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International Tourism Demand for Indonesia: Expenditure Approach

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Abstract

This study aims to analyze the determinant of Indonesian tourism demand with the tourist expenditure approach. The data used in this study are from 31 countries with data series 2003 to 2017. The method used in this study is a dynamic panel with the first difference-GMM estimation method. Many studies use standardized tourism price data. In policy, it is also necessary to consider the price of tourism competitors. The use of tourism prices and competitor prices together if standardized with exchange rates can lead to high multicollinearity. So that tourism prices, competitor prices, and exchange rates are used as each variable. This research found that the income of tourists has a positive effect on demand, but it is not large. Relative prices and exchange rates are the biggest determinants of tourism demand. Appreciation of the exchange rate and the increase in prices in Indonesia can reduce the demand for tourism relatively. While competitor prices show a complementary relationship, rising prices in competing countries will also reduce tourism demand in Indonesia. This research suggests to the government to keep competitive prices to increase tourism demand because the tourist budget is prepared at the beginning by tourists but the value of shopping in the destination country depends on the value of the rupiah and the prices of tourism products in Indonesia.

Keywords: demand tourism; dynamic panel; expenditure; elasticity; Indonesia; price.

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1. Introduction

Tourism is one sector that is growing rapidly due to trade liberalization and openness between countries. The movement of the population between countries and tourist destinations is followed by the expenditure of tourists who become receipts for the destination countries. Foreign exchange earnings through the expenditure of foreign tourists encourage domestic production followed by economic growth, employment and infrastructure development and improving welfare. The World Tourism Organization (UNWTO) noted that in 2017 there were visits between countries totaling 1.33 billion people and tourist spending reaching US \$ 1.34 trillion. The tourism sector contributes 10 percent of world GDP, 7 percent of exports of goods and services, and 1 in 10 new workers come from the tourism sector [28]. The development of world tourism also has an impact on Indonesian tourism. The number of visits to Indonesia in 2017 was 14.04 million people and foreign exchange earnings amounted to US \$ 14.12 billion. The development of Indonesian tourism has an impact on the Indonesian economy. The foreign exchange contribution of the tourism sector in the amount of US \$ 14.12 billion or Rp198.89 trillion had an impact on the formation of GDP of Rp175.09 trillion or around 1.3 percent of Indonesia's GDP. The foreign exchange contribution of the tourism sector also had an impact on labor wage receipts of Rp. 51.72 trillion or around 1.34 percent of total labor costs [4]. The development of Indonesian tourism is in line with government support through promotion, tourism development and tourism support infrastructure. Research on Indonesia's tourism demand has been carried out using some visits approach. But no one has used the tourist expenditure approach. Economically, for foreign destination countries, it is more important for foreign tourists to spend compared to the number of visits. Expenditures for foreign tourists explain the consumption bundle that tourists do during a visit. Expenditure approach is considered better because it is directly on consumption by foreign tourists. Tourist visits will have an economic impact when they have already spent their money for needs during the visit because the expenditure of foreign tourists is a source of foreign exchange. In addition, it can have a multiplier effect on the domestic economy. Expenditures made by tourists when visiting not only one sector but several sectors related to tourism can have an impact on other sectors. In the Southeast Asian region each country is trying to develop tourism to increase foreign exchange visits and revenues. Therefore, each country will compete to increase the number of tourists who will visit their country [10]. The problem arises is when there was an increase in the share of Indonesian tourists visiting Southeast Asia from 9.9 percent in 2010 to 10.8 percent in 2017. However, the share of foreign exchange earnings from the tourism sector decreased from 10.2 percent in 2010 to 9.6 percent in 2017. By this can be a problem because increasing the share of visits can cause social burdens that need to be covered by an increase in the share of foreign exchange earnings to develop the domestic economy. This study wants to make the expenditure of foreign tourists as a proxy for tourism demand. In an effort to increase the demand for tourism, it is necessary to know the determinant that influences the demand for tourism. It is not enough to only increase the number of share visits but also need to increase the share of foreign exchange earnings.

