

# Assessment of Tourism Impact on Uganda's Economic Welfare (1995-2019)

Arnold Bugonga<sup>1</sup>, Dennis Mahebe<sup>2\*</sup>, Israel Mugezi<sup>1</sup>

<sup>1</sup>Department of Production Trade and Tourism Planning, National Planning Authority, Clement Hill Road Plot 17B

<sup>2</sup>Department of Local Government Development Planning, National Planning Authority, Clement Hill Road Plot 17B

\*Corresponding author: [dennismahebe52@gmail.com](mailto:dennismahebe52@gmail.com)

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**Abstract** The study used quarterly secondary time series data obtained from World Bank to assess the impact of tourism on economic welfare in Uganda for the period 1995 to 2019. Results from Vector Error Correction Model (VECM) show that international tourism receipts on average contribute USD 55.2 to Uganda's Gross Domestic Product Per Capita (economic welfare) per quarter, higher than the Gross Domestic Savings contribution of USD 46.1 and imports contribution of about USD 50.1. Therefore, to maximise the impact of tourism on Uganda's economic welfare, government should implement the proposed policy actions like setting up modern centers of excellence for training, improving accommodation in upcountry hotels and lodges, digitalizing data collection in the sector and setting up a tourism relief fund backed by an insurance scheme.

**Keywords:** *economic welfare, gross domestic product, gross domestic savings, inbound arrivals, tourism*

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## 1. Introduction

### 1.1. Background

Tourism is defined by United Nations World Tourism Organisation as a social, cultural, and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal, business, and professional purpose with their activities often involving monetary expenditure. Uganda is endowed with a wide range of tourism resources, ranging from biodiversity, landscapes, cultural and religious heritage [1]. Landscape and wildlife are the most significant tourist resources, with a considerable employment and foreign exchange source for the country [1].

Tourism is recognized as a key primary economic growth sector in Uganda's third National Development Plan, capable of alleviating poverty through job creation [2]. For instance, in 2018 before the Corona virus disease (COVID-19) pandemic, tourism generated UGX 8.36 trillion in expenditure which translates to a 7.7% of the country's GDP and USD 1.6 billion in foreign exchange earnings [3]. The growth in 2018 was mainly driven by international tourism arrivals which increased by 7.4% and a significant increase in domestic tourism. In the same year, the sector also accounted for 6.7% of the country's employment totaling to 667,600 jobs [3].

The inbound tourism arrivals for Uganda are from; Rwanda, accounting for 29%, Kenya 29%, Democratic Republic of Congo 6%, Tanzania 5%, United States of

America 5% and the rest of the world 27% [4]. However, due to ongoing global Corona Virus pandemic, the travel and tourism industry in Uganda has registered a disruption in activity resulting in a decline in its impact [4]. For instance, the total contribution of tourism to gross domestic product (GDP) decreased from UGX 7,445.6 billion (6.5% of GDP) in 2019 to UGX 2,961.9 billion (2.5% of GDP) in 2020, while for employment, the travel and tourism industry registered a decline from 589,300 jobs (3.6% of total employment) in 2019 to 386,200 jobs (2.4% of total employment) in 2020 [4].

Despite the increase in tourism budget financing from UGX 91 billion in financial year 2015/2016 to UGX 178 billion in financial year 2021/2022, it is still considerably low compared to the sectors contribution to the country's GDP in 2020 [5]. As a result, there have been challenges in addressing the sector emerging issues like establishing air rescue services, tourism recovery fund, tourism information management system for effective data collection and improving up country accommodation infrastructure [5]. This therefore necessitates the investigation of tourism on Uganda's economic welfare to drive concerted efforts towards reinvigorating the tourism industry in the country.

