

The Economic Valuation of Tourism Sector and Poverty Reduction in Kota Batu: Travel Cost Method (TCM) Approach

Setyo Tri Wahyudi

Faculty of Economics and Business, Universitas Brawijaya

Email: setyo81@gmail.com

Abstract

Kota Batu, as one of the tourist destinations in East Java, has long been known as the best tourism destination. On the other hand, Kota Batu also still has a problem regarding poor people. The tourism sector is seen as a growth strategy that enables the economy to grow, has the potential to improve the local economy, and able to reduce poverty. This study aims to measure the economic valuation of the tourism sector and its contribution to poverty reduction. The respondents and research samples are visitors to the tourist village of Bumiaji District, Kota Batu. Using the travel cost method, the results of the study showed that the economic valuation of the tourist village of the Bumiaji District provided substantial value and ability to contribute to poverty reduction in the area. Village tourism visitors also benefit (consumer surplus) because of the relatively low average costs to be borne compared to the willingness to pay.

Keywords: Economic Valuation, Tourism, Poverty, Travel Cost Method

BACKGROUND

Problems and challenges to achieve sustainable food security are multidimensional, including economic, social, political, and environmental aspects. At the macro level, the realization of food security will be increasingly difficult because of trends in the movement of food supply and demand in the opposite direction. On the other hand, food supply is increasingly difficult because of its physical, economic, and environmental constraints. While food demand will continue to grow in line with population growth, economic development, and strategic ecological dynamics.

East Java has excellent potential as a support for national food security. The abundance of production factors in the form of land is a vital capital to develop the agricultural sector to increase food security. Those are supported by the number of households engaged in agrarian services in East Java is the largest in Indonesia. Not only that, but the tourism sector in East Java is also increasingly showing its role in the economy of East Java. But on the other hand, poverty is still an unresolved problem. The poverty is still the most significant challenge faced today, and most of the poor live in rural areas (Farrington & Mitchell 2006).

One way to get out of poverty is to migrate to urban areas. Large cities adjacent to rural areas still have a strong appeal to the rural poor, especially those who are unemployed (Hwang & Stewart, 2017). Therefore, a measurable strategy is needed to overcome these problems. The increasing role and contribution of the tourism sector are believed to be able to be a solution to overcome the problem of poverty. The tourism sector is predicted to play an essential role in achieving the MDGs through efforts to overcome the problem of appropriation through better access to education, health, and opportunities for all (UNWTO, 2005).

Several empirical studies addressed rural tourism as a mechanism for poverty alleviation such as study Mthembu and Mutambara (2018) in Kwa-Zulu-Natal Province of South Africa; Njoya and Seetaram (2017) for study in Kenya; Mahadevan, Amir, and Nugroho (2016) for research

in Indonesia; Venegas, Gartner, and Senauer (2015) study in Costa Rica and Nicaragua and Wattanakuljarus and Coxhead (2008) study in Thailand. Based on those studies, tourism is seen as a possible growth strategy for developing economies and development agents because of its potential to generate a source of income for the local economy (Isaac and Van der Sterren, 2017). However, the successful strategy needs to identify the key actors (Lakener, et al., 2018), it because some studies found that growth of inbound tourism demand which raises aggregate household income, but worsens its distribution (Wattanakuljarus and Coxhead, 2008). Batu City is one of the tourist destinations in East Java. Various tourist rides were developed to attract tourists. This study aims to measure the economic valuation of the tourism sector and efforts to reduce poverty.

METHOD

This research was conducted in the tourist village of the Bumiaji district, Kota Batu. The population in this study were visitors to the tourist park. The instrument used was using a questionnaire instrument that was distributed to tourists who visited. Respondents sampled in this study included representatives from the Agriculture Service, the Food Security Service, the UMKM Service, and the Tourism Service, Tulungrejo Village District, and Business Actors. Business actors include Rice Farmers in Pendem Village, Mawar Farmers in Gunungsari, and Anggrek Farmers in Dadaprejo, Mushroom Farmers in Sumberejo Village. Then the Actors of UKM (UKM Kripik Mushroom and UKM Sari Apel). Besides, a sample (Restaurant and Villa Owner) was added to identify the economic level of the business actor.

