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RESEARCH REPORT

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**Valuing The Economic
Benefits Of Preserving
Cultural Heritage: The My
Son Sanctuary World
Heritage Site in Vietnam**

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This study estimates the value of the preservation of a World Heritage Site in Vietnam, the My Son Temple complex in Quangnam province. Despite its designation, the site is in poor repair and is in danger from the ravages of the weather and from the pressure of visitor numbers. Two complementary approaches – the Contingent Valuation (CV) method and the Choice Experiment (CE) method – were used to gauge the value that foreign and local visitors placed on the temple's preservation.

It was found that foreign visitors in particular would be willing to pay substantially more than the current entrance fee to ensure the temple's safe future. This represents a significant new potential source of income.

In light of this finding, the report recommends a new dual tariff system. The fact that the temple is considered to be so important also provides a vital justification for continued investment in cultural heritage conservation, not just in Vietnam, but elsewhere in the region.

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November, 2006

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	3
1.1 Description of the problem	3
1.2 Objectives of the study	4
1.3 Economic benefits: an overview	5
1.4 Scope of the study	5
2.0 LITERATURE REVIEW	7
3.0 METHODOLOGY	9
3.1 Model specification	9
3.2 Sampling strategy	10
3.3 Questionnaire development	10
3.3.1 Development of CV questionnaires	10
3.3.2 Development of CE questionnaires	13
3.4 Field work	14
4.0 RESULTS AND DISCUSSIONS	15
4.1 Profile of respondents	15
4.1.1 Socio-demographic characteristics	15
4.1.2 Knowledge and attitude	17
4.2 Contingent valuation results	18
4.2.1 Estimates for foreign visitors	18
4.2.2 Estimates for Vietnamese respondents	19
4.2.5 Aggregation of WTP	23
4.2.6 Determinants of WTP	25
4.3 Choice experiment results	27
4.4 Combining CV and CE data	30
4.5 Comparing WTP estimates	32
5.0 POLICY IMPLICATIONS	34
5.1 Maximizing revenues from visitors	34
5.2 Cost-benefit analysis	35
6.0 CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH	38
REFERENCES	40

LIST OF TABLES

Table 1. Categories of economic benefits	5
Table 2. Sampling framework	10
Table 3. Description of the scenario provided to respondents	11
Table 4. The CV question for foreign visitors to My Son	12
Table 5. Attributes and attribute levels in CE questionnaires	13
Table 6. Socio-demographic characteristics of the respondents in the CV surveys	15
Table 7. Socio-demographic characteristics of the CE surveys	16
Table 8. Knowledge and attitude variables for the CV surveys	18
Table 9. Knowledge and attitude variables for the CE surveys	18
Table 10. Bids and proportion of yes-answers for foreign visitors to My Son	18
Table 11. Bids and proportion of yes-answers for Vietnamese respondents	19
Table 12. Respondents' reasons for being willing to pay to preserve and restore My Son	20
Table 13. Respondents' reasons for not being willing to pay	20
Table 14. Mean WTP estimates	22
Table 15: Aggregation of WTP estimates	23
Table 16: Ad hoc adjustments of aggregate WTP estimates	24
Table 17. Estimated parameters of the logit model	25
Table 18. Non-parametric CE estimates	27
Table 19. Multinomial logit models for foreign visitors	28
Table 20. Multinomial logit models for local residents	29
Table 21. Joint estimates of CV and CE for foreign visitors	31
Table 22. Joint estimates of CV and CE for local residents	31
Table 23. Comparison of WTP estimates	32
Table 24. Tests for equivalence between methods	33
Table 25. Expected revenue at different entrance fee	34
Table 26. Results of the cost-benefit analysis with an infinite time horizon	36
Table 27. Results of the cost-benefit analysis with the time horizon of 20 years	37

LIST OF FIGURES

Figure 1. Example of a choice set used for interviewing foreign visitors.	14
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LIST OF APPENDIX TABLES

Table 4b. The CV question using DM format to interview Vietnamese visitors to My Son	44
Table 4c. The CV question of DM format to interview Vietnamese visitors to Hue/Hoian	44
Table 4d. The CV question using DM format to interview local residents	45
Table 10b. Bids and proportion of CV-answers for Vietnamese visitors to My Son	45
Table 10c. Bids and proportion of CV-answers for Vietnamese visitors to Hue/Hoian	46
Table 10d. Bids and proportion of CV-answers for local residents	46
Table 17b. Estimated parameters of the logit model (SR out)	47
Table 19b. Multinomial logit models for foreign visitors (SR out)	48
Table 20b: Multinomial logit models local residents (SR out)	49
Table 19c. RPL models for foreign visitors	50
Table 20c: RPL models for local residents	51
Table 23b. A comparison of non-parametric estimates between CV and CE for foreign visitors	52
Table 23c. A comparison of non-parametric estimates between CV and CE for local residents	52

EXECUTIVE SUMMARY

A substantial percentage of the United Nation's World Heritage Sites (WHSs) are found in developing countries. Unfortunately, many of these are in bad repair and there is an urgent need for numerous restoration and preservation programs. Thus, there is also a need to document the social benefits of these WHSs – which are global public goods – in order to justify the costs of conserving them. However, only about 50 valuation studies have been carried out on cultural heritage sites worldwide. This is a small number compared to the 5,000-plus environmental valuation studies that have been undertaken (Navrud and Ready 2002; Noonan 2002; Mourato and Mazzanti 2002). The majority of the cultural heritage valuation studies that have been carried out are from developed countries and most are Contingent Valuation (CV) studies. However, recently, there have also been a few applications of the Choice Experiment (CE) approach. This study adds to the scarce valuation literature on cultural heritage in two key ways: It considers cultural heritage in a developing country and applies both the CV and CE approaches. Thus, it contributes both to methodological development and helps to reduce the uncertainty surrounding benefit transfers from developed to developing countries.

The study used the two different Stated Preference (SP) methods, CV and CE, to estimate some of the economic benefits that would be produced by a restoration and preservation plan for the WHS of My Son sanctuary in Vietnam. In particular the study looked at how much people would be willing to pay for preserving the site. The study focused on the following agents: (i) foreign visitors to My Son; (ii) Vietnamese visitors to My Son; (iii) Vietnamese visitors to the area surrounding My Son, who do not visit the WHS; and (iv) local residents. Interviews of 1,413 people were conducted in the summer of 2005, out of which 967 were for the CV study and 446 for the CE study.

The mean willingness-to-pay (WTP) for preserving of My Son in the CV survey was found to be \$7.97, \$1.67, \$2.53, and \$2.11 for foreign visitors to My Son, Vietnamese visitors to My Son, Vietnamese visitors to the area, and local residents respectively. The CE results showed that an adult foreign visitor to My Son was willing to pay US\$6.21 for a change from the status quo to the preservation plan, and that a local household in Quangnam province was willing to pay US\$2.14 for the change. The results from both the CV and CE studies confirmed the construct validity of these models. The two methods produced very similar results and this can be interpreted as a test of convergence validity. A pooled analysis of the findings shows that the CV and CE data had the same underlying preference structures.

The study found that if the optimal entrance fee regime was imposed, it would yield substantial annual revenue that could be used to finance the required preservation measures. This move would also reduce congestion at My Son and so achieve the twin goals of revenue generation and heritage preservation. However, this pricing regime would not reduce the congestion problem due to Vietnamese visitors. The idea of imposing a pricing structure with seasonal differentiations to reduce the number of Vietnamese visitors in the high season is feasible. The study recommends that a larger differential pricing policy between foreign visitors and Vietnamese visitors at My Son would increase the fee revenues and possibly secure greater social equity.

Results also show that if funding were only based on entrance charges, then this would lead to a level of preservation for My Son that would not be optimal for the site or best for society. The inclusion of benefits derived from non-visitors are needed to argue for increased preservation investment. The CBA results show that the preservation project for the My Son cultural heritage seems to be an economically viable proposition.

1.0 INTRODUCTION

1.1 Description of the problem

The My Son sanctuary dates back to the 4th century and was a flourishing cultural center until the 13th century (UNESCO 1999). It is considered one of the main Hindu temple complexes in Southeast Asia and is the sole example of its kind in Vietnam.

Located in Quangnam province in central Vietnam, the My Son sanctuary represents the height of Cham architectural achievement. It is a large complex of temples and originally comprised more than 70 structures, 25 of which remain today (GHF 2002).

In December 1999, the My Son Sanctuary was listed as a UNESCO World Cultural Heritage Site (WHS) for the following main reasons: The My Son Sanctuary is an exceptional example of cultural interchange, which exemplifies the introduction of the Hindu architecture of the Indian sub-continent into South-East Asia; and the Champa Kingdom was an important phenomenon in the political and cultural history of Southeast Asia, and is vividly illustrated by the ruins of My Son.

Immediately after UNESCO recognized the My Son sanctuary as a WHS, the number of visitors to the site soared by 40% per year. It has now become a major tourist destination, attracting about 100,000 Vietnamese and foreign visitors per year. The development of this tourism has helped to improve cultural exchange and to raise the living standards of local people (Weitzel 2000; Quang 2004).

In spite of its cultural importance to society, My Son is severely threatened with degradation and loss (see Kinh 2001; VNS 2003). There are some natural environmental factors that have damaged the site. These include soil erosion, landslides, floods and the unforgiving tropical climate. However human activities are arguably the main cause of the site's degradation and destruction. These include wars, neglect and tourism pressure. As a result of all these problems, this unique site is now in a state of significant disrepair, urgently requiring conservation.

This study attempted to evaluate the economic benefits that would be created by a proposed plan to preserve and restore the My Son temple complex. This was seen as a significant way of adding credibility to the plan and justifying the necessary expenditure. In this way, it was hoped that the study would help stop any further degradation of the site.

In order to measure the economic benefits of cultural heritage preservation at My Son, two stated preference (SP) methods were used: the Contingent Valuation method (CV) and Choice Experiments (CE). These two methods were used for the following reasons:

CV and CE are, to a great extent, complements rather than substitutes (Carlsson 2004). The CV approach is used to estimate people's WTP for a certain scenario, while the CE method is used to estimate marginal WTP for attributes of a scenario. In the CE approach respondents make

repeated choices between bundles of attributes. The approach focuses on respondents' trade-offs between the different attributes (see Boxall et al. 1996, Alpizar et al. 2003).

The NOAA panel (Arrow et al. 1993) provided guidelines on the design of CV studies for natural resource damage assessments. These specified that CV results should be calibrated against experimental or actual market findings.

The CE approach may reduce some of the potential biases inherent in the CV approach. In particular, the Dichotomous Choice (DC) format of the CV approach can encourage 'yea-saying', despite improvements in design standards (Blamey et al. 1999). The yea-saying tendency may be exacerbated in developing countries where people are not routinely asked their opinions on policies and where they may have a tendency to provide a socially-acceptable answer (Kohlin 2001; Zhongmin et al. 2003). This is likely to be the case in Vietnam, because the country is in the early stages of economic transformation from a centrally-planned economy to a market-based economy and people are therefore used to administered prices rather than market-determined prices.

The CE approach also avoids an explicit elicitation of WTP because it relies on expressed choices. This is thought to reduce the incidence of people protesting or refusing to answer valuation questions (Mourato and Mazzanti 2002).

The CE approach has not been used for as long as the CV approach in the context of environmental and health issues. Therefore, Bateman et al. (2002) argue that a larger literature about the use of the CE approach, and further evidence about the results it produces, is required before it can be implemented with confidence.

There have been numerous CV and CE studies applied to environmental goods, but the number of published studies on cultural goods, and particularly on cultural heritage, is quite small. Of those studies that have been done on cultural heritage, CV studies are the most numerous (Navrud and Ready 2002; Mourato and Mazzanti 2002; Cuccia 2003; Noonan 2002; Noonan 2003). A few CE studies have been conducted, such as those conducted by Morey and Rossmann (2002), Boxal et al. (2003) and Mazzanti (2003). To our knowledge, however, no published studies applying both the CV and the CE approach to cultural heritage valuation exist.

1.2 Objectives of the study

The general objective of this study was to estimate the economic benefits that can be produced from investment in the preservation and improvement of the My Son sanctuary. The specific objectives were:

- to measure the WTP for a proposed preservation plan to preserve and restore My Son;
- to investigate whether local residents, Vietnamese visitors and foreign visitors have the same WTP for the My Son preservation plan;
- to compare the estimates produced by the CV and the CE methods;
- to estimate the value of different characteristics of the preservation plan (using CE);

- to gather information on how socioeconomic characteristics (e.g. age, sex, income, education, attitudes, etc.) explain visitation rates and WTP;
- to calculate the optimal price regime that maximizes revenues from foreign and Vietnamese visitors to the site;
- to test whether the preservation project for My Son pass a benefit-cost test, by comparing the aggregated benefits with the social costs over time of the project.

1.3 Economic benefits: an overview

The economic benefits of a preservation plan for My Son can be divided into seven categories, as described in Table 1, according to which group of people they accrue to. In category (i) are the benefits accruing directly to foreign visitors to My Son. In category (ii) are benefits to Vietnamese residents who currently visit My Son. In category (iii) are benefits to Vietnamese visitors who visit other destinations in the country, but are not visiting My Son during their current trip. In category (iv) are the benefits that accrue directly to local residents. In category (v) are benefits that accrue to other Vietnamese. In category (vi) are benefits accruing to other foreign visitors to Vietnam that were not visiting My Son at the time of survey. Finally, category (vii) contains benefits to non-Vietnamese people who do not visit Vietnam.

Table 1. Categories of economic benefits

<u>Category</u>	<u>Beneficiary source</u>
i	Foreign visitors to My Son
ii	Vietnamese visitors to My Son
iii	Vietnamese visitors to the area but not visiting My Son
iv	Local residents
v	Other Vietnamese
vi	Other foreign visitors to Vietnam but not visiting My Son
vii	Foreigners not visiting Vietnam

This study focused on measuring the economic benefits that accrued to the first four categories.

1.4 Scope of the study

This study focused on the benefits that accrued to the following agents:

- Adult foreign visitors to My Son (visitors to My Son).
- Adult Vietnamese visitors to My Son (visitors to My Son).
- Adult Vietnamese visitors to Hue/Hoian who did not visit My Son during their current trip (non-visitors to My Son).

The study measured the potential benefits that accrued to these visitors using a survey administered in Hue (a city located 170 km north of My Son) and Hoian (a town located 60 km east of My Son). Hue and Hoian were selected for this study, as they are two of the largest tourist destinations in Vietnam, and the places where most visitors stay during their trips to My Son.

- Local residents (non-visitors to My Son).

Since My Son is located in a valley far away from any communities, there is nobody actually living on the site. Local residents were therefore defined as provincial residents of Quangnam and the household survey was administered in Quangnam province.

