

DOMESTIC VISITORS' WILLINGNESS TO PAY (WTP) FOR THE PRESERVATION OF WORLD HERITAGE SITE, STADTHUYS, MELAKA, MALAYSIA

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Abstract: This research explores the issue of local management system governing the heritage preservation in UNESCO World Heritage Site (WHS) Stadthuys, Melaka. Thus far, there is no clearly defined value of cultural heritage that justifies the benefits of preserving cultural heritage as a tourism product and as a sustainable heritage site. Most studies have proven that visitors in general are less interested in visiting cultural heritage sites due to the lack of information available there. Another issue identified in the recent research on cultural heritage assessment is the lack of empirical references on the economic valuation of cultural heritage preservation. This study used contingent valuation method (CVM) and questionnaire for data collection. Four sets of questionnaires were designed and distributed to a total of 100 respondents consisting of local community and domestic tourists. On average, respondents are willing to pay RM8.82, in which this value is higher than the current fee, RM5.00, showing that visitors have the awareness to value cultural heritage through preservation in Stadthuys, Melaka, WHS. Finally, this research has established a framework to be considered by the management regarding the WTP value of the cultural heritage in order to create a more sustainable Melaka Historical City.

Keywords: cultural heritage, preservation, contingent valuation method, willingness to pay (WTP), stated preference.

Introduction

Cultural heritage is part of a location's identity, which is valued differently by the locals compared to outsiders like tourists. Heritage Counts (2003) stated that a historical landscape is valuable in terms of existence, option, altruistic, community identity, and recreational. It also represents a potential revenue source through tourism and the use of building. Schaeffer and Millerick (1991) posited that historical building is high in value and offers many economic opportunities within its neighbourhood.

Stadthuys, which is in Melaka, Malaysia is one of the protected areas for the conservation and protection of the world's historical heritage by UNESCO. Its red building portrays a strong historical evidence of the legacy of the Dutch in Melaka that used to be the administrative centre of government. It has now turned into a historical museum. Furthermore, many ancient

artefacts and history of Melaka are stored in the building.

Most empirical studies on the conservation of cultural heritage have shown that the cost of admission does not clearly define the benefits of cultural heritage (Fazamimah & Ariffin, 2015) because the current prices for most heritage sources are no longer relevant to the current economy. With the increasing inflation every year and the implementation of various new government policies, the local economy has changed. Therefore, economic revision studies should be conducted to obtain the real value that can translate the real benefits of cultural heritage, thus contributing to the development of local community, state, and national economies. Fazamimah and Ariffin (2015) also argued that the lack of visitors to cultural heritage sites is due to the lack of dissemination of information on tourist cultural tourism attractions. It is

significant to promote cultural heritage as a resource and facilitate financial investment. Cultural heritage resources provide sustainable development and illustrate many positive effects on cultural, economic, social, and environmental conditions.

Tourist behaviour measures include their interest and willingness to pay for responsible tourism and holiday experiences to a heritage site. Previous research proved that the greatest success in influencing visitors' actions comes from understanding what they think about a particular behaviour especially about encouraging pro-environmental behaviour of visitors to act in ways that minimize environmental and experiential impacts of tourism (Brown *et al.*, 2010).

Methodology

Contingent Valuation Method (CVM) is one of the conventional methods based on stated preferences e.g. travel cost and hedonic price. Nowadays the use of this method is broadening to various research areas, and one of them is the cultural heritage tourism (Carson, 1997). CVM measures the visitors' willingness to pay using close-ended technique (CE). This study employed CE as a WTP approach to estimate the benefits of the cultural heritage preservation efforts in Stadthuys, Melaka.

The CVM involved field survey process includes informing respondents what is it they are being asked to value, how it would be provided, and how they would pay for it. Individuals were asked whether they would pay specific additional fees for a given commodity with possible responses being "yes" or "no". The bid amount varied across respondents and the only information obtained from each individual is whether his/her maximum WTP is above or below the bid offered. Their response of either "yes" or "no" will change the future of the Stadthuys as the world's heritage site. The information is presented in written or verbal form and accompanied by photos and other visual contents to assist visitors' understanding.

