Assessing the Economic Value of Cultural Heritage Site: A Case of the Kekayon Puppet Museum in Yogyakarta

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Abstract: Some museums in Indonesia uphold the same mission, namely in the efforts to preserve culture in Indonesia. As part of a cultural preservation, the Kekayon Puppet Museum Yogyakarta educate visitors about Javanese culture through puppet. This study estimates the economic value of a cultural heritage site by investigating visitors' willingness to pay (WTP) for preserving the cultural heritage by visiting the museum. Using a logistic regression, we tested the determinants of visitors' WTP. The results indicate that the visitors contribute less by entrance fee payment. The average WTP value were IDR12,000 (USD 0.83). There are 81.39 percent of respondents willing to contribute. This indicates that most of the visitors had a low contribution for the Museum. This study contributes to the museum administrators, especially cultural heritage museums by identifying the value of visitor's WTP and the determinants of WTP for visiting the museum, so they can promote the importance of cultural heritage tourism and improve the facilities of the museum.

1 INTRODUCTION

The existence of a museum is needed for the communities. The museums has been the main repository of storing objects and cultural and educational relics of a country. The economics research field is quite useful, for example in estimating the value of visitors at their place of visit by using contingent valuation (Johnson and Thomas, 1998). The logistic regression could be employed to explore whether early exposure to the arts of influence participation as adults. The initial exposure resulted in later participation and that the effects of exposure seemed to be strongest in the years before and after adolescence (Gray, 1998).

This study aimed at identifying the factors had impact on willingness to pay of visitors to visit museum. In this study, we used Kekayon Puppet Museum (Museum Wayang Kekayon) Yogyakarta as the object. The tourism potential in Yogyakarta does not only rely on the potential of nature and culture that is very amazing, but also presents the potential of historical tourism and cultural reserves that are very interesting to visit. One tourist attraction that has a high historical value is the museum. The Museum is a permanent non-profit institution in providing services to the community and development, open to the public who receive, maintain, research, deliver and exhibit for the purpose of learning, education and satisfaction, facts about humans and their environment (ICOM, 2007). Some museums in Indonesia uphold the same mission, namely in the efforts to preserve culture in Indonesia. The Kekayon Puppet Museum Yogyakarta is also part of a cultural preservation mission through education of tourists about Javanese culture through puppet (wayang). As a cultural heritage, the museum have characteristics of public goods, and therefore non-market valuation techniques can be employed for assessment. The most important valuation method is contingent valuation (CV) method (Ready, 2002).

Most of the CV methods have applied to assess goods and environmental benefits, and only a few studies have applied to non-profit cultural organizations. Most of these studies have directed at generally supported cultural activities. Some CV studies related to culture (Throsby et al., 1983) (Morrison and Westi, 1986) (Martin, 1994) (Hansen, 1997). Still few CV studies have conducted on the value of culture (or non-profit cultural organizations). For filling this gap, this study would estimate the economic value of cultural heritage site, namely The Kekayon Puppet Museum Yogyakarta using CV method. By logistic regression, this study examined the impact of sociodemographic, travel cost, distance, facilities, etc. had impact on WTP visitors to visit the museum.

2 THE KEKAYON PUPPET MUSEUM YOGYAKARTA

The Kekayon Puppet Museum is a private museum that managed by the Kekayon Social Foundation and it was established since July 23, 1991. The museum is also an official member part of the Museum of the Musyawarah Museum or Barahmus. It began fully operated on June 17, 1992. As one of the museums in Indonesia that participated in storing and exhibiting puppets, the Kekayon Puppet Museum not become the main destination of tourists, both domestic and foreign tourists yet.

