Modelling Tourism Arrivals in the Pacific



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Introduction: Why is tourism important in the Pacific?



PIC's are small, remote and have limited natural resources



However, they are abundant in natural habitats that work well for tourism



Tourism is crucial for economic development for PIC's:

> driver of economic growth> foreign exchange earnings> employment

Introduction: Why is tourism important in the Pacific?



Motivation for the study



- Important for policy-makers to understand behaviors of visitors from different source markets;
- Less literature/studies on this available for the Pacific region
- by examining the determinants of tourist arrivals in the region, with a focus on four tourism dependent countries (Fiji, Samoa, Cook Islands and Palau) for the period 2001 to 2019.
- Such information will be invaluable for marketing exercise and pricing policy to nurture the growing tourism demand

Motivation for the study



Why the 4 countries (Cook Islands, Fiji, Palau, Samoa?

- \checkmark Close to 60% of visitors to the region in 2019 were to these countries;
- ✓ Tourism contributes more than 20% to GDP of these economies;
- ✓ Tourism employs more than 10% of total workforce in these economies
- ✓ Tourism brings in considerable foreign exchange earnings to these countries
- ✓ Fiji & Samoa attract highest number of visitors in the region
- Cook islands and Palau rank the highest in visitors per capita (annual visitor numbers surpass their population)
- ✓ In Fiji & Samoa, tourism earnings outperformed receipts from traditional exports

Fiji is the most popular choice for a Pacific vacation



 40% of the visitors to the Pacific region went to Fiji in 2019

 Samoa is the 3rd most preferred choice of destination in the Pacific, after French Polynesia

 Despite their small size and population, Cook Islands and Palau held 8% and 4% of the market shares, respectively

Where do tourists come from?

- Australia, New Zealand and US make up around 60% of all arrivals
- Europe, PIC's, Other Asia and China make up another 30%

Visitor arrivals source markets - 2019



Destination countries:



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*others include – other countries not captured separately. Source: Pacific Tourism Organization

Purpose of visit (2019)









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Sources: United Nations World Tourism Organization, Fiji Bureau of Statistics, Samoa Tourism Authority

Tourism industry – contribution to the PIC's

Economy	Tourism Earnings (US\$M)	Tourism Contribution to GDP (%)	Expenditure per tourist (local currency)	Tourism Employment (% of total employment)
Fiji	1396	26	FJ\$3,379	36.5
Samoa	201	24.5	NZ\$1588	15
Cook Islands	224.2	66	NZ\$2189	34***
Palau	123*	38	US\$1456**	45

<u>Note:</u> * 2017 estimate; ** 2014 estimate at US\$280 per person per day, equating to US\$1456 per person for an average 5.2 night stay; *** 2016 estimate

Literature Review

Globally, the interest in the study of tourism arrivals amongst researchers have been growing

On measure of tourism demand studies:

- Song and Li (2008) and Lim (1997) analyzed several journal articles that denoted that the number of tourist arrivals is the most common measure for dependent variable in tourism demand studies;
- Tourist expenditures or tourism revenue are also other forms of dependent variables commonly utilized;
- The choice of the predicted variable depends on interest. Several papers are more interested in per capita visitor arrivals of source countries, as an indication of household income in the source country (Onafowora & Owoye, 2012)

On tourism demand methodology:

- Song and Li (2008) most common and effective models include ARDL; ECM and VAR
- Kulendran & King (1997) in analyzing quarterly tourist flows to Australia reiterate that in comparison to time series models, the ECM performed poorly, and one reason may be due to the use of hypothesis testing for differencing and seasonal differencing.
- Shen, Li, & Song (2009) found that no single forecasting technique is remarkably exceptional. However, the Johansen
 maximum likelihood ECM model can outperform the other models while the time series models show superior performance in
 dealing with seasonality.
- Song and Li (2008) Almost Ideal Demand System (AIDS) is an emerging technique that inspects tourism demand in several neighboring destinations by a source market and enables analysis of substitution and complementary effects

Literature Review

On data frequency:

- Song and Li (2008) and Lim (1997) annual data is most used
- Kulendran and King (1997); Lim and MacAleer (2001) and Shen, et al. (2009) high frequency data (quarterly or monthly) is also used to emphasize seasonality patterns in tourism demand
- Song and Li (2008 mixed frequency modelling techniques is another option can implicitly illustrate tourist behavior more specifically and can generate better and more accurate forecasts.

