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The Influence Of The Tourism Sector On The Economy Of The Special Capital Province Of Jakarta: Input Output Analysis

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Keywords

Input-output, tourism, DKI Jakarta

Abstract. The purpose of this research is to analyze the role of the tourism sector in the economy of DKI Jakarta Province. The method used is Input-Output analysis. The data used is secondary data derived from the Total Input-Output Table on the basis of 2012 DKI Jakarta Provincial Buyer Prices, classification of 72 sectors, which have been updated based on 2018 GRDP data. The analysis consists of linkage analysis, distribution impact analysis, and multiplier analysis. From the analysis, it can be seen that the transportation and warehousing sub-sectors have the highest value for each multiplier value. It can be said that this sub-sector is a priority sub-sector which can be used as a reference for the development of the tourism sector in DKI Jakarta Province because it is the sub-sector with the most potential to increase people's income. Development in this sub-sector can reduce poverty and unemployment in DKI Jakarta.

1. INTRODUCTION

As the capital of Indonesia, Jakarta plays a central role in the national economy. Supported by a long historical record and widely scattered tourist destinations, DKI Jakarta Province has an important role in supporting the tourism sector. Apart from being one of the main tourist destinations, Jakarta is also the gateway to Indonesia. The development of DKI Jakarta Province as a tourist destination is increasing rapidly and expanding, especially in the types of shopping, culinary, nature, arts, culture and history tourism. The development of tourism, both directly and indirectly, has an influence on the economy of DKI Jakarta Province.

Tourism for the city of Jakarta is one of the categories of economic activity that makes a major contribution to the regional economy. The concept of tourism involves various categories of economic activity (across categories of economic activity), so that its economic contribution regarding growth, income distribution, employment opportunities, and investment patterns is increasingly widespread. The broad scope of activities included in this category of economic activity, including the various types of businesses and the very close linkages with other categories of economic activity, is an indicator showing the importance of this tourism sector in the economy of the city of Jakarta.

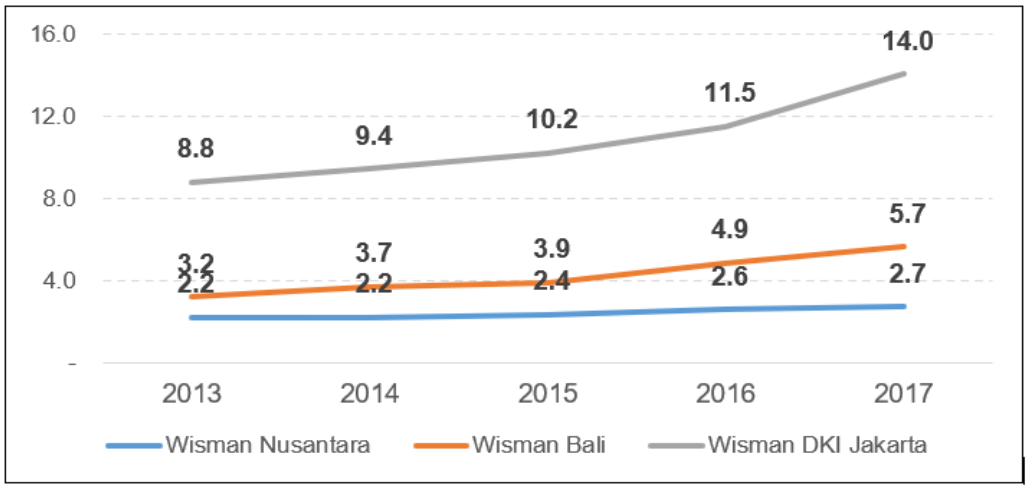

Figure 1. Number of Foreign Tourist Visits by Air Transport (in million)
Source: Central BPS (2018)

The number of foreign tourist arrivals to DKI Jakarta Province through Soekarno-Hatta international airport is the second largest in Indonesia after number one is the visit of foreign tourists through Ngurah Rai airport in Bali Province. It is important to know how the tourism sector affects the economy of DKI Jakarta Province in particular, and Indonesia in general. Apart from being one of the main tourist destinations, Jakarta is also one of the gateways to Indonesia. Soekarno-Hatta Airport as the largest airport in Indonesia, is the main gate for foreign and domestic tourists to go to Jakarta or just for a stopover or transit.

The development of DKI Jakarta Province as a tourist destination is increasing rapidly and expanding, especially in the types of shopping, culinary, nature, arts, culture and history tourism. The tourism development, both directly and indirectly, has an impact on the economy of DKI Jakarta Province . Tourism for the city of Jakarta is one of the categories of economic activity that makes a major contribution to the regional economy.

