

Estimating the direct contribution of tourism to Rwanda's economy: Tourism satellite account methodology

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Abstract

The tourism industry is poised to command a significant role in the economy of Rwanda, a low-income developing country that is rapidly transforming into a service-oriented economy. However, the industry does not exist as a distinct entity in a country's national accounts leading to difficulties in estimating its role. Besides, the existence of a significant informal sector aggravates the situation. This study used tourism satellite accounts approach to estimate the economic contribution of tourism. Using primary data from various tourism surveys, six core tables of the tourism satellite accounts framework are presented to estimate the direct economic contribution of tourism to Rwanda's economy in 2014. In this year, a total of 1,219,529 international tourists visited the country while 560,000 residents took part in domestic tourism trips resulting in internal tourism expenditure/consumption amounting to RWF 261.2bn. This generated an estimated RWF 197.5bn as gross value added by the tourism characteristic industries. Direct tourism gross value added was estimated at RWF 120.0bn while direct tourism gross domestic product, a measure of the direct effects of internal tourism consumption on gross domestic product of the economy was computed at RWF 128.3bn (or 2.5% of Rwanda's gross domestic product) in the year. In addition to the core six tourism satellite accounts tables, the levels of tourism employment (about 89,000 jobs) tourism gross fixed capital formation (slightly over RWF 200bn) and tourism collective consumption (over RWF 7bn) were estimated.

Under this study, the international methodological recommendations on tourism satellite accounts were implemented for Rwanda. The contribution of tourism to gross domestic product, employment, investment, and collective consumption was quantified and estimated. Informal sector tourism activities were included in these estimates. Gross fixed capital formation and collective consumption estimates are tentative due to conceptual considerations documented by the methodological framework.

Keywords

Tourism satellite account, collective consumption, gross fixed capital formation, employment, internal tourism consumption, outbound tourism, domestic tourism, total tourism internal demand, non-monetary indicators, Rwanda

Introduction

Tourism has emerged as a significant phenomenon influencing socio-economic development in a globalized

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society over the last few decades. Tourism accounted for 10% of global gross domestic product (GDP) and provided 1 out of every 11 employment positions in the world resulting in 277 million jobs in 2016. It accounted for 30% of the global service exports and generated an estimated US\$1.5 trillion in export earnings (United Nations World Tourism Organization (UNWTO), 2017).

Africa enjoyed positive growth recording 58 million international arrivals in 2016, an 8% increase from 2015 (UNWTO, 2017). In the East African region, between 2012 and 2015, Rwanda's inbound tourist arrivals grew at an average 7%, three percentage points above the African average over the same period (UNWTO, 2017). According to the national tourism policy elaborated by the Ministry of Trade and Industry (MoTI), Rwanda projects to grow international tourist arrivals to 2,219,000 visitors and are expected to earn the country US\$627 million in revenues by the year 2020 (MoTI, 2009).

The structure of the Rwandan economy has been changing rapidly as the country's reliance on agriculture diminishes relative to services (Eric Uwitonze and Heshmati, 2016; United Nations Conference on Trade and Development (UNCTAD), 2014; Uzziel and Faustin, 2016). Between 2009 and 2014, for instance, the share of services in Rwanda's GDP remained at 47–48% while agriculture contributed 33% to GDP throughout the same period. Manufacturing contributed slightly below 14% of the economy's GDP over the same period.

By 2011, tourism accounted for 63% of the country's service export earnings. As a growth sector, the country's tourism sector ranks highly in attracting foreign direct investment (FDI) and accounts for up to 40% of total FDI into the country (UNCTAD, 2014). Rwanda's tourism development instruments outline policies, strategies, and incentives that have made tourism growth possible (MoTI, 2009).

Between 2011 and 2014, an average of 62% of inbound visitors to Rwanda travelled for personal reasons out of which 9% visited for holidays, leisure and recreation purposes. On the other hand, UNWTO (2016) data show that an average of 38% of tourists over the same period visited for business and professional purposes showing the country's regional significance as a Meeting, Incentives, Conference and Exhibition (MICE) destination. Only about 12% of international and regional visitors travelled by air mainly from the key source markets of North America, Europe and Asia. Improved regional access to the South and East African regions accounted for a larger proportion of the 85–89% inbound visitors from Africa arriving by land (MoTI, 2009).

Under Rwanda's *Vision 2020* and the Economic Development and Poverty Reduction Strategy (EDPRS2) tourism is expected to contribute to increased government revenues, the balance of payments (BOP) and sustained economic growth with equitable distribution of benefits to all Rwandan nationals (MoTI, 2009).