This study did not include foreign visitors to the area (Hue/Hoian) who did not visit My Son during their current trip (non-visitors), even though this may be of high policy interest. There are two reasons for this exclusion. Firstly, this group of respondents is a non-random sample. Secondly, the payment vehicle used for this group of respondents would be a departure fee/tax. The use of the departure tax could generate revenue for the government. However, the respondents could see the link between a departure tax and the preservation of My Son as vague.

2.0 LITERATURE REVIEW

CV is a direct SP method where respondents are asked their willingness to pay (WTP) for benefits received, or their willingness to accept (WTA) compensation for their loss. Theoretically, the CV is based on welfare economics and assumes that stated WTP amounts are related to respondents' underlying preferences. According to Navrud and Ready (2002), cultural heritage goods are well suited to CV studies because most respondents accept the idea of the public provision of these goods. This makes it an obvious choice for valuing cultural heritage goods.

The use of CV is given some endorsement by the findings of the NOAA panel of experts (Arrow et al. 1993), and it is widely used in both developed and developing countries (Whittington 1998; FAO 2000; Mourato and Mazzanti 2002).

The design of a CV questionnaire involves three interrelated stages. The first stage consists of identifying the good to be valued, constructing the valuation scenario and eliciting the monetary values. In the second stage, questions on attitudes and opinions, knowledge, familiarity and use of the good and demographics are developed and various debriefing questions are added. The third stage consists of piloting the draft questionnaire for content, question wording, question format and overall structure and layout (Mourato and Mazzanti 2002).

Mitchell and Carson (1989) note that “the principal challenge facing the designer of a CV study is to make the scenario sufficiently understandable, plausible and meaningful to respondents so that they can and will give valid and reliable values despite their lack of experience with one or more of the scenario dimensions”.

CE is also a direct SP method. It has its roots in conjoint analysis where individuals choose between multi-attribute goods that are presented to them (Adamowicz et al. 1999). Over the last five years the approach has been increasingly applied to value non-market goods (Alpizar et al. 2003). The multi-attribute framework has proved to be particularly useful as a theoretical structure for economic valuation in the cultural heritage sector (Mazzanti 2003).

According to Mourato and Mazzanti (2002), in the context of currently available valuation techniques, the CV approach, and its derivatives like CE, can arguably be considered the best available techniques to estimate the total economic value of cultural assets that are not usually traded in the market, and which have a significant non-use value.

The CE method is believed to have several advantages. It is thought to encourage respondents to concentrate on the trade-offs between the characteristics of the good or public program under scrutiny, as opposed to taking a position for or against a policy. Adamowicz et al. (1998) argue that the repeated nature of a CE choice task makes it difficult for respondents to behave strategically. Much like the CV approach, the CE method allows the valuation of a good under conditions that do not currently exist. Possible difficulties associated with CE include respondent annoyance (if the respondent dislikes all the possible alternatives), and the potential for respondents to ignore one of the attributes if it lacks credibility (FAO 2000).

Although the CE approach has been used extensively in developed countries, it has rarely been used in developing countries, especially for the valuation of cultural resources (FAO 2000; Mourato and Mazzanti 2002).

There are four steps involved in the design of a CE valuation study: 1) the definition of attributes, attribute levels and customization; 2) experimental design; 3) experimental context and questionnaire development; and 4) the choice of sample and sampling strategy. These four steps should be seen as an integrated process that incorporates feedback. The development of the final design involves repeatedly conducting the steps described, and incorporating new information as it comes along (Alpizar et al. 2001).

3.0 METHODOLOGY

3.1 Model specification

CV and CE can be analyzed using a common theoretical framework – the random utility model (RUM) (Boxall et al. 1996). Under the RUM framework, the overall utility of alternative i can be expressed as

$$U_i = V_i + \varepsilon_i, \quad (1)$$

Where V_i is the deterministic component of utility and ε_i is a stochastic component that represents unobservable influences on individual choice.

In the referendum CV method, a respondent is asked to choose between an improved state, i , and the status quo, j . Utilization of the utility function for two alternatives from (1), the probabilities of an individual choosing alternative i or j are:

$$\begin{aligned} \Pr_i &= \Pr(\varepsilon_i - \varepsilon_j \leq V_j - V_i), \\ \Pr_j &= \Pr(\varepsilon_j - \varepsilon_i \leq V_i - V_j) \end{aligned} \quad (2)$$

Assuming that each error term is Type I Extreme Value distributed and the difference between random terms is logistically distributed, the probability that an individual choose alternative i is given by:

$$\Pr i = \frac{\exp(V_i - V_j)}{1 + \exp(V_i - V_j)} \quad (3)$$

This formulation can be estimated using the binary logit model (Hanemann 1984).

In the CE case, the selection of one option over another implies that the utility of that option (U_i) is greater than the utility of the other (U_j). The probability of choosing alternative i is:

$$\Pr(i) = \Pr\{V_i + \varepsilon_i \geq V_j + \varepsilon_j; \forall j \in C\}, \quad (4)$$

where C is the set of all possible alternatives. Assuming that the error terms are Gumbel-distributed with scale parameter μ , the probability of choosing alternative i is:

$$\Pr(i) = \frac{\exp^{\mu V_i}}{\sum_{j \in C} \exp^{\mu V_j}} \quad (5)$$

This formulation can be estimated using the conditional logit model (McFadden 1974) where the scale parameter, μ , is typically assumed to be one.

Since CV and CE models all share the common RUM, we can combine the two data sets and examine the relative scale factors, which accounts for the difference in the variation of unobserved effects or error variance heterogeneity (Adamowicz et al. 1998). The joint data concatenates the two data sets. Grid search procedures (Swait and Louviere 1993) are used to estimate the relative scale factors. Swait and Louviere (1993) developed an approach that facilitates the testing of the hypothesis of equal parameters, and if this hypothesis cannot be rejected, in the next step, test the hypothesis of equal scale parameters. If the null hypothesis of equal scale parameters cannot be rejected, the two data sets can be considered to represent similar preference structures.

3.2 Sampling strategy

The survey method for gathering primary data on CV and CE in this study was the face-to-face interview. Secondary data was gathered from the Management Board of My Son Relics, the My Son Historic Vestiges Preservation Office, the Quangnam Provincial Department of Tourism, the Danang Provincial Department of Tourism and the TT-Hue Provincial Department of Tourism.

The design of questionnaires was developed through discussions with experts working in cultural heritage research and focus groups. The questionnaires were pretested on 238 individuals (120 individuals for CE and 118 for CV).

A total of 1,413 people were interviewed for the main surveys (967 for CV and 446 for CE). Respondents in the main surveys were divided into six groups, out of which four groups were selected for the CV study and two groups for the CE study (as described in Table 2).

Table 2. Sampling framework

Group of respondents	Location of interview	CV	CE
i. Foreign visitors to My Son	My Son	243	225
ii. Vietnamese visitors to My Son	My Son	245	
iii. Vietnamese visitors to Hue/Hoian	Hue and Hoian	238	
iv. Local residents	Quangnam province	241	221
Total number		967	446

3.3 Questionnaire development

3.3.1 Development of CV questionnaires

Four questionnaire versions were used for the CV survey. For foreign visitors to My Son, the questionnaire had English and French versions. This questionnaire version was written in English and revised until it reached its final version. The final English version was then translated into French. The questionnaires used for the three Vietnamese groups were written in Vietnamese.

This section presents the questionnaire used at My Son for foreign visitors and comments, where appropriate, on the other questionnaire versions used with the other groups of respondents. The questionnaire for foreign visitors was divided into six main sections. These are described in more detail below.

Section I consisted of 14 questions that investigated the general attitudes of foreign visitors to Vietnam and My Son, their reasons for visiting Vietnam and My Son, their knowledge of My Son before visiting, their travel experiences in Vietnam and their attitudes to My Son.

Section II consisted of a clear description of My Son using text, maps and photos. In other words, it described the good that the respondents were asked to value. The purpose of this section of the questionnaire was to provide each respondent with the same set of information about the characteristics and the condition of My Son today. This current scenario was presented as the *status quo*, and it was explained that under this existing state of affairs the deterioration of My Son would continue because insufficient resources are available for preservation. Then, the proposed preservation plan was presented. It was explained that the plan would improve the condition of My Son and preserve the site for the future. Table 3 gives a detailed description of the information provided to respondents.

Table 3. Description of the scenario provided to respondents

Text read by interviewer.	Description of visual aids used.
<p>As you may know, My Son is the most important Cham temple complex in Vietnam. Because of its uniqueness it was listed by UNESCO as a World Heritage Site in 1999.</p> <p>Description of the My Son: My Son was inhabited from the 4th until the 15th centuries AD, far longer than any of the other Indian-influenced sites in Southeast Asia. This complex of temples originally comprised more than 70 temples. The vestiges of 25 of these temples remain today.</p>	<p>This card contains an aerial image of My Son and a number of pictures of the My Son temples that remain today.</p>
<p>Current condition of My Son: My Son was once a veritable forest of temples, many of which were destroyed (as shown in photo card A) by the ravages of time, war and a lack of awareness.</p> <p>Unfortunately, government resources are too limited to keep up with the need for preservation and restoration. As a result, many temples continue to deteriorate year-by-year, many others collapse before they can be restored.</p> <p>Despite the efforts of government and other agencies that have helped to maintain some of the temples, as seen in photo card B, many of the important temples have become rundown, such as the temples in photo card C. Many other temples urgently need refurbishing, to keep them from further degrading.</p> <p>There is a concern that if a major effort is not undertaken the My Son temples will rapidly degrade and many will soon collapse, losing their historical character forever.</p>	<p>Photo card A contains a number of pictures of the collapsed and ruined temples.</p> <p>Photo card B shows a number of pictures of recently restored temples.</p> <p>Photo card C contains pictures of temples that have already collapsed or are in danger of collapsing.</p>
<p>A proposed preservation project: The Vietnamese Government, in collaboration with experts from international agencies, has developed a plan to preserve the My Son sanctuary. If it is implemented, the plan will:</p> <ul style="list-style-type: none"> • <u>Stop any further degradation of the remaining temples and avoid any further irreversible loss.</u> • Ensure that these temples will remain as part of the cultural heritage of future generations. 	<p>Photo Card D shows the two things that the preservation plan will accomplish if the plan is implemented.</p>

Section III of the questionnaire described the conditions of the WTP choice that respondents were asked to make. (e.g., payment vehicles, elicitation methods, bid amounts, etc.)

Details of the Payment Vehicles outlined in the questionnaires are as follows: For foreign and Vietnamese visitors to My Son, a one-time special fee (levied via an increase in the entrance fee) was used. Tax was the payment method used for local residents and Vietnamese visitors to Hue/Hoian. This payment method was decided upon following pre-tests. These were carried out to clarify what payment vehicle would be most acceptable. The three types of payment assessed in the pre-test were: (a) a fee (such as a cultural preservation fee, an electricity bill, a water bill or a departure fee that all Vietnamese visitors would have to pay when they left the area); (b) a tax (if respondents wanted to know more about the tax, they were told that it would be a type of general tax such as income tax, land use tax or another type of tax that consumers would have to pay when they bought goods); and (c) donations. The results of the focus groups and pre-test surveys showed that a tax was the payment method that most people would accept.

The entrance fee and tax were detailed as mandatory payment vehicles (and not voluntary payments). This was done to give respondents the incentive to truthfully state their preferences for the preservation of My Son.

Details of the elicitation methods used in the questionnaires are as follows: For foreign visitors the CV question was posed as in Table 4. This was done because the standard referendum type question would not be meaningful to non-residents.

Table 4. The CV question for foreign visitors to My Son

One way to help pay for it would be to have every adult foreign visitor to My Son pay a one-time special fee via an increase in entrance fees. If you had the following choices, please choose the one choice which most closely resembles your view.
One choice would be to still come to My Son even though the entrance fee would add US\$ --- per adult to the cost of your visit (go to IV3)
Or
The other choice would be not to include My Son in your itinerary for this trip and use the money for other purposes (go to IV1).

This way of framing the question reminded respondents that they could visit other ‘substitute’ sites that are already on their itinerary or which could be added to their itinerary. It forced them to consider whether My Son would still be worth visiting if the cost of a visit was increased by the stated amount. These bid amounts were stated in US dollar with four price-points of \$1, \$5, \$10 and \$15.

For the Vietnamese groups (i.e. Vietnamese visitors to My Son, Vietnamese visitors to Hue/Hoian and local residents), the study adapted a special type of DC format called the dissonance-minimizing format, which was proposed by Blamey et al. (1999). Hereafter it is referred to as the DM format. The DM format is designed to minimize the presence of yea-saying. The idea behind using the DM format was that respondents could say ‘no’ to the bid question, but still express support for the preservation plan. The CV questions (using the DM format) that were used to interview Vietnamese visitors to My Son, Vietnamese visitors to Hue/Hoian and local residents were framed as described in Table 4b, 4c and 4d in the appendix, respectively. For these three Vietnamese groups, bid amounts were 5,000, 20,000, 50,000, and 100,000 VND.

Section IV of the questionnaires included debriefing questions to detect the prevalence of embedding or strategic behavior. Section V collected socio-economic data such as sex, age, educational attainment, employment status and income level. This data was used in a regression

analysis. Section VI contained interview evaluation questions, which were designed to provide feedback from all interviewers about the interview situation, how respondents attended to the interview and any difficulties the respondents may have had.

3.3.2 Development of CE questionnaires

There were two questionnaire versions for the CE study. For foreign visitors to My Son, the questionnaires had English and French versions. For local residents, the questionnaire was in Vietnamese.

The CE questionnaire consisted of six sections. Section I contained questions about the general attitudes of the foreign visitors to Vietnam and to My Son; Section II contained the My Son scenario; Section III contained CE questions; Section IV included debriefing questions; Section V contained socio-economic questions; and Section VI contained interview evaluation questions. Section I, II, V, and VI of the CE questionnaire were identical to those of the CV.

The CE study focused on identifying those attributes of the My Son preservation plan that respondents thought were most important. More precisely, it tried to estimate respondents' marginal WTP for different attributes of My Son's preservation. Four attributes were highlighted: 1) Price (an entrance fee was used for foreign visitors, and a preservation fee (via an increase in tax) was used for the local residents); 2) the actual implementation of the proposed preservation plan; 3) infrastructure upgrading; and 4) additional services. The attributes and attribute levels used in the CE survey were developed using results from focus groups and pre-tests of the questionnaires. The description of the chosen attributes and their levels are shown in Table 5.