2. Literature Review

Theoretical arguments about tourism develop in neoclassical theory which assumes a gradual budgeting process [14]. Two important things in this theory are the composite commodity theorem and the separation of preferences. According to [7], the composite commodity theorem states that various commodities can be

combined in larger product bundles, as long as prices differ between commodities. Separation of preferences can be interpreted as the preference of one bundle of several commodities can be explained separately. In the context of tourism, the gradual process of budgeting starts from someone dividing the budget plan in two ways namely tourism and other consumption. Then from the existing budget choose domestic, international tourism and other activities that are incorporated in the recreation goods bundle. The economic definition of tourism, tourism is a list of a number of tourism products or services that are willing to be paid by someone at a certain price level of the price range that is possible within a certain period of time [5]. Tourism as the economic demand side is thought to be through the demand function. Tourism was originally created by the demand for tourist consumption and tourism investment which then must be met by the production sectors that provide goods and services. According to [22], the basic theory that explains the flow of tourists from the country of origin to the destination country is based on the demand function. For the country of origin, the product produced from tourism demand is the total number of people who want to travel within a certain period. From the perspective of the destination country, tourism demand represents a collection of goods and services that tourists obtain and consume during their visit period and under certain conditions which are controlled by explanatory factors. Tourism demand is generally approached by the number of visits and foreign tourists' expenditure. According to [9], from 1961 to 1993 tourism demand was approached with 51 tourist arrivals, 40 tourist expenditures and 14 others. Reference [11] also conducted a literature study, from 1990 to 2004 there were 53 studies using tourist arrivals as an approach to tourism demand, 24 studies using tourist expenditure and others only 11 studies. Reference [14] argued that tourist expenditure is the best proxy for tourism demand because it is able to explain the goods consumed as a consumption bundle. The demand for tourism by tourists is influenced and determined by several important factors. According to [16] there are variations in factors that are important in determining tourism demand, namely population, income, own price, competitor prices, preferences, marketing, visit experience effects and other qualitative effects. The factors that affect tourism demand according to [26] are divided into 3 groups, namely economic determinant, social-psychological determinant and exogenous determinant. Classifications included in the economic determinant group include disposable income, GDP per capita, private consumption, cost of living (CPI), tourism prices, transportation costs, exchange rates, relative prices among competing destinations, promotional expenditure, marketing effectiveness, and physical distance. In demand theory, important factors forming budget lines are income, own prices, prices of other goods [14]. Specifically, tourism demand is thought to be influenced by per capita income, relative destination prices, and replacement prices [16]. In addition there are factors that influence tourism demand, namely marketing and experience on previous visits. Revenue is the most important factor in tourism demand. Reference [9] believes that income is the most decisive factor in tourism demand. However, the difficulty in getting disposable income data is that the approach used for income is GDP both in constant, nominal, growth and per capita. The use of GDP per capita as a proxy for income was found in [1, 21, 25] research. Meanwhile, Reference [24] used GNI per capita as a proxy for income. Price is an important factor influencing demand. The general concept is known that two types of prices namely relative prices and competitive prices that affect demand. In tourism research applications relative prices are defined as the cost of living in tourist destinations while competitive prices are interpreted as tourism costs in competing destination areas [27]. The relative price / RP measures the cost of living in a destination compared to the country of origin of tourists. Whereas Competitive Price / SP measures the cost of living for tourist destinations compared to the