Tourism has, therefore, grown considerably over recent decades as an economic and social phenomenon. Although tourism industry is not explicitly recognised in the Standard Industrial Classification of all Economic Activities (SIC), there is little doubt about the growing significance of economic activities related to this industry (Aydin, 2008; Cristi, 2018; David and Philippe, 2011; Frechtling, 2010; Ramesh et al., 2014). The problem with measuring the economic significance of tourism spending is that the tourism industry or group of industries identified within the tourism sector does not exist as a distinct entity in the national accounts or national statistical system. Tourism activity is thus "concealed" within other industrial activities (accommodation, transportation, telecommunications, etc.). Informal sector contributes to tourism with respect to production and consumption, and hence creating more measurement challenges. Furthermore, data on various aspects of the economic activities associated with tourism found in the statistical infrastructure are fragmented and dispersed (Beynon et al., 2009). The result is that the value-added of the tourism industry is usually underestimated in national economic data used by government and private sector decision makers.

This paper presents an estimation of the direct economic contribution of tourism to Rwanda's economy. The analysis is guided by the Tourism Satellite Account (TSA) recommended methodological framework (TSA) and the International Recommendations for Tourism Statistics (IRTS, 2008).

Literature review

Conceptualizing tourism economic impacts

Tourism gives rise to negative and positive impacts to the physical and human environment. Economic agents are persuaded to get involved in tourism activities as a result of positive impacts on the economy (Kumar et al., 2015). These impacts can be conceptualized by defining categories of tourism contribution and benefits to the economy. Economic benefits include both primary and secondary effects on the economy. Frechtling (2013) describes tourism contribution to the economy as the "direct, positive effects of total tourism internal demand (TTID) in an economy for a given period, usually a year."

Direct economic contribution of tourism results from shocks introduced by visitor consumptive spending, tourism investment spending and purchases as well as “individual” and collective government spending on tourism services directly linked to visitors (World Travel & Tourism Council (WTTC), 2017). Direct contributions are registered as effects on value addition, employment, labour compensation and gross operating surplus by firms as well as government tax revenues.

Secondary effects encompass ‘indirect’ and ‘induced’ impacts and these give rise to additional output, employment and incomes by firms that may or may not directly serve tourists. The third round of economic benefits or induced impacts are realized as employees of tourism industry spend their income in the domestic economy and these consumptive activities further generate more effects (Frechtling, 2013; WTTC, 2017).

Modelling economic impacts of tourism

Kumar et al. (2015) and Wei et al. (2013) point out the significance of estimating subregional or national economic impacts of tourism arguing that information from such studies is an important ingredient in policy formulation, tourism planning, decision making on resource allocation and investment as well as in establishing the profile of tourism as an economic activity. Consumers of information from impacts studies include public sector tourism organizations, non-governmental organizations, private business owners in the industry, employees and the host community (Frechtling and Smeral, 2010). For these reasons, economic impact studies have received enormous scholarly attention leading to a multiplicity of methodological approaches in estimating economic consequence of tourism. Based on their strengths, weaknesses, data requirements, scope of application, complexity and resource requirements, these methods are suited for different objectives in estimating direct and/or total contribution of tourism (Kumar et al., 2015; Frechtling, 2011; Stynes, 1999).

Techniques used to estimate visitor spending impacts range from those that rely on expert judgment, those that use primary data from household and visitor surveys, those based on secondary visitor expenditure data to those that use off-the-shelf multipliers (Stynes, 1999). However, the author observes that these methods hold the direct economic impact of tourism spending to be a function of the volume of tourists and average per capita tourist expenditure.

Methodology

TSA approach

TSA provides an internationally recognized and standardized method of assessing the scale of tourism-related production and its links across different sectors. The Account provides a comprehensive database that identifies the role of tourism in the economy. A clearer picture of tourism’s performance within the economy and the benefits the industry offers can then be evaluated.

TSA methodology analyses tourism and its relationship with the rest of the economy within the central framework of national accounting, the System of National Accounts (SNA, 2008).¹ In this way, the contribution of tourism to national accounts aggregates can be determined and compared with other industries. This methodology is designed to measure and record final consumption by visitors involved in tourist type trips away from their usual environments and its direct effects on GDP and employment in a national or subnational economy in a given time period, usually a year (Frechtling and Smeral, 2010). The methodology was designed to respond to difficulties encountered in capturing impacts of an ‘inexistent’ industry such as tourism that is not defined in any system of economic statistics and national accounts (Frechtling, 2010). TSA offers the solution to this challenge by defining tourism as a demand-side determined industry using principles, structures and compilation rules of an internationally adopted SNA.² The ‘industry’ is thus identified from the demand side by measuring the demand for various commodities. This makes it possible to form a link to the supply side of the industry through the identification of tourism commodities. The industries which are characteristic of or connected to tourism are then identified through their relative dependence on tourism generated demand. The structure of TSA depends on the balance between the demand for tourism commodities by visitors and supply of these commodities (Aydin, 2008; Van de Steeg, 2009; Frechtling, 2010; Kenneally and Jakee, 2012; Mahesh, 2012). TSA relies on statistically recorded observations within accounts that capture the impact of tourist consumption activities. This is different from other economic impact models where the approach is the simulation of economic impacts using theoretical assumptions (Smith and Wilton, 1997; WTCC, 2017).