### 1.2. Problem Statement

Uganda has a dismal tourism sector performance in terms of GDP contribution and job creation that is USD 798.1 million (2.5%) and 386,200 jobs. Compared to regional peers like Kenya, where the tourism sector contributes USD 7,961 million (8.8%) to the nation's GDP and employs 1,076,800 people, while in Tanzania,

the tourism sector contributes USD 6,674 million (11.7%) to the nations GDP and employs 1,483,400 people [4]. Uganda has inadequately exploited her tourism potential due to limited branding, low domestic tourism, inadequate tourism infrastructure, limited marketing and promotion, undeveloped and narrow product range. Additionally, Uganda is also constrained by inadequate capacity to host large number of tourists at a time especially outside the greater Kampala Metropolitan area where most tourism hot spots are located due to limited bed capacity. The emergence of epidemics like COVID-19 has also further exacerbated the situation by inhibiting movement of global tourists who are Uganda's top tourism spenders resulting into booking cancelations and loss of revenue. According to Ministry of Tourism Wildlife and Antiquities, the travel and tourism sector in Uganda suffered a setback after outbreak of COVID-19 with reduction in international tourist arrivals from 1,542,620 in 2019 to 473,296 in 2020, loss in foreign exchange earnings of up to US\$ 1.01 billion in 2020 and decline in hotel occupancy rates from 51.9% in 2019 compared to an average of 20% in 2020 [5]. Investment in sectors that have a big multiplier in the economy will aid quick economic recovery post COVID-19.

### 1.3. Objectives of the Paper

The overall objective of this paper is to examine the economic impact of tourism on Uganda's economic welfare. Specifically, this paper seeks to:

- i) Highlight the contribution of imports on GDP per capita in Uganda.
- ii) Highlight the relationship between Gross Domestic Savings and Uganda's GDP per capita

## 2. Literature

Tourism stimulates the production of goods and services in a wide range of sectors and subsectors such as construction, furniture, agriculture, processing, education, handicrafts, wood carving, textiles, jewelry, transport, telecommunications, and financial services [6].

Granger causality tests based on Error Correction Models (ECMs), indicated that there was a 'strong Granger causal relationship between international tourism earnings and economic growth, and a strong causal relationship between real exchange rate and economic growth [7]. The co-integration and causality analysis application to the expenditure of international tourists' arrival in Nepal indicated that there was long run bidirectional relationship between average expenditure per visitor, their length of stay and a unidirectional causality between average length of stay and the number of international tourist arrivals [7].

### 2.1. Development Theories in Support of Tourism

#### 2.1.1. Modernization Theory

The modernization theory attempts to identify the social variables that contribute to social progress and development of societies and seeks to explain the process

of social evolution [8]. Proponents of modernization theory claim that modern states are wealthier and more powerful and that their citizens are freer to enjoy a higher standard of living which is associated with leisure spending on tourism related activities [9]. Developments such as new data technology and the need to update traditional methods in transport, communication, and production, make modernization necessary or at least preferable to the status quo [9].

#### 2.1.2. Globalisation and Modernisation

Globalization is defined as the integration of economic, political, and social cultures [10]. Reference [10] further argues that globalization is related to the spreading of modernization across borders through tourism. Annual global trans-border tourist arrivals rose to 456 million by 1990 and almost tripled since, reaching a total of over 1.2 billion in 2016 due to globalisation. The nexus between globalisation and tourism is that globalisation drives tourism since we become one part of the global village which removes unnecessary travel restrictions [10]. Uganda which is part of the globalisation and modernisation theory as evidenced in participation to global tourism events like British Bird Watching Fair in Rutland, Kwita Izina in Rwanda, World Travel Market in London, Magical Kenya, Intra African Trade Fair in Egypt, Communication and Marketing Agency(KPRN) Road show in 5 German cities, New York Times Travel Show, International Mediterranean Tourism Market in Israel, Meetings Africa Expo in South Africa; ITB Berlin; Cairo International Fair; World Travel Market Africa; Indaba Tourism Fair in South Africa, Arabian Travel Market - Dubai, Imex Mice Expo in Frankfurt, Kili/Karibu Fair in Arusha, China-Africa Economic &Trade Expo and the Uganda Canadian diaspora business expo and convention in Toronto [3]. This has resulted in increased marketing of the country that has led to increase in number of visitor arrivals in the country from 1,402,409 in 2017 to 1,509,669 in 2019 [3].

