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More Tourists, More Money? Reassessing the Relationship Between International Arrivals and Tourism Revenue Across Countries

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ABSTRACT

Visitor arrivals dominate tourism performance reporting, yet tourism receipts need not expand proportionately with recorded trips. This study tests the arrivals–receipts relationship using 2,751 country-year observations from 189 countries and economies during 2002–2019, assembled from World Development Indicators tourism series. Pooled regressions are compared with country and year fixed effects, consecutive-year first differences, and sensitivity analyses involving long-reporting panels, outlier trimming, transport receipts and country-specific trends. The pooled arrivals elasticity is 0.954, but the preferred two-way fixed-effects estimate is 0.593 (95% CI 0.465–0.720); the annual first-difference estimate is 0.355. The proportional elasticity benchmark of one is rejected in the preferred model. A pre-period tourism-export-dependence interaction is not statistically distinguishable from zero. These results show that the positive cross-country association overstates the conditional within-country correspondence between arrival growth and nominal tourism receipts. The paper advances measurement-focused tourism economics by separating tourism volume from recorded monetary performance, and cautions against treating arrivals, nominal revenue, visitor expenditure, domestic value added and welfare as interchangeable outcomes. Destinations should evaluate visitor targets alongside harmonized receipt measures and direct indicators of locally retained value.

KEYWORDS tourism receipts; international arrivals; panel fixed effects; tourism yield; destination performance

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01 Introduction

International tourism is commonly assessed through a simple headline: how many people arrive. Visitor-count targets appear prominently in destination strategies because arrivals are intuitive, quickly communicated and often available across jurisdictions. Yet destinations ultimately depend on the economic transactions associated with visits, not on border crossings as such. A rise in arrivals can coincide with stronger tourism receipts, but the two series need not grow at the same rate. Length of stay, visitor mix, prices, purchasing power, the structure of transport services and the share of expenditure retained locally can all change the monetary outcome associated with additional inbound trips (Alegre & Pou, 2006; Crouch, 1995; Dwyer & Kim, 2003). The empirical size of that difference remains important for both tourism economics and performance measurement.

Existing research provides strong reasons to study tourism-related economic activity, but its usual research question is different from the one pursued here. One large tradition investigates whether tourism causes or predicts aggregate economic growth, using tourism receipts, arrivals or both as explanatory variables (Balaguer & Cantavella-Jordá, 2002; Lee & Chang, 2008; Brida et al., 2016). Another examines the determinants of inbound tourism demand and how policy, income, exchange rates or risk affect arrivals (Crouch, 1994; Song & Li, 2008; Sequeira & Nunes, 2008a). These approaches illuminate important mechanisms, but they do not directly establish whether increases in arrival counts are accompanied by proportional increases in destination receipts across a broad set of countries.

This distinction matters because arrivals and receipts measure different constructs. Inbound-arrival statistics generally count trips, not distinct travelers, and national tourism systems may record overnight tourists, all visitors or a narrower set of arrivals. Tourism receipts are balance-of-payments-related revenues denominated in current US dollars and may include international passenger transport; coverage of those transport items differs across countries (World Bank, 2026). The ratio between the two series is therefore best interpreted as a proxy for reported receipts per recorded arrival rather than a precise measure of each tourist's on-site expenditure. International comparisons require particular care, but within-country changes can still provide useful evidence when year-specific and stable country differences are taken into account.

Research on destination competitiveness already emphasizes expenditure and broader welfare outcomes alongside visitation (Dwyer & Kim, 2003; Crouch, 2011). Economic impact studies likewise warn that tourism revenue must not be equated with income, value added or resident welfare because import leakages, substitution and wider economic linkages matter (Dwyer et al., 2004; Faber & Gaubert, 2019). These concerns have become sharper in discussions of overtourism and local development, where more visitor volume can create congestion or environmental costs without guaranteeing equivalent local benefits (Koens et al., 2018; Spenceley & Meyer, 2012; Yergeau, 2020). This study addresses a deliberately narrower and testable first step: how closely receipts move with international arrivals when the same destination is observed repeatedly.

Indonesia offers a useful substantive motivation, but not a privileged source of identification. Azizurrohman et al. (2021) examined foreign tourism and economic growth in Indonesia; Wang et al. (2026) analyzed tourism-arrival determinants using bilateral policy and gravity variables. Studies of the Mandalika Special Economic Zone additionally show why destination expansion, community readiness and local benefit distribution should not be conflated (Azizurrohman et al., 2023; Yuli et al., 2025). Work by researchers at Sekolah Tinggi Pariwisata Mataram likewise documents local destination assets, participation and tourism-enterprise practices (Noviyanti et al., 2023; Siwantari et al., 2024; Martayadi & Siwantari, 2026). Together these studies motivate attention to economic conversion, although they do not themselves estimate a global arrivals-to-receipts elasticity.