Based on data from tourist visits to the Kekayon Puppet Museum in recent years, there have been fluctuations in the number of tourist visits to the Kekayon Puppet Museum in the last 3 years through data from the Yogyakarta Special Region Tourism Office. The Kekayon Puppet Museum. The Kekayon Puppet Museum is not included in the top 10 list of 31 museums yet. In 2017, the De Mata Art Museum had the highest total visitors of 613,812 tourists and Affandi Museum had the lowest total visitors, which was 19,148. Tourists visiting the Special Region of Yogyakarta still choose to visit other museums rather than visiting the Kekayon Puppet Museum. Of course, with various kinds of promotional efforts or improvements to facilities such as making more attractive puppet displays and other vehicles that are able to attract visitors to come in the next few years it is expected that the total number of tourist visits at the Kekayon Puppet Museum increases.

3 METHODOLOGY

3.1 Study Site

This study conducted in the Kekayon Puppet Museum. The Kekayon Puppet Museum Yogyakarta is also part of a cultural preservation mission through education of tourists about Javanese culture through puppet (wayang). The museum has more than 5,000 several awards related to the quality of the facilities provided, namely two national awards from the Roaming Community as a Nomination Museum for Local Culture Wisdom in 2016 and Nomination of Friendly Museum in 2017.

3.2 Sampling Procedure

The sampling method in this study used convenience sampling technique. With convenience sampling techniques researchers can save in terms of time and costs and sampling respondents easily measured then usually very helpful and want to be invited to cooperate. The use of this sampling method is very appropriate for this type of research with groups that focused and explorative research to find ideas or initial testing of a hypothesis. We surveyed the visitors who are willing to provide information needed by researchers through questionnaires distributed, and interviews conducted to obtain information directly or indirectly. The required sample size for the surveys was determined by the Slovin formula. We examined a total of 172 respondents who visit The Kekayon Puppet Museum.

3.3 Survey Design and Administration

We surveyed visitors in the study site to investigate their support for improving The Kekayon Puppet Museum. Their support were measured they willing or not to provide financial support for improving the Kekayon Puppet Museum by the entrance fee payment. These identified the visitors who care or not about the cultural heritage site. In order to identify the amount of entrance fee for the museum, we conducted a focus group discussion with 20 visitors knowledgeable about the topic. In the discussion, we utilized the contingent valuation method that constructed a hypothetical market to measure participants' willingness to pay for a certain change in sites (Mazzanti, 2003)(Sanz et al., 2003)(Bedate et al., 2004). Based on bids above IDR 5,000 (USD 0.36), results of a single bound study showed that the informed visitors were willing to pay of IDR 12,000 (USD 0.83) at average for visiting the museum. This value indicate the economic value of the museum from the point of view of informed visitors. It could distinguish visitors with sufficient financial support for the museum from those without. Based on this estimation, we designed a question to find out whether participants would willing or not willing to pay IDR 12,000 (USD 0.83) for the entrance fee.

3.4 Data Analysis

The researcher applied a single dichotomous choice method tied to two possible respondent answers namely "yes" or "no". The dichotomous choice method best uses the Contingent Valuation Method (CVM) approach because this method is closest to market behavior when consumers will choose to buy something or not at a certain price (Bateman et al., 2002). Contingent Valuation is still widely used to assess a tourist spot because the technique describes an

individual by generating value directly from an individual through a survey (Mazzanti, 2003)(Sanz et al., 2003)(Bedate et al., 2004).

We employed a logistic regression (Wang and El-hag, 2007) to identity the impacts of the determinants on visitors' WTP for visiting The Kekayon Puppet Museum. The dependent variable of the model was the visitor's WTP for for visiting The Kekayon Puppet Museum, where 1 indicated their agreements (they willing to pay as IDR 12,000) and 0 showed their disagreements (they are not willing to pay as IDR 12,000). The independent variables of the model included the sociodemographic characteristics, visit characteristics, and site characteristics (Figure 1). The logistic regression of this study is

$$log\left(\frac{p}{1-p}\right) = \beta + \Sigma\frac{n}{(j=1)}\beta X_{ji}\Sigma\frac{m}{(k=1)}Y_k Dki + e \tag{1}$$