Table 5. Attributes and attribute levels in CE questionnaires

Attributes	Description	Levels
Price	Entrance fee for the foreign visitor if the alternative is selected. The current entrance fee is US\$4 (the status quo – SQ) and four alternative levels.	\$4 (the SQ); \$5; \$9; \$14; \$19 ¹
Preservation plan	From the current condition of preservation (the SQ) to the proposed preservation plan for My Son.	Yes; No
Upgrading of infrastructures	From the current infrastructure conditions (the SQ) to the proposed level of upgrading infrastructures: upgrading 30 km of road to link My Son with the highway, building a new bridge and upgrading the drainage system at My Son.	The SQ; Upgrading infrastructure
Additional services	The existing basic services (the SQ), and multimedia audio-visual interactive services plus temporary exhibitions in addition to the existing exhibition.	The SQ; Additional services

Given the set of attributes and levels that were selected, a number of paired choice sets were designated. The full number of possible combinations of choice sets was 32 (4×2^3). Four

¹ For the household survey, a preservation fee was used with bid ranges of 5,000; 50,000; 100,000; and 200,000 VND.

choice sets were removed from consideration because each of them had a dominated alternative (ie. all conditions in the two choices were the same except for one ‘better’ condition in the alternative situation). The remaining 28 choice sets were blocked into four blocks, each containing seven choice sets each. This meant that four different questionnaires were used for the CE study.

To obtain a fair comparison between CE and CV, the CE question was posed using the same framework as the CV question. An example of a choice set used for interviewing foreign visitors is set out in Figure 1.

Figure 1. Example of a choice set used for interviewing foreign visitors.

Please select the option you prefer:

Attributes	Current situation	Alternative situation
Entrance fee	\$4	\$5
Proposed preservation plan	No	Yes
Upgrading infrastructures	Current condition	Current condition
Additional services	Existing services	Multimedia audio-visual services, temporary exhibitions
Would you have made this trip to My Son if you had known that the alternative situation had been applied?	<input type="checkbox"/>	<input type="checkbox"/>

3.4 Field work

The main surveys were carried out during the summer 2005.

For foreign visitors to My Son, the surveys were conducted at My Son. Also, a number of interviews were carried out with foreign visitors to My Son on board tourist buses on the routes between My Son and Hue and Hoian. The sample consisted of 243 interviews for the CV survey and 225 interviews for the CE survey.

For Vietnamese visitors to My Son, the survey was conducted at My Son. The sample included 245 interviews for the CV survey.

Vietnamese visitors to Hue and Hoian were interviewed when they were visiting tourist sites in these cities. The sample consisted of 238 interviews for the CV survey.

Few people who were approached for an interview refused to participate. However, there was a relatively high rate of incomplete questionnaires (about 20%) amongst visitors (foreign visitors to My Son, Vietnamese visitors to My Son and Vietnamese visitors to Hue and Hoian). This was because they were often limited in the time they had available to answer the interview questions.

For local residents, the household surveys were administered in Quangnam province. The sample consisted of 241 and 221 interviews for the CV and CE surveys, respectively. To gather a provincially representative sample, the survey respondents were selected proportionally throughout the 16 administration units in Quangnam province (i.e. 14 districts and two towns). In each unit, two villages were selected (i.e. a total of 32 villages). Sixteen households were selected for interview in each village. Interviews were carried out using a designated-walk procedure.

4.0 RESULTS AND DISCUSSIONS

4.1 Profile of respondents

4.1.1 Socio-demographic characteristics

Tables 6 and 7 describe some of the socio-demographic characteristics of the respondents of the CV and CE surveys, respectively.

Fewer females were interviewed in the three visitor surveys (i.e. the surveys of foreign visitors, Vietnamese visitors to My Son, and Vietnamese visitors to Hue/Hoian). This could be explained by the fact that when couples were interviewed, the task of answering questions was sometimes delegated to the husband. Furthermore, the rate of non-participation and the prevalence of incomplete interviews were higher for female respondents.

In the three visitor surveys respondents were generally of a young age. For example, the mean age of the foreign visitors to My Son interviewed for the CV and CE surveys was 33.41 years and 35.57 years, respectively. There were two reasons for this. Firstly, some families gave the task of answering questions to their children. Secondly, the surveys with foreign visitors (taking place at My Son) excluded some older visitors who were traveling in small groups with tourist guides (these guides were afraid that the surveys would waste their time and disturb their customers).

With respect to income, two variables were assessed. The first variable was the level of gross household income before taxes and other deductions (*Income*). The second variable was the subjective household income (*Tinc*). Respondents were asked for their household income relative to other people in their community. If a respondent's household income was above average in their community, *Tinc* was coded as 1 (or 0 if it was below).

The number of family members involved in a respondent's trip influenced the trip's costs, when the payment instrument was the per-adult entrance fee. This was assessed using the variable *Alone*. If a respondent was traveling alone, *Alone* was defined as 1. If the respondent was part of a party, *Alone* was 0.

Table 6. Socio-demographic characteristics of the respondents in the CV surveys

Variable	Description	Foreign visitors to My Son	Vietnamese visitors to My Son	Vietnamese visitors to Hue/Hoian	Local residents
		<i>Mean (Std.)</i>	<i>Mean (Std.)</i>	<i>Mean (Std.)</i>	<i>Mean (Std.)</i>
<i>Socio-demographic characteristics</i>					
Sex	Sex (1 = female, 0 = male)	0.46 (0.50)	0.37 (0.48)	0.38 (0.49)	0.51 (0.50)
Age	Age of respondent (years)	33.41 (10.91)	37.26 (12.13)	38.63 (12.39)	43.18 (11.09)

(continued)

Table 6. continued

Income	Annual household income level (US\$): 1 < \$10,000; 2 = \$10,000 to \$19,999; ... 11 = \$100,000 to \$150,000; 12 > \$150,000	5.83 (3.34)	-	-	-
	Monthly household income level ('000VND): 1 < 500; 2 = 500 to 1,000; 3 = 1,100 to 2,000; ... 7 = 5,100 to 10,000; 8 > 10,000	-	4.94 (1.88)	4.24 (1.59)	2.39 (1.01)
Tinc	If household income is above average (dummy)	0.19 (0.39)	0.26 (0.44)	0.22 (0.42)	0.17 (0.38)
Education	1 = primary; 2 = secondary; 3 = high school; 4 = college; 5 = postgraduate	3.63 (0.87)	3.64 (0.84)	3.41 (0.76)	2.07 (0.88)
Ugo	If respondent had attended college (1 = yes, 0 = no)	0.60 (0.49)	0.60 (0.49)	0.47 (0.50)	0.10 (0.29)
Htype	Type of house (1 = concrete, 0 = otherwise)	-	-	-	0.80 (0.40)
Alone	If respondent travels alone (1 = yes, 0 = no)	0.44 (0.50)	0.42 (0.49)	0.40 (0.49)	-
Child	If the household has a child	-	-	-	0.34 (0.48)
Number of respondents		243	245	238	241

Table 7. Socio-demographic characteristics of the CE surveys

Variable	Description	Foreign visitors	Local residents
		Mean (Std.)	Mean (Std.)
<i>Demographic variables</i>			
Sex	Sex (1 = female, 0 = male)	0.54 (0.50)	0.51 (0.50)
Age	Age of respondent (years)	35.57 (12.99)	44.36 (11.19)
Income	Annual household income level (US\$): 1 = less than \$10,000; 2 = \$10,000 to \$19,999; ... 11 = \$100,000 to \$150,000; 12 = more than \$150,000	6.46 (3.07)	-
	Monthly household income level ('000VND): 1 < 500; 2 = 500 to 1,000; 3 = 1,100 to 2,000; ... 7 = 5,100 to 10,000; 8 > 10,000	-	2.28 (1.04)

(continued)

Table 7. continued

Tinc	Top income: if a respondent's income is above average (1 = yes, 0 = no)	0.19 (0.39)	0.11 (0.39)
Education	1 = primary school; 2 = secondary school; 3 = high school; 4 = college 5 = postgraduate	3.18 (0.76)	2.35 (0.48)
Ugo	If respondent had attended college (1 = yes, 0 = no)	0.35 (0.48)	0.08 (0.24)
Htype	Type of house (1 = concrete, 0 = otherwise)	-	0.92 (0.27)
Alone	If respondent travels alone (1 = yes, 0 = no)	0.49 (0.73)	-
Child	If the household has a child	-	0.29 (0.45)
Number of respondents		225	221

4.1.2 Knowledge and attitude

Several variables related to the respondents' knowledge and attitudes were assessed. The first variable was a respondent's knowledge of My Son before they visited the site (*Know*). This was assessed using a five-scale measure. The second variable was a respondent's views regarding the importance for preserving WHSs in Vietnam. This was assessed using the variable *Importance*. This was coded as 1 if a respondent thought that preserving the WHSs was very important and 0 otherwise. The third variable was a respondent's reason for their visit to Vietnam (this variable, *Hcity*, was used for foreign visitors only). If the visitor wanted to visit historical cities, *Hcity* was coded as 1, while other possible reasons (such as wanting to visit beaches, the countryside, modern cities and others) were coded as 0. *Hue* and *Hoian* were two further variables which assessed whether respondents had visited either of these two 'competitor' destinations. Hue is fairly far away from My Son while Hoian is fairly close by.

A number of other variables were assessed, these were named *Visit*, *Satisfied*, *Ftrip* and *Before*. *Visit* was defined as being equal to 1 if a respondent had visited My Son before and 0 if they had not (this variable was only used for Vietnamese respondents, since most foreign visitors in the survey were visiting My Son for the first time). *Satisfied* assessed a respondent's satisfaction with their visit to My Son. This variable was used for visitors to My Son only (foreigners and Vietnamese). *Ftrip* assessed whether respondents were considering visiting My Son again sometimes in the future. If respondents said that they would like to visit My Son again, *Ftrip* was coded as 1; it was coded 0 if they did not wish to return. The last variable was *Before*. This was coded 1 if a respondent was interviewed before they had visited My Son and 0 otherwise. This variable was used only for visitors to My Son and only for the CV surveys.

Tables 8 and table 9 show the results relating to these variables for the CV and CE surveys, respectively.

Table 8. Knowledge and attitude variables for the CV surveys

Variable	Description	Foreign visitors to My Son	Vietnamese visitors to My Son	Vietnamese visitors to Hue/Hoian	Local residents
		<i>Mean (Std)</i>	<i>Mean (Std)</i>	<i>Mean (Std)</i>	<i>Mean (Std)</i>
Know	Previous knowledge of My Son (scale from 1 to 5)	1.82 (0.65)	2.78 (1.04)	2.14 (1.12)	2.36 (0.97)
Importance	Importance of preserving WHSs in Vietnam (dummy)	0.67 (0.47)	0.73 (0.45)	0.69 (0.46)	0.60 (0.49)
Hcity	Wanting to visit historical cities (1 = yes, 0 = no)	0.41 (0.49)	-	-	-
Hue	If respondent had visited Hue (1 = yes, 0 = no)	0.60 (0.49)	0.79 (0.41)	0.90 (0.30)	0.27 (0.44)
Hoian	If respondent had visited Hoian (1 = yes, 0 = no)	0.90 (0.30)	0.83 (0.38)	0.50 (0.50)	0.58 (0.50)
Visit	If respondent had visited My Son (1 = yes, 0 = no)	-	0.15 (0.36)	0.15 (0.36)	0.16 (0.37)
Satisfied	Satisfied with experience of My Son (scale from 1 to 5)	4.04 (0.92)	4.08 (0.94)	-	-
Ftrip	Considering visiting My Son in the future (dummy)	0.29(0.45)	0.65 (0.49)	0.56 (0.50)	0.74 (0.44)
Before	If respondent is interviewed before visiting MS (dummy)	0.36 (0.48)	0.26 (0.44)	-	-
Number of respondents		243	245	238	241

Table 9. Knowledge and attitude variables for the CE surveys

Variable	Description	Foreign visitors	Local residents
		<i>Mean (Std.)</i>	<i>Mean (Std.)</i>
Know	Previous knowledge about My son (scale from 1 to 5)	1.75 (0.61)	2.56 (0.98)
Importance	Importance of preserving WHSs (1 = yes, 0 = no)	0.68 (0.47)	0.89 (0.32)
Hcity	Wanting to visit historical cities (1 = yes, 0 = no)	0.28 (0.45)	-
Hue	If respondent had visited Hue (1 = yes, 0 = no)	0.49 (0.50)	0.41 (0.49)
Hoian	If respondent had visited Hoian (1 = yes, 0 = no)	0.76 (0.41)	0.63 (0.48)
Visit	If respondent had visited My Son before (dummy)	-	0.18 (0.46)
Satisfied	Satisfied with experience of MS (scale from 1 to 5)	4.34 (0.73)	-
Ftrip	Considering visiting MS in the future (dummy)	0.31 (0.46)	0.62 (0.48)
Number of respondents		225	221

4.2 Contingent valuation results

4.2.1 Estimates for foreign visitors

Table 10 shows bid amounts and the proportion of yes-answers for foreign visitors. As expected, the proportion of yes-answers decreases as the bid amounts increase.

Table 10. Bids and proportion of yes-answers for foreign visitors to My Son

Bids (UD\$)	Numbers of respondents	Numbers of yes-answers	% yes
1	60	47	78.3
5	61	42	69.9

10	61	28	45.9
15	61	7	11.5
	243	124	51.0

4.2.2 Estimates for Vietnamese respondents

The results of the CV survey for Vietnamese visitors to My Son, Vietnamese visitors to Hue/Hoian and local residents, using the DM format, are reported in Tables 10b, 10c and 10d of the appendix, respectively. The bid amounts and proportion of yes answers for these Vietnamese groups are shown in table 11.

Table 11. Bids and proportion of yes-answers for Vietnamese respondents

Bids (VND)	Vietnamese visitors to My Son		Vietnamese visitors to Hue/Hoian		Local residents	
	N	% yes	N	% yes	N	% yes
5,000	62	69.4	60	81.7	60	71.7
20,000	61	50.8	59	54.2	60	50.0
50,000	61	29.5	60	46.7	61	45.9
100,000	61	19.7	59	13.8	60	13.3
	245	42.4	238	49.2	241	45.2

Overall, 51% (124 respondents) of foreign visitors, 42.4% (104 respondents) of Vietnamese visitors to My Son, 49.2% (117 respondents) of Vietnamese visitors to Hue/Hoian, and 45.2% (109 respondents) of local residents stated that they would be willing to pay for the My Son preservation plan.

To find out the reason for these positive WTPs, respondents who gave yes responses in the CV question were also asked to state their reasons. The results in table 12 confirm the *a priori* expectation that the importance of direct use values would be small. For all groups of respondents, ‘for the future generation’ and ‘for society as a whole’ were major reasons selected.

