Development Economic Review
Volume 12 No.2 (July 2018)

Valuing Cultural Heritage: A Case Study of Temples in Chiang Saen

Pongsan Sanyakamdhorn* Udomsak Seenprachawong**

Abstract

This paper presents a study of the willingness to pay by the Thai population to preserve historic temples in Chiang Saen, an ancient city in Chiang Rai Province, Thailand. The temples are facing degradation and deterioration from natural disasters such as storms, earthquakes and human activities. This study aimed to determine the factors that affected willingness to pay by the population to preserve cultural heritage in Chiang Saen and investigate the concept of willingness to pay and its attributions. The contingent valuation method was applied to conduct an economic assessment of non-market values for the preservation of ancient temples. Results indicated that Thai people have a positive and optimistic perception and attitude towards cultural heritage in Chiang Saen ancient city and most respondents stated their willingness to pay for a preservation programme. The logit model demonstrated that the determinants of bid amount, gender, income, age and education level significantly influenced the willingness to pay. This willingness to pay analysis will be advantageous for decision-making on how best to preserve cultural heritage effectively and efficiently.

Keywords: Contingent Valuation Method, Cultural Heritage, Economic Valuation, Willingness to Pay.

* Graduate Student - Graduate School of Development Economics, National Institute of Development Administration, Serithai Road, Klong-Chan, Bangkapi, Bangkok, Thailand 10240 – Email: pongsan.dh@gmail.com

** Associate Professor of Economics - Graduate School of Development Economics, National Institute of Development Administration, Serithai Road, Klong-Chan, Bangkapi, Bangkok, Thailand 10240 – Email: sudomsak@yahoo.com

พัฒนาการเศรษฐกิจปริทรรศน์
ปีที่ 12 ฉบับที่ 2 (กรกฎาคม 2561)

การประเมินมูลค่าของมรดกทางวัฒนธรรม กรณีศึกษาของวัดในเชียงแสน จังหวัดเชียงราย

พงษ์ศัลย์ ศัลยกำธร* อุดมศักดิ์ ศีลประชาวงศ์**

บทคัดย่อ

งานวิจัยชิ้นนี้จัดทำขึ้นเพื่อศึกษาความเต็มใจที่จะจ่ายของประชากรไทยต่อการอนุรักษ์โบราณสถานในเมืองโบราณเชียงแสน จังหวัดเชียงรายผู้วิจัยได้ทำการสำรวจข้อมูลจากกลุ่มตัวอย่างโดยใช้แบบสอบถามจำนวน 480 ตัวอย่างโดยใช้วิธีสมมติเหตุการณ์ (Contingent Valuation Method; CVM) เพื่อศึกษาความเต็มใจที่จะจ่ายในการอนุรักษ์วัดโบราณในเมืองโบราณเชียงแสน จังหวัดเชียงราย ผลการศึกษาพบว่า ชาวไทยโดยทั่วไปมีทัศนคติที่ดีต่อการอนุรักษ์มรดกทางวัฒนธรรมในเมืองโบราณเชียงแสนเนื่องจากผู้ตอบแบบสอบถามส่วนใหญ่ระบุความเต็มใจที่จะจ่ายเป็นบวกสำหรับการอนุรักษ์วัดโบราณดังกล่าว จากการวิเคราะห์ด้วยแบบจำลองโลจิตพบว่าความเต็มใจจ่ายนี้ขึ้นอยู่กับปัจจัยด้านรายได้ เพศ การศึกษาและอายุของผู้ตอบแบบสอบถามเป็นสำคัญ ผลของการศึกษานี้จะเป็นประโยชน์สำหรับผู้กำหนดนโยบายในการวางแผนสำหรับการจัดทำโครงการอนุรักษ์โบราณสถานนี้ได้อย่างมีประสิทธิภาพ

คำสำคัญ: การประเมินมูลค่า, ความเต็มใจที่จะจ่าย, มรดกทางวัฒนธรรม, วิธีสมมติเหตุการณ์

---

* นักศึกษาปริญญาโท - คณะพัฒนาการเศรษฐกิจ สถาบันบัณฑิตพัฒนบริหารศาสตร์ถนนเสรีไทย แขวงคลองจั่น เขตบางกะปิ กทม 10240 - Email:pongsan.dh@gmail.com

**รองศาสตราจารย์ - คณะพัฒนาการเศรษฐกิจ สถาบันบัณฑิตพัฒนบริหารศาสตร์ถนนเสรีไทย แขวงคลองจั่น เขตบางกะปิ กทม 10240 - Email: sudomsak@yahoo.com

1. Introduction

Cultural heritage can be considered as the outcome of collective human activities expressed in various senses to represent masterpieces of human creativity and wisdom. Cultural heritage is an expression of the lifestyle developed by a community over time, portrayed as customs, practices, places, objects, artistic expression and values. It represents a critical historical state of human development and incorporates sites that have remarkable natural beauty and artistic importance and also structures and buildings of architectural or archaeological significance. Ashworth and Tunbridge (2011) suggested that to understand the values of cultural heritage, people must first recognize some benefit in the heritage item that cannot be expressed in financial terms but rather as an intangible worthiness. This promotes the concept of caring about cultural heritage through appreciating and understanding its importance. Since cultural heritage defines the history of civilization, it must be preserved and passed down for future generations to respect, cherish and admire.