Logistic regression technique was used to estimate WTP (Hanemann, 1984). Using this approach, the probability of saying "yes" to a bid at different levels of the independent variable is estimated as below:

$$P = (1 - e^{-x})^{-1}$$

Where x is estimated regression logit regression equation and P is the probability of accepting the price. Mean WTP is estimated as the area under this probability function. This area shows the proportion of the population who would consume the good at each price level, and their associated utility. The area under the curve is estimated by integration techniques and can be expressed as:

$$E(WTP) = \int_L^U (1 + e^{a + bPRICE})^{-1} dPRICE$$

where $(1 + e^{a + bPRICE})^{-1}$, is the probability of saying "yes" and U and L the upper and lower limits of the integration respectively.

Estimating mean WTP within this framework relies on making some assumption about upper and lower limits of the integral i.e. knowing the price amount at which the probability of saying "no" is zero and the probability of saying "yes" is one. Applying this to Stadthuys Melaka, and if individuals will not pay if they receive a disutility from it, negative WTP can be ruled out and zero used as the lower limit.

Bishop and Heberlein (1979) used the upper range for the integration of their price amount as the upper limit for the integration. Hanemann (1984) argued that such an approach makes assumption about the probability distribution for the unknown WTP in the sample. He argued that the upper limit should be infinity and that using the highest offered amount may be a poor approximation of the mean utility estimated when integrating between zero and infinity. In this study, zero was chosen as the lower limit of the integral and maximum value as the upper limit. Confidence interval of WTP was also calculated using the variance covariance matrix and a technique adopted for dichotomous CVM (Park *et al.*, 1991).

Data Collection

Providing information on the item being valued is a fundamental component of a contingent valuation study. This study employed primary data and questionnaire as a data collection method. The survey was conducted in Stadthuys, Melaka to obtain preservation awareness of the world's heritage site through paying decision among domestic visitors. About 100 of domestic visitors were involved in the study and the field site survey was conducted for one month in February 2019 at the targeted site. Selection of sample size is a matter of choosing an acceptable level of precision within a given budget. The CV studies entail large sample size since large variance in the WTP responses (Mitchell and Carson, 1989). In practise, most studies prefer larger sample size with possible given according to financial budget.

Results and Discussion

The maximum likelihood estimates of the specification for logit and the means of WTP were estimated using an econometric software, *Stata 15*. An estimation of the model using all the socio-economic characteristics as independent variables revealed that age, income, and education level have significant positive correlation with the visitors' WTP as in Table 1. The chi-squared statistics shows that the model is highly significant. The variables of age of respondents were positive in its relationship towards dependent variable and significance at 15% level. It was found that as the age of visitors' increases, they are willing to contribute for preservation of the Stadthuys as UNESCO World Heritage Site, hence proving that respondents' maturity level will affect their decision on WTP. Meanwhile, "income" is highly significant at 5% level and being represented as when income increases, visitors' WTP also increases. Visitors with higher income have more income and able to allocate their expenses to support positive efforts for preservation and conservation at the building. In addition, education has a positive relationship towards the WTP for preservation and is highly significant at 5% level. The

variable showed that as visitors' education level increases, the visitors' WTP also increases. The increasing level of education helps visitors to better understand the importance of preservation of world's heritage site for future generation. The value of adjusted McFadden's pseudo R² is 0.6493.

