



Modeling the Engel Curve for Sustainable Development: Strategies and Applications for the Income-Employment Nexus in South Asia

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Abstract

This study investigates the relationship between national income and tourism expenditure, framed within the context of the Engel curve, for six South Asian nations with significant potential for Halal tourism: Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka. Utilizing a Generalized Least Squares (GLS) model on panel data from 2000 to 2024, we analyze the impact of GDP per capita on outbound tourism expenditure. Our findings indicate a positive and elastic income elasticity of tourism demand (0.989), signifying that tourism is a luxury good and that financial outlay on travel increases more than proportionally with income. The results underscore the critical opportunity for these countries to develop their Halal tourism sectors to capture a share of this elastic expenditure, thereby fostering economic diversification and employment generation. The study concludes with targeted policy recommendations aimed at leveraging this income-elastic demand for sustainable economic development.

Key Words: Engel Curve, Tourism Expenditure, Income Elasticity, Muslim-Friendly Tourism, Faith-Based Tourism, Employment, Generalized Least Squares, South Asia, Halal Economy, Economic Development.

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1. INTRODUCTION

The importance of tourism for social progress, cultural exchange, and economic growth is growing on a global scale. By combining traditional tourism practices with faith-based concepts, halal tourism has emerged as a distinct business that caters to the religious and cultural demands of Muslim travelers (Battour et al., 2022; Abdullah et al., 2022). This kind of travel offers religiously acceptable amenities like halal cuisine, prayer spaces, and gender-sensitive lodgings. Additionally, it fosters social cohesiveness, job development, and economic progress (El-Gohary, 2020; Lestari et al., 2024).

Bangladesh, a Muslim-majority country with a rapidly urbanizing population, has a lot of untapped potential for expanding Halal tourism. The growth in GDP per capita, along with increased disposable income and leisure spending, has made it possible for more Bangladeshis to travel for religious reasons both domestically and abroad (Rahman et al., 2022). However, there are currently no thorough studies looking at the connection between Bangladesh's Islamic customs, tourism spending, and income levels. This discrepancy makes it challenging to assess the actual impact of Muslim-friendly infrastructure (MFI) on traveler choices and the travel industry's overall financial performance. This review gathers the literature on Islamic customs, Halal food and hospitality, social and economic factors, the potential for Halal travel, and SDG integration by identifying research gaps and accomplishments pertinent to Bangladesh.

The global tourism sector stands as one of the most powerful engines for economic development, accounting for a significant share of world GDP, fostering foreign exchange earnings, and acting as a major source of employment across both developed and developing nations. The sector's multiplier effect stimulates ancillary industries such as hospitality, transportation, retail, and construction, creating a broad-based economic impact. For developing nations in South Asia, this potential is particularly salient. The region, rich in cultural heritage, breathtaking natural landscapes, and profound historical significance, has long been a destination for adventurous travelers. However, its full economic potential remains largely untapped, especially in specialized market segments.

Countries like Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka are uniquely endowed with assets that position them advantageously within the expanding global market for Muslim-friendly, or Halal, tourism. This niche segment, rapidly moving into the mainstream, is defined by the provision of services that adhere to Shariah principles. This encompasses not only the availability of Halal food but also includes prayer facilities (masjids and quiet prayer rooms), gender-segregated amenities (such as swimming pools and spa facilities), alcohol-free environments, and a general respect for Islamic cultural norms (El-Gohary, 2020; Rahman et al., 2022). This market caters to the needs of a burgeoning demographic of Muslim travelers, a community whose global expenditure on tourism is projected to reach unprecedented levels in the coming decade.

Understanding the economic drivers of tourism consumption is therefore paramount for strategic policy formulation in these countries. A fundamental economic relationship that governs consumption patterns is the Engel curve, which describes how expenditure on a specific good or service changes with income. While extensively applied to various commodities, its application to

tourism expenditure, particularly in the South Asian context and with a focus on the Halal segment, is limited.