We address three questions. First, what is the cross-country relationship between recorded arrivals and receipts? Second, how does the association change when comparisons are restricted to changes within countries after accounting for global year shocks? Third, is the within-country elasticity robust to alternative transformations, observation rules, travel-revenue composition and pre-existing tourism specialization? The analysis uses 2,751 positive country-year pairs spanning 189 countries and economies in 2002–2019, compiled from the six World Development Indicators (WDI) files supplied for this study; the central estimates require two indicators, while related indicators support diagnostic and heterogeneity analyses.

The contribution is threefold. Conceptually, we separate the extensive-margin volume indicator from the monetary revenue indicator, rather than substituting either for the broader notion of tourism success. Empirically, we compare pooled, country fixed-effects, two-way fixed-effects and year-on-year change estimates in a large but explicitly unbalanced cross-national panel, alongside tests of proportional revenue response. Practically, we show how a destination scorecard can distinguish arrivals, receipts, and the imperfect yet informative receipts-per-arrival ratio. The contribution is an observational benchmark for tourism performance, not an estimate of the causal return to attracting one additional visitor.

02 Literature Review and Hypothesis Development

2.1 From tourism volume to tourism receipts

The economic logic connecting tourism arrivals to receipts is intuitive. More inbound trips enlarge the potential market for accommodation, transport, food, attractions and other visitor-related services. Aggregate tourism receipts should therefore generally move in the same direction as arrivals. However, the monetary consequence of a trip is affected by prices, time spent in the destination, travel purpose and composition of purchased services. Evidence on tourist demand emphasizes income and price sensitivities (Crouch, 1995), the differences between long-haul and short-haul markets (Crouch, 1994), and the importance of holiday characteristics for length of stay (Alegre & Pou, 2006). An additional recorded visit does not necessarily represent a uniform amount of tourist expenditure.

The distinction is also a matter of measurement. The WDI series for arrivals is compiled from heterogeneous national administrative and survey systems; where tourist counts are unavailable, the source may include broader visitors, such as cruise and same-day visitors. Receipts may include payments to resident transport providers and other prepayments, while some national systems omit passenger transport items (World Bank, 2026). A national arrival series may consequently grow faster than the corresponding recorded receipts without revealing falling on-site spending by each overnight tourist. The study keeps this limitation central when interpreting the estimates.

In log terms, the receipts–arrivals association can be expressed as $\ln(R) = \alpha + \beta \ln(A)$, where R denotes total international tourism receipts and A is the recorded number of arrivals. A positive β is consistent with the basic expectation that more recorded trips accompany more tourism revenue. The benchmark $\beta = 1$ represents proportionate comovement; β below one represents a less-than-proportionate conditional association. These are descriptive elasticities, not price or income demand elasticities, and are not equivalent to the causal effect of changing tourism marketing expenditure. We therefore distinguish a positive-association proposition from the empirical test of proportionality.

H1: Within countries, growth in recorded international arrivals is positively associated with growth in recorded international tourism receipts, conditional on common year effects.

2.2 Why a proportional response is not guaranteed

Destination competitiveness research rejects the notion that visitor quantity alone captures destination success. Dwyer and Kim (2003) integrate demand, competitiveness and socioeconomic outcomes, while Crouch (2011) shows that competitive attributes differ in their importance. Revenue per trip can change through visitor segmentation, travel duration, price levels, exchange-rate movements, transport arrangements and product development. Conversely, short visits, discounting, greater use of low-cost transport or lower-cost market segments can expand visitor numbers without a matching increase in nominal tourism receipts. These examples are possible mechanisms, not mechanisms directly observed in our aggregate dataset.

Tourism-led-growth research demonstrates the significance of the sector for wider economic activity, but it also warns against making an arrival count synonymous with domestic benefits. The direction and magnitude of tourism–growth relationships vary by context, specification and development stage (Oh, 2005; Lee & Chang, 2008; Sequeira & Nunes, 2008b; Dogru & Bulut, 2018). More directly, studies of tourism impacts find that tourist spending can generate unequal local consequences and that revenue and welfare are separate outcomes (Britton, 1982; Dwyer et al., 2004; Yergeau, 2020). A two-way fixed-effects elasticity significantly below one would establish a descriptive shortfall in proportional comovement, not evidence of declining welfare or failed tourism policy.

The benchmark has an arithmetic implication: $\ln(R/A) = \ln(R) - \ln(A)$. If the estimated elasticity of $\ln(R)$ with respect to $\ln(A)$ is β, the associated elasticity for the constructed ratio R/A is $\beta - 1$. This is an identity, not independent evidence. The substantive test is whether the estimated β can be distinguished statistically from one. Because changing nominal exchange rates and domestic price levels are not separately observed in the uploaded files, a β below one cannot by itself be attributed to lower real expenditure per visitor.

