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ECONOMIC VALUATION OF CULTURAL HERITAGE IN SURAKARTA CITY, CENTRAL JAVA-INDONESIA

Abstract:

Surakarta city has various types of cultural heritage, both physical and non-physical, and has a great potential in improving the tourism sector. Surakarta is located at the southern part of Central Java bearing economic functions as a surviving historic city of the country. Despite the great opportunities for cultural heritage in Surakarta, the city is currently facing threats of high traffic, excessive depletion of the natural environment in the city. This is due to underestimation on the market values of cultural heritage in development decisions. Surakarta require an additional source of income for the maintenance and preservation of cultural heritage. The research of willingness to pay (WTP) of the visitor of the Surakarta cultural heritage is needed. Cultural heritage is something that must be preserved, because it is a public good that can carry the name of Surakarta city in the arena of world culture. The aim of this study is to estimate the economic benefit of cultural heritage in Surakarta city as the results would be able to provide insight to the value of this unique heritage society. The methods employed is contingent valuation method (CVM). The payment vehicle opted in this study is via accommodation, where a fixed heritage charge per night was included in the total accommodation bill in Surakarta. In CVM, the logit model was defined based on dichotomous choice method to estimate the WTP randomly with different starting bid value. A total of 225 respondents were interviewed in person, using random stratified sampling method. Utility preservation of cultural heritage Surakarta influenced by several factors, such as gender, age, level of visit frequent, type of work, and the amount of WTP. Gender, age, and type of work affect the utility respondent preservation of Surakarta cultural heritage is a significant positive. Level of visit frequent variable been negatively affect utility. WTP of respondents is greater than the status quo. Variable income, national origin, marital status, and education level influence the utility of Surakarta cultural heritage preservation is not significant. How to withdraw funds for the preservation of Surakarta cultural heritage can be done by adding to the hotel and restaurant taxes, adding to the ticket of admission, or added to the retribution.

Keywords:

economic-valuation, heritage, CVM, Surakarta

INTRODUCTION

The tourism sector is a strategic sector in the national economic system of Indonesia. Surakarta city has various types of cultural heritage, both physical and non-physical, and it has a great potential in improving the tourism sector. The step to achieve this goal is the declaration of Surakarta as a heritage city and a International MICE city. The direction of government policy related to the tourism sector will affect to develop creative industries in Surakarta, such as typical food products and batik products. The question is with a number of its cultural heritage, whether Surakarta Local Government has had a policy for the care and preservation.

Surakarta city status as a tourist destination's cultural heritage has been recognized by the government of the Republic of Indonesia. At this time the city of Surakarta is in the process of preparation to apply for a world heritage city to the UNESCO. Therefore, Surakarta require additional sources of revenue for the maintenance and preservation of cultural heritage. Studies on willingness to pay (WTP) of the visitors of the Surakarta cultural heritage is needed. The cultural heritage is something that must be preserved, because it is a public good that can carry the name of the city of Surakarta in the arena of world culture.

Carson, et. al. (1994) had research at Kakadu Conservation Zone in Australia and Alberini, et. al. (1997) at San Jaoquin Valley in California stated that the utility is affected by the amount of WTP. Herath (1999) had research at Lake Mokoan in Victoria stated that variable income, sex, age, and occupation of respondents still had a significant positive effect on the utility. According to Alvares-Farizo, et. al. (1999) who had research at Environmentally Sensitive Areas (ESAs) in Scotland, variable that affects a significant positive on utility is income, sex, and age. Tuan and Navrud (2007) had research at My Son Vietnam states that the factors affecting utility is sex, age, a frequent visit, permanent jobs, as well as the amount of WTP. Amirnejad, et. al. (2012) had research at Sari Forest states that the factors affecting utility is income, sex, age, and frequent visits. Firoozan, et. al. (2012) had research at Lahijan Forest in Iran stated that the utility is affected by income, sex, and the work of the respondent. Varahrami (2012) had research at Kakh Sadabad in Iran and Chea (2013) at Melaka City in Malaysia stated that sex and the amount of WTP significantly affect utility.