Table 1: Parameter Estimates for Contingent Valuation for Preservation of Cultural Heritage in Stadthuys, Melaka

Variables	Coefficient
Intercept	1.6425
Age	0.1068*
Income	0.0009***
Education	1.5973***
Log-likelihood	-22.7077
Chi-square	84.07
McFadden R-square	0.6493

Note: 5% (***), 10% (**) and 15% (*)

Based on the estimation results, equivalent WTP measures were calculated using logit model (refer to Table 2). The calculated WTP means were ranged from RM8.32 to RM9.32 for the logit model based on 95% confident interval. Therefore, the premium value of RM8.82 is taken as the conservative WTP measure.

Table 2: Estimating the WTP Mean for the Conservation of Cultural Heritage in Stadthuys Melaka

	Lower limit 95% confident interval	Mean	Upper limit 95% confident interval
Logit Model	8.3178	8.8168	9.3158

Source: Computed from field survey

Conclusion

The preservation of heritage buildings is vital as it offers a sense of identity and continuity in a rapidly changing world for future generations. This study has shown that visitors to the Stadthuys, Melaka are willing to pay more than

the current entrance fee, RM5.00. By applying the logit model, it is estimated that the visitors are willing to pay about RM8.85 for the entrance fee. The fundamental information transmitted in the survey are the descriptions of the changes in resource conditions due to the policy being valued. The revenue collected from the visitors could be used as an additional support to the limited fund allocated for the maintenance and conservation of the museums. Moreover, the revenue derived from the tourism industry is not being earmarked for maintenance or conservation efforts; rather, it is frequently merged with other sources of revenues. Setting appropriate fees to heritage sites would enable assigning the use of resources to the rationale users. Therefore, this study has proven that economic valuation is one of the most effective ways for the society to identify the relative value of the cultural heritage for the conservation of sustainable heritage site. Involvement of the public in valuing the cultural heritage is highly influential in the sustainability of their heritage.

This research also faced some inevitable problems although it had been successfully conducted. First, due to resource constraints i.e. time and finance, this research only managed to analyse one case study located in Stadthuys, Melaka. Therefore, researchers will consider these problems as an important guideline for future research.

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References

- Ahmad, S. A., (2009). Visitors' Willingness-to-pay for an Entrance Fee: A Case Study of Marine Parks in Malaysia. University of Glasgow, Glasgow.
- Amirnejad, H., Khalilian, S., Assareh, M. H., & Ahmadian, M. (2006). Estimating the existence value of north forests of Iran by using a contingent valuation method. *Ecological Economics*, 58(4), 665-675.
- Avrami, E., Mason, R., & de la Torre, M. (2000). Report on research. Values and Heritage Conservation: research report. Los Angeles: The Getty Conservation Institute, 3-11.
- Báez, A., & Herrero, L. C. (2012). Using contingent valuation and cost-benefit analysis to design a policy for restoring cultural heritage. *Journal of Cultural Heritage*, 13(3), 235-245.
- Balmford A., A. Bruner, P. Cooper, R. Costanza, S. Farber, R. E. Green, M. Jenkins, P. Jefferiss, V. Jessamy, J. Madden, K. Munro, N. Myers, S. Naeem, J. Paavola, M. Rayment, S. Rosendo, J. Roughgarden, K. Trumper, R. K. Turner 2002. Economic reasons for conserving wild nature. *Science*, 297, 950-953.
- Bann, C., (1999). A Contingent Valuation of the Mangroves of Benut, Johor State, Malaysia. Johor Bahru: Johor State Forestry Department /DANCED/Darudec
- Barrena, J., Nahuelhual, L., Báez, A., Schiappacasse, I., & Cerda, C. (2014). Valuing cultural ecosystem services: Agricultural heritage in Chiloé island, southern Chile. *Ecosystem Services*, 7, 66-75.
- Bishop, R. C., & Heberlein, T. A. (1979). Measuring values of extramarket goods: Are indirect measures biased?. *American Journal of Agricultural Economics*, 61(5), 926-930.