H2: The within-country association between tourism arrivals and nominal tourism receipts is less than proportionate ($\beta < 1$) after controlling for country and year effects.

2.3 Destination structures and heterogeneous responses

A plausible source of heterogeneity is tourism's position in the national export structure. Where tourism receipts account for a larger portion of total exports, the destination may have deeper tourism specialization, different spending channels or greater exposure to shocks. Sequeira and Nunes (2008a) illustrate how country risk and national conditions shape tourism patterns; Proença and Soukiazis (2008) and Eugenio-Martín et al. (2004) document cross-country heterogeneity in tourism-related economic performance. The WDI receipts-as-a-share-of-exports measure permits a limited comparison based on a pre-study-period reference rather than using contemporaneous receipts to classify outcomes.

However, no single direction follows necessarily. Higher specialization might correspond to more established premium tourism services, or alternatively to a high-volume model with thin margins. Moreover, export share is not a direct indicator of spending quality, destination maturity or institutional capacity. We therefore treat moderation by early-period tourism export dependence as an exploratory research question rather than presenting a directional hypothesis: does the arrivals–receipts association differ between higher- and lower-dependence country groups?

2.4 The global comparison and local value perspective

Broader development research underscores the gap between aggregate tourism expenditure and retained economic value. Faber and Gaubert (2019) identify spatial and general-equilibrium effects of tourism growth; Spenceley and Meyer (2012) examine the conditions under which tourism reaches poorer communities. At the destination level, community readiness in Mandalika (Azizurrohman et al., 2023) and local institutional involvement (Noviyanti et al., 2023) suggest practical pathways linking tourism markets to residents. Tourism-village mapping and conservation studies by Gede et al. (2024), Siwantari et al. (2024) and Siwantari et al. (2025) further illustrate that places differ in tourism resources and development constraints. Our macro panel cannot test these mechanisms directly; it provides a reproducible cross-national pattern that can guide subsequent destination- and firm-level studies.

03 Methods

3.1 Research design and data provenance

The study uses a retrospective, unbalanced country-year panel of publicly released World Development Indicators records supplied in six annual CSV files: international tourism arrivals (ST.INT.ARVL), international tourism receipts in current US dollars (ST.INT.RCPT.CD), tourism receipts for passenger transport items (ST.INT.TRNR.CD), international tourism receipts as a percentage of exports (ST.INT.RCPT.XP.ZS), tourism departures (ST.INT.DPRT), and tourism expenditures as a percentage of imports (ST.INT.XPND.MP.ZS). The latter two describe the broader data inventory but are not included in the primary estimating equation because outbound behavior is not a pre-specified confounder of contemporaneous inbound-receipt comovement. Observations were matched by three-letter area identifier and calendar year. The original series report data for 1995–2020 (World Bank, 2026). The primary period is 2002–2019 to focus on the more extensively reported pre-pandemic interval and preserve comparison with annual tourism performance before exceptional 2020 travel disruptions (Gössling et al., 2021). A 1995–2019 extension is reported as a sensitivity test.

Entities identified as regional, income, demographic or other supra-national aggregates were excluded using the ISO alpha-3 country/economy code system, with Kosovo retained as a separately reported economy. Country-years with nonpositive or missing recorded arrivals or receipts were excluded because logarithms cannot be computed. No interpolation or imputation was performed. This yielded 2,751 valid observations from 189 countries and economies; the median included country contributes 17 years, and sample size differs across ancillary analyses. The analytic unit is a country-year, not an individual tourist or a tourism business. The dataset cannot establish representativeness of countries with missing years.

3.2 Measures and analytical interpretation

Table 1. Variables, sources and operational treatment

Measure	Operational definition	Role in this study
Tourism receipts (R)	ST.INT.RCPT.CD; annual current US dollars; natural logarithm	Main outcome
Tourism arrivals (A)	ST.INT.ARVL; annual recorded arrivals; natural logarithm	Main explanatory variable
Receipts per arrival	R/A in current US dollars; not visitor-level survey expenditure	Descriptive diagnostic
Tourism transport receipts	ST.INT.TRNR.CD; annual current US dollars; transport receipts/R	Robustness restriction
Tourism export dependence	ST.INT.RCPT.XP.ZS; median available share (%) in 2002–2007	Exploratory moderator
Year and country effects	Calendar-year and reporting-economy indicators	Controls for common years and time-stable country effects

Note. All source data are World Development Indicators (WDI) annual series. Period and logging rules are specified in the Methods section.

The main dependent variable is the natural logarithm of international tourism receipts in current US dollars. The explanatory variable is the natural logarithm of international tourism arrivals. For descriptive purposes, receipts per arrival are calculated as total nominal receipts divided by the recorded number of arrivals; this ratio does not directly measure traveler-level spending, domestic value added, profitability or welfare. Country fixed effects absorb time-invariant differences across reporting systems and destination scale; year fixed effects absorb shocks common to all countries in a given calendar year, including part of the common US-dollar inflation environment. Neither control absorbs country-specific currency fluctuations, changes in national statistics, tourism composition or concurrent policies.