As an accounting method, TSA is made up of a set of 10 interrelated tables showing the size and distribution of tourism consumption in a country and its direct contributions to GDP, employment and other macroeconomic indicators of a national economy

(Fretchling, 2010; World Tourism Organization, 2010). TSA is used for tourism planning and broader development planning. It provides the framework from which a country can determine the activities that are most dependent on tourism as well as activities that visitors consume or spend most on. Understanding these relationships can allow for stronger linkages to be developed within the economy and assists in better positioning of the tourism industry to contribute more significantly to development (Dwyer et al., 2012; Song et al., 2012). Such information is also necessary for efficient and effective policy decisions that can guide future development of the sector (Dredge and Jamal, 2015; Dwyer et al., 2010, 2012; Jones et al., 2003).

Since its description in 1993 by UNWTO, TSA methodology has undergone much development and gained wide acceptance. Libreros et al. (2006) reviewed global progress in research and practice of TSA in 62 countries up to 2004 and demonstrated an expanding uptake of TSA. By 2010, at least 60 countries had elaborated their TSA or were at various stages of completing their accounts (UNWTO, 2010). A regional comparison showed that statistically advanced and data-rich countries in America, Europe and Asia-pacific regions had completed TSAs (UNWTO, 2010). Progress was lagging in Africa with pioneering countries like Egypt and South Africa operating at experimental stages of TSA development (UNWTO, 2010). One of the main reasons is the relatively large informal sector in the economies of developing countries.

Data and data sources

Multiple sources of data from official records of Rwanda Development Board (RDB), National Institute of Statistics of Rwanda (NISR), the National Bank of Rwanda (BNR) and the United Nations Economic Commission for Africa (UNECA) were relied on to generate estimates used to construct the TSA tables.

The data utilized were both secondary and primary. Estimation of direct effects in terms of consumption, income, investment, employment etc. was made in accordance with UNWTO edition.

Primary sources of data used include results of the 2014 Survey of Inbound Tourism; Results of the 2015 Survey of Outbound Tourism and NISR 2010/2011 Integrated Household Living Conditions Survey (EICV3) that included domestic tourism. The RDB 2014 survey of inbound tourism captured data from a random sample of 3138 in an exit survey questionnaire administered to visitors at the country's land borders (74%) and airport (26%). On the other

hand, the 2015 survey of outbound tourism by NISR randomly sampled 4284 respondents, 99.1% of whom were Rwandese. The 2010/2011 integrated household living Conditions Survey (EICV3) was conducted for one year by NISR from November 2010 to cater for seasonal variations and included a sample of households divided into 10 equal sized cycles and distributed across the country. The survey yielded data on tourism participation, trip characteristics, motivations and expenditure on trips taken 12 months prior to the survey.

The NISR establishment census of 2014 estimated the accommodation and food services activities sector to have 44,621 establishments. The RDB tourism establishment survey of 2015 created 12 categories of tourism characteristic establishments i.e. accommodation facilities, heritage centres, transport companies, tour companies, tour guides, curio shops, food and beverage facilities, travel agencies and training institutions among others.

Secondary data were obtained from the Rwanda 2011 Supply and Use Table (SUT), BOP Credit and Debit Travel statistics from BNR, GDP by Kind of Activity and Macroeconomic Aggregates from Rwanda National Accounts. Rwanda Tourism Satellite Account (RTSA) 2014 distinguished tourism characteristic products as accommodation; food and drinks; local tour packages; day tours and excursions as well as other local transport. Non-tourism-related consumption products were identified separately and included shopping.

Findings

Internal tourism expenditure/consumption

TSA Table 4 presents a summary of the estimated total tourism consumption by all visitors within the country for the year 2014. Internal tourism consumption refers to consumption of both resident and non-resident visitors within the economy of reference. It is the sum of domestic tourism consumption and inbound tourism consumption. Total consumption is generated by combining expenditure data from TSA Tables 1 and 2 together with estimates of 'other' components of tourism consumption. Other components include services associated with vacation accommodation on own account (except refunds) and tourism social transfers in kind (TSA).² Therefore, the table presents only the internal tourism expenditure which was estimated at RWF 261.2bn (market prices) or RWF 209.2bn at basic prices. Basic price refers to the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable, and plus any subsidy

Table 1. Inbound tourism expenditure by products and categories of visitors 2014.