The main objective of this study was to estimate the economic valuation of cultural heritage preservation Surakarta using two approaches, namely the Contingent Valuation Method (CVM) with single-Bounded CVM. The purpose of this study were (1) to estimate the value attribute of cultural heritage in Surakarta and (2) estimate the willingness to pay to preserve the cultural heritage in Surakarta.

MATERIALS AND METHODS

Surakarta city has an area of approximately 44 km², with a population of 2013 as many as 499.337 people. The border of Surakarta city is Boyolali (west), the district of Klaten and Sukoharjo (south), Karanganyar district (east), and Sragen (north). Surakarta cultural heritage components are grouped into three types, namely: the traditional city Component (Kasunanan Palace, Puro Mangkunegaran), colonial component city (European architecture building or a mix of local and European), and component cities patterned ethnic Arab and Chinese (Kauman regions and territories Chinatown). Surakarta city is one of the National Tourism Strategic Area located in Central Java province. Surakarta city is dominated by cultural and historical tourism, such as Mangkunegaran Palace, Kasunanan Palace, Sriwedari Park, Batik Village, typical food, and others. Travelers come from inside and outside the country that is dominated by tourists who come from Asia-Pacific countries. In 2013, the number of foreign tourist is 30,500 and the domestic tourist is 2,067,850.

The mainstay of the Surakarta cultural heritage is Surakarta Palace (Kasunanan Palace and Mangkunegaran Palace), Batik Products (Laweyan Batik Village), and typical food (Tengkleng and Serabi Notosuman).

The number of samples of this study is 225 respondents. Data were collected using a questionnaire and indepth interview. The analysis tool used is the Contingent Valuation Method (CVM).

RESULTS

CVM analysis requires the determination of the value of the initial bid. Justification determination of the initial bid values obtained from the average budget each year for the treatment of Surakarta cultural heritage from the year 2011 until 2013 (without the grant of Rp 4,873,042,167 and with a grant of Rp 16,539,708,833) compared with the average number of tourists who visit in Surakarta (by 1,988,475 tourists). Thus the minimum value of the initial bid is between Rp 2,452 to Rp 8.318. Based on the results of these calculations, the value of the initial bid in this study used Rp 7,500.

Descriptive analyzes were carried out on the perception of respondents, from 27 items in total there are 10 items with high assessment scores (the other items had a total score of medium) for the preservation of Surakarta cultural heritage.

Table 1. The High Ten of Total Score

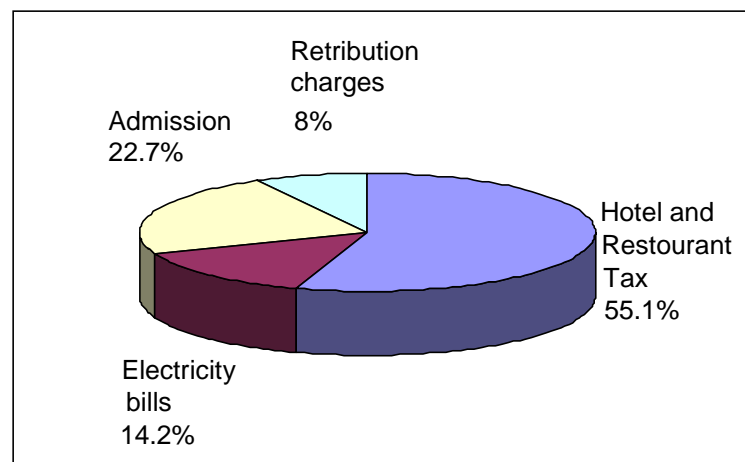
No	Items	Total Score
1	I am very happy because today I can still enjoy the Surakarta cultural heritage.	1,616
2	Surakarta cultural heritage has the very important values of heritage.	1,605