The passenger transport ratio is defined as transport-item receipts divided by total tourism receipts when both are observed and nonnegative; it is used only for a restricted-sample robustness test because national definitions can differ. Early tourism export dependence is computed from each economy's median available tourism-receipts share of exports during 2002–2007. A country enters the dependence analysis only if that benchmark exists. The median among 163 qualifying countries is 8.92%; the main study remains the full unbalanced arrival–receipt panel.

3.3 Estimating equations and inference

To make between-country and within-country evidence distinguishable, the analysis first fits pooled log–log OLS and an alternative including calendar-year effects. The preferred model includes country and year fixed effects: $\ln(R_{it}) = \alpha_i + \lambda_t + \beta \ln(A_{it}) + \varepsilon_{it}$, where α_i and λ_t are country and year intercepts. The coefficient β is a conditional within-country elasticity, identified by variation remaining after partialling out country-specific means and common annual shifts. Standard errors are clustered by country to allow unrestricted heteroskedasticity and serial dependence within countries over the study interval (Arellano, 1987; Cameron & Miller, 2015). Two-sided tests use the conventional 5% threshold, and confidence intervals are reported rather than relying solely on significance stars (Stock & Watson, 2008). The proportional benchmark tests H0: $\beta = 1$ against a two-sided alternative; evidence supporting H2 requires β significantly below one.

A separate first-difference model evaluates $\Delta\ln(R_{it}) = \tau_t + \theta\, \Delta\ln(A_{it}) + \upsilon_{it}$ for consecutive within-country year pairs. First differences remove time-invariant country factors but may magnify measurement noise and should not be assumed superior by construction. Further checks include country panels with at least 12 observations, trimming the bottom and top 1% of the calculated receipts-per-arrival distribution, restricting to country-years where transport receipts are at most 30% of total receipts, estimating 2002–2009 and 2010–2019 separately, adding country-specific linear trends, and extending the period to 1995–2019. A lagged-arrivals specification is exploratory and not interpreted as temporal causality, since tourist demand and revenue are jointly determined and serially correlated. These alternative samples and transformations are reported individually rather than pooled as if identical estimands.

For the export-dependence comparison, a fixed-effects model augments the preferred specification with $\ln(A_{it})$ interacted with an indicator for whether the country's 2002–2007 median receipts/export share is at or above the median of the eligible economies. The level indicator is absorbed by country effects. This

specification assesses differences in slopes, not whether export dependence causes higher or lower tourism yield. Unobserved macroeconomic and policy determinants may affect both the number of arrivals and recorded receipts; the estimates are therefore associations and are not assigned causal interpretations. Stronger identification would require exogenous travel-demand shocks or richer origin–destination, price and spending data (Bertrand et al., 2004).

04 Results

4.1 Sample composition and descriptive contrasts

Table 2 presents sample coverage and central descriptive indicators. Recorded tourism receipts per arrival vary substantially across observations: the median is US$736.58, with an interquartile range of US$348.46–1,169.37. Such dispersion can reflect genuine destination differences, but it can also capture national reporting conventions and differences in the transport component. Consequently, the ratio is used as a transparent accounting comparison, not as a cross-country ranking of tourist quality.

Table 2. Coverage and distribution of the primary analysis panel

Statistic	Value	Interpretation / basis
Study years	2002–2019 (18 annual periods)	2020 excluded from primary pre-pandemic design
Country-year observations	2,751	Positive, observed arrivals and receipts
Countries / economies	189	Country/economy ISO-3 entities; no regional aggregates
Median years per country	17	Unbalanced panel; range 1–18
Receipts per arrival, median	US$736.58	Nominal total receipts divided by recorded arrivals
Receipts per arrival, IQR	US$348.46–1,169.37	25th–75th percentile across observed country-years
Paired 2002–2019 countries	102	Positive data available in both endpoint years
Median 2019:2002 arrivals ratio	2.53	Paired-country comparison
Median 2019:2002 receipts ratio	3.50	Current US dollars, paired-country comparison
Median 2019:2002 ratio R/A	1.37	Paired countries; not inflation adjusted

Note. IQR = interquartile range. The paired-country statistics use only countries with data in both 2002 and 2019 and reflect nominal values.

The balance of flows is particularly revealing in a paired-country comparison, although it is not representative of the whole panel. Among 102 countries with usable observations in both 2002 and 2019, median 2019-to-2002 ratios were 2.53 for arrivals, 3.50 for nominal receipts and 1.37 for receipts per arrival; the receipts-per-arrival ratio rose in 75.5% of these countries. The paired comparison describes cumulative nominal movements over 17 years. It neither establishes purchasing-power-adjusted gains nor contradicts the lower-than-unitary fixed-effects elasticity, which uses annual deviations around country and year patterns rather than long-run between-year totals. The distinct estimands are important: a positive multiyear nominal ratio trend can coexist with a weaker conditional elasticity within destinations.

