



Measuring The Economic Contribution of Tourism: An Improvement in Indonesia

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Abstract. The implementation of the international standard manual is an effort made by every national statistical office (NSO) in developing its official statistics so that they have comparability at the global level. The methods recommended in the international standard manual have also been refined and adapted to other standard manuals so that the resulting official statistics are consistent with each other. Statistics Indonesia (BPS) as the Indonesian NSO adopts various international standard manuals, including the International Recommendations for Tourism Statistics (IRTS) and Tourism Satellite Accounts: Recommended Methodological Framework (TSA:RMF) 2008 manuals recommended by UNWTO in calculating the tourism contribution in the Indonesian economy. Both recommend the utilization of the supply and use table (SUT) framework that explains tourism supply-demand in measuring tourism contributions. This approach is an improvement from the previous approach which used shock analysis under input-output (I-O) framework in calculating tourism contributions. Through the supply-demand of tourism sector approach, the amount of tourism direct gross domestic product (TDGDP) is obtained which shows the contribution of tourism to the national economy. During 2016-2019, the tourism sector contributed around 4.6 – 4.9 percent to the Indonesian economy.

1. Introduction

Indonesia has a strategic geographical position that makes it a country that is very rich in natural resources and biodiversity. With more than 17,540 islands inhabited by various ethnic groups with heterogeneous cultural backgrounds, making Indonesia an attractive country to visit, both by local and foreign tourists. Indonesia is a country that is flanked by two continents and two oceans and has a tropical climate with warm air temperatures. This makes Indonesia as a favourite tourist destination, especially for tourists from the United States (US) and European country. Indonesia has great potential in developing its tourism sector so as a booster the revenue receipts through increasing the number of tourist visits, both local and foreign.

Referring to the development agenda for 2020-2024 RPJMN IV, increasing tourism added value is one of the government's priorities which aims to strengthen economic resilience for quality growth. Tourism sector developments are expected to increase net exports (services) and maintain fiscal sustainability. The government has launched several tourism targets mandated in the 2020-2024 RPJMN IV development agenda which includes increasing value added and investment, increasing work productivity and creating jobs, increasing exports of high added value, as well as increasing the pillars of economic growth and competitiveness. Tourism is an important sector considering that it roles on the employment, foreign exchange earns, and national economic growth [1].



The data from the Statistics Indonesia (BPS) shows that the trend of tourist visits in Indonesia is always increasing. In 2010, the number of foreign (inbound) tourist visits amounted to more than seven million visits and increasing every year until in 2019 there were more than 16 million inbound tourists visiting Indonesia. In the same period, the number of domestic tourist trips also showed an increasing trend despite fluctuations during the 2010-2019 period. A tendency of the increasing number of tourist visits potentially creating business fields around the tourist attraction so that encourage an increase in the income of the society [2].

Tourism is one of important sectors that needs a set of tools to measure its role in the economy [3]. Taking into account the increasing trend of the number of tourists, the Indonesian government may take it as a chance to boost its economy through tourism. The acceleration of infrastructure development, the preparation of skilled workers, and the harmonization of government regulations are need to be encouraged so that may support the expansion of the Indonesian tourism sector. The preparation of tourism data is carried out to increase the accuracy of achieving targets as stated in the development agenda. The availability of measurable macro indicators that shows how much tourism contributes to the economy and can be compared on a global scale is the basic issue of the importance of calculating tourism contributions based on international recommendations.

The government has long recognized the urgency of calculating the contribution of tourism. Ministries and other institutions, in collaboration with BPS, estimated the contribution of tourism through the shock analysis approach under the input-output (I-O) table framework [4]. Starting with calculating the magnitude of the shock that was estimated from the consumption and government spending as well as the investment spending in the tourism sectors, the total impact was obtained which was then equated with the tourism contribution.