- Brown, T. J., Ham, S. H., and Hughes, M. (2010). Picking up litter: An application of theory-based communication to influence tourist behavior in protected areas. *Journal of Sustainable Marketing*, 18(7), 879-900.
- Cameron, T. (1988) 'Anew paradigm for valuing non-market goods using referendum data: maximum likelihood estimation by censored logistic regression', *Journal of Environmental Economics and Management*, 15, 355-379.
- Carson, R., Mitchell, R., Conway, M., & Navrud, S., (1997). Non-Moroccan Values for Rehabilitating the Fes Medina. Washington DC: World Bank.
- Chen, W. Y. (2015). Public willingness-to-pay for conserving urban heritage trees in Guangzhou, south China. *Urban Forestry & Urban Greening*, 14(4), 796-805.
- Fazamimah, N., & Ariffin, M. (2015). Willingness-to-pay value of cultural heritage and its management for sustainable conservation of George Town, world heritage site (Doctoral dissertation, University of Malaya).
- Geleto, A. K. (2011). Contingent valuation technique: A review of literature. *ISABB Journal of Health and Environmental Sciences*, 1(1), 8-16.
- Hanemann, M., Loomis, J., & Kanninen, B. (1991). Statistical efficiency of double-bounded dichotomous choice contingent valuation. *American journal of agricultural economics*, 73(4), 1255-1263.
- Hanemann, W. M. (1984). Welfare evaluations in contingent valuation experiments with discrete responses. *American journal of agricultural economics*, 66(3), 332-341.
- Kakiuchi, E., (2004). Heritage as a Community Asset - Monetary Valuation of Heritage using CVM and Policy Related Issues. Paper presented at the International Symposium on Preservation of Cultural Heritage, Yangon, Myanmar.
- Kim, S. S., Wong, K. K., & Cho, M. (2007). Assessing the economic value of a world heritage site and willingness-to-pay determinants: A case of Changdeok Palace. *Tourism management*, 28(1), 317-322.
- Luzar, E. J., & Cosse, K. J. (1998). Willingness to pay or intention to pay: the attitude-behavior relationship in contingent valuation. *The Journal of Socio-Economics*, 27(3), 427-444.
- Maskey, V., Brown, C., Collins, A. R., & Nassar, H. F. (2007). What is historic integrity worth to the general public? Evidence from a proposed relocation of a West Virginia agricultural mill. *Agricultural and Resource Economics Review*, 36(1), 39-52.
- Mason, R., (2002). Assessing Value in Conservation Planning Methodological Issues and Choices. Los Angeles: The Getty Conservation Institute.
- Md Nor, A. B., (2009). Statistical Methods in Research. Kuala Lumpur: Prentice Hall.
- Mitchell, R. & Carson, R. (1989). Using Surveys to Value Public Goods: The Contingent Valuation Method, Resources for the Future, Washington, DC.
- Montenegro, A. B., Huaquin, M. N., & Herrero Prieto, L. C. (2009). The valuation of historical sites: a case study of Valdivia, Chile. *Journal of Environmental Planning and Management*, 52(1), 97-109.
- Mourato, S., & Mazzanti, M., (2002). Economic Valuation of Cultural Heritage: Evidence and Prospects. Los Angeles: The Getty Conservation Institute.
- Mulok, N. F. A., ((2008)). The use of willingness-to-pay (WTP) method to identify potential for use of solar energy. Universiti Teknologi Malaysia, Skudai.
- Mwebaze, P., & Bennett, J. (2012). Valuing Australian botanic collections: a combined travel cost and contingent valuation study. *Australian Journal of Agricultural and Resource Economics*, 56(4), 498-520.