cost of living for other destinations that have similar tourism products [25]. But in calculating the SP there are differences, Reference [27] compare the destination price with the prices of other destinations at least two or more by giving a weight based on the level of competition. Exchange rates in many studies are used as standardization of prices, both relative prices and competitive prices. However, the exchange rate is also used as a price proxy for destination countries because tourists consider the exchange rate as a price [6]. The use of relative prices and competitive prices that are standardized with exchange rates can create multicollinearity problems because they originate from the same division of numbers, namely the exchange rate. Reference [25] believes that entering the exchange rate together with standardized prices can be misleading. Therefore, to be able to capture the effect of relative prices and competitive prices simultaneously it can be done without standardization. Fixed exchange rates are included as part of the price proxy. Promotion is one of the determining factors in the law of demand, especially at the level of the destination and company. However, difficulty in accessing relevant marketing data is often a matter of using promotional data [16]. The use of government expenditure data for the tourism sector is a proxy. Reference [21] uses government spending to capture the effects of promotion. Other explanatory variables included in the tourism demand model are autoregressive effects with lag dependent variables [6, 9, 13]. This variable explains the intention of tourists to return to the destination or disseminate information about the destination, which can influence the choice behavior of others [3]. In addition, the lag dependent variable explains the extent to which the objective of increasing the supply components of the tourism industry such as hotels, transportation, and trained employees is to meet increased tourism demand [23]. Researchers have proposed various techniques for analyzing tourism demand. The development began with a static model. But problems arise with false regression [23]. A dynamic model was developed because basically economic variables have a dynamic process of adjustment (Baltagi, 2005). The use of panel data especially dynamic panels is still limited to tourism research. Panel data has the advantage of utilizing pooled time-series or cross-sectional data sets allowing us to have more degrees of freedom than with time-series or cross-sectional data, and we can control for the bias of variables that are omitted and reduce multicollinearity problems, thereby increasing parameter estimation accuracy [12]. Estimation using OLS will produce a biased model because there is a correlation between error and the estimated value [2]. To overcome this problem, a model developed with the GMM estimator is first-difference (FD-GMM) by [19] and the GMM system by [18].

3. Research Metodology

The demand for tourism in this study is proxy through the expenditure of foreign tourists. Independent variables that are thought to have an influence on tourism demand are GDP per capita, relative prices, replacement prices, exchange rates, and promotions. The specifications of the proposed model are as follows

$$W_{it} = f(GDP_{it}, RP_{it}, SP_t, ER_{it}, Gov_t) \quad (1)$$

GDP is real GDP per capita with a hypothetical positive effect. RP is a relative price with a negative effect hypothesis. SP is a substitute price with a hypothesis having a positive effect if substitution and negative if complementary. ER is a bilateral exchange rate between destination and origin countries with a negative impact hypothesis. Gov is government spending on tourism promotion with the hypothesis of a negative impact.

In this tourism demand research using data directly from external sources and data from the calculation of variable proxies based on external data. The following is an explanation of the variable proxy formula used

Dependent Variable

Tourism demand is defined as the share of foreign tourist expenditure of a country against the total expenditure of foreign tourists in a country. Expenditures of foreign tourists are derived from multiplying the number of visits with an average expenditure per visit. Share of expenditure (W) is defined as:

$$W_{it} = \frac{\text{Tourism spending of the sending country}}{\text{Total tourism spending in Indonesia}} \quad (2)$$

Independent Variable

The independent variable that is calculated before being entered into the model is price. Relative price / RP is defined as:

$$RP_{it} = \frac{CPI_{Indonesia}}{CPI_{the\ sending\ country}} \quad (3)$$

Whereas competitor / SP prices are calculated by making Malaysia, Thailand and Singapore as competitors. Competitor / SP price is defined as:

$$SP_{it} = \frac{CPI_{Indonesia}}{(CPI_{Malaysia} + CPI_{Thailand} + CPI_{Singapore})^{\frac{1}{3}}} \quad (4)$$

There are three criteria in determining the best dynamic model or GMM, namely (i) Unbiased by comparing estimators with pooled least square (PLS) and fixed effects (FE), if the lag variable estimator results are between the PLS results and the FE model is said to be unbiased. (ii) The instrument is valid by conducting a citizenship test, if received H0 then the instrument in the model is valid. (iii) Be consistent with performing Arellano-Bond AR (1) and AR (2) statistical tests, if AR (1) reject H0 and AR (2) accept H0 then the estimators in the model are consistent [20].