Several previous studies have discussed the economic impact of the tourism sector on the economy. A study from Atan & Arlsanturk (2012) shows that the tourism sector can be used as a trigger for economic growth in developing countries. Furthermore, a study from Surugiu (2009) discusses how the impact of activities in the tourism sector is felt directly by the local community through income from the sale of various goods and services to tourists. Meanwhile, Narayan (2004) shows how the expansion of tourism increases consumption, national welfare, increases in wage rates, and the resulting inter-sectoral impacts.

DKI Jakarta is a destination city for urbanization from various regions, its existence as a development center has become a magnet for migrants to come to the capital. This is a problem for Jakarta, because many migrants come to the capital without sufficient skills, so that with a high standard of living and competition in the capital, this increases the population, the number of poor people, the shortage of land, and the lack of jobs.

The poverty rate in Jakarta in the last 10 years has tended to be stagnant, this should serve as a warning to stakeholders to pay more attention to this poverty problem.

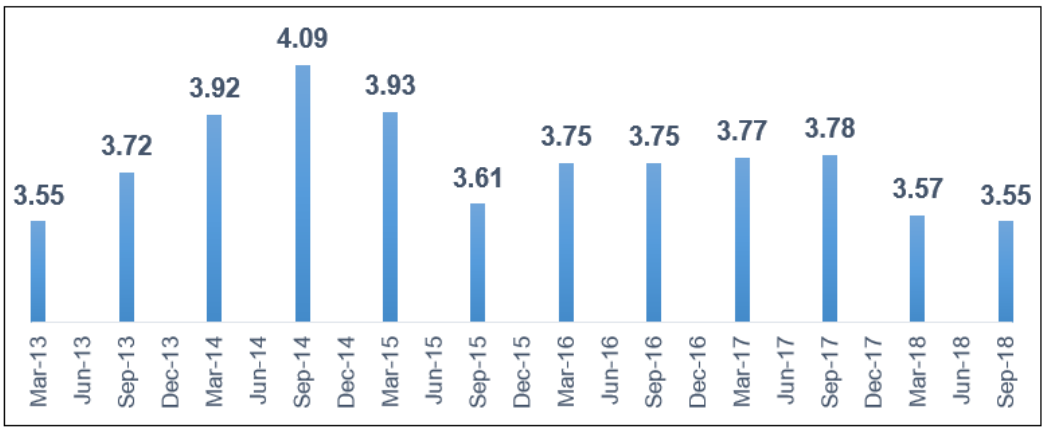

Figure 2. Percentage of Poor Population in DKI Jakarta Province 2013-2018
Source: BPS DKI Jakarta Province (2019)

Based on these root causes, this study seeks to find out how the tourism sector can play a role in overcoming the two problems above. The study will be carried out by analyzing the extent to which the tourism sector plays an important role in the economy of DKI Jakarta Province using the *input-output model* as pioneered by Leontief (1986). Using this model, the interrelationship of the tourism sector and the multiplier effect of the sector on production, income and employment opportunities will be analyzed. Analysis will be carried out on three major economic sectors (according to BPS classification) related to the tourism industry, namely (1) trade, hotels and restaurants; (2) transportation and communication; and (3) services.

Literature Review

The input output model is an analysis of the economy of a region that aims to see the inter-sectoral linkages of the economy in a region as a whole. Thus, if there is a change in the level of production in certain sectors, the impact on other sectors can be seen. In addition, this analysis is also related to the level of prosperity of the community in the region through primary inputs (added value). Therefore, with changes in the level of production of the sectors, it can be seen how much the prosperity of the people in the region is (Daryanto & Hafizrianda, 2010).

The input output model was first developed by Wassily Leontief in 1936 which was based on the approach that the relationship between one sector and other sectors in the economy can be expressed in a linear equation. Baumol in Nazara (2005) states input output analysis as an attempt to include general balance phenomena in the empirical analysis of the production side. The input output model is also used in the analysis of industrial systems or macro economic systems to examine the structure of intersectoral linkages (Miller & Blair, 2009).

Input output analysis is a general balance analysis tool. The balance in the input output analysis is based on the flow of transactions between economic actors. The main emphasis in input output analysis is on the production side. Production technology plays an important role in relation to usage intermediate input. To a certain stage, primary input is considered an exogenous variable, just as the final demand side is often used as an endogenous variable (Nazara, 2005).

Leontief focuses his attention on the relationship between sectors in one area. The basic concept of Leontief's input output is (Elfiana, 2012):

1. The structure of the economy is composed of various sectors that complement one another interact through buying and selling transactions;
2. The output of one sector is sold to other sectors to meet final demand households, government, capital formation, and exports;
3. Inputs of a sector are purchased from other sectors and households in the form of services and labor, business surplus and imports;
4. The input output relationship is linear;
5. The analysis time is usually carried out over a period of one year and total input equal to total output.