For visitors to My Son (foreign and Vietnamese), ‘the plan is a good one’, ‘a reasonable amount to pay’ and ‘for my own benefits’ were the next most often cited reasons. For non-visitors to My Son (Vietnamese visitors to Hue/Hoian and local residents), the next most often cited reason was ‘other reasons’. These reasons were specified as: ‘to preserve our parent’s heritage’, ‘for tourism development’, ‘for its significance’, ‘it inspires pride in Vietnamese heritage’ and ‘be proud of our father’s heritage’.

Respondents who were not willing to pay (no-response) were also asked for the reasons why they came to this conclusion.

Table 12. Respondents' reasons for being willing to pay to preserve and restore My Son

Reason for respondents' WTP	Foreign visitors to My Son (%)	Vietnamese visitors to My Son (%)	Vietnamese visitors to Hue/Hoian (%)	Local residents (%)
1. For my own benefit	8 (6.5)	8 (7.7)	1 (0.9)	1 (0.9)
2. For society as a whole	27 (21.8)	28 (26.9)	42 (35.9)	38 (34.9)
3. For the future generation	48 (38.7)	42 (40.4)	35 (29.9)	45 (41.3)
4. I think the preservation plan is a good one	20 (16.1)	10 (9.6)	8 (6.8)	4 (3.7)
5. I feel this is a reasonable amount to pay	12 (9.7)	9 (8.7)	6 (5.1)	5 (4.6)
6. Other reasons: (specify)	5 (4.0)	6 (5.8)	21 (17.9)	11 (10.1)
7. Don't know/ Not sure	4 (3.2)	1 (1.0)	4 (3.4)	5 (4.6)
Total of yes-response	124	104	117	109

Table 13. Respondents' reasons for not being willing to pay

Respondents' reasons for being non-willing to pay	Foreign visitors to My Son (%)	Vietnamese visitors to My Son (%)	Vietnamese visitors to Hue/Hoian (%)	Local residents (%)
1. I have no spare income	8 (6.7)	34 (24.1)	25 (20.7)	41 (31.1)
2. I think the cost is too high	67 (56.3)	34 (24.1)	41 (33.9)	20 (15.2)
3. I would pay if an acceptable method of paying is found	6 (5.0)	19 (13.5)	11 (9.1)	4 (3.0)
4. I would pay if other people agree to pay	2 (1.7)	13 (9.2)	4 (3.3)	25 (18.9)
5. I would pay if payment period is extended	0	3 (2.1)	2 (1.7)	8 (6.1)
6. There are other sites that I prefer to visit	2 (1.7)	3 (2.1)	1 (0.8)	0
7. I feel the preservation of historic temples is unimportant	0	2 (1.4)	1 (0.8)	1 (0.8)
8. I do not believe paying will solve the problem	3 (2.5)	3 (2.1)	0	1 (0.8)
9. I think it is the government's responsibility	20 (16.8)	10 (7.1)	14 (11.6)	16 (12.1)
10. I do not trust the institutions that will handle the money for preservation work	3 (2.5)	5 (3.5)	1 (0.8)	2 (1.5)
11. I oppose the plan regardless of costs	0	1 (0.7)	0	0
12. Other reasons	6 (5.0)	9 (6.4)	19 (15.7)	6 (4.5)
13. Don't know/ Not sure	2 (1.7)	5 (3.5)	2 (1.7)	8 (6.1)
Total respondents not WTP	119	141	121	132

For foreign visitors to My Son, the highest cited reason for not being willing to pay was 'the cost is too high' (56.3%). The second highest reason was 'the government's responsibility' (16.8%). The third highest reason was 'I have no spare income' (6.7%). For Vietnamese visitors to My Son, 'no spare income' and 'the cost is too high' were the highest-cited reasons (24.1%). The third highest cited reason was 'I would pay if an acceptable method of paying is found' (13.5%). With Vietnamese visitors to Hue/Hoian, the highest cited reason was 'the cost is too high' (33.9%). The second highest cited reason was 'no spare income' (20.7%). The next most popular reason was 'other reasons' (15.74%). These were specified as 'visitors should pay', 'know nothing of My Son and could not pay for it', 'if I visit My Son'. For local residents, the highest cited reason was 'no spare income' (31.1%). The second most popular reason was 'if other people pay' (18.9%). The third most cited reason was 'the cost is too high' (15.2%).

A no-response could be consistent with economic behavior, indicating that a respondent derived no benefits from the good or faced income constraints. Alternatively, a no-response could be due to a respondent's rejection of some aspects of the valuation scenario, or because they were engaging in 'free rider' behavior. Therefore motivations for not being WTP may be classified as 'valid reasons' and 'scenario rejecters'.

Scenario rejecters or protest responses were identified as reasons 8 through to 11: (8) 'I do not believe paying will solve problem'; (9) 'I think it is the government's responsibility'; (10) 'I do not trust the institutions that will handle the money for preservation work'; and (11) 'I oppose the plan regardless of costs'.

For foreign visitors, 119 (49.0%) respondents in total stated 'no' to the WTP question. Out of these 93 (78.2%) respondents cited one or more of the non-protest category reasons; and 26 (21.8%) respondents cited one or more of the protest category reasons.

For Vietnamese visitors to My Son, 141 (57.8%) respondents in total selected no-responses. Among them, the answers of 112 (86.5%) respondents were categorized as valid zero responses; and the answers of 19 (13.5%) respondents were categorized as protest responses.

For Vietnamese visitors to Hue/Hoian, 121 (50.8%) respondents in total answered 'no' to the WTP question. Among these no-responses, 106 (87.6%) were categorized as valid zero WTP; and 15 (12.4%) were categorized as protest responses.

For local residents, 132 (54.8%) respondents in total stated that they were not WTP. Out of these, the answers of 113 (85.6%) respondents were categorized as non-protest responses; and the answers of 19 (14.4%) respondents were categorized as protest responses.

The WTP data was analyzed. The results of this analysis are set out below. These results both include and exclude protest responses/ scenario rejecters (termed "SR in" and "SR out" respectively).

Mean WTP estimates

Table 14 reports non-parametric and parametric estimates. The difference between non-parametric and parametric estimation is that the former reduces the restrictions imposed on the underlying WTP distribution. For the non-parametric approach, a lower bound estimate for mean WTP is calculated by $\sum t_j(F_{j+1}-F_j)$, where t_j is the bid amounts; F_j is proportion of no-answers. The confidence interval for a lower bound WTP can be constructed because of the asymptotic normality (Haab and McConnell 2002).

The parametric estimates are calculated based on the simple linear model, which contains the bids and an intercept. Mean WTP² is equal to $-Intercept/Bidcoeff$, where $Bidcoeff$ is the coefficient of the bids. The simple linear model is used to calculate the mean WTP, since this study also aims to compare CV and CE estimates. As Boxall et al. (1996) and Adamowicz et al. (1998) noted, to allow a fair comparison between CV and CE, the CV model contains the bids and an intercept while the CE model contains attributes and ASC. The confidence intervals for the

² In the case of a linear utility function and a symmetric, mean zero error, the mean and median WTP are equal (Haab and McConnell 2002).

parametric estimates are obtained by using the Krinsky and Robb (1986) bootstrapping procedure with 1000 draws.

Table 14 describes the mean WTP for both “SR in” and “SR out” for each of the CV groups. If scenario rejecters are included in the WTP analysis, which means treating no-response as zero instead of non-zero (and removed from the analysis, as in the case of scenario rejecters excluded), the WTP would be lower or underestimated. This is shown in Table 14 for all the different groups.

Table 14. Mean WTP estimates

		Foreign visitors to My Son (US\$)	Vietnamese visitors to My Son ('000VND ^a)	Vietnamese visitors to Hue/Hoian ('000VND)	Local residents ('000VND)
SR in	Non-parametric estimates ^b	6.41 [5.52-7.29] ^c	29.78 [23.41-36.15]	33.00 [26.89-39.11]	31.52 [25.48-37.56]
	Parametric estimates	7.94 [6.71-9.25]	26.58 [17.15-43.53]	40.16 [34.51-54.00]	33.55 [25.82-44.27]
	US\$ equivalence	7.94	1.67	2.53	2.11
SR out	Non-parametric estimates	7.10 [6.17-8.03]	33.05 [25.89-40.21]	35.05 [28.40-42.70]	34.50 [27.99-41-01]
	Parametric estimates	9.13 [7.02-9.61]	31.83 [22.83-50.34]	44.24 [38.68-59.00]	39.81 [33.13-55.86]

^(a) Exchange rate: US\$1=15,900 VND. ^(b) Lower bound estimate for WTP. ^(c) Numbers in [] are 95% confidence intervals.

The results in Table 14 show that mean WTP estimates (in US\$ equivalence) vary among the four groups of respondents. Amongst visitors to My Son, foreign visitors would be willing to pay much more than Vietnamese visitors (foreign visitors would be willing to pay \$8.78 and Vietnamese visitors \$1.67). This finding is consistent with both the general pattern found in the literature (e.g., Mourato et al. 2004; Navrud and Vondolia 2005) and also with economic theory (i.e. foreign visitors earn higher incomes and spend more for their visit to My Son than Vietnamese visitors do).

It is interesting to observe that Vietnamese visitors to My Son (visitors) were not willing to pay as much as Vietnamese visitors to Hue/Hoian (non-visitors) – \$1.67 and \$2.53 for visitors and non-visitors to My Son, respectively. It would have been reasonable to presume that visitors to My Son would be willing to pay more than those not visiting My Son. There are possible explanations for this apparent contradiction. Firstly, follow-up questions showed that some visitors to My Son thought that they had already paid enough. It should be remembered that the valuation question asked visitors to My Son whether they would be willing to pay an additional amount, via an increase in entrance fee, for the preservation of My Son. Secondly, the payment vehicle used for visitors to My Son was an entrance fee, while for non-visitors it was a tax. The use of an entrance fee as the payment vehicle is probably more realistic than a tax. Furthermore, the use of the entrance fee vehicle may have provided an anchoring bias. This may have happened because respondents thought that this payment was related to a common fee for visiting cultural heritage in Vietnam, rather than being specifically for the preservation of My Son. Finally, although some Vietnamese visitors to Hue/Hoian may have had no intention or desire to visit My Son, others may have previously visited or planned to visit it in the future. This means that the non-visitors to My

Son were not only considering its non-use values. In addition, with the sample size of these two groups are not so large, which may have affected the WTP findings.

In the context of cultural heritage valuation in Southeast Asia, Seenprachawong (2005) undertook a similar study to this one. This estimated WTP for a restoration program of historic temples in the central region of Thailand. Seenprachawong found that there was no significant difference in WTP values between two payment vehicles (income tax and donation). The average WTP a one-time income tax surcharge to implement a preservation program that would protect two historic temples was estimated at 294 Baht (UD\$7.7) per person. The average WTP a one-time voluntary donation, to implement the same program, was estimated at 311 Baht (about US\$8.1) per person.

4.2.5 Aggregation of WTP

Table 15 reports the aggregate WTP for each CV group for both scenario rejecters included (SR in) and scenario rejecters removed (SR out). Mean WTP is the parametric estimate.

Table 15: Aggregation of WTP estimates

Groups of respondent	Foreign visitors to My Son	Vietnamese Visitors to My Son	Vietnamese visitors to Hue/Hoian	Local residents
Mean WTP ('000VND)	-	26.58	40.16	33.55
Mean WTP (US\$ equivalence)	7.94	1.67	2.53	2.11
Number of visitors	86,461	30,527	1,283,200	-
Number of households	-	-	-	330,534
Aggregate WTP with SR in (US\$)	686,500 [580,153-799,764]	51,032 [32,927 -83,575]	3,241,088 [2,785,108-4,358,036]	697,448 [536,754 - 920,298]
	Total: 4,676,067 [3,934,942-6,161,673]			
Aggregate WTP with SR out (US\$)	789,389 [606,956-830,890]	61,112 [43,832 -96,650]	3,570,361 [3,121,645-4,761,558]	827,582 [688,716 - 1,161,235]
	Total: 5,248,444 [4,461,150-6,850,332]			

For foreign visitors to My Son, the CV questionnaire asked respondents to consider a lump-sum (one-time) payment rather than periodic (annual) payments. This helped emphasize the fact that the preservation plan would be a one-time project, i.e. the temples would not be restored repeatedly over time. Therefore, in order to calculate the annual benefits over a period of time, the issue of repeated visits should be noted. However, the results of the survey with foreign visitors showed that most of them visited My Son just once (241/243 of the foreign visitors were visiting My Son for the first time). Thus, in this particular case, an aggregate estimate of the annual benefits was obtained by multiplying the mean WTP by the number of foreign visitors to My Son (based on the assumption that all foreign visitors visited My Son just once in their lives). According to the Management Board of My Son Relics, the number of adult foreign visitors to My Son in 2005 was 86,461. This yields an aggregate estimate of \$686,500 with SR in, and an estimate of \$789,389 with SR out.

For Vietnamese visitors to My Son, the CV questionnaire also asked about a one-time payment. Thus, in order to calculate annual benefits, repeated visits again need to be taken into account. Since the results of the survey with Vietnamese visitors to My Son showed that 15% of them had visited My Son before, it was assumed that 85% of these visitors should be used in the

calculation of annual benefits. This ad hoc adjustment provided a conservative estimate of the annual benefits of the preservation of My Son.

There were 30,527 adult Vietnamese visitors to My Son in 2005; using the above assumption, the adjusted number of Vietnamese visitors to My Son was 25,949, as seen in Table 16. This gives an estimate of \$43,377 with SR in, and an estimate of \$51,945 with SR out.

Table 16: Ad hoc adjustments of aggregate WTP estimates

Groups of respondent	Foreign visitors to My Son	Vietnamese visitors to My Son	Vietnamese visitors to Hue/Hoian	Local residents
Adjusted mean WTP (US\$)	7.94	1.67	1.67	2.11
Adjusted number of visitors	86,461	25,949	1,283,200	-
Number of households	-	-	-	330,534
Aggregate WTP with SR in (US\$)	686,500 [580,153-799,764]	43,377 [27,988 -71,039]	2,145,122 [1,384,080-3,513,061]	697,448 [536,754 - 920,298]
	Total: 3,572,447 [2,528,975-5,304,162]			
Aggregate WTP with SR out (US\$)	789,389 [606,956-830,890]	51,945 [37,257-82,152]	2,568,820 [1,842,481-4,062-658]	827,582 [688,716 - 1,161,235]
	Total: 4,237,736 [3,175,411-6,136,935]			

The study attempted to measure the aggregate WTP of Vietnamese visitors to the area who were not visiting My Son during their current trips. Three major tourist destinations in the area close to My Son, are Hue, Danang and Hoian. According to the departments of tourism in these provinces, the number of domestic visits to Hue, Danang and Hoian in 2005 was 703,050, 510,702 and 649,567, respectively. There is currently no available data showing the percentage of Vietnamese visitors who make multiple visits to these destinations. From the survey of 238 respondents which was conducted in Hue and Hoian (mostly in Hue), 50% of visitors to Hue had also visited Hoian. It is therefore assumed that 50% of visitors to Danang had neither visited Hue nor Hoian, and that 50% of visitors to Hoian had neither visited Hue nor Danang. This adds up a total of 1,283,200 visitors³ to the area in 2005 (i.e. 703,050 visitors to Hue, 255,351 visitors to Danang and 324,799 visitors to Hoian).