		Inbound tourism expenditure (RWF millions)		
		Tourists (overnight visitors)	Excursionists (same-day visitors)	All visitors
A. Consumption products ⁹				
A.1 Tourism characteristic products				
1.1	Accommodation	98,600	2600	101,200
1.2	Food and drinks	30,600	800	31,400
1.3	Local tour packages	7300	200	7500
1.4	Day tours and excursions	3200	100	3300
1.5	Other local transport	26,200	700	26,900
A.2 Other consumption products				
1.6	Shopping	24,500	600	25,100
1.7	Other	12,400	300	12,700
Total		202,800	5300	208,100

Source: Researchers' estimates from Rwanda Development Board (RDB).

Table 2. Domestic tourism expenditure by products, classes of visitors and types of trips in TSA 2014 in RWF billions.

		Domestic tourism expenditure (RWF Billions) 2014		
		All visitors domestic tourists	All visitors outbound trips (domestic component)	All types of trips (domestic tourism)
B. Consumption products				
B.1 Tourism characteristic products				
2.1	Accommodation	2.9	–	2.9
2.2	Food and Beverage	10.5	–	10.5
2.3	Transport and local tour packages	26.8	–	26.8
2.4	Day tour and excursions	0.02	–	0.02
2.5	Other local transport and recreation	0.2	–	0.2
B.2 Other consumption products				
2.6	Shopping	9.2	–	9.2
2.7	Other service	3.5	–	3.5
Total		53.1	–	53.1

Source: Researchers' estimates from the Rwanda 2010/11 Integrated Household Living Conditions Survey.

receivable, on that unit as a consequence of its production or sale; it excludes any transport charges invoiced separately by the producer.

TSA Table 1 details international inbound visitor expenditure for the year 2014. Total expenditure was approximated by considering the number of visitors, the weighted average length of stay and weighted average expenditure per day. Thus almost 1,013,607 tourists were in the country for 6,605,211 nights and spent a total of RWF 202,800 million in 2014. The weighted average spent was RWF 26,157 per night. In the same year, 229,271 same-day visitors spent an estimated RWF 5,306 million in the country on their day trips bringing total inbound expenditure to RWF 208,106 million.

TSA Table 2 provides domestic tourism expenditure for the same year. Data from the 2010/2011

Integrated Household Living Conditions Survey or EICV3 (*Enquête Intégrale sur les Conditions de Vie des Ménages*) was used to estimate household domestic expenditure including visitor expenditure on domestic trips.³ A sample of 14,308 households was adopted in the survey. According to the survey, about 22% of Rwanda's population participated in domestic tourism.

The total expenditure by domestic visitors was estimated at RWF 53.1 billion at 2014 prices.

International outbound tourism expenditure

TSA Table 3 details outbound visitor expenditure by Rwandese nationals and other nationalities resident in Rwanda. Estimates for this table were computed using data from an outbound survey undertaken by NISR in

Table 3. Outbound tourism expenditures by products, classes of visitors in 2014 RWF billions.

	Outbound tourism expenditure (RWF Billions) 2014		
	Overnight outbound tourist	Same-day visitors	All outbound visitors
C. Consumption products			
C.1 Tourism characteristic products			
3.1 Accommodation	13.4	-	13.4
3.2 Food and beverage	22.0	-	22.0
3.3 Transport and local tour packages	9.8	-	9.8
3.4 Day tour and excursions	6.1	-	6.1
C.2 Other consumption products			
2.6 Shopping	22.0	-	22.0
2.7 Other service	3.7	-	3.7
Total	77.0	-	77.0

Source: Researchers' estimates based on Rwanda Development Board international outbound visitor Survey (2015).

Table 4. Internal tourism consumption by products 2014 (RWF billions).

	Internal tourism final expenditure (RWF billions) 2014				
	Inbound tourism expenditure	Domestic tourism expenditure	Internal tourism expenditure	Other components of tourism consumption	Internal tourism consumption
D. Consumption products					
D.1 Tourism characteristic products					
4.1 Accommodation	101.2	2.9	104.1	-	104.1
4.2 Food and beverage	31.4	10.5	41.9		41.9
4.3 Transport and local tour packages	7.5	26.8	34.3		34.3
4.4 Day tour and excursions	3.3	0.02	3.3		3.3
4.5 Other local travel	26.9	0.2	27.1		27.1
D.2 Other consumption products					
4.6 Shopping	25.1	9.2	34.3		34.3
4.7 Other	12.7	3.5	16.2		16.2
Total	208.1	53.1	261.2		261.2

Source: Researchers' estimates from Rwanda Development Board and various visitor surveys.

2015. From the survey estimates, about 560,000 people were involved in outbound tourism, mostly to destinations within the East African Community (88.8%) and other African countries (10.9%). A total of RWF 77.0bn was spent by outbound visitors in 2014 prices. TSA Table 3 is a stand-alone table whose estimates are not fed into the other TSA tables (Smith et al., 2011).