As is known, the analysis in the static model uses technical coefficients which are a measure of the flow of goods needed for ongoing production in a certain period. In reality, the production activities of a sector are also influenced by several input goods, especially capital goods which are used to support the implementation of the production process in the year concerned. In other words, a sector has a stock of goods or capital It is also very much needed to support production needs. In the static input output model, capital goods are exogenous variables that have no effect on the course of the production process (Saragih in Elfiana, 2012).

The linkages between each sector and its upstream and downstream sectors can be analyzed using the concepts of the backward linkage index (ITBL) and the forward linkage index (ITFL). ITBL and ITFL values can be calculated by adding up each column and row of Leontief's inverse matrix.

Multiplier analysis can be carried out on *output*, income, and employment opportunities. The *output* multiplier is obtained in the same way as the ITBL calculation. Meanwhile, the income multiplier can be calculated by first finding the income matrix using the concept of wage coefficients per sector. Furthermore, the employment multiplier is calculated using the same concept as finding the income multiplier. However, the matrix used is a job opportunity matrix based on the job opportunity coefficient.

2. METHOD

The unit of analysis used in this study is the 2012 Jakarta Special Capital Region (DKI) Jakarta Input Output Table issued by the DKI Jakarta Regional Statistics Agency (BPS) and has been updated based on the 2018 DKI Jakarta Province Gross Regional Domestic Product *data* which is data also released by BPS DKI Jakarta. The population used in this study is in accordance with the

classification of 72 economic sectors which have been aggregated into 17 economic sectors in the 2012 Input Output Table of the Special Capital Region of Jakarta. and Warehousing (8), Provision of Accommodation and Food and Drink (9), Information and Communication (10), and Other Services (10).

3. RESULTS AND DISCUSSION

Analysis of Linkages Between Economic Sectors in DKI Jakarta Province

Backward linkages *indicate* the linkages of a sector with the upstream sector which is the input provider *for* that sector. This index of backward linkage is referred to as the total backward linkage index (ITBL). An ITBL figure greater than one indicates that the sector absorbs quite a lot of input from its upstream sector. Sectors related to the tourism industry that have such high linkages are: hotels and restaurants; ground transportation; air transportation; and other service sectors. Thus, it can be concluded that *a shock* to the tourism sector will cause a significant increase in demand in the upstream sector which provides input *for* the tourism sector.

Forward linkages *indicate* the linkages of a sector with the downstream sector which is the user of that sector's *output*. This index of forward linkages is referred to as the total forward linkage index (ITFL). An ITFL number that is greater than one indicates that the sector's *output* is mostly absorbed by other sectors and consumers in the economy. The results of the analysis show that there are no sectors related to the tourism industry that have such high linkages. Thus, it can be concluded that *the shock* in the tourism sector did not significantly increase the use of *output* and production in other downstream sectors. The backward linkage index (ITBL) and the forward linkage index (ITFL) are shown in Table 1.

Table 1. Analysis of Inter-Sector Linkages in DKI Jakarta Province

Code	Sector	ITBL	ITFL
1	Agriculture, Forestry and Fisheries	0.87	0.78
2	Mining and excavation	0.77	0.58
3	Processing industry	1.21	4.77
4	Procurement of Electricity, Gas	0.86	1,13
5	Water Supply	0.83	0.53
6	Construction	1.31	0.77
7	Wholesale and Retail Trade, and Car and Motorbike Repair	0.96	0.54
8	*Transportation and Warehousing*	*1,13*	*0.88*
9	*Provision of Accommodation and Food and Drink*	*1,12*	*0.71*
10	*Information and Communication*	*0.93*	*1.00*
11	Financial Services	0.92	1.19
12	Real Estate	0.91	0.69
13	Company Services	1.00	1.19
14	Government Administration, Defense, and Mandatory Social Security	1.03	0.53
15	Education Services	0.94	0.60
16	Health Services and Social Activities	1.24	0.54
17	*Other Services*	*0.96*	*0.56*

Output Multiplier Analysis (*Output Multiplier*)

Table 2. below shows a partial output multiplier table which only includes sectors related to the tourism industry, namely sectors numbered (8), (9), (10), and (17). For the full output multiplier covering 17 sectors can be seen in Appendix 2.

Table 2. Partial Revenue Multiplier for the Tourism Sector

Code	Sector	Output multiplier	Priority
8	Transportation and Warehousing	2.25	1
9	Provision of accommodation and food and drink	2.24	2
10	Information and Communication	1.85	4
17	Other Services	1.90	3

From Table 2, the size of the output multiplier shows the magnitude of the impact that occurs on output when there is an increase in final demand (either in the form of investment or other) in each of the four sectors that make up the tourism sector. If you look at it, the biggest impact on output is produced by the Transportation and Trade sectors.