Based on the several studies, there are many technics and procedures for calculate the impact of tourism sector on poverty alleviation such as using Dynamic Computable General Equilibrium Analysis (Njoya and Seetaram, 2017; Mahadevan, et al., 2016; Wattanakuljarus and Coxhead, 2008), using Social Accounting Matrix Model (Croes and Rivera, 2017) and panel data (Chou, 2013). However, in this study, we use the travel cost methods to determine economic valuation. Previous studies have also used the travel cost method to measure tourism economic valuations. For example, Ortacesme, Ozkan, and Karaguzel (2002) examine the recreational use values of natural areas in Turkey. Leh, et al. (2018) used the travel cost method to measure the value of recreation by taking examples of local and foreign studies in Malaysia.

Clawson first introduced the travel cost method (TCM) in 1959 (Clawson & Knetsch, 1966). This method is commonly used for the evaluation of non-market goods, usually for recreational purposes, such as parks, beaches, protected areas (Brandli et al., 2014; Jim and Chen, 2005; Tameko et al., 2011). Because these places do not have market prices, alternative methods are needed to calculate their value. Typically, tourist areas include goods that do not have a price on the market; therefore, the market value for travel to the tourist area serves as a reference for valuation. Using TCM, a researchers can determine the demand curve for visits to the city and assess consumer surpluses, which indicate a willingness to pay for those visiting the zone (OECD, 2006; TEEB, 2010; Haab and McConnell, 2002).

The Travel Cost method is used in this study to calculate the time and travel costs that must be paid by visitors to visit tourist attractions. The fee is the price to access the tourist attractions. That is what is called the willingness to pay (WTP), which is measured based on differences in travel costs. The economic valuation of the Bumiaji district in Kota Batu is calculated using the Individual Travel Cost Method to calculate the value of the consumer surplus per individual per visit. To get the benefit of consumer surplus first is to form a demand function. The request function is often written as follows:

$$V = \alpha_0 + \alpha_1 c$$

Where:

V = number of visits

α_0 = constant

α_1 = regression coefficient

c = travel expenses incurred by the individual

From the above function, then the consumer surplus can be calculated, which is a proxy of the Value of WTP (Willingness To Pay) to tourist sites. The formula used to calculate the consumer's surplus value is as follows:

$$WTP \approx CS = N^2 / 2\alpha_1$$

Where:

CS = consumer surplus

N = number of individual visitors

α_1 = regression coefficient of travel costs

After obtaining a consumer surplus value per individual per year, the next step is to calculate the economic value of the tourist object of the Bumiaji district in Kota Batu by multiplying the value of the consumer surplus by the number of tourist visits. Meanwhile, to calculate the economic valuation of the tourist village of the Bumiaji district, Kota Batu, 40 respondents were tourists.

RESULTS AND DISCUSSION

The economic potential of Kota Batu is very diverse. Tourism potential and agricultural potential are prominent in Kota Batu. One that is in line with the vision of Kota Batu itself is the growth of organic agriculture based on tourism. Many of Kota Batu residents use their land as a producer of agriculture and as a tourist attraction. An example is a land that is used as an object for planting apples as well as apple picking tours. Not only apples, even now there are many tourists picking oranges and strawberries. There are also plans to promote flower picking tours. Those who have a house around the tourist attractions, especially on the edge of a big road, have a more significant opportunity to benefit. They can sell typical stone products, or at least their agricultural products. The number of tourists who visit can also be used by business people restaurant and lodging. Complete accommodation can be offered to visitors so that all parties can feel the multiplier effect of tourism advances.

Poverty in Kota Batu

Conceptually, macro poverty is seen as an inability to meet basic food needs (measured in terms of expenditure). Meanwhile, micro poverty does not only look at basic food needs but on specific criteria. These criteria include homeownership, water sources, and lighting sources. Micro poverty assessment aims at social assistance and social protection.

