

2018 PACIFIC UPDATE

TOURISM -GROWTH NEXUS IN PACIFIC ISLAND COUNTRIES A STUDY ON FINANCIAL INCLUSION AND ICT AS CONTINGENT FACTORS

T.K. Jayaraman
Faculty of Business and Finance
University of Tunku Abdul Rahman
Malaysia

Keshmeer Makun
College of Business, Hospitality and Tourism Services
Fiji National University
Nasinu Campus

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Outline

- Introduction/highlights
- Tourism's contribution to growth
- ICT's contribution to tourism and FSD
- Modeling, Data and Methodology
- Result discussion
- Policy conclusion

Introduction/highlights

- Tourism contributes real resources to PIC in terms of foreign exchange.
- It alleviates poverty.
- It raises consumption levels.
- It creates jobs in informal sector for meeting tourist needs.
- ICT facilitates faster international travel and hotel bookings
- It enables penetration of tourist travel into interior,
- Booking for ecotourism & home stays for adventuresome backpack tourists
- ICT overcomes hurdles of density, distance and division
- ICT promotes banking habits, beyond towns and helps fin sector development (FSD)
- Mobile banking & other innovations reducing transaction costs
- Our study finds ICT & FSD play significant roles in tourism & growth nexus.

Tourism's contribution to Growth

- Tourist arrivals are of two kinds;
- Regular Tourist : a stay of minimum three to four nights.
- Cruise Ship passengers : day tourists/ or at least one night stay in the ship
- Regular tourists : spend on hotel accommodation, food and beverages, tours and handicrafts
- Youth & backpackers prefer travel in the interior and prefer cheaper places for stay & home stays .
- Their expenditures on lodging and boarding are much less.
- Some of them spend on food and travel in the interior
- Their expenditures are incomes for the operators in the informal sector

Tables 1 to 5 presents Growth in Tourism and Growth in Per Capita GDP

Table 1: Fiji

	Percapita		
	GDP	Tourism	Tourist
	Const	Earnings	Arrivals
	US \$	% of GDP	(Numbers)
2000	3315.067	17.27916	294000
2010	3651.967	26.26963	632000
2011	3719.889	25.30116	675000
2012	3744.277	24.89922	661000
2013	3894.263	23.0541	659000
2014	4084.2	23.1342	693000

Table 2: Samoa

	Percapita		
	GDP	Tourism	Tourist
	Const	Earnings	Arrivals
	US \$	% of GDP	(Numbers)
2000	2766.531	15.24	88000
2010	3453.434	19.24	122000
2011	3624.573	18.24	121000
2012	3609.737	18.50	126000
2013	3510.925	17.05	116000
2014	3524.596	18.26	120400

Growth in Tourism and Growth in Per Capita GDP

Table 3:
Solomon Islands

	Percapita		
	GDP	Tourism	Tourist
	Const	Earnings	Arrivals
	US \$	% of GDP	(Numbers)
2000	1234.299	0.92	5200
2010	1272.448	7.56	20500
2011	1405.47	7.43	22900
2012	1439.19	6.38	23900
2013	1451.048	6.65	24400
2014	1442.233	5.60	20100

Table 4:
Tonga

	Percapita		
	GDP	Tourism	Tourist
	Const	Earnings	Arrivals
	US \$	% of GDP	(Numbers)
2000	3275.812	3.46	35000
2010	3548.068	7.58	47100
2011	3631.543	7.49	46000
2012	3650.819	9.70	47400
2013	3524.232	10.67	48200
2014	3581.837	#VALUE!	50400

Growth in Tourism and Growth in Per Capita GDP

Table 5:
Vanuatu

	Percapita		
	GDP	Tourism	Tourist
	Const	Earnings	Arrivals
	US \$	% of GDP	(Numbers)
2000	2839.932	25.36628	58000
2010	2965.802	34.53175	97200
2011	2932.872	31.43345	94000
2012	2916.639	34.28413	108200
2013	2907.61	39.16249	110000
2014	2909.775	34.84858	109000

ICT Contribution to Tourism

- ICT Contributes to easy & faster booking
- Accommodation are advertised in the website of hotels & resorts
- Home Stays are also advertised in the websites
- Increase in the use of cell phones
- Online booking of hotel and reservation & travel tours

ICT Contribution to Financial Inclusion

- Increased usage of mobile banking and easy access to banks
- Rise in the spread and use of mobile phones in the interior
- More internet use by computers
- Helping financial inclusion of the hitherto bypassed sections of the community
- Financial sector development is indicated by increase in broad money

Indicators of ICT use and indicators of FSD

Table 6. Fiji: Indicators of ICT use and indicators of FSD

	Internet users per 100	Cellular Subscription Number	Broad Money % of GDP	Quasi Money (% of GDP)
	Internet	CELL	BM	QM
2000	1.5	55057	41.8	25.7
2005	8.5	205000	58.4	35.6
2010	20.0	697920	67.6	44.9
2011	28.0	727000	67.1	38.4
2012	33.7	858809	67.7	39.0
2013	35.2	930406	74.2	29.7
2014	37.4	876176	74.9	30.6

Table 7. Samoa.: Indicators of ICT use and indicators of FSD

	Internet users per 100	Cellular Subscription Number	Broad Money % of GDP	Quasi Money (% of GDP)
	Internet	CELL	BM	QM
2000	0.6	2500	33.9	23.0
2005	3.4	24000	38.4	28.0
2010	7.0	90000	46.6	31.5
2011	11.0	95000	40.4	27.8
2012	12.9	100302	38.1	26.0
2013	15.3	99887	40.6	27.4
2014	21.2	106524	43.9	29.1