4. Data

Table 1: Indonesia partners used in this study

Australia	Egypt	Japan	Russia
Austria	Spanish	South Korea	Saudi Arabia
Belgium	Finland	Sri Lanka	Singapore
Canada	France	Malaysia	Sweden
Switzerland	English	Netherlands	Thailand
China	Hongkong	Norway	Taiwanese
German	India	New Zealand	United States
Denmark	Italy	Philippines	

Sources of data in this study came from Statistics Indonesia, World Bank, UNCTAD. The data series used in

this study were 15 years from 2003 to 2007. For the sample countries in this study were 31 countries. The use of panel data with a relatively large cross-section compared to series meets one of the conditions proposed in the use of the panel model.

5. Results

The dynamic model is used to look at the factors that affect tourism demand in terms of foreign tourist expenditure. Variables are analyzed using double-log with the aim of looking at price and income elasticity. The advantages of dynamic panels can see short-term and long-term elasticity. Table x shows the estimated results of a dynamic model of Indonesian tourism demand. All proposed variables have a significant influence on tourism demand. Lag in tourism demand (W (-1)), GDP and government expenditure (GOV) has a positive impact or can increase tourism demand if the variable increases. The exchange rate (ER), relative prices (RP) and competitor prices (SP) negatively affect tourism demand or can reduce tourism demand if the variable increases. The assessment of the best dynamic model criteria shows that the proposed model is not biased because the alleged value of W (-1) with GMM is between PLS and Fe. The instrument used is valid because it is based on the Sargan Test (J-statistic) showing it cannot reject H0. The estimator is consistent because the Arellano-Bond test for AR (1) shows the decline of H0 and the Arellano-Bond test for AR (2) shows that it cannot reject H0. Based on the specified criteria, the discussion of the model can proceed to economic analysis.

Table 2: Estimation results for the dynamic model 2003-2017

Variable	Coefficient
W(-1)	0.67***
GDP	0.44**
ER	-0.77***
RP	-1.10***
SP	-0.68***
GOV	0.21***
W(-1) by PLS	0.96***
W(-1) by FE	0.62***
J-statistic	23.70 (0.82)
Arellano-Bond test for AR(1)	-2.78 (0.00)
Arellano-Bond test for AR(2)	0.34 (0.73)

Note : ***, ** represent statistical significance at the 1% level, 5% level

GDP as a proxy of income for tourists shows a positive effect with a value of 0.44. This shows that each increase in tourist income per capita by one percent will increase tourism demand by 0.44 percent. These results are in line with research conducted by [1, 21, 25]. The value of income elasticity gives the second lowest effect. Foreign tourist income is not a major factor in determining tourism demand. Partner countries that visit Indonesia on average are included in high-income and upper-middle income countries except the Philippines which is in the lower-middle income category so that income is not a major factor in tourism demand. ER or exchange rate gives a negative influence with a value of -0.77. This shows that if there is an appreciation of the rupiah exchange rate against the exchange rate of the country of origin of tourists 1 percent will reduce tourism demand by 0.77 percent. Appreciation of the exchange rate causes the value of goods in Indonesia to be relatively higher than the country of origin. These results are in line with research by [17, 24, 25]. In