Income *Multiplier* Analysis

Table 3. below shows a partial income multiplier table which only includes sectors related to the tourism industry, namely sectors numbered (8), (9), (10), and (17). For the full income multiplier covering 17 sectors, see Appendix 3.

Table 3. Partial Income Multiplier for the Tourism Sector

Code	Sector	Income multiplier	Priority
8	Transportation and Warehousing	2.58	1
9	Provision of Accommodation and Food and Drink	2.53	2
10	Information and Communication	2.02	3
17	Other Services	1.58	4

From Table 3, the amount of the income multiplier shows the magnitude of the impact that occurs on income when there is an increase in final demand (either in the form of investment or other) in each of the four sectors that make up the tourism sector. If you look at it, the biggest impact on revenue is generated by the Transportation and Trade sector.

Analysis of Employment Multiplier (*Labor Multiplier*)

Table 4. below shows a partial employment opportunity multiplier table which only includes sectors related to the tourism industry, namely sectors numbered (8), (9), (10), and (17). For the full income multiplier covering 17 sectors can be seen in Appendix 4.

Table 4. Partial Employment Multiplier for the Tourism Sector

Code	Sector	Job opportunity multiplier	Priority
8	Transportation and Warehousing	1.52	3
9	Provision of accommodation and food and drink	1.85	2
10	Information and Communication	2.80	1
17	Other Services	1.28	4

From Table 4. From this it can be seen that the magnitude of the multiplier of employment opportunities shows the magnitude of the impact that occurs on employment opportunities when there is an increase in final demand (either in the form of investment or otherwise) in each of the four sectors that make up the tourism sector. If you look at it, the biggest impact on output is produced by the information and communication sector.

Discussion

multiplier analysis, it can be seen that if the government wants to pursue the target of increasing output through the development of the tourism sector, then the most appropriate policy is if government spending or private investment is prioritized first on the Transportation and Warehousing sector, then Provision of Accommodation and Food and Drink, then Other Services, and finally Information and Communication.

Furthermore, when the output multiplier value of the four tourism-related sectors is compared with the average income multiplier of all 17 sectors – where the average value is 1.99 (see Appendix 2) –, it can be seen that there are sectors with a higher multiplier value than the average value of the income multiplier. So it can be said that the two sectors (namely the Transportation and Warehousing sector as well as the Provision of Accommodation and Food and Drink) are *pro-growth* sectors because they can increase output and increase economic growth.

Through income multiplier analysis, if the government wants to pursue the target of increasing people's income through developing the tourism sector, then the most appropriate policy is if government spending or private investment is prioritized first in the Transportation and Warehousing sectors, then Providing Accommodation and Food and Drink, then Information and Communication, and finally Other Services.

Furthermore, if the income multiplier value of the four tourism-related sectors is compared with the average income multiplier of all 17 sectors - where the average is 1.91 (see Appendix 3) -, it can be seen that the multiplier value is greater than the average. average income multiplier value. So it can be said that three sectors (namely the Transportation and Warehousing sector, Providing Accommodation and Food and Drink, and Information and Communication) are pro-growth sectors *because* they can increase people's income and reduce income gaps.

Through income multiplier analysis, if the government wants to pursue high economic growth targets through developing the tourism sector, then the most appropriate policy is government spending or private investment with priority in the Information and Communication sector, then the provision of accommodation and food and drink, then transportation and warehousing. , and finally Other Services.

Furthermore, when the income multiplier value of the four tourism-related sectors is compared with the average income multiplier of all 17 sectors – where the average value is 2.43 (see Appendix 4), it can be seen that there are sectors whose multiplier value is greater than average income multiplier value. So it can be said that the Information and Communication sector is a *pro-poor* sector because it can increase people's income and reduce income inequality.

4. CONCLUSION

Based on the results of an analysis of the 2012 DKI Jakarta Province Input Output Table (*updating*) and a series of multiplier tests, it can be concluded from this study that: Sectors related to the tourism industry that have high backward linkages are the Transportation and Warehousing sector as well as the Provision of Accommodation and Food and Drink, while based on the results of the analysis it shows that there are no sectors related to the tourism industry that have high linkages going forward. *multiplier* analysis , it can be concluded that the Transportation and Warehousing sector as well as the Provision of Accommodation and Food and Drink are pro *-growth sectors* because they can increase output and increase economic growth. *multiplier* analysis , it can be said that the three sectors (namely the Transportation and Warehousing sector, Provision of Accommodation and Food and Drink, and Information and Communication) are pro-poor sectors *because* they can increase household income and reduce income gaps. Through manpower multiplier analysis, it can be concluded that the Information and Communication sector is a pro *-job sector* because it can increase employment opportunities.

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