Along with the development of international recommendation standards and manuals, the UN through the United Nations World Tourism Organization (UNWTO) recommends International Recommendations for Tourism Statistics (IRTS) and Tourism Satellite Accounts: Recommended Methodological Framework (TSA: RMF) 2008 as manuals in calculating tourism contributions. Both refer to the 2008 System on National Account (SNA) manual so that the concepts, approaches, and recommendations listed in the IRTS and TSA-RMF are consistent with the concepts and approaches taken in preparing the national accounts. The two manuals show clear mechanisms related to the flow of tourism expenditure and tourism consumption so that they can finally be derived as tourism contributions [5,6,7]. In addition, IRTS and TSA-RMF also explain that the contribution of tourism is calculated through the supply and use table (SUT) framework which describes the balance of supply and demand for the tourism sectors.

This study explains how BPS improved the calculation of tourism contribution by comparing the current calculation method based on SUT framework with the previous method using shock analysis under I-O table approach.

2. Methodology

This study explains how BPS calculates tourism contribution according to recommended international manuals. The IRTS and TSA-RMF explain that tourism contributions should take into account on how the provision (supply) of tourism products can be consumed (used), both by tourists and non-tourists.

A comprehensive framework that can explain the balance of supply and use of goods and services is SUT [8]. The SUT consists of two tables, the first is the supply table which explains how goods and services are produced by each business field (industry). The supply table also shows the supply of goods and services originating from abroad (imports) to meet the needs of the domestic economy. While the second is a use table that shows how goods and services are used in each economic activity. This table shows the cost structure of each business field in the production process, as well as the portion of goods and services used in domestic activities and foreign transactions (exports).

The columns in the SUT show the dimensions of the business field (industry). While the rows show the details of goods and services commodities. From the two tables (supply table and use table), it is necessary to meet two equilibrium equations.

$$\text{supply} = \text{use} \quad (1)$$



The value of goods and services provided from domestic production and imports must equal the value of goods and services used.

$$\text{output} = \text{input} \quad (2)$$

The value of goods and services produced must be equal to the value of the goods and services used for these production activities.

In calculating the tourism contribution, the SUT is further disaggregated according to the tourism classification. The columns in the supply table and use table are disaggregated into the tourism and non-tourism industries. Likewise, the rows are also disaggregated by tourism and non-tourism products [9]. Table 1 shows the classification of tourism products and industries.

Table 1. Tourism Characteristic Consumption Products and Tourism Characteristic Consumption Activities (Tourism Industries)

Products	Activities
1. Accommodation services for visitors	1. Accommodation for visitors
2. Food-and beverage-serving services	2. Food-and beverage-serving activities
3. Railway passenger transport services	3. Railway passenger transport
4. Road passenger transport services	4. Road passenger transport
5. Water passenger transport services	5. Water passenger transport
6. Air passenger transport services	6. Air passenger transport
7. Transport equipment rental services	7. Transport equipment rental
8. Travel agencies and other reservation services	8. Travel agencies and other reservation activities
9. Cultural services	9. Cultural activities
10. Sports and recreational services	10. Sports and recreational activities
11. Country-specific tourism characteristic goods	11. Retail trade of country-specific tourism characteristic goods
12. Country-specific tourism characteristic services	12. Other country-specific tourism characteristic activities

Source: Tourism Satellite Account: Recommended Methodological Framework, 2008

The IRTS and TSA-RMF manuals explain that the contribution of tourism is calculated on the basis of tourist consumption occurring in the domestic economy. In this regard, the consumption of tourists used in calculating the contribution of Indonesian tourism is internal tourism consumption, which covers the consumption of inbound tourism during their visit in Indonesia (including the use of Indonesian airlines) plus consumption of domestic tourism. Internal tourism consumption will then be juxtaposed with the value of providing tourism products resulting from the disaggregation of SUT so that the size of tourism contribution can be derived, namely:



- a. **Gross Value Added Tourism Industry (GVATI)**
Sums the total gross value added 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 process. It leaves out the value added from other non-tourism industries whose outputs have been acquired by visitors or by others for their benefit.
- b. **Tourism Direct Gross Valued Added (TDGVA)**
The part of gross value added generated by tourism industries and other industries of the economy that directly serve visitors in response to internal tourism consumption.
- c. **Tourism Direct Gross Domestic Product (TDGDP)**
The sum of the part of gross value added (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

Although those three aggregates show the magnitude of the contribution of tourism, the most relevant indicator in describing the contribution of tourism in a country's economy is TDGDP [7,10]. This indicator juxtaposes the supply of tourism products with tourism consumption on the respective supplied tourism products. This means this indicator looks at the side of the tourism product provider industry as well as tourism consumption which reflects the demand for tourism products. The relationship between economic aggregates and the three measures of tourism contribution is shown in table 2.