macroeconomic theory, depreciation drives increased exports from one country to another. In tourism, the depreciation of the value of the rupiah will cause more money to be used. Maintaining a stable exchange rate provides certainty for tourists in planning shopping during the visit. RP or relative price as a proxy for tourism prices has a negative effect with a value of -1.10. This shows that any increase in tourism prices relative to the country of origin of 1 percent will cause a decrease in tourism demand to 1.10 percent. These results are in line with research conducted by [17]. In demand theory, the price of an item is inversely proportional to the demand for an item. In the context of tourism demand, rising prices incorporated in tourism consumption bundles will reduce tourist spending on tourism products. Reference [25] found that prices are positively related to tourism demand, this is because tourism is considered a luxury item. The relative price and the exchange rate have a negative impact, these two factors are related to the nominal money prepared to be spent by tourists. Tourists prepare money in their home currency, then exchange it for rupiah and spend it in rupiah while in Indonesia. When the rupiah appreciates and prices in Indonesia relatively increase, tourism spending will decrease. SP or competitor prices as a proxy for comparison of Indonesian tourism prices with competing countries. In this study, Malaysia, Thailand and Singapore are assumed to be competitors because they have a higher competitiveness index and higher tourism demand than Indonesia. The use of competitor prices is still rarely found in previous studies. SP has a negative impact on tourism demand with a value of -0.68. This means that a 1 percent increase in tourism prices in competing countries will reduce tourism demand in Indonesia by 0.68 percent. Reference [25] also found the same results, but did not provide an explanation related to this negative relationship. In theory, demand, the negative relationship between competitor prices and tourism demand indicates a complementary relationship. The increase in prices in competing countries also had an impact on the decline in Indonesian tourism demand. GOV or government expenditure for tourism promotion has a positive impact that is equal to 0.21. This means that any increase in government spending for the promotion of Indonesian tourism 1 percent will increase tourism demand by 0.21 percent. Reference [8] found the use of government spending as a proxy for promotion and no one has used the tourism industry expenditure as a proxy. Reference [21] found government spending to have a positive impact on tourism demand in Portugal. Promotion is a way to introduce tourism to potential tourists. Although it does not have a direct influence on tourist spending decisions, promotions can provide information that can attract tourists to visit and shop in the destination country. W(-1) or lag dependent variable as a proxy of persistence, information, rates and impressions has a positive impact with a value of 0.67. This means an increase in positive things at the previous visit 1 percent can increase visits 0.67 percent. The results of this study are in line with [1, 21, 25]. Indonesia as a tourist destination must be able to give a positive impression to visitors with friendliness, security, and facilities that support both directly related to tourism and other supporting facilities.

Table 3: Estimated short-term and long-term elasticity

	Sort-term	Long-term
Income	0.44	1.33
Own Price	-1.10	-3.33
Substitute Price	-0.68	-2.06
Exchange Rate	-0.77	-2.33

The advantage of using dynamic panels is that they can predict short-term and long-term elasticity [1]. Short-

term elasticity is obtained from the estimated coefficient value of the parameters in the model and long-term elasticity is obtained from the value of the short-term elasticity divided by 1- the estimated coefficient of the dependent lag parameter. In the long run, tourists are more sensitive to changes in income, relative prices, substitute prices and exchange rates.

6. Conclusion

This study provides another approach to tourism demand, namely the expenditure of tourists who become foreign exchange earnings for the destination country. This study measures the performance of Indonesia's tourism foreign exchange revenue from 31 countries between 2003-2017 by using a dynamic model and the GMM First Difference estimation method discovered by [19]. The independent variables proposed in this model all have a significant effect on tourism demand. The relative price and exchange rate are the most influential factors on Indonesia's tourism demand. This means that the price of Indonesian tourism must be kept competitive. The budget planned by tourists for tourism is fixed. Tourists visiting will use their money for consumption during the visit depending on the value of domestic money and the value of tourism products in the destination country.

7. Recommendations

The highest increase in expenditure on foreign tourists is influenced by prices, namely relative prices and exchange rates. The Indonesian government needs to maintain inflation and the exchange rate to create certainty for prospective foreign tourists.

References

- [1] A. Aslan, M. Kaplan and F. Kula. "International tourism demand for Turkey: a dynamic panel data approach." Munich Personal RePEc Archive (MPRA), No. 10601, 2008.
- [2] B. Baltagi. *Econometric analysis of panel data*, 3rd ed. West Sussex: John Wiley and Sons Inc, 2005.
- [3] B. Peng, H. Song and G.I. Crouch. "A meta-analysis of international tourism demand forecasting and implications for practice." *Tourism Management*, vol. 45, pp. 181-193, 2014.
- [4] BPS.Statistik Kunjungan 2018. Jakarta: PS, 2019.
- [5] C. Cooper and J. Fletcher. *Tourism Principle and Practices*. Essex: Pearson Education Limited, 1998.
- [6] C. Lim. "Review of international tourism demand models." *Annals of Tourism Research*, vol. 24, no. 4, pp. 833-849, 1997.
- [7] E. Smeral and A. Weber. "Forecasting international tourism trends to 2010." *Annals of Tourism Research*, vol. 27, no. 4, pp. 982-1006, 2000.
- [8] G.I. Crouch. "A Meta Analysis of Tourism Demand." *Annals of Tourism Research*, vol. 22 no. 1, pp. 103-118, 1995.
- [9] G.I. Crouch. "The study of international tourism demand: a review of findings." *Journal of Travel Research*, vol. 33, no. 1, pp. 12-23, 1994.
- [10] G.I. Crouch and J.R.B. Ritchie. "Tourism, competitiveness, and societal prosperity." *Journal of*