- Nagle, T. T., & Holden, R. K. (2002). Estrategia y táctica de precios: una guía para tomar decisiones rentables.
- Norecliffe, G. B., (1982). *Inferential Statistics for Geographers: An Introduction*. London: Hutchinson.
- Park, T., Loomis, J. B., & Creel, M. (1991). Confidence intervals for evaluating benefits estimates from dichotomous choice contingent valuation studies. *Land economics*, 67(1), 64-73.
- Pearce, D.W. 1991. *Forestry Expansion - a study of technical, economic and ecological factors; Assessing the Returns to the Economy and Society for Investments in Forestry*. Occasional Paper No. 47. Forestry Commission: Edinburgh.
- Platania, M., & Rizzo, M. (2018). Willingness to pay for protected areas: A case of Etna Park. *Ecological Indicators*, 93, 201-206.
- Portal Data Terbuka Malaysia (2018). Statistik Kedatangan Pelancong ke Negeri Melaka bagi Tahun 1999-2017. Data.gov.my. Diperolehi daripada http://www.data.gov.my/data/ms_MY/dataset/statistik-kedatangan-pelancong-ke-negeri-melaka-bagi-tahun-1999-2017.
- Portal Rasmi Jabatan Perangkaan Malaysia (DOSM), (2018). Akaun Satelit Pelancongan 2017. Dasm.gov.my. Diperoleh daripada https://www.dasm.gov.my/v1/index.php?r=column/cthemebycat&cat=111&bul_id=YIU1d29XWW1kRUtBVWVuMS9lcUZ3QT09&menu_id=TE5CRUZCb1h4ZTZMODZlbnk2aWRRQT09.
- Prem., (1995). *Introductory Statistics, Student Solutions Manual (Second Edition ed.)*. Mann. : John Wiley & Sons, Inc.
- Radam, A., & Mansor, S. A., (2005). Use of Dichotomous Choice Contingent Valuation Method to Value the Manukan Island, Sabah. *Pertanika J. Soc. Sci. & Hum*, 13(1), 1-8.
- Rolfe, J., & Windle, J., (2003). Valuing the Protection of Aboriginal Cultural Heritage Sites. *The Economic Record*, 79(Special Issue), 85-95.
- Samdin, Z., (2010). Factors Influencing the Willingness to Pay for Entrance Permit: The Evidence from Taman Negara National Park. *Journal of Sustainable Development*, 3(3).
- Santagata, W., & Signorello, G. (2000). Contingent valuation of a cultural public good and policy design: The case of 'Napoli musei aperti'. *Journal of cultural economics*, 24(3), 181-204.
- Sanz, J. Á., Herrero, L. C., & 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.
- Schaeffer, P. V., & Millerick, C. A. (1991). The impact of historic district designation on property values: *An empirical study. Economic Development Quarterly*, 5(4), 301-312.
- Seenprachawong, U., (2006). *Economic Valuation of Cultural Heritage: A Case Study of Historic Temples in Thailand*. Bangkok: National Institute of Development Administration.
- Seidl, A. (2014). Cultural ecosystem services and economic development: World Heritage and early efforts at tourism in Albania. *Ecosystem Services*, 10, 164-171.
- Teal, G. A., & Loomis, J. B. (2000). Effects of gender and parental status on the economic valuation of increasing wetlands, reducing wildlife contamination and increasing salmon populations. *Society & Natural Resources*, 13(1), 1-14.
- Teo, C. B. C., Khan, N. R. M., & Rahim, F. H. A. (2014). Understanding cultural heritage visitor behavior: the case of Melaka as world heritage city. *Procedia-Social and Behavioral Sciences*, 130, 1-10.

- Throsby, D., (2007). The Value of Heritage. Paper presented at the Heritage Economics Workshop.
- Tuan, T. H. (2006). Valuing the economic benefits of preserving cultural heritage: The My Son sanctuary, world heritage site in Vietnam. EEPSEA (IDRC, Regional Office for Southeast and East Asia), Singapore, SG.
- Wedgwood, A., & Sansom, K. (2003). Willingness-to-pay surveys: a streamlined approach: guidance notes for small town water services. WEDC, Loughborough University.
- Zhang, Y., (2010). Rethinking Cultural Heritage: Valuations and Dilemmas: University of Cambridge.