Table 2. Percentage of Households by Characteristics and Ownership Status of Residential Buildings Occupied, 2018

No.	Characteristics	Building Ownership Status		Total
		Owned	Not Owned	
1.	40% Lower	82,75	17,25	100%
2.	40% Middle	86,13	13,87	100%
3.	20% Upper	83,67	16,33	100%

Table 2 above shows that the ownership status of Kota Batu residents for each category is the lowest 40% expenditure category, middle 40% expenditure group, and 20% expenditure category community is still dominated by the ownership status of their own home. This means that the community category based on the state of homeownership in Kota Batu can be said to be relatively good. However, there is no further information whether the house itself is categorized as liveable, for example, the area of the house, sanitation, the condition of the home (leaking or not exposed to the sun), and so forth. Meanwhile, what is meant by “not own house” says an official house / traditional house, not the status of a contracted house or illegal house that stands without permission and without tax, which indicates the lack of economic power of the community.

Based on the results of an interview with the Department of Food Security (2019), the people of Kota Batu who are categorized as people who live in uninhabitable homes will get assistance from the Social Service. Of course, to get help from the social service, Social Service officials will conduct data collection and validation regarding the eligibility status of the house. The goal is that the assistance provided is right on target, that is, only those who are categorized as living in an uninhabitable home will receive compensation from the local government.

The micro category of poverty can also be demonstrated by the accessibility of the use of electricity as the primary source of lighting and the source of drinking water used. Based on data from the Kota Batu People’s Welfare Statistics in 2018, the distribution of households to the category of expenditure groups is 40% lower, 40% middle and 20% above, shown as follows:

Table 3. Percentage of Households Using Electricity as Main Source of Lighting and Source of Drinking Water by Characteristics, 2018

No	Characteristics	Source of Lighting		Source of Drinking Water	Decent Drinking Water Source	Decent Water Access
		PLN	Non-PLN			
1.	40% Lower	100	0	86,09	84,23	87,15
2.	40% Middle	99	1	88,54	79,49	88,83
3.	20% Upper	100	0	90,53	75,79	90,53

Based on table 3, sources of electricity have been able to be accessed and used by all categories of society, both types of expenditure groups 40% down to 20% and above. Only 1% of the population in the middle 40% expenditure group has lighting using non-PLN electricity. If referring to the table, it indicates that the Kota Batu Government program related to the lighting infrastructure has been evenly and well distributed. Next, referring to the indicator of the use of drinking water sources, it appears that the lowest 40% expenditure category is the category of people who enjoy

the smallest clean water. This is indicated by the number of people enjoying clean water sources and having access to safe water, amounting to 86.09 and 87.15, respectively. Meanwhile, 40% of the middle class and 20% of the population enjoy clean water sources and have access to more decent water (above 86.09 and 87.15). Hopefully, access to the bottom 40% can be easier to enjoy clean water sources.

Economic Value Evaluation

The economic value of the Bumiaji district in Kota Batu based on the individual travel cost method obtained by the demand function results with the variable travel costs:

$$V = 6.223 + 1.41055$$

The demand function obtained the absolute value of α_1 (travel cost regression coefficient) of 1.41055. With this value, it can be calculated consumer surplus using WTP and the economic value of the tourist village of the Bumiaji district, Kota Batu. The results of the calculation of the consumer surplus and the economic value of the tourist village of the Bumiaji district of Kota Batu can be seen in the following table.

Table 4. Results of Calculation of Economic Value of the tourist village of Bumiaji District, Kota Batu

Value of α_1	1,41055
Number of Visitors 1 Year	400
Consumer Surplus (Per year)	Rp 19.141.442,5
Consumer Surplus (visiting)	Rp 4.111.865,426
Economic Value	Rp 1.544.746.170
Average of Visiting (Per individual)	2,9
Average Cost of Travelling	Rp 478.536,06

In table 4, that the number of visitors to the tourist village of Bumiaji district in Kota Batu in the past year amounted to 400 visitors, the result of the calculation of the consumer surplus obtained a consumer surplus of Rp. 19,141,442.5 per individual per year or Rp. 4,111,865.42 per individual per visit. The excess (surplus) enjoyed by visitors due to the ability to pay exceeds the actual demand, the real value for the individual (the average price incurred for travel costs) to the Pancer Cengkrong mangrove ecotourism is Rp. 478,536.06 with an average number of visits per individual during one year of 2.9 times.