$$log\frac{(}{p}(1-p)) = \beta + \beta_1 INC + \beta_2 SEX + \beta_3 EDUC +$$
$$\beta_4 AGE + \beta_5 MARRIAGE + \beta_6 FREQ + \beta_7 TC +$$
$$\beta_8 FACILITIES + \beta_9 DISTANCE +$$
$$\beta_{10} SUBSTITUTION + e \tag{2}$$

where p is willingness to pay for the Kekayon Puppet Museum (p = 1, if the respondent is willing to pay; 1-p, if the respondent is not willing to pay); 1-p is not willing to pay for visiting the Kekayon Puppet Museum p / (p-1) = Odds Ratio (Risk); Xj is vector of independent variable; Dk is vector of dummy variable. αβi dan Yk=e is parameters that are assumed to be random tool logistic functions.

4   RESULT AND DISCUSSION

The study results indicated that 81.4% of the respondents (n=140) willing to pay for visiting The Kekayon Puppet Museum, while the 18.6% (n=32) did not willing.

Age has a positive significant effect on willingness to pay for visiting the museum. Most of the respondents were young and active as students where there was a special purpose in visiting the museum. Respondents who have more than 30 years of age have a greater willingness to pay because they already have a steady income. This research is in line with the hypothesis of other research (Murzyn-Kupisz and Działek, 2013). This in line with some previous studies (Nandagiri et al., 2015) (Tao et al., 2012) (Van Sandt and Thilmany, 2016) (Chansina and Seenprachawong, 2017) (Adamu et al., 2015).

Variable	Coef,	Wald	Odd ratio
Age	.098	8.580	1.103**
Sex	-1.448	9.315	0.235**
Marriage	-.620	.670	.538
Education	.290	5.444	1.337***
Income	.000	.000	1.000**
Travel cost	000	4.279	1.000**
Visit	.341	.892	1.406
Substitution	-.880	-.880	.415*
Distance	-.046	4.834	.955**
Facility	.506	4.394	1.659**
Constant	-5.703	8.628	.003

Dependent variable: WTP to visit The Kekayon Puppet Museum
*significant at level 90%; **significant at level 95%; significant at level 99%

Figure 1: Regression Result.

Sex has a significant effect on willingness to pay to visit the museum. The results of this study are in line with the results of other researches (Nandagiri et al., 2015)(Van Sandt and Thilmany, 2016)(Fonseca et al., 2010). The coefficient value of the sex variable is negative, which means that women have more WTP than men to visit The Kekayon Puppet Museum.

The results of this study are supported by other research (Priambodo and Suhartini, 2016) Marital status has no significant effect on the value of willingness to pay for The Kekayon Puppet Museum. The value of the variable coefficient of marital status is negative.

The results of the binary logistic regression test show that there is a positive and significant relationship between education with the willingness to pay. It means that the higher level of education, the higher the willingness to pay for visiting the museum. In other words, knowledge from someone will increase regarding awareness to maintain cultural heritage such as puppets and maintain the facilities from the museum so that the possibility of the risk of puppet damage will be smaller. A similar study who investigated the Malaysian Museum regarding willingness to pay for improving the quality of the museum facilities' improvement (Fadhil et al., 2017), The study also mentions that if the longer years of schooling, the higher willingness to pay for the improvement. Some previous studies found the effect of education on WTP (Nandagiri et al., 2015) (Adamu et al., 2015) (Fonseca et al., 2010) (Fadhil et al., 2017) (Calleja et al., 2017). Income has a positive and significant influence on willingness to pay. This indicates that the higher the income level of the respondents, the higher the willingness to pay for admission to museums. The results of previous studies are also in line with this hypothesis carried out by other studies (Nandagiri et al., 2015) (Tao et al., 2012) (Van Sandt and Thilmany, 2016) (Chansina and

Seenprachawong, 2017) (Adamu et al., 2015)(Fonseca et al., 2010). Travel costs have a significant positive effect on WTP to visit The Kekayon Puppet Museum. This indicates that when there was an increase in travel costs, the willingness to pay from respondents for the Kekayon Yogyakarta Puppet Museum also increased. Some studies have found the effect of travel cost on WTP of tourist attractions (Van Sandt and Thilmany, 2016) (Lamsal et al., 2016).

