For instance, tourism accounts for roughly one-third of the GDP in the Bahamas, with various sectors closely tied to it. In Barbados, tourism stands as the leading economic sector, contributing 15 percent to the GDP in 1992. In Jamaica, tourism contributed 13.4 percent to the GDP in 1992, while in Mexico, it constituted 4 percent. However, it's important to note that not all tourism earnings remain within the economy, as some foreign exchange outflows occur due to goods, services, and capital investments. The magnitude of these imports depends on a country's level of development, economic diversification, and the availability of substitutes for imported products within the tourism supply (Organization of American States, ND).

Rasool et al.'s (2021) study findings indicate that international tourism growth and financial development have a positive impact on long-term and short-term economic growth. Specifically, the coefficient related to tourism suggests that a 1% increase in tourism receipts per capita leads to a 0.31% increase in GDP per capita for BRICS economies in the long run. These results align with the Tourism-Led Growth Hypothesis (TLGH) introduced by Balaguer and Cantavell-Jorda (2002), which posits that inbound tourism can serve as a long-term driver of economic growth. This hypothesis suggests that the development of a country's tourism industry can ultimately lead to increased economic growth and further economic development through spillover effects and multipliers.

III. METHODOLOGY

The methodology of this study relied on secondary data sourced from the Philippine Tourism Satellite Account, provided by the Department of Tourism, covering the years from 2012 to 2022. The utilization of secondary data is a common approach in research, especially when it is impractical or costly to collect primary data. The Philippine Tourism Satellite Account is a credible source for this study, as it is likely to contain comprehensive and reliable information related to the tourism sector's economic activities and capital formation.

The primary analytical technique employed in this study was linear regression analysis. Linear regression is a statistical method used to examine the relationship between one or more independent variables (in this case, the year) and a dependent variable (the share of Tourism Gross Fixed Capital Formation to Total Gross Fixed Capital Formation). It helps researchers understand how changes in the independent variable(s) are associated with changes in the dependent variable.

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IV. RESULTS AND DISCUSSION

The line graph illustrates the fluctuation in the share of Tourism Gross Fixed Capital Formation (TGFCF) as a percentage of the total Gross Fixed Capital Formation (GFCF) in the Philippines over the span of eleven years, from 2012 to 2022. At the outset in 2012, the share of TGFCF stood at 11.4%, reflecting a relatively moderate contribution of the tourism sector to the country's overall capital formation. Over the next few years, there was a noticeable upward trend, with 2016 and 2017 marking the peak years, reaching 19.5% and 19.8% respectively. This surge could be attributed to increased investments in tourism-related infrastructure and services.

However, the trend began to reverse in subsequent years. By 2018, the share of TGFCF had dropped significantly to 10.8%, suggesting a reduction in tourism-related capital investment. This decrease continued through 2019, though slightly recovering to 11.2%. The year 2020 witnessed another drop to 10.8%, likely due to the adverse impacts of the COVID-19 pandemic on the tourism industry, leading to reduced capital investment.

In 2021 and 2022, the share of TGFCF experienced a further decline, reaching 7.2% and 7.1% respectively, indicating a continuing struggle for the tourism sector in the Philippines. The decline during these years could be attributed to the lingering effects of the pandemic, such as reduced travel and tourism activities, which may have discouraged capital investment in the sector. In summary, the line graph highlights the fluctuating nature of tourism capital formation in the Philippines, influenced by economic conditions and external factors like the global pandemic.