4.2 Main elasticity estimates

Table 3 reports the progression from pooled to country-specific and two-way fixed-effects associations. The pooled elasticity is 0.954 (95% CI 0.894–1.014), suggesting close-to-proportionate differences when countries of different sizes are pooled. Adding common year effects produces a similar coefficient (0.945). With country effects alone the estimate is 0.927, but with both country and year effects it drops to 0.593 (95% CI 0.465–0.720; $p < .001$). Thus, much of the seemingly near-unitary pooled relationship reflects persistent country differences and common temporal movements rather than differential within-country performance in a particular year.

Table 3. Main pooled and panel regression estimates

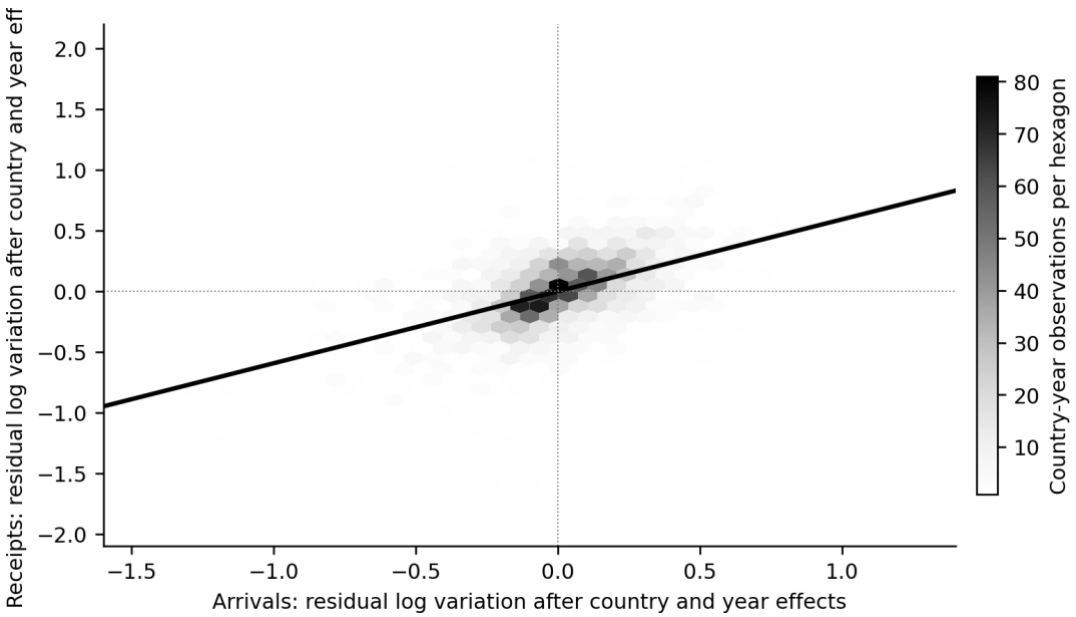
Specification	Observations	Countries	Elasticity β (SE)	95% confidence interval
Pooled OLS	2,751	189	0.954 (0.031)	[0.894, 1.014]
Year effects	2,751	189	0.945 (0.031)	[0.884, 1.006]

Specification	Observations	Countries	Elasticity β (SE)	95% confidence interval
Country effects	2,751	189	0.927 (0.054)	[0.821, 1.033]
Country + year effects	2,751	189	0.593 (0.065)	[0.465, 0.720]
Annual first differences	2,530	186	0.355 (0.074)	[0.209, 0.501]

Note. Outcome = ln(international tourism receipts, current US$); regressor = ln(arrivals). SEs are clustered by country. First differences include calendar-year effects and require consecutive observations. Country and year effects are included as indicated.

The main estimate means that a 1% higher recorded arrival count is associated with approximately 0.59% higher recorded tourism receipts within a country, conditional on its fixed effect and the corresponding year effect. It is an elasticity based on the fitted log model, not a statement that a particular campaign will produce an additional 0.59% in receipts. We reject $\beta = 1$ in the preferred specification (two-sided $p = 3.49 \times 10^{-10}$), while the positive estimate supports H1 and the below-one estimate supports H2. The implied coefficient for the constructed receipts-per-arrival ratio is $\beta - 1 = -0.407$ by algebraic identity. This identity is not estimated as an additional independent outcome.

Figure 1 shows the partial association after removing country and year effects from each logged series. The slope of the fitted line equals the preferred two-way fixed-effects estimate, making the distinction between cross-sectional size and within-destination change visible. Dispersion around that line is substantial: arrivals do not exhaust the information needed to account for observed tourism receipts. Because prices, market composition and local expenditure are unobserved, the residual dispersion should not be attributed to a single behavioral mechanism.