Table 2. Relationship between The Economic Aggregates with The Tourism Contribution

	GVATI	TDGVA	TDGDP
Gross value added (at basic prices) generated by the supply to visitors by the tourism industries	√	√	√
Gross value added (at basic prices) generated by the supply to non-visitors by the tourism industries	√	-	-
Gross value added (at basic prices) generated by the supply to visitors by other industries	-	√	√
Gross value added (at basic prices) generated by the supply to non-visitors by other industries	-	-	-
Net taxes on products and imports included in the value of internal tourism consumption (at purchasers' prices)	-	-	√

Source: Tourism Satellite Account: Recommended Methodological Framework, 2008

3. Data and Data Source

The main data in the calculation of the tourism contribution is tourism consumption which is collected from the Domestic Tourism Survey, and the Outbound Survey carried out by the BPS. In addition, the data of inbound tourists spending are collected from the Passenger Exit Survey (PES) which is then aligned with the value of service exports originating from the BPS (the Directorate of Expenditure Account). Those tourist expenditure data explain the size of demand for tourism products. Yet, the data of tourism supply is derived from the SUT obtained from BPS (the Directorate of Production Account).

4. Empirical Results

Tourism is considered as a broad sector that includes various activities such as economic, ecological, social, and cultural [11]. Tourism is an important economic and social activity on a local and global scale. Even at the district level, it has an impact on regional economic development as shown by the increase of its contribution to regional income [12]. It may promote economic growth directly and indirectly through its role on other economic sectors [13].



Tourism activities involve various business fields such as accommodation services, restaurant services, and transportation services. On the other hand, the demand for this industry not only comes from the domestic area, but also comes from foreign demand. Table 3 shows the expenditure of inbound tourism expenditure and domestic tourism expenditure in Indonesia during 2016-2019.

Table 3. Domestic Tourism Expenditure and Inbound Tourism Expenditure in Indonesia, 2016-2019 (Billion Rupiah)

	Inbound Tourism Expenditure				Domestic Tourism Expenditure			
	2016	2017	2018	2019	2016	2017	2018	2019
Tourism Characteristic Products								
Accommodation services for visitors	48,724	60,425	80,397	82,441	232,740	236,764	243,615	264,602
Food-and beverage-serving services	45,165	53,936	76,557	81,594	324,928	340,977	406,654	423,795
Railway passenger transport services	335	378	438	503	1,555	1,864	2,342	2,768
Road passenger transport services	3,750	4,271	4,554	4,922	10,433	13,996	18,546	21,724
Water passenger transport services	2,930	3,332	3,549	3,828	7,800	9,144	9,985	11,404
Air passenger transport services	21,496	24,699	32,634	25,351	366,511	414,164	446,762	510,602
Transport equipment rental services	995	1,118	1,817	1,430	33,817	37,642	43,790	50,296
Travel agencies and other reservation services	32	36	41	46	5,133	5,713	6,572	7,644
Cultural, sports and recreational services	10,708	12,117	13,592	15,614	7,867	19,781	24,514	25,990
Country-specific tourism characteristic goods	8,932	9,661	10,551	11,255	76,112	101,442	115,384	120,276
Country-specific tourism characteristic services	2,202	2,414	2,638	2,911	7,161	8,020	11,023	11,536
Other Consumption Products	32,398	37,995	43,541	49,397	7,533	3,740	7,945	4,256
TOTAL	177,668	210,382	270,309	279,293	1,081,590	1,193,248	1,337,132	1,454,893

Source: Tourism Satellite Account Indonesia, 2016-2019

It can be seen that both inbound tourism expenditure and domestic tourism expenditure continued to show an increasing trend during 2016-2019. In addition, typical expenditures for both were also dominated by accommodation services, food-and beverage-serving services, and air passenger transport services. The share of these three products on the inbound tourism expenditure was about 60-70 percent. Meanwhile, the portion for the three products on the domestic tourism expenditure was around 80 percent. Another interesting thing, from table 3 it can be shown that the share of souvenirs (tourism characteristic goods) on the domestic tourism expenditure ranked fourth. This explains the character of Indonesian tourists who often shop at tourism destination places.