## 3. Methodology

Using quarterly data from 1995 to 2019 obtained from World Bank data development indicators. The study adopts the models as used by [11]

From a Cobb- Douglas Production Function

$$GDP_i = A_i CAP_i^\alpha POP_i^{(1-\alpha\epsilon vi)} \quad (1)$$

Where;

GDP<sub>i</sub> - real GDP of the country

CAP<sub>i</sub> - capital

POP<sub>i</sub> - population

A<sub>i</sub> - productivity

vi -random disturbance term

Real GDP per capita which determines the living standard of a representative is:

$$GDP_i / POP_i = A_i (CAP_i / POP_i)^{\alpha\epsilon vi} \quad (2)$$

The above equation implies that per capita GDP or income is primarily a reflection of capital per person and

productivity which is the core concept of modern growth theory.

To linearize the production function for appropriate estimation, a logarithmic transformation is performed

$$\ln(GDP_i / POP_i) = \ln(A_i) + \alpha \ln(CAP_i / POP_i) + v_i \quad (3)$$

Research and Development (RnD) and education (EDU) are well known to have important influence on productivity [8]. Therefore, productivity is modelled as a function of relevant determinants

$$\ln(A_i) = \lambda + \delta \ln(EDU_i) + \gamma \ln(RnD_i) + u_i \quad (4)$$

Combining eqns 4&3

$$\ln(GDP_i / POP_i) = \lambda + \alpha \ln(CAP_i / POP_i) + \delta \ln(EDU_i) + \gamma \ln(RnD_i) + \mu \quad (5)$$

where  $\mu = v_i + u_i$ .

Eqn 5 summarises the growth theory model pioneered by [12] but does not incorporate or allow international tourism to have separate effects on income per capita. To test if tourism development is an additional determinant of income in the presence of standard income determinants such as capital accumulation, its contribution is added to equation (5) to obtain equation (6) as follows;

$$\ln(GDP_i / POP_i) = \lambda + \alpha \ln(CAP_i / POP_i) + \delta \ln(EDU_i) + \gamma \ln(RnD_i) + \beta \ln(Tour) + \mu \quad (6)$$

Log per capita GDP of a country is a function of tourism activities (Tour) in a combination of other income factors. Therefore, if tourism is an additional determinant of income, we expect that  $\beta > 0$

From equation 6, this study introduces the variables of GDP per capita, gross domestic savings and imports based on data availability. This gives equation 7 that examines the relationship between international tourism receipts and economic welfare in Uganda.

$$Y_{it} = \beta_0 + \beta_1 gds + \beta_2 imp + \beta_3 itr + \epsilon_{it} \quad (7)$$

$Y_{it}$  - GDP per capita: is gross domestic product divided by mid-year population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.

$imp$  - Imports: which represent the value of all goods and other market services received from the rest of the world

$gds$  - Gross Domestic Savings: is calculated as GDP less final consumption expenditure (total consumption).

$itr$  - International tourism receipts for travel items: are expenditures by international inbound visitors in the reporting economy. The goods and services are purchased by or on behalf of the traveler or provided without a quid pro quo, for the traveler to use or give away. These receipts should include any other prepayment made for goods or services received in the destination country. They also may include receipts from same-day visitors, except in cases where these are so important as to justify a separate.

$\beta_0$  - intercept

$\beta$  - coefficient to be estimated

$\epsilon$  - error Term

### 3.1. Data and Variables Used

Time series data from World Bank Development Indicators was used and the variables are GDP per capita, international tourism receipts, imports and gross domestic savings. These variables were chosen because they have greatly impacted on Uganda's GDP hence the need to investigate their level of impact on the country's GDP per capita. The Vector Error Correction model (VECM) used includes the long run theoretical restrictions.