Note. Residualized logged variables reflect the preferred two-way fixed-effects design; line slope β = 0.593. Filled hexagons denote country-year density; axes emphasize the populated region, while estimation uses the full sample.

Figure 1. Partial association between log arrivals and log tourism receipts after removing country and year effects

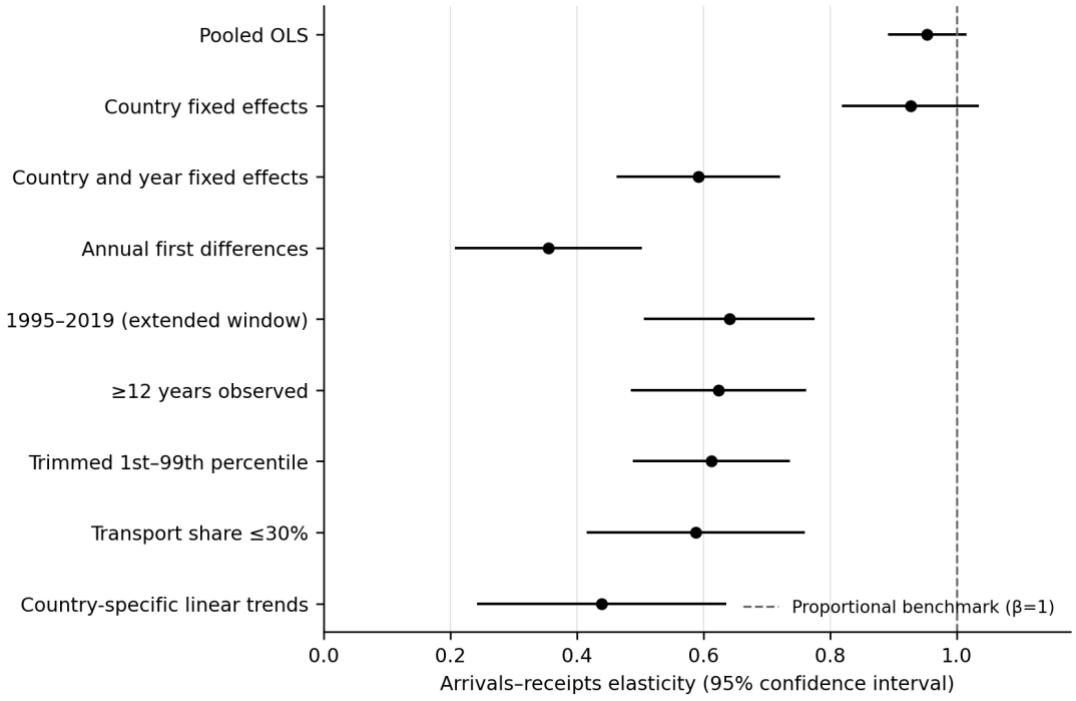
4.3 Changes over time and sensitivity to specification

Table 4 and Figure 2 evaluate whether the preferred inference depends on one modeling or sample decision. The annual first-difference coefficient is 0.355 (95% CI 0.209–0.501; $p < .001$), which is lower than the two-way fixed-effects level coefficient but preserves the positive, below-one pattern. The restricted panel of destinations with at least 12 valid years produces 0.624; the extreme-ratio-trimmed panel produces 0.612; and the subset with transport revenue at or below 30% of total receipts produces 0.588. The 1995–2019 extension estimates 0.641, and models allowing country-specific linear time trends estimate 0.440. These estimates vary materially in magnitude, underscoring the need not to overstate precision about a single structural relationship, but all remain positive and below the one-for-one benchmark.

Table 4. Robustness and heterogeneity estimates

Specification	N (countries)	β / slope (SE)	95% CI / interpretation
Main two-way fixed effects	2,751 (189)	0.593 (0.065)	[0.465, 0.720]
At least 12 country-years	2,424 (143)	0.624 (0.070)	[0.488, 0.760]
Trimmed receipt/arrival ratio: 1% tails	2,695 (189)	0.612 (0.062)	[0.491, 0.734]
Transport receipts ≤30% of total	1,985 (156)	0.588 (0.087)	[0.418, 0.758]
2002–2009 window	1,206 (175)	0.531 (0.083)	[0.368, 0.694]
2010–2019 window	1,545 (179)	0.484 (0.112)	[0.265, 0.703]
1995–2019 extended series	3,675 (196)	0.641 (0.068)	[0.508, 0.774]
Country-specific linear trends	2,751 (189)	0.440 (0.100)	[0.244, 0.635]
Exclude France and United States	2,717 (187)	0.594 (0.065)	[0.466, 0.722]
Prior-year arrivals (exploratory)	2,530 (186)	0.555 (0.069)	[0.419, 0.691]
Low-dependence arrivals slope	2,483 (163)	0.609	Median-split interaction model
High minus low dependence slope	2,483 (163)	−0.068 (0.096)	p = .476; not significant

Note. Models except first differences include country and year effects as appropriate. Standard errors are clustered by country. Baseline export dependence is the 2002–2007 median receipts share of exports; interaction analysis uses 163 countries. Estimates across sample restrictions do not share identical samples.