Indicators of ICT use and indicators of FSD

Table 8: Solomons: Indicators of ICT use and indicators of FSD

	Internet users per 100	Cellular Suscription Number	Broad Money % of GDP	Quasi Money (% of GDP)
	Internet	CELL	BM	QM
2000	0.48	1151	20.9	9.6
2005	0.84	6000	30.3	11.4
2010	5.00	115500	38.3	14.2
2011	6.00	274872	38.5	10.9
2012	7.00	302147	40.6	8.9
2013	8.00	323105	44.5	9.6
2014	9.00	376696	42.6	11.5

Table 9. Tonga: Indicators of ICT use and indicators of FSD

	Internet users per 100	Cellular Suscription Number	Broad Money % of GDP	Quasi Money (% of GDP)
	Internet	CELL	BM	QM
2000	2.4	180	37.0	20.9
2005	4.9	29872	47.6	26.1
2010	16.0	54300	43.6	28.6
2011	25.0	55000	39.5	26.5
2012	30.0	56000	43.1	22.3
2013	32.8	57500	45.5	21.2
2014	36.0	68000	48.2	16.5

Indicators of ICT use and indicators of FSD

Table 10. Vanuatu. Indicators of ICT use and indicators of FSD

	Internet users per 100	Cellular Subscription Number	Broad Money % of GDP	Quasi Money (% of GDP)
	Internet	CELL	BM	QM
2000	2.1	365	90.1	76.5
2005	5.1	12692	98.6	66.1
2010	8.0	169935	83.3	50.7
2011	9.2	136956	80.8	49.2
2012	10.6	146084	78.6	47.4
2013	11.3	127244	70.9	36.0
2014	18.8	156051	73.8	38.3
Source: WDI				

Modeling, data and Methodology

- Examination of the long run cointegration between the variables in the models. (Pedroni Cointegration test)
- Estimation of the long run coefficient of the model.
- Eview software has been used.

Data

Data:

- We have used the annual data over the 2000-2014 period.
- World Development Indicator
- Panel of five countries: Fiji, Samoa, Solomon islands, Tonga and Vanuatu

Model

- The model proposed was conditioned by the availability of the data on key variables in the model.
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- $GDPP = f(K, TA, ICT, BM)$ (1)
- $GDPP = f(K, TA*ICT, ICT, BM)$ (2)
- Where:
- GDPP is per capita GDP
- K is per capita capital stock
- TA is Tourism measured by number of tourist arrivals.
- ICT is information communication technology (measured by cellular subscription)
- BM is Broad money, indicator for financial sector development
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Results

Pedroni Cointegration Test

Table 11: Pedroni Cointegration Test Results				
Test Statistics				
Panel cointegration statistics (within-dimension)				
		<u>Statistic</u>	<u>Prob.</u>	
Panel v-Statistic		-0.097912	0.5390	
Panel rho-Statistic		1.631000	0.0514**	
Panel PP-Statistic		-1.906228	0.0283**	
Panel ADF-Statistic		-2.612698	0.0045*	
Group mean panel cointegration statistics (between-dimension)				
		<u>Statistic</u>	<u>Prob.</u>	
Group rho-Statistic		2.513647	0.9940	
Group PP-Statistic		-2.431051	0.0075*	
Group ADF-Statistic		-2.250575	0.0122**	

Note: number of lag truncations used is 2. * and ** is significant at 1 and 5 percent level.

Long Run results with interactive term of ICT and tourism

Table 13: Long run with interactive term of ICT and Tourism

dependent variable (LGDPP)			
Regressor	Coefficient	t-values	P-value
LK_t	0.388	2.621	0.009*
LTA_t	0.633	1.679	0.094***
$LTA*ICT_t$	0.153	2.55	0.011**
$LICT_t$	0.001	1.544	0.123***
LBM_t	0.140	2.172	0.030**
Constant	0.012	2.634	0.009*

R-square = 0.91 , S.E.equation = 0.027 , S.D. dependent = 0.0292, DW=2.03

Result Interpretation/Discussion

- Capital share (K) is found to be positive and around stylized value of around 33%
- Tourism (TA tourist arrivals) is positively related to GDP.
- The financial sector development (BM) and ICT is also found to be positively related in the long run.
- The effect of interactive term of tourism and ICT (LTA*ICT) is positive and significant.
- Tourist arrival (TA) and ICT act as complements to each other.

Threshold level of ICT

- $\Delta LGDPP/\ln TA = 0.633 + 0.153 LICT$
- From the above we obtain the natural logarithm of the exponential value: $0.633/0.153 = 4.1372$.
- The exponential value of the natural logarithm will give us the actual percentage that would be the pre-required level of *ICT* to enhance economic growth.
- The threshold level of ICT is 62.6 percent.
- Thus, the result shows that *Tourism* stimulates economic growth in PICs through ICT development.

Policy Conclusion

- From policy perspective it is vital to emphasize that FSD and tourism are essential drivers of output growth.
- For directed policies we would like to conclude that tourism and capital accumulation have relatively high share in supporting long run growth and thus are the principal drivers of output growth during the study period.
- Effect of ICT along with tourism is also significant.
- Therefore, we would recommend further and greater investment and advancement in ICT and tourism infrastructure.
- Particular focus on mobile cellular subscription which will increase efficiency and productivity in tourism industry and eventually enhance long term growth.



THANK YOU