Other direct macroeconomic indicators

TSA: specifies other macroeconomic indicators that estimate the size of tourism in an economy. These are gross value added of the tourism industries (GVATI), tourism direct gross value added (TDGVA) and tourism direct GDP (TDGDP). GVATI sums the total

gross value added (GVA) of all establishments belonging to tourism industries, regardless of whether all their output is provided to visitors and the degree of specialization of their production processes. It leaves out the value added from other non-tourism industries whose outputs are acquired by visitors or by others for their benefit. Direct tourism gross value added (DTGVA) represents the value added to the economy of Rwanda as a direct result of tourism activity and is calculated by multiplying the tourism ratio by the gross value added of the corresponding industry. This aggregate does not cover the effects of other components of internal tourism demand (e.g. the influence of gross investments or collective consumption). The use of the term direct in this aggregate refers to the fact that the TSA measures only that part of the value added (by

tourism industries and other industries) due to the consumption of visitors and leaves aside the indirect and induced effects that such a consumption might generate. Total GDP of an economy is equal to the sum of GVA generated by all industries (at basic prices) plus net taxes on products and imports.

DTGDP is the sum of the part of GVA (at basic prices) generated by all industries in response to internal tourism consumption plus the amount of net taxes on products and imports included within the value of this expenditure at purchasers' prices.

GVATI was estimated at RWF 197.5bn (TSA Table 5), DTGVA at RWF 120.0 billion (TSA Table 6) and TDGDP at RWF 128.3 billion.

TSA Table 5 (Production Accounts of Tourism Industries and Other Industries) details the supply of tourism products for visitor consumption. The table captures the activities of tourism firms within the country's geographical jurisdiction. The TSA: provides an extensive list of tourism characteristic industries and their classification and these were used for developing estimates of total domestic tourism supply. A tourism specific Make Matrix (MM) was constructed to reconcile industries' output to the output of products required by each industry (Smith et al., 2011). TSA: requires that output of travel agencies be measured net of all purchases (for instance flight and accommodation).⁴ The balance is an estimate of the value of services purchased to make the product (Smith et al., 2011; Kolli et al., 2014). Output broken down by product is valued at basic prices

and intermediate consumption (intermediate inputs) at purchasers' prices. The difference between value output and intermediate consumption yields an estimate of GVA at basic price for each industry.⁵ TSA Table 6 (Domestic Supply and Consumption by Product) is the core of the TSA methodology; it brings together the interaction between domestic supply and internal tourism consumption. The table adds net taxes on production and imports of products to the domestic output of products reported in TSA Table 5. Taxes on production were extracted from Rwanda Supply-Use Table (SUT) while BOP provided import values. Adding taxes and imports to domestic output generated total domestic supply of products at purchaser's prices.⁶ This was then reconciled with demand data provided under TSA Table 1. This allowed for the calculation of the tourism ratio. This ratio gives the proportion of products supplied in Rwanda that are consumed by visitors. The ratio enables the calculation of TDGVA.

Direct tourism GDP accounted for 2.4% of the country's RWF 5,395bn GDP in 2014. This is a lower bound measure of tourism's impact on the economy as it represents only the direct contribution of tourism to GDP. International visitors spent in the country an amount equal to almost three times that spend through outbound tourism. Domestic tourism accounted for about 20.3% of the amount accruing from internal tourism consumption, pointing to the significance of international tourism. Tourism imports comprise goods and services purchased by residents

Table 5. Production accounts of tourism industries and other industries (at basic prices) 2014 RWF billions.

Products	Tourism Industries					Other industries	Output of domestic producers (at basic prices)
	Accommodation	Food and beverage	Passenger transport	Travel agencies	Total		
5.1 Accommodation services for visitors	108.6				108.6	0	108.6
5.2 Food and beverage serving services		253.4			253.4	0	253.4
5.3 Passenger transport services			177.2		177.2	0	177.2
5.4 Travel agency etc. services				8.2	8.2	0	8.2
5.5 Other products/services					0	8,046.60	8046.6
Total output (at basic prices)	108.6	253.4	177.2	8.2	547.4	8,046.6	8594
Total intermediate consumption (at purchasers prices)	73.6	172.5	100.4	3.4	349.9	3,141.2	3491.1
Total gross value added (at basic prices)	35.0	80.9	76.8	4.8	197.5	4,905.4	5102.0

Source: Researchers' estimates from the Rwanda Development Board (RDB) International Inbound Visitor Survey (2014), Rwanda 2010/2011 Integrated Household Living Conditions Survey (NISR), Rwanda Supply-Use Table (SUT) and National Accounts.

Table 6. Domestic supply and internal tourism consumption, by product (at basic prices) 2014 RWF.