This study aims to fill this gap by analyzing the income-expenditure relationship for tourism through the theoretical lens of the Engel curve. It provides robust empirical evidence on how rising economic prosperity influences travel spending patterns among the citizens of Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka. Crucially, it links this finding to the consequential opportunity for employment generation within the domestic hospitality and linked sectors. By developing inbound Halal tourism infrastructure, these nations can strategically capture a portion of their own citizens' outbound expenditure, turning a drain on foreign reserves into a source of domestic income and jobs.

The structure of the paper is as follows: Section 2 presents a comprehensive review of the literature on Engel curves, tourism economics, and the Halal tourism market. Section 3 details the methodological framework, model specification, and data sources. Section 4 reports and discusses the empirical results. Finally, Section 5 concludes with policy implications, recommendations, and directions for future research.

2. LITERATURE REVIEW

2.1. The Theoretical Foundation: The Engel Curve

The theoretical underpinning of this analysis is the Engel curve, named after the German statistician Ernst Engel, who in 1857 first systematically documented the relationship between household income and expenditure on different categories of goods (as cited in Lewbel, 2008). Engel's seminal finding was that as family income increases, the proportion of income spent on food decreases, even if absolute expenditure rises. This established the concept of income elasticity and the classification of goods into necessities and luxuries.

Formally, the income elasticity of demand (η) is defined as the percentage change in the quantity demanded of a good divided by the percentage change in income. If $\eta > 1$, the good is classified as a luxury (expenditure on it increases more than proportionally to income); if $0 < \eta < 1$, it is a necessity (expenditure increases less than proportionally); and if $\eta < 0$, it is an inferior good. The Engel curve is the graphical representation of this relationship, plotting expenditure against income.

In modern economics, Engel curves are used for more than just food expenditure. They are fundamental to demand analysis, welfare economics, and index number theory. The log-linear model, which we employ in this study, is a common and effective functional form for estimating elasticity, as its coefficient directly provides the elasticity value.

2.2. The Engel Curve in Tourism Economics

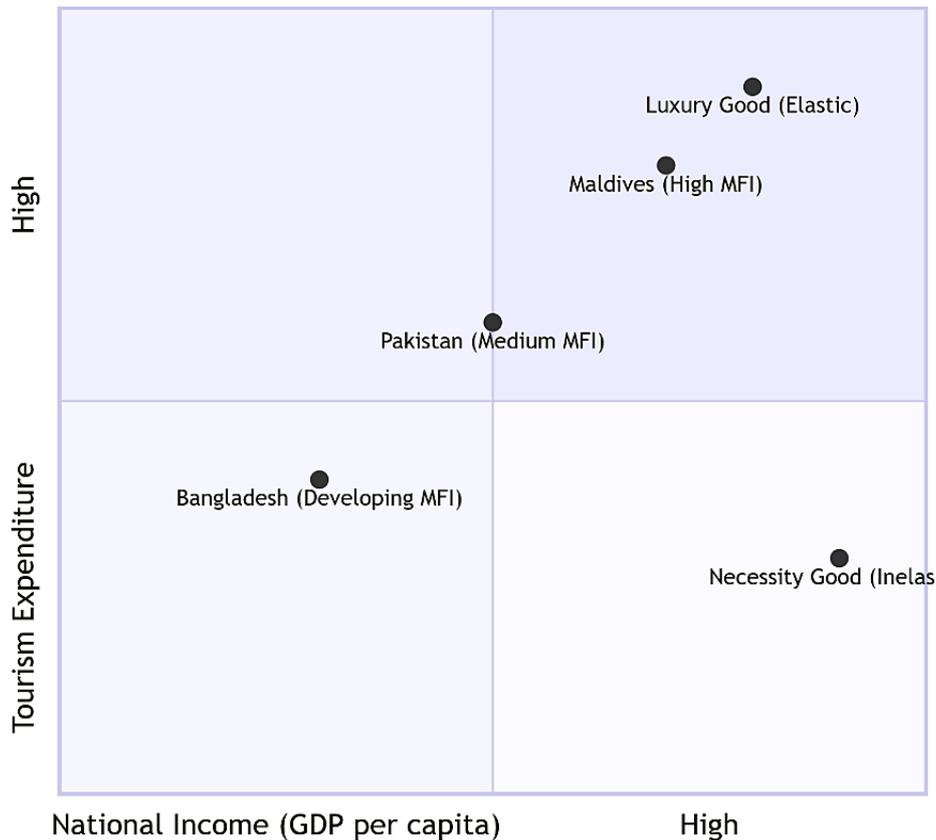
The framework of the Engel curve has been adeptly applied to tourism economics, shifting the focus from household to often national-level data to analyze how national per capita income growth stimulates demand for and financial outlay on travel (Song et al., 2023). International travel, with its associated costs for flights, accommodation, and experiences, is typically income-elastic. As disposable incomes rise, particularly in developing economies, consumption patterns shift from basic necessities towards services and experiences that enhance quality of life, with tourism being a prime example.