Business Research, vol. 44, pp. 137–152, 1999.

- [11] G. Li, H. Song and S.F. Witt. “Recent developments in econometric modeling and forecasting.” *Journal of Travel Research*, vol. 44, pp. 82-99, 2005.
- [12] Hsiao. *Analysis of Panel Data*, 2nd ed., Cambridge:Cambridge University Press, 2003.
- [13] H. Song and G. Li. “Tourism demand modelling and forecasting: a review of recent research.” *Tourism Management*, vol. 29, no. 2, pp. 203-220, 2008.
- [14] H. Song, G. Li, S.F. Witt and B. Fei. “Tourism demand modelling and forecasting: how should demand be measured?” *Tourism Economics*, vol. 16, no. 1, pp. 63-81, 2010.
- [15] H. Song and S.F. Witt. *Tourism Demand Modelling and Forecasting: Modern Econometric Approaches*. Oxford: Pergamon, 2000.
- [16] H. Song, S.F. Witt and G Li. *The Advanced Econometrics of Tourism Demand*. New York:Routledge, 2009.
- [17] L.F. Martins, Y Gan, A.F. Lopes. “An empirical analysis of the influence of macroeconomic determinants on World tourism demand.” *Tourism Management*, vol. 61, pp. 248-260, 2017.
- [18] M. Arellano and O. Bover. “Another Look at the Instrumental Variable Estimation of Error-Components Models.” *Journal of Econometrics*, vol. 68, pp. 29-51, 1995.
- [19] M. Arellano and S. Bond. “Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations.” *The Review of Economic Studies*, vol. 58, no.1, pp. 277-297, 1991.
- [20] M. Firdaus. *Aplikasi Ekonometrika Untuk Data Panel dan Time Series*. Bogor: IPB Press, 2018.
- [21] N.C. Leitão. “Portuguese tourism demand : a dynamic panel data analysis.” *International Journal of Economics and Financial Issues*, vol 5, no. 3, pp. 673–677, 2015.
- [22] S.A. Proenca and E. Soukiazis. “Demand for Tourism in Portugal: A Panel Data Analisis”. *Centro de Estudos da Uniao Europeia, Portugal*, 2005.
- [23] S.F. Witt and C.A. Witt. “Forecasting tourism demand : a review of empirical research.” *International journal of forecasting*, vol. 11, pp. 447–475, 1995.
- [24] S. Khandaker and S.Z. Islam. “International tourism demand and macroeconomic factors.” *International Journal of Economics and Financial Issues*, vol. 7, no. 5, pp. 389–393, 2017.
- [25] T. Dogru, E. Sirakaya-turk and G.I. Crouch. “Remodeling international tourism demand : old theory and new evidence.” *Tourism Management*, vol. 60, pp. 47–55, 2017.
- [26] Uysal M. “The Determinants Of Tourism Demand.” *The Geography of Tourism*, Chapter 5, 79-94, 1998.
- [27] Uysal M. and J.L. Crompton. “Determinants of demand for international tourist flows to Turkey.” *Tourism Management*, vol. 5, no. 4, pp. 288-297, 1984
- [28] WTTC. “Travel and Tourism Economic Impact 2018 World.” Available: <https://www.wttc.org/-/media/files/reports/economic-impact-research/regions-2018/world2018.pdf> [Des18, 2018].