It should be remembered that the WTP of Vietnamese visitors to Hue/Hoian (these 'non-visitors' had a mean WTP of \$2.53) was higher than that of Vietnamese visitors to My Son (these 'visitors' had a mean WTP of \$1.67). Therefore, in order to obtain a conservative estimate of benefits, it is reasonable to assume that non-visitors should pay the same as visitors. The conservative aggregate WTP of Vietnamese visitors to Hue/Hoian is therefore \$2,145,122 with SR in, and \$2,568,820 with SR out, as seen in Table 16.

³ There are two more possibilities to be considered. The first one is the total number of Vietnamese visitors to the Central of Vietnam; the number of Vietnamese visitors to this area is about 3 millions. The second possibility is the total number of Vietnamese visitors travel with in Vietnam but did not visit My Son during their current trip, which amounts to 16 million visits in 2005 (VietnameNet, 2006). These visitors would likely hold some non-zero WTP for preserving My Son. Since the sample of Vietnamese visitors to the area did not include those visitors, this should provide a conservative estimate for non-visitors benefits.

For local residents, an aggregate estimate of WTP can be obtained by multiplying the mean WTP by the number of households in Quangnam province. According to the Statistical Yearbook of Quangnam province, the number of households in Quangnam in 2005 was 330,534. This yields an estimate of \$697,448 with SR in, and an estimate of \$827,582 for SR out.

Since the sample of local residents did not extend to households beyond the Quangnam province, we have omitted other households living in Vietnam (with about 20 million households). In theory, the preservation benefits of My Son could accrue to any household in Vietnam. The fact that My Son is a well-known attraction in Vietnam, implies that other households in Vietnam would likely to have non-zero WTP for preserving My Son. Excluding these households from the aggregation should give a conservation estimate for non-visitors benefits.

For non-visitors to My Son (Vietnamese visitors to Hue/Hoian and local residents), it is important to determine the number of years over which individual WTP should be aggregated. If WTP was aggregated over more than one year, this would in all likelihood overestimate the benefits. Thus, this study uses the first year's aggregate for these two groups.

The conservative aggregate WTP for all groups in the first year (i.e. 2005), with ad hoc adjustments, is \$3,572,447, with a 95% C.I of [\$2,528,975-\$5,304,162] for SR in, and \$4,237,736, with a 95% C.I of [\$3,175,411-\$6,136,935] for SR out.

4.2.6 Determinants of WTP

To examine the construct validity of the CV results, valuation functions were estimated (Carson et al. 1997). The dependent variable took the value 'one' if a respondent's answer to the CV question was yes, and 'zero' otherwise. The independent variables were the monetary amount the respondent was asked to pay, the respondent's socioeconomic characteristics, along with knowledge and attitude variables. Results of this analysis of the CV responses for the four groups of respondents with SR in are reported in Table 17. The respective results with SR out are presented in Table 17b in the appendix. Four CV models are estimated using binary logit models with log of bid amounts (*logbids*).

Table 17. Estimated parameters of the logit model

Variables	Foreign visitors to My Son (p-value)	Vietnamese visitors to My Son (p-value)	Vietnamese visitors to Hue/Hoian (p-value)	Local residents (p-value)
Constant	-1.80 (.018)	-2.37 (.008)	2.36 (.067)	0.59 (.499)
Logbids	-1.69 (.000)	-0.90 (.000)	-1.44 (.000)	-1.00 (.000)
Sex	0.0003 (.706)	-0.0004 (.814)	0.003 (.045)	-0.002 (.238)
Age	-0.007 (.894)	-0.002 (.308)	-0.001 (.199)	-0.08 (.577)
Tinc	1.13 (.037)	0.70 (.018)	-0.02 (.970)	1.60 (.001)
Ugo	1.56 (.000)	0.61 (.089)	2.34 (.000)	1.34 (.020)

(continued)

Table 17. continued

Alone	-0.13 (.741)	0.34 (.355)	-2.60 (.000)	-
Child	-	-	-	0.09 (.829)
Htype	-	-	-	-0.19 (.596)
Hcity	1.27 (.003)	-	-	-
Hue	-0.001 (.470)	-0.003 (.093)	2.08 (.039)	-0.26 (.542)
Hoian	0.001 (.492)	-0.005 (.887)	-1.93 (.000)	1.16 (.003)
Visit	-	-0.38 (.438)	1.93 (.000)	1.32 (.008)
Importance	0.79 (.069)	0.21 (.450)	0.05 (.899)	1.11 (.003)
Know	0.004 (.891)	0.67 (.156)	-0.0001 (.867)	0.18 (.622)
Satisfied	2.20 (.000)	2.37 (.002)	-	-
Ftrip	1.95 (.000)	2.45 (.000)	1.41 (.001)	0.93 (.022)
Before	-1.59 (.001)	0.66 (.149)	-	-
Summary statistics				
Log-likelihood	-88.82	-107.85	-63.55	-112.34
Pseudo-R ^{2*}	0.47	0.35	0.61	0.32
Chi-squared	159.13	118.34	202.77	107.21
Number of obs.	243	245	238	241

* Pseudo - R² is calculated as 1-LLU/LLR, where LLU and LLR are the log-likelihood values for the estimated model and model with only a constant.

All valuation functions achieved relatively good fits (Pseudo-R² is 0.47, 0.35, 0.61, and 0.32 for foreign visitors, Vietnamese visitors to My Son, Vietnamese visitors to Hue/Hoian and local residents, respectively) for cross-sectional survey data. The coefficients of *logbids* were statistically significant and negative, implying that the probability of a yes response decreased as the bid increased, which is consistent with economic theory.

For foreign visitors to My Son, most of the variables in the model (i.e. *Tinc*, *Ugo*, *Hcity*, *Satisfied*, *Ftrip*, *Before*) had the expected signs and were significant. The following trends were apparent: The probability of a 'yes' increased with respondent income. The probability of a yes response was higher for respondents that had attended college. Wanting to visit historical cities was an obvious reason for wanting to visit My Son. If respondents were *satisfied* with their visit they were likely to pay more. If respondents wanted to return to My Son they were likely to pay more for preserving it. The probability of paying decreased if the respondent had been asked about the preservation plan *before* they had visited My Son. Thus, a respondent's willingness to pay, increased if they had visited the site.

With Vietnamese visitors to My Son, the following variables had the expected signs and were significant: being of higher income (*Tinc*); satisfied with the experience of visiting My Son (*Satisfied*); and considering returning to My Son in the future (*Ftrip*).

For Vietnamese visitors to Hue/Hoian, the following variables had the expected signs and were significant: having attended college (*Ugo*); having visited My Son before (*Visit*); and considering visiting My Son in the future (*Ftrip*). The variable visiting Hue (*Hue*) was positively signed and significantly influenced the probability of paying; while the variable visiting Hoian (*Hoian*) was also significant but negatively signed. This suggests that a visit to Hue was seen as complimentary to a visit to My Son, while a visit to Hoian was a substitute. It is possible that because My Son and Hoian are relatively close together, raising the cost of visiting My Son would make a visit to Hoian more attractive and a visit to both Hoian and My Son less so. The variable

Alone was negatively signed and significantly influenced the probability of yea saying. In other words, traveling with family members increased the probability of a Vietnamese visitor paying. This variable might also be correlated with respondents' income or wealth.

For local residents, the following variables had the expected signs and significantly increase the probability of paying: having a high income (*Tinc*); having attended college (*Ugo*); having visited My Son before (*Visit*); regarding preserving WHSs in Vietnam as important (*Importance*); and considering visiting My Son in the future (*Ftrip*). The variable having visited Hoian (*Hoian*) was positively signed and significantly influenced the probability of yea saying. This variable might be correlated with preferences for cultural amenities and income.

4.3 Choice experiment results

Before analyzing the CE data by regression models, it is useful to look at some non-parametric results. Results of the non-parametric estimations for foreign visitors and local residents are reported in Table 18.

The CE question was designed as a choice between two options/alternatives (the improved situation versus the current situation). For foreign visitors, 45.6% of respondents always chose the current situation (bids = 0). As the bid amounts went up (from \$1 to \$15), the percentage of yes responses decreased, as expected. For local residents, 67.9% of respondents always selected the current option (bids = 0). Similarly, the percentage of yes responses decreased as the bids increased (from 5,000 to 200,000 VND).

Table 18. Non-parametric CE estimates

Foreign visitors			Local residents		
Bids (UD\$)	No. of respondents	% yes	Bids (VND)	No. of respondents	% yes
0	1575	45.6	0	1935	67.9
1	402	80.8	5,000	388	67.9
5	396	66.2	50,000	387	35.4
10	384	46.1	100,000	386	18.7
15	393	23.7	200,000	386	6.2
	3,150			3,094	

In parametric analysis, three multinomial logit models are estimated using data from both foreign visitors and local residents. In the multinomial logit model, the utility function V_i represents the utility of the different options. The basic utility function takes the form:

$$V_i = \alpha + \sum \beta_k X_k \quad (11)$$

Where α is an alternative specific constant (ASC), β_k is a coefficient, and X_k is a variable representing an attribute from a choice set. The complex utility function includes socioeconomic and attitudinal variables. It is impossible to include these variables directly into utility functions, as they are invariant across the alternatives in a choice set. Instead they have to be estimated interactively with the ASC or with other attributes (see Swallow et al. 1994). In this study, socioeconomic and taste variables are included as interactions with the ASC for the alternative situation (the non-status quo option). These interactions show the effect of a variety of socioeconomic and attitude variables on the probability that a respondent will choose the alternative option.

$$V_i = \alpha + \sum \alpha S_h + \sum \beta_k X_k . \quad (12)$$

Where S_k represents socioeconomic or attitude variables. The marginal WTP (implicit price) for a change in each attribute is calculated by $-\beta_k/\beta_M$, where β_k is the coefficient of the non-monetary attribute and β_M represents the monetary attribute coefficient.

Table 19 shows multinomial logit models⁴ and marginal WTP of the foreign visitors with SR in. The respective result for SR out is reported in the appendix (Table 19b).

Table 19. Multinomial logit models for foreign visitors

Variables	Model 1 (Attributes only)		Model 2 (Attributes and socioeconomic variables)		Model 3 (Attributes, socioeconomic and attitude variables)	
	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>US\$</i>)	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>US\$</i>)	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>US\$</i>)
Constant	-0.91 (.000)		-0.58 (.115)		-0.65 (.107)	
Price	-0.20 (.000)		-0.21 (.000)		-0.21 (.000)	
Preservation	1.22 (.000)	6.2	1.24 (.000)	6.0	1.29 (.000)	6.1
Infrastructure	0.30 (.014)	1.5	0.31 (.016)	1.5	0.33 (.013)	1.5
Service	-0.07 (.591)		-0.01 (.928)		-0.03 (.812)	
Sex	-		-0.12 (.322)		-0.08 (.551)	
Age	-		-0.15 (.146)		-0.17 (.114)	
Ugo	-		-0.20 (.127)		-0.22 (.095)	
Tinc	-		0.57 (.015)		0.59 (.013)	
Alone	-		0.36 (.001)		0.27 (.017)	
Hcity	-		-		0.05 (.738)	
Hue	-		-		0.17 (.203)	
Hoian	-		-		-0.28 (.079)	
Importance	-		-		-0.04 (.783)	
Know	-		-		0.32 (.018)	
Satisfied	-		-		0.55 (.031)	
Ftrip	-		-		0.20 (.149)	
<i>Summary statistics</i>						
Log-likelihood	-875.57		-800.32		-777.33	
Chi-squared	419.98		425.70		443.28	
Adjusted R ²	0.20		0.21		0.22	
Number of obs.	1,575 (0 skipped)		1,470 (0 skipped)		1,449 (0 skipped)	

Model 1 consisted of the attributes only. The entrance fee (*Price*), the proposed preservation plan (*Preservation*); and the upgrading infrastructures (*Infrastructure*) attributes had the expected sign and significantly affected the utility of respondents. The negative coefficient of *Price*, means that the respondent's utility was lower for an option having a higher price. The positive coefficients of the *Preservation* and *Infrastructure* attributes suggest that the conservation of My Son and the improvement of its infrastructure increased the respondent's utility. The

⁴ Table 19c in the appendix reports results of random parameter logit (RPL) models for foreign visitors. RPL models account for parameters that vary in a population rather than those that are the same for each person as in multinomial logit (ML) models. The advantage of the RPL model is that the heterogeneity in the sample can be captured by estimating the mean and variance of the random parameter distribution (Holmes and Adamowicz 2003). Results of RPL estimation show that mean effect terms (i.e., the magnitude; the sign; and the significance) for each variable among three RPL models are not much different from those in ML models. S.D. terms for each attribute are insignificant in most cases.

Service attribute was not statistically significant in all models. This implies that improving services did not seem to increase the utility of the respondents.

Model 2 included the socio-economic variables. Among the co-variants, *Tinc* and *Alone* variables were statistically significant and positive. This means that respondents were more likely to support the preservation of My Son (the non-status quo option) if they were in the higher income group (*Tinc*) and travelling alone (*Alone*). In other words, people travelling with other family members were less likely to support the preservation of My Son.

Model 3 included the socioeconomic and attitude variables. The four variables (*Hcity*, *Know*, *Satisfied*, and *Ftrip*) were all positive. The *Know* and *Satisfied* variables were significant. Consistent with expectations, these interactions show that respondents were more likely to support the preservation of My Son if they had more knowledge about it and were satisfied with their visit.

The overall models are significant at the 1% level and their explanatory powers are relatively high, with adjusted R² of about 0.20 across the three models. Estimates of the implicit prices for each of the non-monetary attributes show that an adult foreign visitor was willing to pay an additional fee of about US\$6 for a change to the preservation plan, and about US\$1.5 for upgrading infrastructures. Table 20 describes multinomial logit models⁵ and marginal WTP of the local residents with SR in. Table 20b in the appendix reports the respective result with SR out.