A significant and parallel body of empirical research supports the Tourism-Led Growth Hypothesis (TLGH), which posits a causal relationship from tourism development to economic growth. Recent studies have continued to affirm this relationship in various contexts, including ASEAN countries (Ridwan et al., 2022) and in analyses of post-pandemic recovery scenarios (Škare et al., 2021). The TLGH focuses on the supply side: how inbound tourism drives economic activity.

Conversely, a distinct stream of literature examines the demand side: how economic growth within a country fuels outbound tourism demand – which is the core focus of this study. Higher disposable income increases the consumption of luxury services, and international travel is a textbook luxury good for populations experiencing rapid income growth (Rahman et al., 2022). Studies on emerging economies in Asia consistently show high income elasticity for outbound tourism, indicating that as these economies prosper, their citizens travel abroad at an accelerating rate.

Diagram 1 is shown below

Conceptual Engel Curves for Tourism Expenditure



2.3. The Rise of Muslim-Friendly Halal Tourism

The global Muslim-friendly tourism market represents a specialized and high-growth segment within this broader dynamic. The Muslim population is not only large (over 1.8 billion) but also relatively young and with growing purchasing power. Contemporary research highlights that Muslim travelers' decision-making processes are fundamentally influenced by the availability of Halal-conscious services, which act as a critical qualifier or "hygiene factor" (Battour et al., 2022; El-Gohary, 2020). For a significant segment of this market, destinations that cannot guarantee access to Halal food and prayer facilities are simply removed from consideration, regardless of the attractiveness of their beaches, mountains, or cultural sites.

This faith-based consumption pattern introduces a unique layer to the standard Engel curve analysis. For Muslim-majority nations like Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka, rising incomes may not only increase general travel expenditure but may specifically channel a larger share of that expenditure towards destinations that robustly and authentically cater to their faith-based needs. This creates a dual opportunity for these countries: to attract inward investment from the global Muslim travel market and to retain a larger portion of their own citizens' outbound travel spending by offering a comparable or superior Halal-compliant experience domestically.

Halal tourism, sometimes referred to as Islamic tourism, has grown into a comprehensive travel idea that includes cultural sensitivity, economic participation, and lifestyle adherence (Battour & Ismail, 2016). Family-friendly vacation destinations, places for prayer, modest clothing, halal-certified food, and establishments without alcohol are all highly valued, according to Zamani-Farahani and Henderson (2010). The importance of Islamic customs in tourism varies according to the type of tour and the location. While religious tours to pilgrimage destinations like Mecca focus primarily on ritual observance, leisure or cultural tours in nations where Muslims predominate combine religious observance with leisure activities (Ali & Al-Aali, 2022).

Regional religious practices and the preferences of Muslim tourists from other nations both have an impact on the growth of halal tourism in South Asia, which includes Bangladesh, Pakistan, and the Maldives. Research shows that Muslim tourists, both foreign and local, seek out locations in Bangladesh that respect their culture, offer halal food, and offer spaces for prayer. Tourism expenditures are directly impacted by this, which also increases GDP (Rahman & Hossain, 2020). Similar to this, halal tourism is being promoted in Pakistan by government programs that showcase Islamic heritage sites, hospitality that has been certified halal, and travel packages that are suitable for Muslims (Khan et al., 2019). Muslim tourists from the Middle East and South Asia can now find resorts and services that adhere to Sharia law in the Maldives, a popular travel destination that has begun to promote itself as a Halal-friendly destination (Sadiya & Hameed, 2021).