Tourism is a strategic sector where the development of this sector is considered to be able to encourage the regional economy, including in the ASEAN region [14]. By knowing the size of indicators related to tourism, tourism development policies can be carried out more directed. In addition to estimating the demand side of tourism, policy makers also need to look at the potential of their country's tourism supply. Table 4 shows the development of the supply of tourism products juxtaposed with the value of the tourism ratio. The tourism ratio is a comparison of internal tourism consumption to tourism supply. The greater the value of the tourism ratio, the greater the consumption of tourists for these tourism products. Overall, there was an increase in the value of the ratio of tourism products during 2016-2019. This means that the portion of tourism consumption towards the supply of tourism products



increased. This may be considered as a prompt indication that the demand for Indonesian tourism products continues to increase.

Table 4 also shows that there was no tourism product with hundred percent of tourism ratio. Meaning that not all tourism supplies were consumed by tourists. Part of the tourism supply was also consumed by non-tourists. For instance, tourism ratio of the railway passenger transport services was about 60-70 percent. This means that around 30-40 percent of the supply of railway passenger transport services from PT KAI was consumed by non-tourists. In practice, this can be illustrated by the activities of residents who routinely go to work using this mode of transportation. That could be said that even though the supply of tourism products is not entirely consumed by tourists, it does not mean that there are no parties who use them. The supply remains depleted in economic activity even though it is used by non-tourists. Table 4 shows that the suggested recommendations on the IRTS and TSA-RMF in measuring tourism contribution provide flexibility for the data compiler and data user in the analysis of the tourism sector. Tourism sector also could be seen from supply side, not only from demand perspective.

Table 4. Comparison between Domestic Supply of Tourism Products and Tourism Ratio in Indonesia, 2016-2019

	2016		2017		2018		2019	
	Domestic Supply (Billion Rp)	Tourism Ratio (%)	Domestic Supply (Billion Rp)	Tourism Ratio (%)	Domestic Supply (Billion Rp)	Tourism Ratio (%)	Domestic Supply (Billion Rp)	Tourism Ratio (%)
Tourism Characteristic Products								
Accommodation services for visitors	285,474	98.60	309,095	96.15	329,278	98.40	353,605	98.14
Food-and beverage-serving services	753,943	49.09	801,568	49.27	852,314	56.69	909,855	55.55
Railway passenger transport services	2,915	64.85	3,334	67.23	3,986	69.74	4,744	68.96
Road passenger transport services	66,147	21.44	75,438	24.22	81,935	28.19	90,614	29.41
Water passenger transport services	28,215	38.03	32,203	38.74	34,936	38.74	38,674	39.39
Air passenger transport services	397,895	97.51	447,587	98.05	485,866	98.67	544,057	98.51
Transport equipment rental services	51,503	67.59	57,861	66.99	64,741	70.44	73,783	70.11
Travel agencies and other reservation services	6,086	84.88	6,834	84.13	7,633	86.64	8,644	88.96
Cultural, sports and recreational services	70,028	48.73	79,293	74.78	88,955	78.97	102,233	75.93
Country-specific tourism characteristic goods	522,206	16.29	566,273	19.62	612,992	20.54	651,030	20.20
Country-specific tourism characteristic services	43,468	21.54	47,066	22.17	52,147	26.20	57,047	25.32
Other Consumption Product	21,445,330	0.19	23,508,990	0.18	25,678,424	0.20	27,483,189	0.20
TOTAL	23,673,211	5.32	25,935,543	5.41	28,293,207	5.68	30,317,476	5.72

Source: Tourism Satellite Account Indonesia, 2016-2019

Table 5 shows the development of Indonesia's tourism contribution. There are three contribution measures, GVATI, TDGVA, and TDGDP. All three showed an increasing trend of contributions during