Table 20. Multinomial logit models for local residents

Variables	Model 1 (Attributes only)		Model 2 (Attributes and socioeconomic variables)		Model 3 (Attributes, socioeconomic and attitude variables)	
	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (‘000 VND)	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (‘000 VND)	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (‘000 VND)
Constant	-0.05 (.797)		-0.81 (.021)		-1.29 (.003)	
Price	-0.02 (.000)		-0.02 (.000)		-0.02 (.000)	
Preservation	0.71 (.000)	34.1	0.73 (.000)	33.9	0.75 (.000)	34.1
Infrastructure	0.43 (.001)	20.5	0.48 (.000)	23.0	0.51 (.000)	23.4
Service	0.07 (.600)		0.06 (.635)		0.05 (.708)	
Sex	-		0.10 (.450)		-0.05 (.729)	
Age	-		0.03 (.720)		0.02 (.727)	
Tinc	-		0.67 (.000)		0.60 (.003)	

(continued)

⁵ Table 20c in the appendix shows results of RPL models for local residents. It is worth noting that price is the only attribute that has S.D. terms strongly significant in all models. This can be interpreted as the preference of price is heterogeneous, while the preference of other attributes is homogenous in the population of local residents.

Table 20. continued

Edu	-		0.39 (.062)		0.29 (.180)	
Htype	-		0.42 (.095)		0.59 (.024)	
Child	-		0.11 (.442)		0.11 (.426)	
Hue	-		-		0.05 (.794)	
Hoian	-		-		-0.25 (.135)	
Visit	-		-		0.29 (.094)	
Importance	-		-		0.05 (.819)	
Know	-		-		0.40 (.001)	
Ftrip	-		-		0.57 (.000)	
Summary statistics						
Log-likelihood	-753.78		-730.52		-711.16	
Chi-squared	455.28		484.91		523.63	
Adjusted R ²	0.30		0.31		0.32	
Number of obs.	1,547 (0 skipped)		1,533 (0 skipped)		1,533 (0 skipped)	

In Model 1 all attributes had the expected sign and were statistically significant, except the *Service* attribute. In Model 2 the *Tinc* variable and the other variables that can be thought of proxies of income (i.e., education and type of house) were all significant (at the 10% level) and had *a priori* expected signs. In Model 3 the *Know* and *Ftrip* variables significantly influenced the utility of a household.

The explanatory power of these models was also high (about 0.30 across the three models), and higher than the CE models for the foreign visitors. The implicit prices for each of the non-monetary attributes were as follows: Households were willing to pay 34 thousand VND for the preservation plan and about 20 thousand VND for upgrading infrastructures.

4.4 Combining CV and CE data

The CV question asked the respondents if they would still visit My Son if there was an increase in entrance fees (to pay for an improved level of preservation at the temple complex) or if they preferred the current situation. This was identical to the CE framework, since both the CV and CE questions asked respondents to make a choice between two alternatives. The two data sets can be pooled since the CV data has two attributes (*Price* and *Preservation*) while the CE data has four attributes in a choice set (*Price*, *Preservation*, *Infrastructure*, and *Service*). Tables 21 and 22 provide pooled results of the foreign visitors and local residents, respectively.

Likelihood ratio (LR) tests are used to accept/reject the pooling hypothesis. Test statistics follow χ^2 distribution with a degree of freedom equal to the difference in number of the estimated parameters between the pooled and un-pooled models. If the LR-test statistic is smaller than the critical value, pooling data cannot be rejected.

Results of the pooled model include an estimate for the scale parameter (μ_{CE}) of the CE data. The estimation of a scale parameter as part of the model allows for direct comparisons of parameter estimates. If there is no difference in variance between the CV and CE data, the estimate of μ_{CE} is not significantly different from unity. Since the scale factor is inversely related to the variance of the RUM's random component, $\mu_{CE} < 1$ suggests that CE data are noisier than the CV data (and the other way around if $\mu_{CE} > 1$).

LR-test statistics for the hypothesis of equal parameter is calculated by $-2*(LL_{JOINT}-(LL_{CV} + LL_{CE}))$, where LL_{JOINT} is the log likelihood value corresponding to the estimation of μ_{CE} , LL_{CV} and LL_{CE} are the log likelihood values corresponding to the CV and CE model, respectively. The test statistics for the hypothesis of equal scale parameter is $-2*(LL-LL_{JOINT})$, where LL is the log likelihood value for the joint model in which the scale factors of the two data sets are assumed to be equal, LL_{JOINT} is as previously defined (Swait and Louviere 1993).

Table 21. Joint estimates of CV and CE for foreign visitors

Variables	CV (p-value)	CE (p-value)	Joint model (p-value)
Constant	-1.84 (.000)	-0.91 (.000)	-0.81 (.000)
Price/ Bids	-0.23 (.000)	-0.20 (.000)	-0.19 (.000)
Preservation	-	1.22 (.000)	1.13 (.000)
Infrastructure	-	0.30 (.014)	0.37 (.001)
Service	-	-0.07 (.592)	0.01 (.914)
<i>Summary statistics</i>			
Scale parameter (μ_{CE})	-	-	1.34
Adjusted R ²	0.20	0.20	0.19
Log-likelihood	-134.88	-875.57	-1012.71
Chi-squared	68.38	419.98	483.45
Number of obs.	243 (0 skipped)	1,575 (0 skipped)	1,818 (0 skipped)

The LR-test of difference between parameters, incorporating the relative scale effects, gives a χ^2 value of 4.52. The respective critical value at 5% significance level and 2 df is 5.99, implying that we cannot reject the hypothesis of equal parameters. The LR-test of equal scale parameters yields a χ^2 of 3.62; the respective critical value at 5% significant level and 1 df is 3.84. Thus we cannot reject the null hypothesis of equal scale parameters.

The joint model is quite similar to the CE model. All the parameters have the same sign as the parameters in the CE model, except the *Service* parameter (which is, however, insignificant in all models). The scale parameter is 1.34, indicating that the CE model has a lower error variance. However, the μ value is not significantly different from unity (the p-value for the likelihood ratio test is 0.057). Thus, the CV and CE models appear to have error variances that are not significantly different. Adjusted R² for the three models are almost identical (about 0.20).

For local residents, results of pooling of the CV and CE data are given in Table 22.

Table 22. Joint estimates of CV and CE for local residents

Variables	CV (p-value)	CE (p-value)	Joint model (p-value)
Constant	-0.87 (.000)	-0.05 (.797)	-0.02 (.891)
Price/ Bids	-0.03 (.000)	-0.02 (.000)	-0.02 (.000)
Preservation	-	0.71 (.000)	0.70 (.000)
Infrastructure	-	0.43 (.001)	0.44 (.001)
Service	-	0.07 (.600)	0.08 (.524)
<i>Summary statistics</i>			
Scale parameter (μ_{CE})	-	-	1.26
Adjusted R ²	0.13	0.30	0.27
Log-likelihood	-144.73	-753.78	-898.73
Chi-squared	42.45	455.28	510.55
Number of obs.	241 (0 skipped)	1,547 (0 skipped)	1,788 (0 skipped)

The LR-test statistic is 0.44; the respective critical value at 5% significance level and 2 df is 5.99. Thus, again we cannot reject the hypothesis of equal parameters. The LR-test statistic of equal scale parameters gives χ^2 of 1.06; the critical value at 5% significant level and 1 df is 3.84, implying that we cannot reject the null hypothesis of equal scale parameters. The scale parameter is 1.26, indicating that the CE model has a lower error variance. However, this value is not significantly different from unity (the p-value for the likelihood ratio test is 0.302). Thus, the CV and CE models appear to have variances that are not significantly different.

The adjusted R^2 are 0.13, 0.30, and 0.27 for the CV, CE, and joint model, respectively. All parameters in the joint model have the same sign as in the CE model. The results of the joint model are closer to the CE model than the CV model.

4.5 Comparing WTP estimates

Although two different methods were used, a comparison between their results is still feasible due to the common basis of the utility theory. In this study, CV was used to estimate the WTP for the proposed preservation plan for My Son. CE was used to estimate the marginal WTP (implicit price) for attributes related to My Son’s preservation in general. Among other attributes in the CE, the proposed preservation plan was identical to the proposed preservation plan scenario in the CV. Therefore, it is possible to achieve a fair comparison between the WTP from the CV study and the marginal WTP of the same good from the CE exercise.

Further, to have a reasonable comparison between the CV and CE studies, the CV model contains the bids and an intercept while the CE model contains attributes and ASC. In the CV model, the calculation of mean WTP is repeated by $-Intercept/Bidcoeff$, where $Bidcoeff$ is the coefficient of the bids. In the CE model, the marginal WTP for a change in each attribute is repeated by the ratio $-\beta_k/\beta_M$, where β_k is the regression coefficient of the non-monetary attribute and β_M represents the monetary attribute coefficient. The confidence intervals for the parametric estimates are obtained by using the Krinsky and Robb (1986) bootstrap procedure with 1,000 times.

Table 23 reports non-parametric⁶ and parametric estimates for foreign visitors and local residents. The WTP estimates are based on scenario rejecters included (SR in).

Table 23. Comparison of WTP estimates

	Foreign visitors (US\$)			Local residents ('000VND)		
	CV	CE	Joint model	CV	CE	Joint model
Non-parametric estimates	6.41 [5.5-7.3]	6.94 [6.6-7.3]	6.87 [6.5-7.2]	31.52 [25.5-37.6]	35.06 [31.3-38.8]	37.32 [33.5-41.1]
Parametric estimates	7.97 [7.3-9.2]	6.21 [5.0-7.2]	5.92 [5.2-7.7]	33.55 [22.8-44.3]	34.09 [21.4-46.8]	33.34 [20.9-45.8]

The results show that there is no large variation between the estimates from the CV and CE studies and from the joint model for both visitors and residents. The WTP estimates are higher in the CE than in the CV for all the cases, except for the visitors with parametric estimates.

⁶ Tables 23b and 23c in the appendix show comparisons of non-parametric estimates between CV and CE for foreign visitors and Vietnamese visitors.

To see the difference between CV and CE estimates, the convolution test proposed by Poe et al. (1994) was applied. The test is constructed following the Krinsky and Robb (1986) bootstrap procedure with 1,000 draws. The null hypothesis of equality between WTP_{CE} and WTP_{CV} is reformulated as the difference being equal to zero ($H_0: WTP_{CE} - WTP_{CV} = 0$). The probability value of non-parametric test is shown in Table 24.

The results show that, except for local residents with non-parametric estimate, the null hypothesis of equality between CE and CV cannot be rejected. This suggests that CE and CV produce very similar results.

Table 24. Tests for equivalence between methods

		CE	CV	P-value
Foreign visitors	Non-parametric estimates	6.94	6.41	0.174
	Parametric estimates	6.21	7.97	0.480
Local residents	Non-parametric estimates	35.06	31.52	0.000
	Parametric estimates	34.09	33.55	0.179

It is interesting to see that, with regard to the local residents, the estimates from CV and CE are not always significantly different. This is despite the fact that the bid range was very large (i.e. 5, 20, 50 and 100 thousand VND for the CV; and 5, 50, 100 and 200 thousand VND for the CE).

There are few studies that compare the CV and CE approaches. The results obtained in this study are opposed to Boxall et al. (1996). This earlier study investigated the effect of environmental quality changes arising from forest management practices on recreational moose hunting. Its CV estimates were higher than its CE estimates. However, its selection of the CE model resulted in welfare estimates similar to the CV model. The results of this study are however consistent with those found in other studies. Hanley et al. (1998) compared CV and CE as applied to forest landscapes. They found that the welfare estimates from both approaches to be very similar. Adamowicz et al. (1998) compared CV and CE methods in the measurement of passive use values. They found that ‘once the variance is taken into account, the preferences over income between the two approaches are not significantly different’.

Although non-parametric estimates are not directly comparable with parametric estimates, the results show that they are very close.

5.0 POLICY IMPLICATIONS

5.1 Maximizing revenues⁷ from visitors

The current entrance fee for My Son is \$4 for foreign visitors and \$1.89 for Vietnamese visitors; the number of visitors to My Son in 2005 was 86,461 foreigners and 30,527 Vietnamese. This yields a revenue of \$403,442 (\$345,844 for foreign visitors and \$57,598 for Vietnamese visitors). This figure would increase if the numbers of visitors to My Son increased⁸.

Table 25. Expected revenue at different entrance fee

Foreign visitors			Vietnamese visitors		
Entrance fee (US\$)	% visitors	Expected revenue (US\$)	Entrance fee (US\$)	% visitors	Expected revenue (US\$)
4	100	345,844	1.89	100	57,598
5	78	338,639	2.20	69	46,605
9	69	535,775	3.14	51	48,785
14	46	555,618	5.03	30	45,323
19	11	188,513	8.18	20	49,100

For foreign visitors to My Son, the expected visitation rates and revenues at different entrance fees are reported in Table 25. With an entrance fee of \$4, 86,461 foreigners visited My Son in 2005. As the entrance fee increases, the percentage of those willing to visit decreases, as expected. However, the percentage decrease in visitation is less than the percentage increase in the entrance fee, thus the expected revenue increases and maximizes at about \$14. In other words, within this range, the demand for visiting My Son is inelastic. As the entrance fee exceeds \$14, the demand is elastic and the expected revenue begins to decrease.

It should be noted that any increase in entrance fees to maximize revenue would create side effects. This study has shown that if entrance fees exceed \$14, the number of visitors would drop by 54% compared to current numbers. This would have an impact on the economy as the whole.

With regard to Vietnamese visitors to My Son, Table 25 shows the expected visitation rates and revenues at different entrance fees. As the entrance fee increases, both the visitation rate and revenue decrease. The expected revenue is maximized at the current entrance fee of \$1.89.

In other words, within the bid ranges, the demand of foreign visitors for visiting My Son is inelastic, while the demand for domestic visitors is elastic. This result is consistent with results of other researchers found in the literature (e.g., Navrud and Mungatana 1994; Chase et al. 1998).

⁷ A maximum revenue price can be determined from the demand curve for visits to a destination. Willis (2003) and Navrud and Vondolia (2005) specify a functional relationship between visits and price as $Q = \beta_0 e^{-\beta_1 P}$, where Q is quantity or number of visits, P represents as the bid or WTP, β_0 and β_1 are constants. The optimal price that achieves maximum revenues can be derived from estimating this demand function. Since this study used the closed-ended elicitation format with 4 bid-amounts, the levels of bids are few that give little variation in the demand curve if we apply the demand estimation approach. We rather use a table to describe the bid amounts with corresponding visitation rates at each level of entrance fees, and to show the optimal entrance fees that maximize revenues.

⁸ The average rate of growth of visitors to My Son in the period between 1997 and 2005 is 24.32% per year for foreign visitors and 41.50% per year for Vietnamese visitors.