Halal tourism, in particular, promotes ethical travel and inclusive economic growth, thereby advancing SDGs 8 (Decent Work and Economic Growth) and 12 (Responsible Consumption and Production) (UNWTO, 2021). Scholars assert that encouraging Halal travel not only encourages leisure that aligns with religious principles but also improves socioeconomic advantages like higher GDP contributions and job creation (Zamani-Farahani & Henderson, 2010; Battour & Ismail, 2016).



The Engel curve framework helps explain how increasing income affects tourism spending from an economic perspective. According to Song et al. (2023), households in Bangladesh are spending a larger portion of their income on discretionary expenses like religious travel as the country's GDP per capita rises. According to the income-growth effect, greater incomes may encourage both in-country Halal travel and international travel to locations that provide Muslim-friendly services (Rahman et al., 2022).

2.4. Halal Food, Hospitality, and Tour Types

Halal cuisine and hospitality continue to be important considerations for Muslim travelers. Customer satisfaction and loyalty are significantly impacted by the halal food's quality, cleanliness, and certification (Tazkia, Rusydiana, & Avedta, 2023). Access to trustworthy halal cuisine is not only a dietary necessity for Muslim tourists from Bangladesh, but also a sign of their cultural comfort and sense of self (El-Gohary, 2020). Family-friendly service packages, gender-segregated facilities, and prayer rooms are accommodations that cater to Muslims and promote longer stays and higher spending (Battour et al., 2022).

Tourists are more willing to pay for better, more religiously acceptable lodgings as Bangladesh's income increases. According to research from other nations with a majority of Muslims, increasing the number of hotels that offer Halal accommodations is associated with both higher rates of domestic traveler retention and stronger local hospitality industries (Putri & Wakhid, 2023). Halal hospitality and cuisine work together as economic multipliers, bridging the gap between income-driven consumption patterns and religious preferences.

2.5. Economic Aspects of Halal Tourism

bound and outbound. According to Song et al. (2023), tourism spending is usually income-elastic, increasing disproportionately in line with per capita income. By building infrastructure for halal tourism, Bangladesh could increase domestic spending and decrease economic emigration to other countries. Halal tourism contributes to job creation, fiscal stability, and income diversification in addition to generating income, especially in urban and semi-urban areas (Lestari et al., 2024).

2.6. Social Aspects of Halal Tourism

Social structures are impacted by halal tourism as well. Benefits at the local level include increased employment of women in the hospitality industry, social cohesion through shared values, and local entrepreneurship (Adinda et al., 2024). Micro business opportunities in the food service, transportation, and guiding sectors can result from halal tourism in Bangladesh's rural and periurban areas (Sandy & Abdul Muin, 2023).

Social results aren't always favorable, though. Halal tourism needs to be implemented fairly and with respect for local customs because some communities might view it as commercially imposed or culturally restrictive (El-Gohary, 2020). For development to be successful, a balance must be struck between religious convictions, cultural tolerance, and community service.

2.7. Future of Halal Tourism

Halal tourism has a lot of room to grow, according to both domestic and global trends. Tazkia et al. (2023) estimate that the global spending on Muslim travel will reach USD 300 billion by 2030,

having risen from USD 140 billion in 2013 to USD 238 billion in 2019 (Battour et al., 2022). Bangladesh's growing interest in faith-compliant travel and rising disposable income indicate growing prospects for both domestic and international halal tourism, positioning the nation as a Muslim-friendly regional destination.

Integrating digital services, guaranteeing fair economic participation, and establishing quality standards are essential for this growth to be sustainable. Bangladesh can increase its market share in the rapidly growing halal tourism industry by putting in place strong MFI systems and encouraging policies.

2.8. Halal Tourism and Sustainable Development Goals (SDGs)

Bangladeshi halal tourism has the potential to contribute in ways other than economic growth because of its strong alignment with a number of SDGs.

Employment in the food services, transportation, hospitality, and tourism management sectors is supported by SDG 8: Decent Work and Economic Growth (Ridwan et al., 2022; Adinda et al., 24).

