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The Determinants of Inbound Tourism Demand in Singapore: Panel Data Applied Approach

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Abstract: Tourism plays a crucial role in Singapore's economic and social development, contributing significantly to revenue generation and employment. This study investigates the key determinants influencing inbound tourism in Singapore using a panel data approach. By analyzing a dataset of 1,413 international tourists, multiple linear regression was employed to assess the impact of various factors, including distance, shared language, colonial ties, common religion, and income levels in both origin countries and Singapore. The findings indicate that while colonial ties, common language, and higher income levels in both origin and destination countries positively influence tourist arrivals, factors such as common borders, greater distance, and shared religion have a negative impact. These results suggest that historical and economic relationships play a vital role in shaping Singapore's tourism sector. Moreover, adapting to emerging trends, such as digitalization and sustainable tourism, is essential for maintaining Singapore's status as a leading international tourist destination. The study offers insights for policymakers to develop strategies that enhance tourism resilience and long-term growth.

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1. Introduction

Tourism development is one of the crucial activities that define countries' development. Singapore's economic growth, revenue, and social perception as a multicultural tourist-friendly destination are linked to the regularity and quality of tourist visits. Tourism is one of the leading economic activities in Singapore. Revenue and employment generation is supplemented by such sectors as hotel business, entertainment, etc. and mainly impacted in growth of MICE (Meetings, Incentives, Conferences and Exhibitions) domain [1], [2]. Singapore has been designated as one of the most famous touristic destinations due to its landmarks, accommodating modern infrastructure, and cultural heritage.

However, switching global trends lead to a shift for new opportunities and challenges. The rise of COVID-19 impact, digitalization, and demand for sustainable tourism reshaped Singapore's relationship with tourists. Singapore's tourism sector showed a remarkable recovery after the global pandemic. By 2022, numbers of international arrivals estimated 6.3 million, or even higher than estimated, and consolidated tourism receipts have returned to \$13.8 billion. The partnerships and new wings towards communicating new products and tourism events enabled the government

to support the recovery of the sector while expenditures by visitors increased hence the assessment of positive outlook for 2023 [3], [4].

The purpose of this study is to identify the causes and effects of the tourism sector in Singapore with the quantity of tourist arrivals. Hence, this research will delve into trends, issues, and opportunities analysis in the light of analyzing Singapore's tourism plans and their abilities in sustaining the country as an international tourism destination.

2. Materials and Methods

This study examines the impact of various determinants on tourist arrivals in Singapore. The data utilizes qualitative data gathered from a sample of 1413 international tourists coming from various generations. The data was gathered through a survey online and further loaded into SPSS to conduct the analysis. The R Square value on Table 1 shows that independent variables estimated in the model are explained by 46,5%. This indicates that the linear regression model is less efficient.

Table 1. Linear regression R Square.

Model Summary				
Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	,682 ^a	,465	,463	1,51687616

a. Predictors: (Constant), TouristIncome_dest, distance, comrelig, colony, col, contig, touristIncome_orig

Multiple linear regression model is a method of statistical analysis used to determine the relationship between multiple variables. In this paper, multiple linear regression model has been employed to estimate the relationship between the number of tourist arrivals in Singapore and several factors impacting it. The purpose of this research is to analyze the relationship between the number of tourist arrivals in Singapore and factors of distance, border share, share of common language with origin countries, religion share, income levels of origin countries and Singapore and colonial ties. The model of linear regression had the following formula:

$$\text{Number of Tourist Arrivals in Singapore (TAS)} = \beta + \text{contig} + \text{distance} + \text{col} + \text{colony} + \text{comlang_ethno} + \text{comrelig} + \text{touristIncome_orig} + \text{touristIncome_dest} + \varepsilon$$

Where, β is constant; contig is a common spoken language between origin and Singapore; Distance is between origin and Singapore countries (in km); Col is a common spoken language between origin and Singapore; Colony is colonial ties between origin and Singapore countries; comlang_ethno; comrelig is a common religion shared between origin countries and Singapore; touristIncome_orig is tourist income in origin countries; touristIncome_dest is income in Singapore; ε is error term. The linear regression estimations are shown on Table 2.

Table 2. Linear regression results.

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	8,952	2,248		,000
	contig	-1,335	,387	-,079	,001
	distance	-3,958	,162	-,659	,000

col	1,417	,167	,311	8,494	,000
colony	2,251	,343	,133	6,561	,000
comrelig	-4,355	,918	-,107	-4,743	,000
touristIncome_orig	,549	,034	,385	16,070	,000
TouristIncome_dest	1,040	,207	,100	5,029	,000

a. Dependent Variable: Intou

3. Results

Common border share is statistically significant at 0.01 level. Alternative hypothesis is accepted, which indicates a negative relationship. If Singapore shares a common border with origin country, the number of tourist arrivals to Singapore tends to decrease by 1.3%; International tourists might have better access to nearby destinations, for example, tourists from Malaysia or Indonesia might opt for cheaper and culturally similar destinations, preferring domestic tourism over Singapore.