The consumer surplus value per individual per visit is Rp. 4.111.865.42, it can be calculated the economic value of the tourist village of the Bumiaji district of Kota Batu by multiplying the value of consumer surplus by the number of visitors who came in the last one year as many as 400 visitors. Based on these calculations, the ecotourism value of the tourist village of Bumiaji district, Kota Batu is Rp. 1,544,746,170 per year. The calculation of economic value can be seen as follows:

$$\begin{aligned} \text{Economic value} &= \text{Consumer Surplus per Visit} \times \text{Number of Visits 1 Year} \\ &= \text{Rp}4,111,865.42 \times 400 \\ &= \text{Rp. 1,544,746,170 per year} \end{aligned}$$

The value of the revenue obtained by the tourist village of the Bumiaji district Kota Batu comes from the parking fee of Rp. 2,000 for motorbikes and Rp. 10,000 for the car, then the receipt value of Rp. 77,410.00.

Table 5. Reception of Tourism Village in Bumiaji District, Kota Batu

Number of Ordinary Days in 1 year	Rp. 38.000.000
Number of Holidays and Weekends in 1 year	Rp. 38.000.000
Total Regular Day Visitors	200
Total Holidays and Weekend Visitors	200
Motorcycle Parking Prices	Rp. 2.000
Car Parking Prices	Rp. 10.000
Normal Day Reception	Rp. 38.650.000
Reception Holidays and Weekend	Rp. 38.760.000
Total Revenue	Rp. 77.410.000

If the total revenue for one year from the tourist village of Bumiaji District, Kota Batu is Rp. 77,410,000 compared to the economic value in one year of Rp. 1,544,746,170, then the amount of revenue obtained from Pancer Cengkong mangrove ecotourism is only 4.70% of the financial benefit obtained. The acceptance only involves parking fees that are applied in the tourism village area of Bumiaji district, Kota Batu. It does not include consumption costs, travel costs, and other costs incurred by visitors while in the tourist village of Bumiaji district, Kota Batu.

The increased interest and visits of tourist villages in the Bumiaji district in Kota Batu, will increase the actual reception of the tourism village and enhance the economic value of the tourist village area. The development of tourist sites and the increasing number of visits coming to the tourist village of Bumiaji district in Kota Batu has led to the emergence of multiplier effects felt by the surrounding community. Increasing the number of visitors who come to the tourist village of Kota Batu, Bumiaji district will increase the velocity of money in the area. Visitors who come to the tourist village of Bumiaji district, Kota Batu not only come from Kota Batu, but also from outside Kota Batu. Visitors who come from outside the Kota Batu usually enjoying the beauty of the tourist attractions. They also desire to buy souvenirs or food and drinks that are unique from Kota Batu as memories to bring home. Further, this opens business opportunities for the surrounding communities, which are near the location of the tourist village of the Bumiaji district to build a business that can produce and meet the needs, such as providing a variety of foods or drinks typical of Kota Batu.

CONCLUSION

Kota Batu, as a tourist destination, provides benefits not only for the economy but also for poverty reduction. Also indicated by the improved poverty conditions (showed by decreasing number of poor people) in the Kota Batu community as the development of the Kota Batu as tourism sector. Based on the economic value obtained in the tourist village of Kota Batu, it can be said that the existence of this tourism village has enormous benefits and impacts on community. Also, consumers benefit in the form of excess (surplus) because they can pay for various expenses while traveling in Kota Batu, which is still far above the average cost incurred to visit the tourist

village. Therefore, to improve the functions and benefits of the Bumiaji district tourism village area, the manager of the Bumiaji subdistrict village of Kota Batu is expected to be able to reform and add facilities that support the comfort of visitors. As suggested by Mahadevan, Amir, and Nugroho (2016) need a policy to be targeted differently for touristic and non-touristic urban/rural regions. Also, need to identify the key actors such as study Lakener, et all (2018). On the other hand, the travel cost method which using the concept of consumers' willingness to pay (WTP) for the costs of visiting the recreational area does not take into account several essential elements such as Travel Duration, Multi-purpose Trip, Substitution Sites, Other costs involved, Effects of trip duration, and the quality of recreational area and congestion (Leh, et al., 2018; Bedate, Herrero and Sanz, J.A., 2004).