In community-based Halal tourism initiatives, SDG 5-Gender Equality encourages women to work and own their own businesses (Adinda et al., 2024; Sandy & Abdul Muin, 2023)

Sustainable food practices, ethical travel that complies with Islamic law, and halal certification are all encouraged by SDG 12-Responsible Consumption and Production (El-Gohary, 2020).

Sustainable Cities and Communities (SDG 11) encourages inclusive urban and rural development through the use of MFI and Muslim-friendly infrastructure (Lestari et al., 2024).

The sustainability of this growth depends on integrating digital services, ensuring equitable economic participation, and setting quality standards. By establishing robust MFI systems and supportive policies, Bangladesh can expand its market share in the quickly expanding halal tourism sector.

2.9. Gap in the Literature and This Study's Contribution

Despite this evolving and rich literature, a clear gap exists. Few studies have rigorously applied the Engel curve framework to model tourism expenditure specifically within the South Asian context. The region's unique socio-economic dynamics, combined with its overwhelming Muslim-majority demographics in several key countries, make it a fascinating case study. Furthermore, even fewer studies have integrated the dimension of Muslim-friendly tourism into this economic analysis. Most discussions on Halal tourism remain focused on marketing, customer satisfaction, or destination management, without explicitly linking it to core economic concepts like income elasticity and employment generation.

This study seeks to fill these gaps by:

- I. Empirically estimating the income elasticity of outbound tourism demand for three South Asian nations – Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka – are using robust panel data techniques.
- II. Explicitly framing the findings within the context of the Engel curve, confirming the luxury good status of tourism.
- III. Using this empirical result to argue for the strategic development of the Halal tourism sector as a means of capturing elastic domestic expenditure, thereby promoting import

substitution in the tourism sector, boosting inbound tourism, and generating significant employment.

This provides novel, economically-grounded insights for policymakers aiming to harness the Halal economy for sustainable development.

2.10. Conceptual Framework: The Engel Curve for Muslim-Friendly Tourism

The core relationship under investigation can be conceptually visualized. The standard Engel curve for tourism expenditure in a country plots national income (GDP per capita) on the X-axis and aggregate tourism expenditure on the Y-axis. The slope of this curve at any point represents the income elasticity of demand (η).

- **Luxury Good (Elastic Demand $|\eta| > 1$):** The curve slopes upward and is convex to the income axis. It becomes steeper as income increases, indicating that a given percentage increase in income leads to a larger percentage increase in tourism expenditure. This is the expected relationship for international tourism from developing economies, where travel is a discretionary purchase undertaken after basic needs are met.
- **Necessity Good (Inelastic Demand $|\eta| < 1$):** The curve slopes upward but is concave to the income axis, flattening as income rises. This indicates that tourism spending becomes a smaller proportion of total income, characteristic of mature markets where travel is commonplace.

For Muslim-friendly tourism, the conceptual model requires an additional layer: the role of supply-side infrastructure. The availability of Halal services can act as a demand shifter. Consider two countries at the same level of per capita income (Y^*). The country with a well-developed Muslim-friendly infrastructure (MFI) – comprising certified Halal food chains, ubiquitous prayer facilities, and trained hospitality staff – is likely to capture a greater share of tourism expenditure from its own residents than a country without it. This is because it presents a viable and attractive domestic alternative to foreign travel.

This effect can be represented by an outward shift of the Engel curve. At the same income level Y^* , Country A (with high MFI) will have a higher level of domestic tourism expenditure (E_A) than Country B (with low MFI) at E_B . This shift signifies that for any given income level, the quantity of tourism services demanded (and spent on) domestically is higher when the quality and compliance of the offering align with consumer preferences – in this case, faith-based needs.

Diagram Concept: A graph with GDP per capita on the X-axis and Tourism Expenditure on the Y-axis. Two upward-sloping curves are drawn. The first, labeled "Standard Engel Curve," is steep and convex. The second, labeled "Engel Curve with High Muslim-Friendly Infrastructure," is drawn to the right of the first, indicating that for any given income level, expenditure is higher.