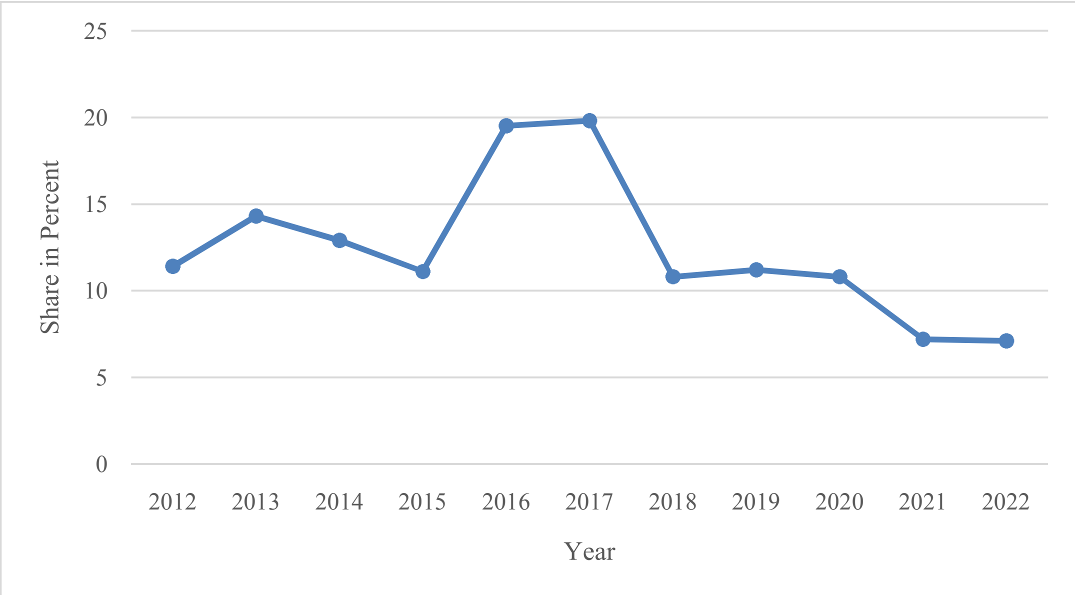

FIGURE 1. SHARE OF TOURISM GFCF TO TOTAL GFCF IN THE PHILIPPINES 2012-2022

Table 1 presents the results of a linear regression analysis conducted to examine the relationship between the year and the share of Tourism Gross Fixed Capital Formation (TGFCF) as a percentage of the total Gross Fixed Capital Formation (GFCF) in the Philippines. The table displays the coefficients, R-square value, t-statistics, and their significance levels for the model.

The coefficient for the constant term, which is 1198.735, indicates the estimated share of TGFCF when the year is zero. However, since the year is not defined in the dataset, this constant term's interpretation may not have a practical meaning in this context. The coefficient for the year variable is -0.588, suggesting that there is a negative relationship between the year and the share of TGFCF. In other words, as the years progress, there is a decrease in the share of TGFCF in the total GFCF. However, it's important to note that the coefficient is not statistically significant at the 0.05 significance level, as indicated by the p-value of 0.146. This means that the relationship between the year and the share of TGFCF may not be statistically robust. The R-square value of 0.219 suggests that the model explains approximately 21.9% of the variability in the share of TGFCF. This implies that other factors, not included in the model, may also influence the share of TGFCF in the Philippines.

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TABLE 1. LINEAR REGRESSION ANALYSIS ON THE SHARE OF TOURISM GFCF TO TOTAL GFCF IN THE PHILIPPINES

Model	Unstandardized Coefficients		R Square	t	Sig.
	B	Std. Error			
(Constant)	1198.735	745.783	.219	1.607	.142
Year	-.588	.370		-1.591	.146

V. CONCLUSION

The study revealed that while there was a notable increase in TGFCF in the mid-2010s, this trend reversed in later years, with a declining trajectory. Notably, 2020 and 2021 witnessed a substantial drop, likely due to the pandemic's adverse impacts on the tourism sector. However, it's important to acknowledge that the graph alone cannot definitively explain the underlying drivers of these fluctuations. While the regression analysis suggests a negative correlation between the two, implying that the share of TGFCF decreases over the years, the coefficient for the year variable is not statistically significant. This indicates that the year alone may not be a strong predictor of changes in TGFCF. Therefore, additional factors not accounted for in the analysis likely play a significant role in determining the share of tourism capital formation in the Philippines. To gain a more comprehensive understanding of this phenomenon, further research is needed, considering a broader range of variables that could impact TGFCF, such as government policies, tourism trends, and economic conditions.

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