### 3.2. Johansen-Cointegration Test

To investigate the long run relationship between annual GDP per capita, annual international tourism receipts, gross domestic savings and imports, Johansen's cointegration test was used [13]. Johansen's methodology is typically used in a setting where all variables in the system are integrals of order one I (1). If a single variable is integrated of order zero I (0) instead of I (1) this will reveal itself through a co-integrating vector whose space is spanned by the only stationary variable in the model. Under the Johansen methodology, the trace static is used to test the significance of estimates of the Eigen values. The cointegration test using the Johansen's cointegration procedure ascertains whether the variables are cointegrated. The Johansen's cointegration procedure is used because it detects the rank or number of cointegrating relations as opposed to the Engle Granger Methodology which only assumes one cointegrating equation regardless of the number of series. The cointegration methodology allows estimation of multiple long run relationships between a series of non-stationary variables through cointegrating vectors as well as many short run dynamics in these variables.

### 3.3. Augmented Dickey Fuller Test

To test for stationarity of variables in the model, the Augmented Dickey Fuller test and Philips Pheron was applied using EVIEWS 10. The Augmented Dickey Fuller and Philips Pheron Test is a unit root test for stationarity. Unit roots can cause unpredictable results in your time series.

## 4. Results

### 4.1. Descriptive Statistics

To find out the economic behaviour of the variables before subjecting them to econometric analysis descriptive statistics were also conducted.

The descriptive statistics results show that for the period under review, the GDP per capita average growth was 6.13% while International Tourism Receipts grew by 19.80%. The average growth of Gross Domestic Savings on consumer prices was at 21.18%. During the same period under study, the economy experienced the highest growth in International Tourism Receipts at 20.93% and lowest growth at 17.88%. The maximum growth rate GDP per capita of the economy was at 6.78% and lowest growth rate of GDP per capita was at 5.46%. The Jarque-

Bera probability for all the variable results is less than 5 % implying that they are normally distributed.

**Table 1. Descriptive Statistics**

Statistic	LNGDPQ	LNGDSQ	LNIMPQ	LNITRQ
Mean	6.134	21.183	21.914	19.805
Median	5.996	20.832	21.995	19.802
Maximum	6.786	22.773	22.832	20.937
Minimum	5.469	18.581	20.768	17.889
Std. Dev.	0.512	1.141	0.748	0.887
Skewness	0.064	-0.060	-0.084	-0.231
Kurtosis	1.189	1.540	1.241	1.567
Jarque-Bera	13.735	8.937	13.011	9.448
Probability	0.001	0.011	0.001	0.009
Sum	613.380	2118.336	2191.409	1980.504
Sum Sq. Dev.	25.941	128.880	55.390	77.975
Observations	100	100	100	100

Source: Computed by Author using EVIEWS 10.

## 4.2. Multicollinearity

A correlation analysis to check for multicollinearity was run. Table 2 shows that the variables are highly correlated implying that there exists multicollinearity among the selected variables.

**Table 2. Correlation Results**

Correlation Probability	LNGDPQ	LNGDSQ	LNIMPQ	LNITRQ
LNGDPQ	1.000000			
LNGDSQ	0.957***	1		
LNIMPQ	0.975***	0.947***	1	
LNITRQ	0.941***	0.955***	0.973***	1

Source: Computed by Author using EVIEWS 10

Note: \*\*\* Significant at 1%, \*\* Significant at 5%, \* Significant at 10%.

The results above prompted the study to test for test for correlation at first difference. Results of the correlation analysis at first difference in Table 3 shows that the variables are not highly correlated at first difference implying that there is no multicollinearity at first difference.

A VECM was used for quantitative analysis to investigate empirical relationship between economic welfare and tourism.