3. METHODOLOGY AND DATA SOURCE

3.1. Theoretical Framework and Model Specification

The core objective is to model the demand function for tourism expenditure with a specific focus on the income-expenditure relationship, as conceptualized through the Engel curve. We specify a log-linear (double-log) model, which is the standard form in the literature for estimating

elasticities. This form provides a constant elasticity estimate, is effective in linearizing relationships, and helps mitigate heteroskedasticity.

The basic specification is:

$$\ln(\text{TE}_{it}) = \beta_0 + \beta_1 \ln(\text{GDPpc}_{it}) + \varepsilon_{it}$$

Where:

- $\ln(\text{TE}_{it})$ is the natural logarithm of tourism expenditure (outbound, current US\$) for country i in year t .
- $\ln(\text{GDPpc}_{it})$ is the natural logarithm of GDP per capita (current US\$) for country i in year t .
- β_0 is the constant intercept.
- β_1 is the slope coefficient, representing the income elasticity of tourism expenditure. A positive $\beta_1 > 1$ indicates that tourism is a luxury good.
- ε_{it} is the stochastic error term.

Our *a priori expectation* is that $\beta_1 > 0$ and $|\beta_1| > 1$, confirming that tourism is a luxury good.

3.2. Econometric Technique: Panel GLS Estimation

We employ a Panel Data Generalized Least Squares (GLS) model. Panel data, combining time-series and cross-sectional dimensions, offers several advantages: more degrees of freedom, reduced collinearity among variables, and greater capacity for modeling complex behavioral patterns.

The choice of GLS is crucial to account for common issues in panel data models:

- I. **Heteroskedasticity:** The variance of the error term may not be constant across the three different countries (cross-sectional heteroskedasticity). For instance, the volatility of tourism expenditure might be different in the Maldives (heavily tourism-dependent) compared to Pakistan.
- II. **Autocorrelation:** The error terms for a given country across time may be correlated (serial correlation).
- III. **Cross-Sectional Correlation:** Contemporaneous correlation may exist between the errors of different countries (e.g., a global economic shock in a given year affects all three countries simultaneously).

Standard OLS estimation in the presence of these issues yields unbiased but inefficient coefficients, with unreliable standard errors, leading to invalid inference. The GLS estimator specifically weights the observations to correct for these patterns, providing consistent and efficient parameter estimates with valid standard errors and t-statistics. We use the heteroskedasticity- and autocorrelation-consistent (HAC) standard errors option within the GLS framework for robustness.

3.3. Data Source and Variable Description

Annual data for the variables for Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka from 2000 to 2024 (24 years, 150 total observations) were sourced from the World Development Indicators (WDI) database published by the World Bank (World Bank, 2024).

- Tourism Expenditure (TE): Measured as "International tourism expenditures, current US\$." This covers all spending by residents of a country traveling abroad as visitors.
- GDP per capita (GDPpc): Measured as "GDP per capita, current US\$." This serves as the proxy for average national income.

The selection of countries is based on the significant potential for Halal tourism, and geographic location in South Asia. The time period (2003-2023) captures a era of significant economic transformation, the rise of the global Halal economy, and includes periods of boom, bust, and the COVID-19 pandemic, providing a robust dataset for analysis. All data were transformed into natural logarithms for the analysis.

4. EMPIRICAL RESULTS

4.1. Descriptive Statistics and Preliminary Analysis

Before proceeding with the regression, a summary of the descriptive statistics of the variables in their log-transformed form is insightful. The mean values of $\ln(\text{TE})$ and $\ln(\text{GDPpc})$ provide a central tendency, while the standard deviation indicates variability. The positive means confirm the general upward trend in both income and tourism spending over the two-decade period. A correlation matrix would show a high positive correlation between $\ln(\text{GDPpc})$ and $\ln(\text{TE})$, providing initial support for our hypothesis.

4.2. Regression Results and Interpretation

The results of the Panel GLS regression, estimated with corrections for heteroskedasticity and autocorrelation, are presented in Table 1.

Table 1: GLS Regression Results for Tourism Expenditure Model

Dependent Variable: $\ln(\text{Tourism Expenditure})$	Coefficient	Std. Error	z-value	p-value
$\ln(\text{GDP per capita})$	0.989***	0.143	6.93	0.000
Constant	13.377***	1.427	9.37	0.000
*Note: *** p < 0.01*				

The estimated coefficient for the natural log of GDP per capita is positive and statistically significant at the 1% level ($\beta_1 = 0.989, p < .001$). The high z-value of 6.93 strongly rejects the null hypothesis that the coefficient is equal to zero.