2016-2019, except for GVATI which had shown a decline during 2016-2018. The decline was caused more by the growth of the value added of the non-tourism industry which was faster than the value added of tourism industry. This is indicated by the GVATI level which always grows during this period. The GVATI shows the contribution of the tourism industry value added to the entire gross value added (GVA) generated in an economy. This indicator reflects the amount of tourism contribution from the supply side. This indicator does not pay attention to whether the value added of the tourism industry is consumed directly by tourists. In other words, the amount of tourism contribution shown in GVATI better reflects the contribution of the tourism industry. This measure is less relevant to describe the tourism contribution to the economy due to the lack of its ability to directly link the demand side of tourism.

On the other hand, the measurement of the tourism contribution under TDGVA and TDGDP also consider the tourism supply perspective and tourism demand perspective. Therefore, these two measures are more relevant in measuring the contribution of tourism. The difference between those two measures is the TDGVA does not include the amount of tax on tourism products. Consequently, the tourism contribution under TDGVA approach is derived by comparing it with the total of GVA in the economy (on the basis of the basic price). Meanwhile, the tourism contribution under TDGDP approach is measured by comparing it with total GDP (GVA plus net tax on products).

During 2016-2019, the tourism contribution from the TDGVA approach increased. It was 4.63 percent in 2016, increased to 4.97 percent in 2019. At the same period of time, the TDGDP increased from 4.65 percent in 2016 to 4.97 percent in 2019. Table 5 explains that the tourism contribution can be seen from three approaches. All three measures explain certain specific issues according to the inherent concept. This provides flexibility for interested particular parties conducting tourism analysis.

Table 5. Indonesian Tourism Contribution, 2016-2019

	2016		2017		2018		2019	
	Value (Billion Rp)	%	Value (Billion Rp)	%	Value (Billion Rp)	%	Value (Billion Rp)	%
GVATI	849,353	7.10	925,290	7.08	996,892	7.00	1,085,447	7.15
TDGVA	553,404	4.63	609,711	4.67	698,255	4.90	753,973	4.97
TDGDP	576,758	4.65	635,277	4.67	728,791	4.91	786,182	4.97

Source: Tourism Satellite Account Indonesia, 2016-2019

5. Conclusion

To support sustainable economic development policies, the development of the tourism sector is one of the priority alternatives that can be carried out considering that the sustainability of this sector is not focused on exploiting natural data sources, but optimizing community creativity and empowering Indonesia's natural beauty. Through the demand of tourism, Indonesia may gain economic growth [15] since its natural beauty that could attract the tourist. Indonesia also has a variety of cultures that could be utilized as a booster in order to attract tourists, especially inbound tourists [16].

The measurement of tourism contributions which is in accordance with international manuals recommendations will facilitate the comparability of Indonesia's tourism position at the global level. The IRTS and TSA-RMF manuals have been implemented by BPS in its calculation mechanism of the contribution of Indonesian tourism which implemented SUT as the framework.

Indonesia's tourism contribution during 2016-2019 showed an increasing trend, in line with the number of tourist visits and their expenditures. From the view point of supply of tourism product, the contribution of tourism industries (GVATI) increased during 2016-2019 which means that the tourism industry in Indonesia tried to fulfilled the demand of tourism. During that time, the contribution of GVATI was around seven percent. This level was far above the contribution of Indonesian tourism from the perspective of demand side as reflected by the TDGDP. In 2016 the contribution of TDGDP was 4.65 percent, increasing to 4.97 percent in 2019. One of the reasons for the difference between GVATI



and TDGDP was that there are tourism products that were not consumed by tourist. Those products were over supplied and then consumed by non-tourist as daily products. Through this analysis, the policy maker could identify on what products they should promote more frequent, and which products that already meet the demand of tourism.

Moreover, the acceleration of Indonesia's economic growth may also be achieved through the development of the tourism sector. By paying attention to the proportion of tourism expenditure, the government could determine the interest of tourists of the Indonesian tourism products. Meanwhile, by paying attention to the supply of the tourism industry, the government could identify the main players in the tourism industry so that it could be developed in accordance with the demand for tourism products.

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