3	Surakarta city is one of the cities that have a high cultural value in Indonesia.	1,601
4	Surakarta city is unique compared to other cities.	1,593
5	Preservation of Surakarta cultural heritage strongly supports the development of tourism.	1,636
6	Support and participation in the preservation of Surakarta cultural heritage is needed.	1,605
7	The Government is involved in the preservation of Surakarta cultural heritage.	1,683
8	All Indonesian people should contribute to the preservation of cultural heritage.	1,588
9	Imposition of tariffs for the benefit of preservation of cultural heritage is quite reasonable.	1,591
10	The budget will be used to improve the conditions of conservation of cultural heritage.	1,579

Source: Processed Data, 2015

Respondent's perceptions of how withdrawals preservation of cultural heritage is shown in the figure below. Most of the respondents chose the way of preservation of the deposit withdrawal in the hotel and restaurant tax.

Figure 1. Respondent's perceptions of how withdrawals preservation of cultural heritage



Source: Processed Data, 2015

The steps of logistic regression analysis for Single-Bounded CVM are:

a. Selecting independent variables candidate

This step selected independent variables that would include in the model of multivariate analysis. The steps are:

1. To analyze each variable partially with logistic regression analysis.
2. To create a table to display the level of significance of the coefficient of the independent variable analysis results.
3. If the significance level of less than or equal to 5% that mean the variable is a candidate variable for the model of multivariate analysis.

b. The multivariate analysis

This analysis was conducted to analyze all of the variables that a candidate as a result of the previous analysis. The steps are:

1. To analyze all of candidate variables with multiple logistic regression analysis.
2. To create a table to record the value of Odd or Exp (B) of each variable.
3. To create a table to record the significance level of each independent variable coefficients.
4. To analyze all of candidate variables with multiple logistic regression analysis without the variable with highest level of significance.
5. Comparing the value Odd or Exp (B) the results of step (2) with a value of Odd or Exp (B) step (4). If there is more than 10% differences, return the variable into the model.
6. Conducting the logistic regression analysis did not include a variable with a significance level of the next order (next highest).
7. Repeat steps (5) until to the last sequence variable.

In the single-bounded analysis of CVM, the question of WTP is done only once. For the initial bid of Rp 7,500, the question is "To the benefit of Surakarta cultural heritage preservation, are you willing to pay an additional Rp 7,500 for a visit?"

Table 2. Results of variable selection of candidates

No	Variables	Sig	Descriptions
1	Sex (JK)	0.000	Selected
2	Country (AN)	0.007	Selected
3	Age (UM)	0.000	Selected
4	Marital Status (ST)	0.000	Selected
5	Frequent Visit (SK)	0.000	Selected
6	Income (PT)	0.000	Selected
7	Education (PD)	0.000	Selected
8	Job (PK)	0.001	Selected
9	WTP Max (WTP)	0.000	Selected

Source: Processed Data, 2015

The response to the question on the single bounded produced two possibilities, namely to respond "Yes" or "No". Table 2 display the results of the logistic analysis of single bounded CVM to answer "Yes". The table below represents the results of the selection candidate variables that go into the model.

From Table 2 above, there are nine variables worthy entry into the basic model (primary model), namely:

$$U = \alpha + \beta_1JK + \beta_2AN + \beta_3UM + \beta_4ST + \beta_5SK + \beta_6PT + \beta_7PD + \beta_8PK + \beta_9WTP + e$$

Then, the basic model was analyzed by multivariate logistic regression analysis. The result of that analysis is shown in Table 3 below.