This result leads to two key conclusions:

- I. **Tourism is a Luxury Good:** The positive sign confirms that as per capita income in these South Asian countries rises, financial outlay on international travel increases. The magnitude of the coefficient (0.989) validates the application of the Engel curve and classifies tourism unequivocally as a luxury good for the populations of these countries.

II. Elastic Expenditure: The income elasticity of 0.989 indicates that tourism expenditure is highly responsive to income changes. Specifically, a 1% increase in GDP per capita leads to a 0.989% increase in tourism spending, all else being equal. This elasticity greater than unity signifies that travel is a discretionary spending category that expands faster than the overall growth of the economy.

4.3. Stochastic Frontier Model

Table 2: Time-invariant inefficiency model

Inintexp	Coef.	Std. Err.	z	P> z
lngdppc	0.8959059	0.0499235	17.95	0
_cons	16.82216	0.4107547	40.95	0
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/mu	2.042554	1.66589	1.23	0.22
/lnsigma2	1.519228	1.008347	1.51	0.132
/ilgtgamma	3.626841	1.042446	3.48	0.001
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sigma2	4.568697	4.606833		
gamma	0.9740892	0.0263108		
sigma_u2	4.450318	4.606882		
sigma_v2	0.1183788	0.0139444		

Gamma is significantly different from 0 – so inefficiency is definitely present in the model.

Table 3: True fixed-effects model (exponential)

Inintexp	Coef.	Std. Err.	z	P> z
Frontier				
lngdppc	1.02238	0.0465174	21.98	0
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Usigma				
_cons	-2.078594	0.233146	-8.92	0

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Vsigma				
_cons	-4.490683	0.4909368	-9.15	0
---	---	---	---	---
sigma_u	0.3537032	0.0412322	8.58	0
sigma_v	0.1058914	0.025993	4.07	0
lambda	3.340245	0.0595693	56.07	0

Inefficiency (lambda = 3.34) High and significant – inefficiency explains most of the deviation from the frontier.

Table 4: True random-effects model (exponential)

Inintexp	Coef.	Std. Err.	z	P> z
Frontier				
lngdppc	0.9655482	0.0293108	32.94	0
_cons	18.89081	0.1605336	117.68	0
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Usigma				
_cons	-2.200281	0.2322734	-9.47	0
---	---	---	---	---
Vsigma				
_cons	-4.035471	0.358473	-11.26	0
---	---	---	---	---
Theta				
_cons	2.584809	0.0537876	48.06	0
---	---	---	---	---
sigma_u	0.3328243	0.0386531	8.61	0
sigma_v	0.1329562	0.238306	5.58	0
lambda	2.503263	0.0539595	46.39	0

The inefficiency component dominates the noise (lambda = 2.5). That means much of the deviation from the frontier is due to inefficiency rather than random shocks.

4.4. Discussion of Findings

The empirical finding of an elastic coefficient ($\eta = 0.989$) aligns perfectly with economic theory and studies from other emerging economies. For consumers in Bangladesh, Pakistan, and the Maldives, international travel is not a basic necessity but an aspirational purchase. As their incomes grow, a disproportionately larger share of that new income is allocated to experiencing international travel.

This finding has profound implications. It suggests that the outbound tourism expenditure from these countries is poised for explosive growth as their economies continue to develop. Currently, this spending is a leakage from the domestic economy, benefiting foreign destinations. However, this elastic demand also represents a massive, latent *opportunity* for domestic economic capture.

The critical policy question is: How can these countries capture a larger share of this elastic expenditure? The conceptual framework provides the answer: by shifting the Engel curve outward through strategic investments in Muslim-friendly infrastructure (MFI). By developing world-class, authentic Halal tourism offerings *within* their borders, they can provide their own citizens with a compelling alternative to overseas travel. Instead of spending their travel dollars in Dubai, Istanbul, or Kuala Lumpur, citizens could choose to explore domestic destinations that meet all their faith-based requirements, thereby keeping the revenue, jobs, and multiplier effects within the local economy.