On measuring tourism demand in the PICs:

Only few studies conducted to ascertain tourism demand function for the PICs:

- Kumar, et al. (2020)
- estimated inbound tourism demand models for 5 PIC's (Fiji, Cook Islands, Vanuatu, Tonga and Samoa) using the ARDL Bounds approach.
- > Results: Fiji and the other PIC's are generally competitors except for tourists from the UK and Japan.
- While Australia and US consider Cook Islands and other PIC's as substitute destinations, tourists from Canada consider PIC's as a packaged multi-stop destination

Literature Review

- Takahashi (2019)
- > applied tourism demand model to show linkages between tourism and migration flows in 10 of the PIC's.
- Findings revealed that migrants from these island states influence international tourism demand in their countries of origin islands and is often associated with visiting friends and relatives (VFR) segment of tourism, it is likely to be relatively stable compared with other types of travel, such as leisure tourism.
- > Results: it is important for tourism policies to consider migration linkages and diversified tourism demand such as VFR

- Tourism demand studies done for Fiji by Narayan (2002), Narayan (2004), Katafono & Gounder, 2004 and Wainiqolo & Shivanjali (2018)
- Major trading partners' income is positively correlated with tourism demand while natural disasters, GFC and coups were found to affect tourism demand negatively.



Tourist Decision Making Tree



dreamstime.com

Key considerations



✓ Do I have the means to travel?

✓ Disposable income vs <u>GDP level</u>?

Affordability?

- ✓ Transport (airfare) or ground costs (CPI) or <u>both</u>?
- ✓ CPI-based relative prices vs <u>PPP</u>

Choice?

- ✓ Competitors price where the majority are heading to or <u>similar destinations</u>?
 - ✓ Bali, Thailand and Vietnam as competitors

Value for money?

✓ <u>Complementary prices</u> – if neighboring countries are priced right, can that lure long haul tourists to a destination?

Other factors?

✓ political instability, natural hazards, global economic shocks

Methodology

- ARDL Bounds Testing Approach
 - Does not require variables to be of the same order of integration
 - Can work with small samples sizes
 - Can estimate short run and long run coefficients simultaneously
 - Focus is on long run coefficients as quarterly data are bound to be volatile
- Data
 - 2001Q1:2019Q4
 - Fiji, Samoa, Cook Islands and Palau
 - For each tourist destination, we modelled visitor arrivals for all key source markets
- Modelling
 - 24 models of key source markets
 - Cooks (5), Palau (5), Samoa (5) and Fiji (9)

Results

- The ECM terms of all the models were negative and significant suggesting long-run relationship between visitor arrivals, income and selected price variables
- Bounds test rejects the null hypothesis of no long run relationship
- Income elasticities were greater than 1 suggesting tourism is a luxury good
- The Asian and Canadian markets are highly sensitive to price developments
- European and North American long-haul markets find PICs as complementary destinations to a visit in Australia or New Zealand

Results

- Natural disasters and political instability do have an adverse impact on tourist arrivals
- The GFC had a long run influence on the Australian and some Asian tourism markets

Limitations and further research

- No of flights available (including budget airlines) can affect tourism arrivals but was not considered due to data constraints
- Role of climate change and the sustainable tourism practices
- Role of "tourist spillovers"
- Incorporating the "human factor" in the tourism industry
- Future studies can employ VAR as impulse response functions can help tourism stakeholders plan better
- Extend to include COVID-19 period and its impact on tourism dynamics

Policy considerations

- Careful study of source markets' economic outlook is vital to maximize revenue, profits and tourism earnings from these markets
 - Luxury goods move down the list when in economic turmoil
- Pay closer attention to tourism prices, especially
- in the current digital age
 - Online holiday package bookings and customer reviews
- Explore tri-country partnerships with Australia and NZ through multiple-country tourist packages



Increase air access may reduce travel costs through increased competition

Thank you

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