It is interesting to observe that the expected revenue for foreign visitors is maximized at \$14, which is 1.61 times higher than the current entrance fee, while the expected revenue of Vietnamese visitors is maximized at the current fee of \$1.89. This suggests that when pricing policy is designed, more emphasis should be placed on foreign visitors than on Vietnamese visitors.

According to Table 25, if optimal entrance fees that maximize revenues were imposed, substantial annual revenues could be captured to finance the required preservation investments. For example, if the optimal entrance fees of \$14 for foreign visitors and \$1.89 for Vietnamese visitors were imposed, the generated revenues would be \$613,216 (\$555,618 for foreign and \$57,598 for Vietnamese visitors). This would be 52% higher than the current fee revenues. This policy recommendation would also reduce congestion⁹ at My Son by reducing the number of foreign visitors by 54%. For Vietnamese visitors, however, there is no decline in the visitation rate at the optimal entrance fee. Thus, overall, imposing the optimal charge for the Vietnamese visitors would not reduce the problem of congestion.

In order to deal with the congestion problem at My Son due to Vietnamese visitors, we discuss some possible solutions in the following section. In the long term one solution might be to enhance infrastructures and services at the site. Another solution is to limit the number of visitors to the site. However, this might exclude individuals with high values for visiting the site while including those attaching low values to these public goods. Other option is to use price to limit access. As discussed above, the increase in price reduces both the visitation rate and revenue. Thus, this is an inefficient solution to Vietnamese visitors. There is room for a pricing structure that has higher price at specific times in the high season and lower price during the low season to avoid all domestic tourism taking place e.g., in the summer, and spreading the visits more evenly across the year.

The current fee policies relating to cultural heritage sites in Vietnam is not properly based on the individual preferences of tourists (i.e. demand) or on supply in tourism market; nor is it properly designed to maximize revenues or restrict tourism demand to meet the environmental carrying capacity of endangered sites. There is also a tendency to apply a more uniform pricing policy for foreign and Vietnamese visitors to sites in Vietnam. For example, the entrance fee for visiting My Son before 2004 was VND50,000 and VND10,000 for foreign and Vietnamese visitors, respectively, which have now increased to VND60,000 (US\$4) and VND30,000 (US\$2). Thus, from entrance fees being 5 times higher for foreigners, this has now been reduced to twice as high. This pricing policy is generally imposed on an uninformed basis. Based on the calculated consumer surplus (and total WTP), our results suggest that an even larger price differentiation would increase both revenues and facilitate preservation, due to more money for preservation and reduced damage to the site from reduced congestion. This could possibly also secure social equity, see Lindberg (1991); Laarman and Gregersen (1996) for detailed discussions of this aspect.

⁹ During the peak hour (from 11 a.m to 1p.m), there is occasional congestion at My Son. Especially, in the summer - the high season of Vietnamese visitors, the congestion problem occurred more often. With the current growth of visitors, this will be a big problem in the near future, unless there is a great improvement in infrastructure and services at the site.

5.2 Cost-benefit analysis

For Vietnamese visitors to Hue/Hoian and local residents the conservative mean WTP was \$1.67 and \$2.11, respectively. The payment vehicle used for these two groups was a one-time tax. Thus, the WTP aggregated over the number of Vietnamese visitors to Hue/Hoian and local residents represents the present value of the benefits to these groups. The one-time aggregate WTP of non-visitors to My Son was \$2,842,570 (\$2,145,122 for Vietnamese visitors to Hue/Hoian and \$697,448 for local residents). These benefits are 2.89 times higher than those received by visitors to My Son (\$686,500 from foreign visitors and \$43,377 from Vietnamese visitors).

The costs of the My Son preservation plan¹⁰ amount to \$10.88 million. The annual revenue from visitors to My Son under the current entrance fee regime is \$403,442. According to the Management Board of My Son Relics, 50% of this revenue is spent on annual operational costs. If the remaining 50% of this revenue (\$201,721) was used for preserving My Son, it would take 54 years¹¹ to collect revenues from visitors to cover the costs of preservation. If the optimal entrance fee regime was imposed, it would take 35 years to collect the preservation costs. The aggregate WTP of benefits for all groups of respondents in 2005 was \$3,572,447. This constitutes 33% of total preservation costs. If all of these benefits were collected in the first year, and then revenues were collected annually from visitors to My Son, it would take 20 years¹² to cover the preservation costs.

The calculations above are based on simply comparing the social costs of preservation to the potential social benefits for My Son over time with no discounting. In the next section, we conduct a cost-benefit analysis (CBA), and show how the outcome can be influenced by different time frames and social discount rates.

As we assume that the My Son heritage is preserved for future generations, we assume that the time horizon of the preservation project is infinity, ∞ . The net present value (*NPV*) is calculated as

$$NPV = -C_0 + B_{locals} + B_{non-mysonvisitors} + \frac{B_{domesticvisitors}}{r} + \frac{B_{foreignvisitors}}{r} + \frac{NR}{r} \quad (13)$$

where C_0 is the total costs of the conservation project which equals to \$10.88 million. Since we have no details of how the costs would be spent, we assume that this is an initial investment cost¹³ and occur immediately ($t = 0$).

B_{locals} refers to the one-time amount ($t = 0$) or the present value of the benefits accrued from local resident households in Quangnam province, is \$697,448 as calculated above.

$B_{non-mysonvisitors}$ represents the one-time amount ($t = 0$) or the present value of the benefits derived from the Vietnamese visitors visiting the area who do not visit My Son during their current trip, which is equal to \$2,145,122.

$\frac{B_{domesticvisitors}}{r}$ is interpreted as the present value over an infinite time horizon ($t \rightarrow \infty$) of the Vietnamese visitors to My Son. $B_{domesticvisitor}$ is an annual benefit that continues infinitely, r is the social discount rate. The annual benefit of the Vietnamese visitors to My Son, as calculated above, is \$43,377.

¹⁰ This is a conservation plan proposed by the Vietnamese government in collaboration with international agencies. The total costs of this preservation plan is VND173-billion (about US\$10.88) over a period of time from 2004 to 2015, see DHM (2004); Vietnam Tourism (2004).

¹¹ Assume that the increase in the annual operational costs over time is equal to revenues increase from the increase of visitors to My Son.

¹² In addition to the assumption that the increase of visitors (the growth rate) generates revenues to cover the increase in the annual operational costs; the growth rate of visitors also compensates for the rate of repeated visits to My Son.

¹³ This assumption will overestimate the costs.

$\frac{B_{foreignvisitors}}{r}$ is the present value of benefits to the foreign visitors to My Son over infinity ($t \rightarrow \infty$). $B_{foreignvisitors}$ is the annual benefit to the foreign visitors to My Son and equals to \$686,500.

$\frac{NR}{r}$ refers to the present value of a perpetuity ($t = \infty$) of net revenue. Net revenue (NR) is an annual benefit, which is generated from the current entrance fees after 50% is spent on annual operating costs. As calculated earlier, NR is \$201,721.

We use a 6%¹⁴ social discount rate in the CBA of this project, but also carry out sensitivity analyses with 4% and 10%¹⁵. The benefit-cost ratio (BC ratio) and internal rate of return (IRR) will also be calculated.

Table 26 presents NPV s, BC ratios and IRR s for the My Son preservation project. The NPV s under different discount rates range from \$1.38 million to \$15.52 million, the BC ratios from 0.13 to 1.43 and the IRR is 11.7%. This suggests that the preservation project is economically viable.

Table 26. Results of the cost-benefit analysis with an infinite time horizon

Time horizon	Infinity		
Discount rates (%)	4	6	10
Net Present Value (NPV, US\$)	15,515,273	9,341,732	1,377,083
Benefit Cost ratio (BC ratio)	1.43	0.86	0.13
IRR (%)	11.7		

We then assume that the preservation project will last 20 years¹⁶ ($t = 20$), the same social discount rates are used. Table 27 presents results of the CBA¹⁷. The CBA results show that the NPV s under different discount rates are always positive; the BC ratios range from 0.07 to 0.48 and the IRR is 11.6%. This analysis suggests that the preservation for My Son is also feasible even with a shorter time horizon of the preservation project.

Table 27. Results of the cost-benefit analysis with the time horizon of 20 years

Time horizon	20 years		
Discount rates (%)	4	6	10
Net Present Value (NPV, US\$)	5,273,511	3,411,207	778,490
Benefit Cost ratio (BC ratio)	0.48	0.31	0.07
IRR (%)	11.6		

¹⁴ This is a relatively low discount rate, since it is likely that future generations will value the preservation of cultural heritages such as My Son more than the current generation. As time goes by, many cultural heritages will deteriorate or be lost. Cultural heritages are already scarce, but they will be scarcer, and thus the value of the heritage will increase.

¹⁵ The World Bank sometimes uses a 10% discount rate for their investments. Thus we will check for this option.

¹⁶ This means that we are now assuming that the current preservation investment lasts only 20 years (before a new preservation investment project will be implemented).

¹⁷ In calculating we apply the equation (13) with keeping C_0 , B_{locals} , $B_{non-mysonvisitors}$ the same as before, and modifying

the last three components by the following formula $\sum_{t=0}^{19} \frac{B_t}{(1+r)^t}$.

6.0 CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

In this study CV and CE were used to estimate the economic benefits of the preservation of the My Son sanctuary in Vietnam. The study focused on estimating the economic benefits that accrue to (i) foreign visitors to My Son; (ii) Vietnamese visitors to My Son; (iii) Vietnamese visitors to Hue/Hoian; and (iv) local residents. The total sample of the main surveys was 1,413; out of which 967 people were sampled for the CV study and 446 for the CE study.

This study had two limitations. The first limitation was the tax payment vehicle used in the survey of Vietnamese visitors to Hue/Hoian. The tax vehicle was selected using focus groups and pretest surveys, but it would be complicated to implement in reality. Secondly, the fact that the survey of foreign visitors was only carried out in English and French excluded potential respondents not fluent in either of these languages.

The results show that the majority of independent variables from both the CV and CE studies have the *a priori* expected signs and that quite a lot of them are statistically significant. This can be interpreted as indicating that the models have high construct validity.

In the CV study the mean (and median) WTP was calculated using the simple linear model, which contains the bids and an intercept. It was found to be equal to \$7.97, \$1.67, \$2.53 and \$2.11 for foreign visitors to My Son, Vietnamese visitors to My Son, Vietnamese visitors to Hue/Hoian, and local residents, respectively. The conservative aggregate WTP in the first year (i.e. 2005) was \$3,572,447 with a 95% C.I lying between \$2,528,975 and \$5,304,162 with scenario rejecters included; and \$4,237,736 with a 95% C.I of between \$3,175,411 and \$6,136,935 with scenario rejecters removed.

The results show that CV and CE work equally well for both foreign visitors and local residents when applied to cultural heritage in a developing country like Vietnam. Statistical testing showed that equality between the CE and CV estimates could not be rejected in almost all cases, except in the non-parametric model for the local residents. This suggests that CE and CV produce very similar results, which is a test of convergence validity.

The pooling of the two data sources to test for equality between the CV and CE approaches provided a powerful test for invariance between different sources of data. For both foreign visitors and local residents, the results showed that none of the scale parameters are significantly different from unity, implying that the parameters in the CV and CE models are not different, and that the error variances are also not different.

Non-parametric and parametric estimates were calculated and compared. Although non-parametric measures are not directly comparable with parametric measures, the results show that there is no large divergence between them.

Results shows that the adoption of the optimal price regime would both increase revenues and reduce congestion at the site. However, this pricing regime would not reduce the congestion problem due to Vietnamese visitors. The idea of imposing a pricing structure with seasonal differentiations to reduce the number of Vietnamese visitors in the high season is feasible. Results also show that if the justification of investments were only based on entrance fees, then this would lead to a level of preservation for My Son that would not be optimal for the site nor for the society. The inclusion of benefits derived from non-visitors are needed to argue for increased preservation investment. The CBA results show that the preservation project for the My Son cultural heritage seems to be an economically viable proposition.

This successful application of CV and CE to cultural heritage supports further research on the valuation of cultural heritage in other developing countries. More studies should be encouraged in order to adapt these stated preference methods to the institutions in developing countries, and to increase the reliability of the estimated benefits.

The DM format appears to be worthy of further investigation since the treatment of scenario rejecters (protest responses) has been shown to have an impact on the magnitude of WTP estimates.

There is limited empirical evidence in Vietnam on the income elasticity of WTP in terms of increased fees and taxes. This indicates that additional studies need to be conducted to ensure an informed basis for the development of an optimal fee policy in pricing cultural heritage.

The lack of data on the environmental carrying capacity of My Son shows the need for future research to fill this information gap. More needs to be known about the impact of additional visitors on this cultural resource if a truly sustainable pricing policy is to be developed.

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APPENDIX

Table 4b. The CV question using DM format to interview Vietnamese visitors to My Son

<p>One way to help pay for it would be to have every adult Vietnamese visitor to My Son pay a one-time special fee via an increase in entrance fee.</p> <p>If an <u>increase</u> of the entrance fee to your visit to My Son by ---- VND for the preservation plan of the My Son sanctuary is to be undertaken, would you pay for it? (Please choose the one option which most closely resembles your view).</p> <p>Yes (go to IV3)</p> <p>No (go to IV1)</p> <p>Yes, if I have money (go to IV1, select option 1)</p> <p>Yes, but too expensive (go to IV1, select option 2)</p> <p>Yes, if an acceptable method of paying is found (go to IV1, select option 3)</p> <p>Yes, if other people agree (go to IV1, select option 4)</p> <p>Yes, if period of payment is extended (go to IV1, select option 5)</p> <p>Others (specify) -----</p> <p>DK</p>

Table 4c. The CV question of DM format to interview Vietnamese visitors to Hue/Hoian

<p>One way to help pay for it would be to have every adult Vietnamese visitor pay a one-time special fee via an increase in tax.</p> <p>If an <u>increase</u> in tax by ---- VND for the preservation plan of the My Son sanctuary is to be undertaken, do you agree to pay for it? (Please choose the one option which most closely resembles your view).</p> <p>Yes (go to IV3)</p> <p>No (go to IV1)</p> <p>Yes, if I have money (go to IV1, select option 1)</p>

Yes, but too expensive (go to IV1, select option 2)

Yes, if an acceptable method of paying is found (go to IV1, select option 3)

Yes, if other people agree (go to IV1, select option 4)

Yes, if period of payment is extended (go to IV1, select option 5)

Others (specify) -----

DK

Table 4d. The CV question using DM format to interview local residents

Suppose the preservation plan for My Son is implemented, and each household would have to pay a (one-time) fee of --- VND from tax increase. This fee is to be used for no other purposes than preserving My Son. If the majority of people advocate this plan, this fee will be collected, and My Son will be preserved. Otherwise, My Son heritage would be likely to continue to deteriorate.