**Table 3. Correlation at First Difference**

Probability	DLNGDPQ	DLNGDSQ	DLNIMPQ	DLNITRQ
DLNGDPQ	1			
DLNGDSQ	0.147**	1		
DLNIMPQ	0.604***	0.015*	1	
DLNITRQ	0.312***	0.497***	0.227**	1

Source: Computed by Author using EVIEWS 10

Note: \*\*\* Significant at 1%, \*\* Significant at 5%, \* Significant at 10%.

## 4.3. Unit Root Test

To test for stationarity or non-stationarity of the variables, the Augmented Dickey Fuller Test and the Phillip Peron tests were applied to ascertain the order of integration of the variables of the series to avoid spurious results.

**Table 4. Unit Root test Results**

Variable	ADF		PP	
	Levels	1 <sup>st</sup> Difference	Level	1 <sup>st</sup> Difference
lnGDPQ	-0.927	-2.649*	-0.597	-4.719***
lnGDSQ	-0.412	-2.325	-1.873	-6.306***
lnIMPQ	-0.945	-1.223	-0.955	-5.429***
lnITRQ	-0.841	-3.881***	-2.122	-5.109***

Source: Computed by Author using EVIEWS 10

Note: \*\*\* Significant at 1% \*\* Significant at 5% \* Significant at 10%.

The ADF shows only two variables stationary at first difference that is GDP per capita and international tourism receipts while PP Stationarity test results shown above shows that all variables are stationary at first difference i.e. I (1). Therefore, given that all the variables are I (1), the ECM or VECM model are the best models to estimate the relationship among the variables since the ECM or VECM require that all variables are stationary at first difference.

## 4.4. Co-integration Test

To determine the optimal lag length, Akaike Information Criterion (AIC), Schwarz Information Criterion (SC) Hannan Quinn Information (HQ), Final Prediction Error (FPE) and sequential modified (LR) test statistic are run from Vector Auto Regression (VAR); which is a statistical model used to capture the relationship between multiple quantities as they change overtime.

**Table 5. Lag Section**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	3.481551	NA	1.19e-05	0.010801	0.117649	0.053991
1	630.3677	1188.472	3.53e-11	-12.71599	-12.18175	-12.50005
2	702.7433	131.1808*	1.09e-11*	-13.89049*	-12.92885*	-13.50178*
3	709.7493	12.11459	1.32e-11	-13.70311	-12.31409	-13.14165
4	712.3084	4.211821	1.77e-11	-13.42309	-11.60668	-12.68887

\* Indicates lag order selected by the criterion.



Table 5 recommends the optimal lag length of 2 because all the criteria recommend the optimal lag length of 2.

After establishing the lag length, the Johansen co-integration test was carried out to establish the long run relationships among the variables. These tests take two forms; the co-integration test using the trace statistics and the maximum eigenvalue. The results are shown in Table 6.

The trace test indicates 2 co-integrating equations while the maximum Eigen value indicates 1 co-integrating equation at 0.05 level which indicates there is a long run relationship among the variables.

**Table 6. Co-integration test results**

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.296162	67.81403	47.85613	0.0002
At most 1 *	0.180950	33.74692	29.79707	0.0167
At most 2	0.129510	14.38475	15.49471	0.0730
At most 3	0.009552	0.930972	3.841466	0.3346
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.296162	34.06711	27.58434	0.0064
At most 1	0.180950	19.36218	21.13162	0.0868
At most 2	0.129510	13.45378	14.26460	0.0668
At most 3	0.009552	0.930972	3.841466	0.3346
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				

Source: Computed by author using EViews.

## 4.5. Discussion of the Results

The VECM estimation result shows that the estimated coefficient of the error correction term has the expected negative sign and is statistically significant based on the t-statistics. This is an indication that there is approximately 19.4% adjustment of the estimated short run disequilibrium in the variables towards their long run values. This means that if there is a shock that pushes away the GDP per capita from equilibrium, international tourism receipts, imports and gross domestic savings correct the discrepancy at a speed of 19 percent in the first quarter.