Products	Total tourism industries output (see Table 5 for Breakdown)	Output other industries	Internal tourism consumption (at basic price)	Consumption other industries	Output of domestic producers (at basic prices)	Internal tourism final consumption (at basic prices)
6.1 Accommodation services for visitors	108.6	0.0	92.7	0.0	108.6	92.7
6.2 Food and beverage serving services	253.4	0.0	40.3	0.0	253.4	40.3
6.3 Passenger transport services	177.2	0.0	26.6	0.0	177.2	26.6
6.4 Travel agency etc. services	8.2	0.0	3.1	0.0	8.2	3.1
6.5 Other products/services ¹⁰	0.0	8046.6	0.0	53.6	8046.6	53.6
Total output (at basic prices)	547.4	8046.6	162.7	53.6	8594.0	216.3
Total intermediate consumption (at purchasers' prices)	349.9	3141.2	82.9	13.4	3492.0	96.3
Total gross value added (at basic prices)	197.5	4905.4	79.8	40.2	5102.0	120.0

Source: Researchers' estimates from various visitor surveys, Rwanda Supply-Use Table 2011 (SUT) and National Accounts.

Table 7. Employment in the tourism industry of Rwanda (2014).

Tourism industries	No. of establishments	Number of jobs by employment status						Total
		Self-employed			Direct employed			
		Male	Female	Total	Male	Female	Total	
5.1 Accommodation services for visitors	387	1356	662	2018	2647	1975	4622	6640
5.2 Food and beverage serving services	44,750	31,159	13,585	44,744	10,021	17,040	27,061	71,805
5.3 Passenger transport services	195	285	25	310	763	397	1141	1451
5.4 Travel agency etc. services	35	45	50	95	169	253	422	517
5.5 Other products/services	579	2606	1532	4138	2917	2139	5056	9194
TOTAL	45,946	35,451	15,854	51,305	16,517	21,785	38,302	89,607

Source: Researchers' estimates from Rwanda Development Board (RDB) Tourism Establishment Survey 2015 and National Institute of Statistics of Rwanda (NISR) Establishment Census 2014.

on a trip outside the country whilst tourism exports comprise goods and services purchased by non-residents visitors in the country. The tourism balance of trade is defined as tourism exports net of tourism imports. Rwanda is, therefore, a net exporter of tourism services leading to a positive impact on the BOP accounts.

Extensions to the basic TSA. Extensions to the basic TSA encompass information on employment (TSA Table 7), gross fixed capital formation (TSA Table 8), collective consumption (TSA Table 9) and

non-monetary indicators (TSA Table 10). TSA Table 7 (tourism employment) is based on the Rwanda Establishment Census (2014) that captured 36,545 rural based and 8076 urban establishments. About 97% of the firms were informal and almost 95.6% run as sole-proprietorships. With respect to the number of employees, about 93.5% were microenterprises employing between one and three employees and 6.3% small enterprises with less than 30 employees. The Census revealed that tourism productive activities are relatively informal and labour intensive predominantly employing semi-skill and unskilled labour.

Table 8. Gross fixed capital formation (RWF billion).

Tourism industries		Gross capital formation (RWF bn)		
		Total tourism industries	Other industries	Govt. investment 2014/2015
A	Tourism-specific fixed assets			
5.1	Accommodation services	22.5		
5.2	Food and beverage serving services	104.1		
5.3	Passenger transport services	0.9		
5.4	Travel agency etc. services	0.1		
5.5	Other products/services	1.3		
B	Investment by tourism industries in non-tourism specific assets			
C	Government investment in tourism-related infrastructure			80.8
	TOTAL	128.9		80.8

Source: Researchers' estimates from National Institute of Statistics of Rwanda (NISR) Establishment Census and Rwanda Development Board (RDB) Tourism establishments Survey (2015).

Table 9. Tourism collective consumption (RWF billions).

Product (CPC subclass)		Tourism collective consumption (RWF bn.)	
		Level of government (national)	Tourism private sector federation ¹⁰
85561	Tourism promotion services	1.16	
85562	Visitor information services	0.1	X
91135	Public admin. services related to distributive and catering trades, hotels and restaurants	4.2	
91136	Public admin. services related to tourism affairs	0.92	X
Part of 83700	Market research and public opinion polling services	-	X
91260	Police and fire protection services	-	X
92919	Other education and training services	0.20	
92920	Education support services	0.40	
	TOTAL	6.98	

Source: Researchers' estimates from Rwanda Development Board (RDB) Surveys and Ministry of Finance.

Table 10 (i). Number of trips and overnights by type of tourism and categories of visitors.