Note. Models differ in sample and identification assumptions. Dashed vertical line β = 1 denotes proportionate reported receipts–arrivals comovement. Country-specific trends and 1995–2019 are additional sensitivity estimates.

Figure 2. Elasticity estimates and 95% confidence intervals across model specifications

Splitting the original period yields 0.531 for 2002–2009 and 0.484 for 2010–2019, with overlapping uncertainty intervals; these values do not establish an economically meaningful regime change. Omitting the two especially large measured destinations of France and the United States leaves the main estimate virtually unchanged at 0.594. A model using the preceding year's arrivals as the explanatory variable yields a positive coefficient of 0.555; however, a lag in a persistent time series does not identify a causal delay or prove that arrivals lead receipts. Taken together, the specification checks support a robust positive subunitary conditional association, not a context-free constant of tourism economics.

4.4 Exploratory heterogeneity by tourism export dependence

The export-dependence subgroup analysis uses 2,483 observations from 163 economies for which a 2002–2007 baseline share could be computed. The within-country slope for the lower-dependence group is 0.609. The interaction for higher baseline dependence is −0.068 (standard error 0.096; p = .476), corresponding to an implied higher-dependence slope of 0.541. This difference is neither statistically reliable nor large enough to establish that tourism export dependence systematically moderates the arrivals–receipts relationship. That null result is important: the available share-of-exports indicator does not, on its own, distinguish high-yield from high-volume tourism models.

No effect of individual country ranking is inferred from the international cross-section. For illustration only, Indonesia's 2019 figures in the supplied data are 16.107 million recorded arrivals and US$18.405 billion in receipts, yielding a simple ratio near US$1,143. Thailand's corresponding figures are 39.916 million arrivals and US$64.371 billion in receipts, a ratio near US$1,613. Reporting conventions, passenger-transport inclusion, country-specific prices and the visitor mix differ; the pair is not a controlled comparison and does not imply that either destination is economically superior.

05 Discussion

5.1 What the subunitary elasticity does—and does not—mean

The headline empirical finding is a substantial gap between the pooled association and the within-country association after calendar-year adjustment. A pooled coefficient near unity is easy to interpret as a simple arithmetic correspondence between country size and reported tourism receipts. It is less informative for a destination policymaker considering whether increasing visitor numbers in a particular year is likely to coincide with a similar proportional change in receipts. The preferred estimate of 0.593, together with the annual-difference coefficient of 0.355, suggests that a volume-based success metric alone is insufficient to describe contemporaneous international-tourism revenue performance. This conclusion concerns reported nominal receipts, not real spending, tourism value added, profit or local social welfare.

The findings refine rather than contradict the established literature. Studies of tourism-led growth have examined the relation between tourism activity and GDP, often with distinct causal identification questions (Balaguer & Cantavella-Jordá, 2002; Oh, 2005; Brida et al., 2016; Zuo & Huang, 2018). This paper instead holds economic impact outside the dependent-variable definition and estimates how the two common tourism performance indicators comove. Demand analyses show that arrivals respond to multiple variables (Song & Li, 2008; Wang et al., 2026), while tourism-expenditure research highlights length and composition of trips (Alegre & Pou, 2006). Without observing these mechanisms, we cannot claim that the smaller elasticity was caused by shorter stays, weaker prices or declining visitor expenditure.

The descriptive paired-endpoint comparison adds nuance. For destinations observed in both 2002 and 2019, nominal receipts per arrival commonly increased over time even though the conditional contemporaneous elasticity is below one. This is not paradoxical once the distinction between common time trends and deviations around them is clear. When a destination's receipts and arrivals rise alongside nominal prices and global tourism spending, they can both grow over the longer horizon. In a year when the same country receives more arrivals than expected given its own and the year's baselines, its receipts need not rise proportionately. Policymakers evaluating annual targets and analysts studying long-term structural transformation should therefore avoid treating these two slopes as interchangeable.

5.2 Implications for destination performance management

At the policy level, the most direct implication is to report complementary indicators. Arrival counts show the extent of international tourism flows; nominal tourism receipts capture recorded foreign-currency earnings; and receipts per recorded arrival provide a qualified accounting indicator that should always be annotated with the destination's definition of visitors and transport-receipt coverage. Destination managers may combine these with length of stay, expenditure surveys, tourism satellite accounts, domestic value added and community-level benefits. This wider approach follows work on competitiveness and economic-impact evaluation (Dwyer & Kim, 2003; Dwyer et al., 2004; Crouch, 2011), and guards against equating a tourism marketing target with a development outcome.