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REFERENCES

- Anríquez, G. and Stamoulis. K. (2007). Rural development and poverty reduction: is agriculture still the key?, *Journal of Agricultural and Development Economics*, Vol. 4, No. 1, pp. 5-46
- Bedate, A., Herrero, L.C. and Sanz, J.A. (2004). Economic valuation of the cultural heritage: application to four case studies in Spain, *Journal of Cultural Heritage*, 5, 101-111.
- Brandli, L. L., Prietto, P., Neckel, A. (2015). Estimating the Willingness to Pay for Improvement of an Urban Park in Southern Brazil Using the Contingent Valuation Method, *Journal of Urban Planning and Development*, 141(4)
- Chou, M.C. (2013). Does tourism development promote economic growth in transition countries? A panel data analysis, *Econ. Model*, 33, 226-232
- Clawson, M., and Knetsch, J. (1966). *The Economics of Outdoor Recreation*. Baltimore: Johns Hopkins University Press.
- Croes, R., and M. Rivera. (2017). Tourism's Potential to Benefit the Poor: A Social Accounting Matrix Model Applied to Ecuador, *Tourism Economics*, 23(1): 29-48
- Farrington, J. and Mitchell, J. (2006). *How can the Rural Poor Participate in Global Economic Processes?*. Overseas Development Institute. London.
- Haab, T. C., and McConnell, K. E. (2002). *Valuing Environmental and Natural Resources: The Econometrics of Non-market Valuation*. Massachusetts: Edward
- Hwang, D. and Stewart, W.P. (2017). Social capital and collective action in rural tourism, *Journal of Travel Research*, 56, 81-93.
- Isaac, R. & van der Sterren, J. (2017). *Locally Driven (Community Based) Tourism Development*. H. T. University of Professional Education. Breda
- Jim, C.Y., Chen, W.Y. (2006). Recreation-amenity use and contingent valuation of urban greenspaces in Guangzhou, China, *Landscape and Urban Planning*, 75, 81-96.
- Lakener, J., Kiss, A., Merlet, I., Olah, J., Mate, D., Grabara, J and Popp J. (2018). Building Coalitions for a Diversified and Sustainable Tourism: Two Case Studies from Hungary, *Sustainability*

Journal, 10(4), 1090.

- Leh, F.C., Mokhtar, F.Z., Rameli, N. and Ismail, K. (2018). Measuring Recreational Value Using Travel Cost Method (TCM): A Number of Issues and Limitations, *International Journal of Academic Research in Business and Social Sciences*, 8(10), 1381 – 1396.
- Mahadevan, R., H. Amir, and A. Nugroho. (2016). Regional Impacts of Tourism-Led Growth on Poverty and Income: Inequality: A Dynamic General Equilibrium Analysis for Indonesia, *Tourism Economic*, 1–18.
- Mthembu, B. and Mutambara, E. (2018). Rural Tourism as a Mechanism for Poverty Alleviation in Kwa-Zulu-Natal Province of South Africa: Case of Bergville, *African Journal of Hospitality, Tourism and Leisure*, 7(4) – pp. 1-22
- Njoya, E.T and Seetaram, N. (2017). Tourism Contribution to Poverty Alleviation in Kenya: A Dynamic Computable General Equilibrium Analysis, *Journal of Travel Research*, 1–12
- OECD (2006): Cost-Benefit Analysis and the Environment. Recent Development.
- Ortacesme, V., Ozkan, B., and Karaguzel, O. (2002). An estimation of the recreational use value of Kursunlu Waterfall Nature Park by the Individual Travel Cost Method, *Turkish Journal of Agriculture and Forestry*, 26(1):57-62.
- Tameko, A.M., Pythagore, H, Donfouet, P, and Sikod, F. (2011). The Economic Valuation of Improved Urban Parks: A Case Study of Warda Park, *Journal of Sustainable Development*, 4(1).
- UNWTO. (2005). Declaration on Tourism and the Millennium Development Goals, New York.
- Venegas, M.Sr, Gartner, W. and Senauer B. (2015). Tourism and Poverty Reduction: An Economic Sector Analysis for Costa Rica and Nicaragua, *Tourism Economics*, 21(1), 159-182.
- Wattanakuljarus, A., and Coxhead, I. (2008). Is tourism-based development good for the poor? A general equilibrium analysis for Thailand, *Journal of Policy Modelling*, 30(6), 929-955.