	Inbound tourism			Domestic tourism			Outbound tourism		
	Same-day visitors	Tourists	Total visitors	Same-day visitors	Tourists	Total visitors	Same-day visitors	Tourists	Total visitors
Number of trips	224,393	995,136	1,219,529	802,920	1,501,822	2,307,434	-	1,380,229	1,380,229
Number of overnights	0	6,605,211	6,605,211	0	22,718,013	22,718,013	0	19,516,438	19,516,438

Source: Researchers' estimates based on Rwanda Development Board (RDB) and National Institute of Statistics of Rwanda (NISR) data sets.

Direct tourism employment was derived by applying the technical ratio (value added of tourism share over value added of whole industry) to the number of people employed in each industry.

For each variable of supply in the TSA, this is the ratio between the total value of tourism share and total value of the corresponding variable in the TSA expressed in percentage form.

Almost 89,607 jobs existed in the tourism sector where 57.3% were self-employed persons and 42.7% were directly employed. Food and beverage services accounted for 80% of total tourism employment.

Table 10 (ii). Arrivals and overnights by means of transport (inbound/outbound).

	Number of arrivals	Number of overnights
1.Air	103,781	899,677
2.Waterways	-	-
3.Land	883,545	5,705,534
TOTAL	995,136	6,605,211

Source: Researchers' estimates based on Rwanda Development Board (RDB) and National Institute of Statistics of Rwanda (NISR) data sets.

Table 10 (iii). Number of establishments and capacity by forms of accommodation.

	Collective tourism establishments	
	Hotels and similar	Others
Number of establishments	387	
Capacity (rooms)	7402	10,592
Capacity (beds)	9656	11,953
Capacity utilization (rooms)	50.2%	42.0%

Source: Researchers' estimates and Rwanda Development Board (RDB) Tourism Establishment Survey (2015).

Table 10 (iv). Number of establishments in tourism industries classified according to average number of jobs.

Tourism industries	1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	>1000	Total
Accommodation	125	82	85	71	16	8	-	-	-	387
Food and beverage	21,898	13,425	7141	2286	-	-	-	-	-	44,750
Road/air passenger transport	178	3	5	5	2	2	-	-	-	195
Travel agencies etc.	28	4	1	2	-	-	-	-	-	35
Other tourism industries	295	83	116	69	0	16	-	-	-	579
TOTAL	22,524	13,597	7348	2433	18	26				45,946

Source: Researchers' estimates and Rwanda Development Board (RDB) Tourism Establishment Survey (2015).

Other industries such as arts, entertainment, recreation centres, curio and events catered for 10% while accommodation sub-sector absorbed about 7% of total employment.

TSA Table 7 on employment is rarely completed by many countries, although an attempt was made to complete the table under this study. The concept of full-time equivalent (FTE) jobs was not fully utilized due to limited data on hours worked (Organisation for Economic Cooperation and Development (OECD), 2000).

TSA Table 8 (gross fixed capital formation, GFCF) presents GFCF. GFCF is defined as the total value of producer's acquisition less disposal of fixed assets during the accounting period plus additions to the value of non-produced assets realized by the productive activity (SNA, 2008). Investment in tourism fixed assets is necessary to facilitate the flow and activities of tourists. Investment (gross capital formation) refers to purchase of machinery (including software), buildings (including infrastructure) and stocks/financial investment (inventories). GFCF only covers machinery and buildings (OECD, 2006). Under this table, tourism-driven investments are grouped into three categories depending on the level of exclusivity of use of the investment for production of tourism characteristic goods and services: tourism-specific fixed assets; investments by tourism industries in non-tourism specific fixed assets and tourism-related infrastructure. Tourism-specific assets are those assets that are used exclusively or almost exclusively used in the production of tourism characteristic goods and services. If tourism did not exist, such assets would be of little value as they could not be converted to non-tourism applications (TSA). With respect to investment by the tourism industries in non-tourism-specific fixed assets (for instance, laundry facilities in a hotel), this is considered tourism-related not due to the nature of assets, but due to the use of these by the tourism industry (TSA). Tourism-related infrastructure is principally put in place by public authorities to facilitate tourism.

Therefore, Rwanda tourism GFCF was calculated as the sum of GFCF of tourism-specific fixed assets and tourism-related infrastructure. The table, therefore, presents GFCF for 2014 as estimated from RDB tourism establishment survey of 2015 and NISR establishment census of 2014. Tourism total gross capital formation by the private sector was estimated at RWF 128.9bn at 2014 prices. The public sector injected about RWF 80.8 over the same period of time.

There are two classifications of Tourism Collective Consumption (TCC): product classification following the Central Product Classification (CPC) and classification by level of government i.e. national, regional and local. Under CPC, some services are entirely related to tourism while others are only partly related. Those related to tourism include public financed activities targeted at establishing the legal framework and regulation of tourism activities, security, public administration, marketing and promotion and visitor services. Besides CPC, these services may also be identified in the national accounts by using Classification of the Functions of Government (COFOG). Public expenditure on production of collective non-market services plays a crucial role in the development of tourism activities.⁷

TSA Table 9 (TCC) estimates collective consumption on tourism by the local, regional and national government to be RWF 7bn during the 2014/2015 financial year.