Distance has a negative impact on tourist arrivals to Singapore, standing at 0.01 level. In this case alternative hypothesis is accepted, since 1% increase in distance leads to 3.9% decrease in tourist arrivals; this could happen due higher travel costs as greater distance indicates higher transportation expenses.

Common language is statistically significant at 0.01 level. We accept alternative hypothesis and reject null hypothesis. If Singapore shares a common language with origin country, the number of tourist arrivals to Singapore tends to increase by 1.4%; this is likely because tourists choose destinations according to the easy communication with service providers, locals and governmental authorities. Individuals from similar linguistic backgrounds in travel related countries get more comprehensive and precise travel information that includes guidebooks, advertisements, and reviews.

Colonial ties are statistically significant at 0.01 level. We accept alternative hypothesis and reject null hypothesis. If Singapore shares colonial ties with origin countries, the number of tourist arrivals to Singapore tends to increase by 2.2%; this is due to the fact that previous colonial relationships create strong similarities in cuisine, language and traditions. This cultural relation makes travelling to Singapore more interesting to those travelers originating from these countries since they seem to have a prior attachment to the place. Also, Singapore has a british colonial history. Most Singaporeans speak English, use common laws as their legal system, and other practices similar to countries with history of British colonization hence making Singapore a popular tourist destination for people from such countries.

Common religion is statistically significant at 0.01 level. We accept alternative hypothesis and reject null hypothesis. A negative relationship can be indicated. If Singapore shares a common religion with origin country, the number of tourist arrivals tends to decrease by 4.3%; Culture and religion are important venues that lure many tourists into considering a certain destination for their next vacation. In cases where the tourist's religious context aligns with that of the destination, the destination brand may not be viewed as unique or exotic compared to other destinations with different religious beliefs. Singapore itself is a multi-religious country, but it is also post-modern, secular and post- industrialized. This may make it less attractive for religious tourism compared to destinations that highlight religious history and traditions.

4. Discussion

Tourist income in origin country is statistically significant at 0.01 level. Alternative hypothesis is accepted, which indicates a positive relationship. If tourist income in origin country increases by 1%, the number of tourist arrivals to Singapore tends to increase by

0.5%; as the income in the origin country rises, people generally have more disposable income to spend on travel and leisure activities. Because of this, Singapore boasts as a tourist destination for attractions, shopping, and entertainment; having more income leads to more trips around the globe, including Singapore.

Tourist income in Singapore is statistically significant at 0.01 level. Alternative hypothesis is accepted, which indicates a positive relationship. If income levels in Singapore increase by 1%, the numbers of tourist arrivals to Singapore tend to increase by 1%. Due to increased income levels, the Singapore economy broadly tends to become better hence enhancing consumers' confidence. It may prove beneficial for the overall growth of tourism not only in the domestic regions but also the worldwide markets. Many tourists may be willing to tour Singapore if they think it is a prosperous, stable and attractive tourist destination.

5. Conclusion

Based on the analysis of the current study, it can be concluded that the impact of different factors as determinants of tourist arrivals in Singapore is not linear. Distance, similar border, language, and historical and religious relations also substantially affect the number of internationals' visitors. In particular, familiarity through colonial connection, common language, and so on have positive weights, indicating that cultural and historical relationship between Singapore and the origin country is particularly crucial for tourists attraction. On the other hand, closeness attainable by the common border share and distance dampens the probability of the tourist arrivals since people will be willing to travel closer or cheaper locations. In addition, the dependency of the tourist income in the origin country and Singapore also supports that the tourism is highly dependent on the economic factors. Higher income per capita in the origin country implies that people are able to save and spend more on tourism as they have larger disposable income. Likewise, Singapore's higher income levels make tourists more confident to trust and visit the country's tourism industry. The findings suggest that tourism plays a positive role by creating new economic arrangements for Singapore and by supporting historical and contemporary relationships between the country and other nations. At the same time, the study identified the need to adapt the further development of the industry to new trends, such as digitalization and sustainable tourism to strengthen and develop the leadership of the country as a tourist destination. All in all, this work contributes to the understanding of the range of factors affecting the tourist flow and can serve as a reference point for developing relevant approaches by policymakers and other interested parties in the struggle for the post-crisis development of the tourism industry.

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