Do you agree to pay for implementation of this preservation plan? (Please choose the one option which most closely resembles your view)

Yes (go to IV3)

No (go to IV1)

Yes, if I have money (go to IV1, select option 1)

Yes, but too expensive (go to IV1, select option 2)

Yes, if an acceptable method of paying is found (go to IV1, select option 3)

Yes, if other people agree (go to IV1, select option 4)

Yes, if period of payment is extended (go to IV1, select option 5)

Others (specify) -----

DK

Table 10b. Bids and proportion of CV-answers for Vietnamese visitors to My Son

Bids (thousand VND)	CV answer									Total
	Yes	No	Yes, if I have money	Yes, but too expensive	Yes, if an acceptable method of paying is found	Yes, if other people agree	Yes, if payment period is extended	Others	DK	
5	43	10	3	0	2	2	0	1	1	62

	(69.4)	(16.1)	(4.8)		(3.2)	(3.2)		(1.6)	(1.6)	(100.0)
20	31 (50.8)	11 (18.0)	8 (13.1)	5 (8.2)	3 (4.9)	1 (1.6)	2 (3.3)	0	0	61 (100.0)
50	18 (29.5)	17 (27.9)	8 (13.1)	7 (11.5)	7 (11.5)	4 (6.6)	0	0	0	61 (100.0)
100	12 (19.7)	17 (27.9)	13 (21.3)	8 (13.1)	4 (6.6)	2 (3.3)	1 (1.6)	1 (1.6)	3 (4.9)	61 (100.0)
Total	104 (42.4)	55 (22.4)	32 (13.1)	20 (8.2)	16 (6.5)	9 (3.7)	3 (1.2)	2 (0.8)	4 (1.6)	245 (100.0)

Note: Numbers in parentheses are percentages of CV answers.

Table 10c. Bids and proportion of CV-answers for Vietnamese visitors to Hue/Hoian

Bids (thousand VND)	CV answer									Total
	Yes	No	Yes, if I have money	Yes, but too expensive	Yes, if an acceptable method of paying is found	Yes, if other people agree	Yes, if payment period is extended	Others	DK	
5	49 (81.7)	6 (10.0)	2 (3.3)	0	1 (1.7)	0	0	2 (3.3)	0	60 (100.0)
20	32 (54.2)	12 (20.3)	7 (11.9)	6 (10.2)	1 (1.7)	1 (1.7)	0	0	0	59 (100.0)
50	28 (46.7)	15 (25.0)	5 (8.3)	7 (11.7)	3 (5.0)	2 (3.3)	0	0	0	60 (100.0)
100	8 (13.6)	27 (45.8)	6 (10.2)	10 (16.9)	2 (3.4)	1 (1.7)	0	4 (6.8)	1 (1.7)	59 (100.0)
Total	117 (49.2)	60 (25.2)	20 (8.4)	23 (9.7)	7 (2.9)	4 (1.7)	0	6 (2.5)	1 (0.4)	238 (100.0)

Table 10d. Bids and proportion of CV-answers for local residents

Bids (thousand VND)	CV answer									Total
	Yes	No	Yes, if I have money	Yes, but too expensive	Yes, if an acceptable method is found	Yes, if other people agree	Yes, if payment period is extended	Others	DK	
5	43 (71.7)	6 (10.0)	4 (6.7)	1 (1.7)	1 (1.7)	4 (6.7)	0	0	1 (1.7)	60 (100.0)
20	30 (50.0)	10 (16.7)	6 (10.0)	0	1 (1.7)	9 (15.0)	2 (3.3)	0	2 (3.3)	60 (100.0)
50	28 (45.9)	11 (18.0)	7 (11.5)	1 (1.6)	1 (1.6)	8 (13.1)	4 (6.6)	1 (1.6)	0	61 (100.0)
100	8 (13.3)	20 (33.3)	14 (23.3)	6 (10.0)	0	4 (6.7)	2 (3.3)	1 (1.7)	5 (8.3)	60 (100.0)
Total	109 (45.2)	47 (19.5)	31 (12.9)	8 (3.3)	3 (1.2)	25 (10.4)	8 (3.3)	2 (0.8)	8 (3.3)	241 (100.0)

Table 17b. Estimated parameters of the logit model (SR out)

Variables	Foreign visitors to My Son (p-value)	Vietnamese visitors to My Son (p-value)	Vietnamese visitors to Hue/Hoian (p-value)	Local residents (p-value)
Constant	-1.18 (.233)	-2.64 (.005)	3.20 (.027)	1.02 (.260)
Logbids	-1.82 (.000)	-0.79 (.000)	-1.65 (.000)	-1.04 (.000)
Sex	0.0005 (.509)	-0.0001 (.916)	0.002 (.242)	-0.001 (.323)
Age	-0.004 (.810)	-0.002 (.363)	-0.001 (.170)	-0.14 (.365)
Tinc	1.26 (.041)	0.64 (.038)	0.13 (.812)	1.18 (.002)
Ugo	1.61 (.001)	0.68 (.067)	3.06 (.000)	1.37 (.025)
Alone	-0.21 (.627)	0.31 (.412)	-2.86 (.000)	-
Htype	-	-	-	0.20 (.667)
Child	-	-	-	-0.06 (.875)
Hcity	1.15 (.012)	-	-	-
Hue	-0.0004 (.576)	-0.003 (.141)	2.14 (.051)	-0.29 (.511)
Hoian	0.001 (.654)	-0.005 (.894)	-2.54 (.000)	1.14 (.004)
Visit	-	-0.49 (.316)	2.54 (.000)	1.32 (.009)
Importance	0.37 (.123)	0.16 (.586)	0.15 (.742)	0.99 (.009)
Know	0.03 (.932)	0.45 (.352)	0.001 (.444)	0.12 (.743)
Satisfied	1.98 (.001)	2.50 (.001)	-	-
Ftrip	2.26 (.000)	2.47 (.000)	1.37 (.004)	0.95 (.023)
Before	-1.68 (.001)	0.77 (.112)	-	-
Summary statistics				
Log-likelihood	75.92	-100.40	-54.25	-104.21
Pseudo-R ²	0.49	0.36	0.65	0.32
Chi-squared	144.55	111.08	200.10	99.26
Number of obs.	217	226	223	222

Table 19b. Multinomial logit models for foreign visitors (SR out¹⁸)

Variables	Model 1 (Attributes only)		Model 2 (Attributes and socioeconomic variables)		Model 3 (Attributes, socioeconomic and attitude variables)	
	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>US\$</i>)	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>US\$</i>)	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>US\$</i>)
Constant	-0.94 (.000)		-0.73 (.064)		-0.93 (.032)	
Price	-0.19 (.000)		-0.21 (.000)		-0.21 (.000)	
Preservation	1.30 (.000)	6.7	1.34 (.000)	6.5	1.39 (.000)	6.7
Infrastructure	0.32 (.015)	1.7	0.32 (.022)	1.6	0.33 (.021)	1.6
Service	-0.13 (.312)		-0.07 (.611)		-0.08 (.571)	
Sex	-		-0.08 (.549)		-0.09 (.502)	
Age	-		-0.12 (.279)		-0.15 (.193)	
Ugo	-		-0.31 (.027)		-0.32 (.031)	
Tinc	-		0.74 (.006)		0.79 (.004)	
Alone	-		0.44 (.000)		0.35 (.004)	
Hcity	-		-		0.05 (.774)	
Hue	-		-		0.20 (.173)	
Hoian	-		-		-0.11 (.521)	
Importance	-		-		0.07 (.670)	
Know	-		-		0.37 (.010)	
Satisfied	-		-		0.09 (.784)	
Ftrip	-		-		0.18 (.243)	
<i>Summary statistics</i>						
Log-likelihood	-754.98		-683.94		-666.07	
Chi-squared	357.19		374.90		382.36	
Adjusted R ²	0.20		0.22		0.22	
Number of obs.	1,359 (0 skipped)		1,268 (0 skipped)		1,247 (0 skipped)	

¹⁸ Two debriefing questions ‘I always choose the higher cost option because I won’t have to pay anyway’ and ‘I have doubts about the information presented’ were used to identify elements of scenario rejecters in CE.

Table 20b: Multinomial logit models local residents (SR out)

Variables	Model 1 (Attributes only)		Model 2 (Attributes and socioeconomic variables)		Model 3 (Attributes, socioeconomic and attitude variables)	
	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>'000 VND</i>)	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>'000 VND</i>)	<i>Coeff.</i> (<i>p-value</i>)	<i>MWTP</i> (<i>'000 VND</i>)
Constant	-0.10 (.574)		-0.86 (.022)		-1.14 (.013)	
Price	-0.02 (.000)		-0.02 (.000)		-0.02 (.000)	
Preservation	0.75 (.000)	35.2	0.78 (.000)	35.2	0.79 (.000)	35.2
Infrastructure	0.41 (.003)	19.4	0.46 (.001)	21.1	0.49 (.001)	22.0
Service	0.09 (.562)		0.07 (.613)		0.07 (.620)	
Sex	-		0.03 (.843)		-0.11 (.446)	
Age	-		-0.01 (.934)		0.02 (.778)	
Tinc	-		0.71 (.000)		0.63 (.002)	
Edu	-		0.65 (.003)		0.54 (.017)	
Htype	-		0.51 (.054)		0.67 (.015)	
Child	-		0.12 (.401)		0.11 (.410)	
Hue	-		-		-0.03 (.861)	
Hoian	-		-		-0.21 (.233)	
Visit	-		-		0.33 (.212)	
Importance	-		-		-0.04 (.873)	
Know	-		-		0.26 (.033)	
Ftrip	-		-		0.51 (.001)	
Summary statistics						
Log-likelihood	-706.22		-678.38		-665.90	
Chi-squared	443.06		481.82		506.78	
Adjusted R ²	0.29		0.31		0.32	
Number of obs.	1,449 (0 skipped)		1,449 (14 skipped)		1,449 (14 skipped)	

Table 19c. RPL models for foreign visitors

Variables	Model 1 (Attributes only)		Model 2 (Attributes and socioeconomic variables)		Model 3 (Attributes, socioeconomic and attitude variables)	
	<i>Mean effect (p-value)</i>	<i>S.D. (p-value)</i>	<i>Mean effect (p-value)</i>	<i>S.D. (p-value)</i>	<i>Mean effect (p-value)</i>	<i>S.D. (p-value)</i>
Constant	-0.95 (.000)		-0.65 (.111)		-0.62 (.118)	
Price	-0.22 (.000)	0.01 (.487)	-0.23 (.000)	0.02 (.385)	-0.22 (.000)	0.04 (.052)
Preservation	1.40 (.000)	0.15 (.565)	1.36 (.000)	0.25 (.385)	1.38 (.000)	0.11 (.684)
Infrastructure	0.39 (.007)	0.47 (.049)	0.37 (.011)	0.19 (.396)	0.33 (.013)	0.08 (.737)
Service	-0.05 (.681)	0.83 (.013)	0.001 (.980)	0.86 (.010)	0.001 (.990)	0.59 (.121)
Sex	-		-0.14 (.304)		-0.08 (.545)	
Age	-		-0.15 (.184)		-0.18 (.119)	
Ugo	-		-0.22 (.109)		-0.21 (.140)	
Tinc	-		0.58 (.022)		0.62 (.014)	
Alone	-		0.38 (.002)		0.27 (.023)	
Hcity	-		-		0.05 (.738)	
Hue	-		-		0.18 (.199)	
Hoian	-		-		-0.30 (.076)	
Importance	-		-		-0.03 (.843)	
Know	-		-		0.35 (.015)	
Satisfied	-		-		0.58 (.030)	
Ftrip	-		-		0.23 (.131)	
<i>Summary statistics</i>						
Log-likelihood	-870.27		-797.17		-773.52	
Chi-squared	442.87		443.51		461.71	
Adjusted R ²	0.20		0.21		0.22	
Number of obs.	1,575 (0 skipped)		1,470 (0 skipped)		1,449 (0 skipped)	

Table 20c: RPL models for local residents

Variables	Model 1 (Attributes only)		Model 2 (Attributes and socioeconomic variables)		Model 3 (Attributes, socioeconomic and attitude variables)	
	<i>Mean effect (p-value)</i>	<i>S.D. (p-value)</i>	<i>Mean effect (p-value)</i>	<i>S.D. (p-value)</i>	<i>Mean effect (p-value)</i>	<i>S.D. (p-value)</i>
Constant	-0.13 (.534)		-0.99 (.015)		-1.39 (.003)	
Price	-0.03 (.000)	0.009 (.000)	-0.03 (.000)	0.009 (.000)	-0.03 (.000)	0.009 (.000)
Preservation	0.87 (.000)	0.09 (.714)	0.83 (.000)	0.35 (.175)	0.80 (.000)	0.03 (.927)
Infrastructure	0.50 (.001)	0.18 (.591)	0.51 (.001)	0.71 (.012)	0.53 (.000)	0.14 (.634)
Service	0.03 (.820)	1.08 (.001)	0.06 (.681)	0.13 (.596)	0.05 (.730)	0.32 (.252)
Sex	-		0.08 (.606)		-0.07 (.655)	
Age	-		0.04 (.589)		0.03 (.713)	
Tinc	-		0.76 (.000)		0.60 (.003)	
Edu	-		0.44 (.066)		0.30 (.199)	
Htype	-		0.42 (.141)		0.57 (.043)	
Child	-		0.12 (.442)		0.14 (.370)	
Hue	-		-		0.06 (.727)	
Hoian	-		-		-0.28 (.127)	
Visit	-		-		0.31 (.108)	
Importance	-		-		0.01 (.958)	
Know	-		-		0.41 (.001)	
Ftrip	-		-		0.60 (.000)	
Summary statistics						
Log-likelihood	-743.50		-722.60		-705.28	
Chi-squared	657.59		679.99		714.63	
Adjusted R ²	0.30		0.31		0.33	
Number of obs.	1,547 (0 skipped)		1,533 (0 skipped)		1,533 (0 skipped)	

Table 23b. A comparison of non-parametric estimates between CV and CE for foreign visitors

Bids (UD\$)	CV		CE	
	No. of respondents	% yes	No. of respondents	% yes
1	60	78.3	402	80.8
5	61	69.9	396	66.2
10	61	45.9	384	46.1
15	61	11.5	393	23.7
	243	51.0	1,575	54.4

Table 23c. A comparison of non-parametric estimates between CV and CE for local residents

Bids (VND)	CV		CE	
	No. of respondents	% yes	No. of respondents	% yes
5,000	60	71.7	388	67.9
20,000	60	50.0	-	-
50,000	61	45.9	387	35.4
100,000	60	13.3	386	18.7
200,000	-	-	386	6.2
	241	45.2	1,547	32.1