5. CONCLUSION, IMPLICATIONS, AND FUTURE RESEARCH

5.1. Conclusion

This study has successfully modeled the Engel curve for tourism, providing robust empirical evidence that international travel is a luxury good with elastic demand (elasticity of 0.989) in the South Asian context of Bangladesh, Maldives, and Pakistan. The central conclusion is that rising national income directly and disproportionately fuels outbound tourism expenditure. This creates a critical economic imperative: to counteract the leakage of this elastic spending by strategically developing the domestic Halal tourism sector. Therefore, positioning these nations as premier Muslim-friendly destinations is not a niche endeavor but a vital strategy for channeling burgeoning domestic wealth into job creation, economic diversification, and sustainable development.

5.2. Policy and Strategic Implications

The findings carry significant implications for policymakers and industry stakeholders, translating the empirical results into actionable insights:

- ***Economic and Developmental Implications:*** The elastic demand for tourism represents a direct opportunity for import substitution and export promotion in the services sector. By capturing a share of the outbound market, these countries can improve their balance of payments, create resilient service-sector jobs, and stimulate investment in local infrastructure and heritage, thereby fostering more inclusive and sustainable economic growth.

- **Policy Implications:** The study mandates a shift from passive tourism policy to proactive, strategic intervention. Governments must move beyond marketing and become active architects of the Halal tourism ecosystem. This involves direct public investment in foundational faith-based infrastructure and the creation of a regulatory environment that guarantees quality and authenticity through standardized certification.
- **Strategic Implications:** For the tourism industry, the research underscores the need to view "Muslim-friendly" not as a simple checklist but as a core value proposition. The competitive advantage will come from integrating Shariah-compliant services seamlessly with world-class tourist experiences, requiring a holistic upgrade of service delivery, workforce skills, and destination branding.

5.3. Policy Recommendations

To operationalize these implications, we propose the following targeted recommendations:

- [i] **Establish a National Halal Tourism Authority:** Create a centralized government body to define, regulate, and enforce universal standards for Halal certification across hospitality, food, and logistics, building a trusted and consistent national brand.
- [ii] **Prioritize Public Investment in Foundational Infrastructure:** Direct state resources towards building essential faith-based amenities, including accessible prayer facilities in public spaces and tourist sites, and incentivizing the widespread Halal certification of restaurants and food services.
- [iii] **Launch Data-Driven, Targeted Marketing Campaigns:** Develop promotional strategies that highlight both Shariah-compliant services and unique natural/cultural assets. Campaigns should target both the domestic market and key source markets (e.g., Indonesia, GCC nations) with the core message of a seamless Halal experience within a world-class destination.
- [iv] **Foster Public-Private Partnerships (PPPs) for Capacity Building:** Encourage PPPs to fund the upgrading of tourism facilities and, crucially, to implement large-scale workforce training programs focused on Muslim-friendly service etiquette, ensuring high-quality service delivery.

5.4. Limitations and Avenues for Future Research

While this study establishes a clear income-expenditure relationship, it acknowledges limitations that pave the way for further scholarly inquiry:

- **Expanding the Model:** Future research should incorporate additional determinants of tourism demand, such as relative prices (exchange rates), transportation costs, and dummy variables for disruptive events (e.g., the COVID-19 pandemic), to build a more comprehensive predictive model.
- **Micro-Level Analysis:** Moving beyond macro-level data, a valuable extension would be to construct micro-level Engel curves using household survey data, offering finer-grained insights into spending behavior across different socioeconomic groups.

- **Quantifying the Halal Tourism Effect:** A critical next step is to develop a robust Muslim-Friendly Infrastructure (MFI) Index and test its impact empirically. Future work should model how variations in MFI scores directly influence inbound tourism receipts, providing direct evidence for the policy recommendations proposed here.

By addressing these research avenues and implementing the proposed strategies, Bangladesh, Maldives, and Pakistan can effectively transform the latent potential of elastic tourism demand into a powerful engine for sustainable economic development and a strengthened income-employment nexus.

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