### 4.5.1. Impact Assessment of Tourism Receipts on Uganda's Economic Welfare

Theoretically increase in earnings are expected to boost economic welfare, thus the study's expectation was that tourism in the form of International Tourism Receipts increases economic welfare. Table 7 clearly highlights that International Tourism Receipts (ITR Q) positively contribute to GDP per capita by USD 55.2. The coefficient of International Tourism receipts (ITRQ) is 0.552 with a t statistic of 5.00373. This means that a unit

increase in International Tourism Receipts will lead to a 0.552 increase in GDP per capita. This is in line with apriori expectations as highlighted in the literature review of [11], who argued that increase in tourism activities is associated with increase in income which in turn translates to economic growth. The results imply that Uganda approximately obtains a total of USD 55.2 of its GDP per capita from tourism. Addressing tourism development challenges should therefore remain governments top priority in its drive to attract more tourism receipts as this greatly contributes to the country's per capita income.

### 4.5.2. Impact of Gross Domestic Savings on Economic Welfare

To avoid model misspecification and biasness, Gross Domestic Savings was added to the model to capture its impact on GDP per capita. The study's expectation was that debt servicing positively contribute to economic welfare through increasing GDP per capita because savings increase investments. Results in Table 7 show a positive coefficient of 0.461 of Gross Domestic Savings (GDS Q). Implying that a unit increase in Gross Domestic Savings on average accounts for to a USD 46.1 of GDP per capita per quarter.

### 4.5.3. Impact of Imports on Economic Welfare

The apriori expectation was that imports positively affect economic welfare through import of intermediate and capital goods that are used in production of essential commodities. According to trade map, Uganda's top major imports as of 2019 were mineral fuels USD 1.2 million, machinery USD 536,000 and vehicles USD 539,000. Results from the regression in Table 7 show a positive coefficient of 0.501 implying that a unit increase in imports on average accounts for USD 50.1 per capita per quarter.

**Table 7. Results of the Error Correction Model**

Variable	Coefficient	Std. Error	t-statistics
C	0.005	0.004	1.476
D (LNGDP (-1))	0.381	0.126	3.016
D (LNGDS (-1))	0.461	0.110	4.189
D (LNIMP (-1))	0.501	0.142	3.520
D (LNITR (-1))	0.552	0.110	5.004
CointEq1	-0.194	0.047	-4.108

Source: Computed by author using EViews.

## 5. Conclusion, Limitations and Recommendations

### 5.1. Conclusion

The central objective of this study was to examine the impact of tourism on Uganda's economic welfare through empirical analysis using quarterly data for the period between 1995-2019 obtained from World Bank Development Indicators (2021). The findings of the study indicated that a unit increase in tourism receipts leads to an increase in GDP per capita by USD 55.2 per quarter.

Therefore, tourism has a significant contribution on Uganda's economic welfare directly and indirectly through other variables such as Gross Domestic Savings and imports.

## 5.2. Limitations to the Study

The study's initial intention was to cover a study period from 1985 to 2019 but due to unavailability of data for years below 1995, the data analysed was collected from 1995 to 2019.

It should also be noted that the study is based on the Ugandan context and hence may not be generalized to reflect the whole of Africa, despite many countries in Africa having the same economic characteristics.

## 5.3. Recommendations for Policy Making of Tourism Development

Given Tourism's significant contribution on Uganda's Economic Welfare, Uganda needs to improve accommodation infrastructure in up country lodges by increasing its bed capacity and improving internet and ICT connectivity to increase the absorption capacity of international tourists. Furthermore, there is need for the sector to be shielded from the catastrophic effects of global pandemics like COVID-19 by setting up a National Tourism Relief Fund and a National Tourism Insurance Scheme. Lastly, in order to also maximize domestic benefits from the sector, there is need to setup modern institutions to train locals instead of continually hiring foreigners who expatriate most of their earnings.

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