Although this study made an attempt to complete Table 8 (GFCF) and Table 9 (TCC), there are certain conceptual and methodological issues that need to be concluded, as observed by the framework, before international comparisons can be undertaken (Egon, 2006; Frent and Frechtling, 2015; Ragab, 2016; Frent, 2018; Hadjidakou et al., 2014; Libreros et al., 2006; Smeral, 2006, 2015).

TSA Table 10 (Non-Monetary Indicators) presents quantitative indicators that are related to the previous tables and are essential for the interpretation of the monetary information presented. The table is disaggregated into four sub-tables: number of trips by forms of tourism and classes of visitors; arrivals of overnight visitors by land and air; number of hotel establishments by capacity and number of tourism establishment categorized by the number of employees.

Conclusion

The TSA methodological framework was adopted to extract data related to tourism from the official National Accounts of Rwanda's economy. The main contribution of this paper was the capture of the

informal sector that contributes significantly to domestic tourism market especially for developing countries. Expenditure by visitors that was tourism related was distinguished from spending that was not tourism related. The value of goods purchased by visitors was analysed in detail including sales margins and the underlying value of the goods. Expenditure related to tourism for the purpose of vacation was distinguished from that of tourism business. The gross value of travel packages in the national accounts was converted into net values as required by the framework. In other words, the services offered by the organizers of travels were valued separately from other components of tour packages.

This study also separated the regular household expenditure of Rwanda residents from that of visitors, both domestic and international. These are normally combined in the main National Accounts. The demand data from tourism surveys was reconciled with information on the supply of goods and services generated by tourism-related industries including those in the informal sector. The information on supply was extracted from the SNA framework.

Through this technique, the value of tourism was calculated in the manner that allowed it to be comparable with other economic activities in the general economy of Rwanda.

The Satellite Account also considered the extent of employment and investment by tourism characteristic and tourism connected industries through the application of 'tourism ratios'. The ratios of different sectors represented the proportion of domestic supply of tourism characteristic products that are consumed by visitors.

TTID, a cumulative aggregate normally associated with TSA studies was derived from the results of this study. TTID is the sum of internal tourism consumption, tourism GFCF and TCC. It does not include outbound tourism consumption. This concept refers to the total demand generated by tourism in the economic territory of the country of compilation (UNWTO). The aggregate is the main measure of the direct effects of tourism on the domestic supply of goods and services. Domestic supply is the sum of total output (at basic prices), imports (less direct purchases of residents abroad) and taxes less subsidies on products. The current study was able to cover the components of this aggregate despite the conceptual and methodological challenges especially in the informal sector.

Further research

This study considered a few tourist characteristic industries in the country. The established direct

tourism contribution to the economy represents a lower bound value since it's based on only four tourism characteristic industries on account of limited data. The RTSA 2014 excluded other tourism characteristic industries such as cultural services, recreation and other entertainment services as well as miscellaneous tourism services including rental services and financial/insurance services (TSA).

By employing the TSA framework, the study was limited to estimating the direct contribution of tourism to GDP. However, the total contribution of tourism includes its 'wider impacts' i.e. the indirect and induced impacts of tourism on the economy (Ahlert, 2008; Dwyer et al., 2004; Frechtling, 2010, 2013; Stynes, 1999; Tadayuki, 2008; Tyrrell and Johnston, 2006; Verka and Slađana, 2014; Wei et al., 2013). This calls for further research in order to estimate these wider impacts using appropriate methods and models.

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Notes

1. TSA is underpinned by concepts, classifications and definitions elaborated in the TSA: RMF (2008).
2. Due to inadequate data, the 'other' components of internal tourism final consumption were not included.
3. In addition, expenditure within Rwanda by residents undertaking outbound trips was captured under this TSA table.
4. The gross margin of a provider of reservation services is the difference between the value at which the intermediated service is sold and the value accrued to the provider of reservation services for this intermediated service.
5. Different outputs of each industry are valued at basic prices, excluding all net taxes on products (i.e. indirect taxes net of subsidies on output), and inputs are valued at purchasers' prices, i.e. including transport and distribution margins and all net taxes on products.
6. Imports exclude direct purchase of residents abroad.
7. Expenditure by the private sector federation (Tourism Chambers) of Rwanda was not covered in the current study.

8. The value of consumption products is net of the gross service charges paid to travel agencies, tour operators and other reservation services.
9. For goods, the tourism share is established on the retail trade margin only.
10. This column reflects the expenditure by tourism industries in tourism promotion or other services related to the products described (where relevant) i.e. intermediate consumption by the tourism industries.

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