From the binary logistic regression results show that the visit frequency variable has no effect on willingness to pay, The respondents who visited the Kekayon Yogyakarta Puppet Museum were the first time for the majority. In other words, many respondents just found out information about the the Kekayon Puppet Museum with the main purpose of coming to study. The majority of respondents are young with status still students who do not have a fixed income or still rely on giving money from parents. In other words, respondents visiting the Kekayon Puppet Museum aimed at study and some of them were for recreational purposes only.

The results of this study are in line with the research conducted by other study (Rozikin, 2016). The substitution has a significant influence on the value of willingness to pay to visit the museum. The coefficient value of the substitution variable is negative which indicates that if the respondent visits another tourist spot, the willingness to pay visitors for repairs to the facility will be lower. This negative relationship between the substitution variable and the WTP variable is due to the increasing number of respondents visiting other tourist attractions will reduce the allocation of visitors to the improvement of museum facilities. This phenomenon occurs because visitors have made travel plans and the Kekayon Puppet Museum is one of the tourist destinations but is not the main goal of the respondents.

Distance has a significant influence on repairing facilities at the Kekayon Puppet Museum. This is in line with other research (Lamsal et al., 2016). The distance coefficient has a negative sign, indicating that if the visitor's residence is further away to the museum, the willingness to pay visitors for visiting the museum will be lower. The negative relationship between the distance variables with WTP variables in this study is because the farther the distance that must be taken will reduce the price of admission to the museum.

The results of this study are similar to the research conducted other study (Murzyn-Kupisz and Działek, 2013). The facility variable has a significant influence on the willingness to pay to visit the museum that will be used for repairing the facilities of the Kekayon Puppet Museum. The facility variable coefficient value is positive which indicate that if the facilities provided by museum managers are getting better, it will encourage the willingness to pay visitors for visiting the museum will be higher. So that it can be concluded that the facility variable has a positive and significant influence on the increase in WTP.

5 CONCLUSION

The study examines the effect of some determinants of WTP to visit the cultural heritage site. We surveyed the visitors of the Kekayon Puppet Museum, Yogyakarta which was one of the cultural heritage site part of a cultural preservation mission through education of tourists about Javanese culture through puppet (wayang).

The results indicated that 81.4% of the respondents (n=140) willing to pay for visiting the museum, while the 18.6% (n=32) did not willing. Among the sociodemographic characteristics, age, sex, education and income have effect on WTP to visit the museum. The travel cost and the facility of the museum had positive and significant influence to WTP, respectively. There were the negative effect of substitution of another sites and distance from residence to the museum to the WTP for visiting the museum.

The low WTP of visitors indicate a low interest in visitors to cultural heritage tourism especially at Kekayon Puppet Museum, Yogyakarta. These needs to be concerned by the museum administrator to promote the importance of cultural heritage tourism. They should improve the facilities and attractive spot visits for visitors who have an interest in cultural tourism. As one of the cultural heritage site in Yogyakarta, the manager of the Kekayon Puppet Museum should be increase the facilities for higher education of visitor and an interesting attraction related to the Javanese cultural.

The future research still needed to confirm the determinants of WTP to visit the museum, as cultural heritage site in other provinces of Indonesia, as well as other countries as these effects might change under different social and cultural conditions. This expected to increase cultural tourism in Indonesia, which is known as a country with various ethnic groups that are rich in culture.

REFERENCES

Adamu, A., Yacob, M. R., Radam, A., and Hashim, R. (2015). Factors determining visitors' willingness to pay for conservation in yankari game reserve, bauchi, nigeria. *International Journal of Economics & Management*, 9.