It is particularly important to distinguish monetary volume from retained value. Tourism receipts are not a sufficient measure of leakages, local sourcing, employee income or distributional inclusion, as demonstrated by political-economy research and place-specific studies (Britton, 1982; Faber & Gaubert, 2019; Spenceley & Meyer, 2012). In Indonesia, Azizurrohman et al. (2021) study tourism-related macroeconomic development, whereas Azizurrohman et al. (2023) and Yuli et al. (2025) describe dimensions of local readiness and development in Mandalika. Contributions from Mataram-based scholars on sustainable tourism enterprises, conservation, participatory governance and local tourism resources reinforce the need to look beyond raw visitor counts (Noviyanti et al., 2023; Gede et al., 2024; Siwantari et al., 2025; Martayadi & Siwantari, 2026). These complementary studies offer a research agenda rather than providing direct evidence for the regression's mechanisms.

The limited heterogeneity by export dependence should discourage a simplistic claim that countries with a higher tourism share of exports necessarily convert arrivals into receipts more effectively. Export dependence captures tourism's importance relative to all other exports; it is not a measure of tourism pricing, visitor quality, market power, or sector productivity. In the same vein, the literature on overtourism warns that high volumes can generate pressures outside the revenue account (Koens et al., 2018). A sensible destination assessment would examine economic outcomes together with spatial concentration, environmental carrying capacity and resident well-being, particularly where tourism planning prioritizes repeated expansion of numbers.

5.3 Measurement, identification, and limitations

Several limitations delimit the contribution. First, WDI arrivals are not harmonized counts of identical traveler categories; national source coverage and methods vary. The unusually large measured count for some major destinations illustrates why data users must not treat an arrival ranking as a standard list of overnight tourists (World Bank, 2026). Second, receipts are recorded in current US dollars, so changes in currency conversion, destination price levels, and the definition of transport items can contribute to estimated elasticities. Our year effects absorb common global fluctuations, but they are not substitutes for domestic consumer price indices or bilateral exchange rates.

Third, the panel is unbalanced, and reporting availability changes across countries and years. A restriction to longer series and outlier trimming produces similar signs and less-than-proportionate coefficients, but cannot guarantee that missing data are random. Fourth, arrivals and receipts may be jointly affected by promotions, income changes, crises, regulatory reforms and tourism product shifts. The country and year fixed effects do not eliminate all such time-varying confounding; a country-level increase in arrivals is not an exogenous intervention. Confidence intervals are conditional on the adopted variance model, and global residual comovement beyond year effects may still affect uncertainty. Finally, the analysis ends in 2019 by design. Pandemic travel collapses and later recovery patterns require a different research setting and updated series, not extrapolation of this estimate.

Future research should link arrival and revenue series with tourism satellite accounts, accommodation nights, visitor expenditure microdata, domestic inflation and price competitiveness indices, bilateral source markets, airline structures and leakage measures. Multilevel research can then test why some economies combine tourism volume with high domestic value added while others do not. Exogenous policy variation, credible natural experiments or detailed destination-level panels would be required to make stronger causal claims. In this sense the study supplies a baseline measurement result, not the final word on tourism's welfare contribution.

06 Conclusion

More tourists are generally associated with more recorded tourism revenue, but the association is not one-for-one once cross-country differences and common annual movements are controlled. Across 2,751 observations from 189 countries and economies in 2002–2019, the preferred two-way fixed-effects elasticity is 0.593 (95% CI 0.465–0.720), appreciably below the pooled estimate of 0.954. An annual first-difference estimate of 0.355 and multiple restricted-sample specifications preserve the central pattern. The available data do not support a clear difference between countries with higher and lower initial tourism export dependence.

The study contributes by treating arrivals and receipts as distinct tourism performance constructs, showing how their apparent relationship changes from a between-country comparison to a within-country comparison, and checking the result against multiple sensitivities. It does not assert that additional visitors cause lower per-visitor spending or that reported receipts represent domestic economic gains. For tourism researchers and policymakers, the defensible takeaway is practical: arrival targets should be interpreted alongside comparable revenue measures and, where data permit, direct indicators of retained local value and resident welfare.

07 Declarations

Data availability. The six World Development Indicators tourism series used in this study are publicly available through the World Bank. The sampling rules, variables, and estimation specifications are documented in the Methods section.

Research ethics. This study uses publicly available, country-level aggregate tourism indicators. No participants were recruited and no personal data were analyzed.

Funding. This study used publicly available economic indicators and did not involve new funded field-data collection.

Competing interests. No competing interests were reported for this secondary-data research.

Use of artificial intelligence. AI-assisted editorial tools were used for language editing only. The author remains responsible for the research methods, statistical findings, and final text.

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