Table 3. Results of multivariate logistic regression analysis

No	Variables	Sig	Exp (B)
1	Sex (JK)	.325	2.342
2	Country (AN)	.999	.000
3	Age (UM)	.198	1.060
4	Marital Status (ST)	.532	.441
5	Frequent Visit (SK)	.046	.341
6	Income (PT)	.201	2.106
7	Education (PD)	.032	2.655
8	Job (PK)	.003	13.972
9	WTP Max (WTP)	.001	1.001

Source: Processed Data, 2015

Table 3 stated that the significance level (sequentially from the highest) is variable Country, Marital Status, Sex, Income, Age, Frequent Visit, Education, Employment, and WTP max. After subsequent analysis process turned out to be a variable that goes into the final model is variable Sex, Age, Frequent Visit, Job, and WTP. The final model is as follows:

$$U = \alpha + \beta_1JK + \beta_2UM + \beta_3SK + \beta_4PK + \beta_5WTP + e$$

Table 4 showed the result of final model analysis with logistic regression analysis. Table 4 stated that the value of -2 log likelihood without independent variables amounting to 230.648, and with the independent variable of 56,627. This means that the independent variable has a very significant meaning in the model (shown on the level of significance of Chi Square value less than 0.05). All of the independent variables affect to the dependent variable indicated by 86.2% (the value of Nagelkerke R Square).

From the Table 4 mean that the respondents by sex (Men) have the possibility of 4.23 times more likely to answer "Yes" than respondents with sex (Women). If viewed from this type of job, respondents with jobs as government employees (civil / military / police)

have the possibility 15.74 times more likely to answer "Yes" compared with respondents who have other job.

Table 4. Final Model Analysis Results

No	Variables	B	SE	Sig	Exp (B)	Value
1	Constant	-10.273	2.708	0.000	0.000	
2	Sex (JK)	1.443	.730	.048	4.233	
3	Age (UM)	.042	.032	.193	1.043	
4	Frequent Visit (SK)	-.998	.479	.037	.369	
5	Job (PK)	2.756	.814	.001	15.741	
6	WTP Max (WTP)	.001	.000	.000	1.001	
-2 log likelihood (Constant)						230.648
-2 log likelihood (Model)						56.627
Chi Square				0.000		174.021
Cox & Snell R Square						0.639
Nagelkerke R Square						0.862
Hosmer and Lemeshow Test						0.955

Source: Processed Data, 2015

Partially, the variable age effect to the response "Yes" but not significantly. This is happened because the respondents of this study are all people aged over 18 years and already has the ability to pay for something. While variable Frequent Visits has a significant negative effect, which means that the more frequently respondents visited the lower the possibility to respond "Yes".

Analysis of single-bounded contingent valuation methods stated that 57.3% of respondents said the response was "Yes" for the value of the bid offered. Magnitude average WTP of respondents to the preservation of Surakarta cultural heritage is Rp 8,362. From Table 3 above, there are five variables:

$$U = -10.273 + 1.443JK + 0.042UM - 0.998SK + 2.756PK + 0.001WTP$$

Sig (0.000)	(0.048)	(0.193)	(0.037)	(0.001)	(0.000)
Exp(B) (0.000)	(4.233)	(1.043)	(0.369)	(15.741)	(1.001)

Only the variable age is not significant effect on the preservation of Surakarta cultural heritage utility. The variable type of job (Government employee / Military / Police) has a 15.74 times greater likelihood determine the utility of cultural heritage preservation as compared to other type of job.

CONCLUSION

CVM final analysis models produce independent variable Sex (JK), Age (UM), Frequent visits (SK), Job (PK), and the maximum WTP. Variable Sex, Age, and Job affect the utility

preservation of Surakarta cultural heritage is a significant positive. Variables affecting utility often been the preservation of Surakarta cultural heritage is a significant negative. Willingness to Pay (WTP) of respondents is greater than the status quo. This means that the respondents have a high willingness to pay a certain amount of money to get the utilities preservation of Surakarta cultural heritage. Variables Income affected the utility of Surakarta cultural heritage preservation but not significantly. Variables Country, Marital status, and Education influenced to the preservation of Surakarta cultural heritage utility but not significantly.

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