Bateman, I. J., Carson, R. T., Day, B., Hanemann, M., Hanley, N., Hett, T., Jones-Lee, M., Loomes, G., Mourato, S., Pearce, D. W., et al. (2002). Economic valuation with stated preference techniques: a manual. *Economic valuation with stated preference techniques: a manual.*

Bedate, A., Herrero, L. C., and Sanz, J. Á. (2004). Economic valuation of the cultural heritage: application to four case studies in spain. *Journal of cultural heritage*, 5(1):101–111.

Calleja, A., Díaz-Balteiro, L., Iglesias-Merchan, C., and Soliño, M. (2017). Acoustic and economic valuation of soundscape: An application to the 'retiro' urban forest park. *Urban forestry & urban greening*, 27:272–278.

Chansina, K. and Seenprachawong, U. (2017). Willingness to pay for historic structures preservation: An empirical study of vat phou at champasak province, lao pdr. , 11(1):8–8.

Fadhil, S. F. M., Radam, A., Ya'cob, M. R., and Samdin, Z. (2017). Willingness to pay on visit to museum: A concept paper of choice modelling application for national museum of malaysia. *Journal of Islamic*, 2(5):47–64.

Fonseca, S., Rebelo, J., et al. (2010). Economic valuation of cultural heritage: Application to a museum located in the alto douro wine region-world heritage site.

Gray, C. M. (1998). Hope for the future? early exposure to the arts and adult visits to art museums. *Journal of Cultural Economics*, 22(2-3):87–98.

Hansen, T. B. (1997). The willingness-to-pay for the royal theatre in copenhagen as a public good. *Journal of cultural economics*, 21(1):1–28.

Johnson, P. and Thomas, B. (1998). The economics of museums: a research perspective. *Journal of cultural economics*, 22(2-3):75–85.

Lamsal, P., Atreya, K., Pant, K. P., and Kumar, L. (2016). Tourism and wetland conservation: application of travel cost and willingness to pay an entry fee at ghodaghodi lake complex, nepal. In *Natural Resources Forum*, volume 40, pages 51–61. Wiley Online Library.

Martin, S. (1994). *Industrial economics economic analysis*.

Mazzanti, M. (2003). Discrete choice models and valuation experiments. *Journal of economic studies*.

Morrison, W. G. and Westi, E. G. (1986). Subsidies for the performing arts: Evidence on voter preference. *Journal of Behavioral Economics*, 15(3):57–72.

Murzyn-Kupisz, M. and Działek, J. (2013). Cultural heritage in building and enhancing social capital. *Journal of Cultural Heritage Management and Sustainable Development*.

Nandagiri, L. et al. (2015). Evaluation of economic value of pilikula lake using travel cost and contingent valuation methods. *Aquatic Procedia*, 4:1315–1321.

Priambodo, O. and Suhartini, S. (2016). Valuasi ekonomi kusuma agrowisata kota batu, jawa timur. *HABITAT*, 27(3):122–132.

Ready, R. C. (2002). 'methods for valuing cultural heritage'in stale navrud and richard c. ready (eds.). valuing cultural heritage: Applying environmental valuation techniques to historic buildings, monuments and artifacts. edward elgar, cheltenham.

Sanz, J. Á., Herrero, L. C., and Bedate, A. M. (2003). Contingent valuation and semiparametric methods: A case study of the national museum of sculpture in valladolid, spain. *Journal of cultural economics*, 27(3-4):241–257.

Tao, Z., Yan, H., and Zhan, J. (2012). Economic valuation of forest ecosystem services in heshui watershed using contingent valuation method. *Procedia Environmental Sciences*, 13:2445–2450.

Throsby, C. D., Withers, G. A., et al. (1983). Measuring the demand for the arts as a public good: theory and empirical results. *Economics of cultural decisions.*, pages 177–191.

Van Sandt, A. and Thilmany, D. (2016). Exploring the economics of agritourists: Customizing travel cost methods to evaluate differences across the western us. Technical report.

Wang, Y.-M. and Elhag, T. M. (2007). A comparison of neural network, evidential reasoning and multiple regression analysis in modelling bridge risks. *Expert Systems with Applications*, 32(2):336–348.