One of the important historic cultural heritage sites of Thailand is Chiang Saen, an ancient city located in Chiang Rai Province, Northern Thailand. The history of Chiang Saen is recorded in many ancient chronicles (Yangkul, 2013) as the first city populated by Thais. Three principle ancient chronicles inscribed the history of Chiang Saen: the Chronicles of the origin of Suvan Komkham, Singhanawat Kumar and Hiran Nakon Ngernyang (Princess Maha Chakri Siridhorn Anthropology Centre, 2016). According to these three chronicles, Chiang Saen was originally founded by King Saen Phu in A.D. 1328 and later the capital city was relocated to Chiang Mai and Chiang Saen became isolated from other kingdoms. Chiang Saen was established as a district of Chiang Rai Province in 1957.

Figure 1: Chetwan Temple (Top left), Pra Buad Temple (Top right), Ku Tao Temple (Bottom left), Pra Yuen Temple (Bottom right)

The temples in Chiang Saen are an important component of Thailand's historical and religious legacy. Many hundreds of ancient temples are located in Chiang Saen according to data provided by the Buddhist Monastery Division, National Office of Buddhism (2016). However, dozens of these temples (see Figure 1) have now become dilapidated wreckages covered by a green cloak of vegetation. Historically, Chiang Saen is one of the oldest districts of Chiang Rai Province.

There were several reasons why Chiang Saenwas chosen as the area to research cultural heritage sites. First, every corner of the city is permeated with historic temples since Chiang Saen was the ancient capital city in the era of the kingdom of Yonok Nak Phan before it became integrated into the kingdom of Lanna. Historically, Chiang Saen has been greatly influenced by Buddhism, with ancient buildings reflecting the architectural styles of Thailand through the famous Buddha statue design called "Chiang Saen style". Chiang Mai, as the capital city of the kingdom of Lanna, is also famous for the memorable historic temples located in the city. However, the temples of Chiang Saen ancient city require urgent maintenance and conservation action. Chiang Mai is a popular tourist destination and many cultural heritage sites are supported by government and funded through the expenditure of both domestic and foreign tourists.

The second reason is that the most striking ancient temples are located in Chiang Saen compared with other cities in Chiang Rai Province. Chiang Saen was once the capital city of the kingdom of Yonok Nak Phan and antiques were found in the hypogea beneath the historic temples. These artifacts were used by archaeological scholars to trace the history of Yonok Nak Phan kingdom which is shrouded in mystery.

Another reason is that Chiang Saen's cultural heritage sites have been frequently damaged by natural disasters such as earthquakes and flooding (Fredrickson, 2014). The damage is, in many cases, irreversible and Thailand has lost the opportunity to enrich its culture with these historic national treasures. There is one fault line in Chiang Saen which is known as Chiang Saen fault line or Mae Chan fault line. This places Chiang Saen and its memorial and meaningful historic temples at risk of the seismic hazard as if there is an earthquake that strikes another place rather than Chiang Saen but a big tremor at one fault line theoretically could affect the other fault lines nearby. This hypothetical assumption had been proved by the actual quake in 2011 when its epicentre was located in Myanmar but caused the great pagoda of Chedi Luang temple to collapse (see Figure 2), the pagoda of Pradhat Chomkitti temple to tilt (see Figure 3) and the shrine of Pradhat Doi Bhukhao temple to tumble down, (MGR Online, 2011).

Figure 2: Collapsed Pagoda of Chedi Luang Temple

Figure 3: Leaning Pagoda of Pradhat Chomkitti Temple

Cultural heritage can also be considered as a valuable economic development resource. Bowitz et al. (2009) analyzed the benefits of cultural heritage on the economic development of the town of Røros in Norway. They suggested that cultural heritage was creating jobs amounting to around seven percent of the overall employment in the region. A report published by the Local Government Association (2013) comprising local authorities and other public-interest institutions in England and Wales investigated how culture and art contributed as economic drivers. Five major areas of economic impact were identified as: 1) attracting visitors, 2) creating jobs, developing skills and reducing unemployment, 3) attracting and retaining businesses, 4) revitalizing the area and 5) developing talent and investing in future value. If the policymakers do not well plan for the upcoming economic development, it can be a tragedy for many cultural heritage places especially when is economic development investment is in the shared area of that historic buildings.

Nonetheless, the current state of conservation and restoration of those temples are poor because there are a large number of places that are in urgent need of preservation programme and maintenance works and inadequate government support. If we do not take the conservation of cultural heritage seriously, and the damage cannot be reversed back, then the posterity or the future generation will certainly lose their opportunity to be enriched in national identity and self-esteem

This study aimed at valuing the non-market, intangible benefits of cultural heritage sites in Chiang Saen to show how they can contribute many beneficial advantages. Results will provide a firm basis for measuring and quantifying the economic values of cultural heritage as specific and unique goods which preserve ancient cultures. Cultural heritage can be viewed as a public asset, which has two main characteristics of benefit to the local people as non-excludable and non-rival. Put differently, one enjoys cultural heritage site no matter how much he pays for the entrance fee, he cannot exclude the others not to enjoy the same cultural heritage and once he enjoys the heritage good, his consumption of seeing and visiting cultural heritage site does not affect the others' utilities or preferences on cultural good. Therefore, as cultural heritage is generally a public good, for government to provide a public good, the government must compare a marginal cost of providing cultural heritage, say, a preservation program on the historic sites, and marginal social benefit and see whether it is worth investing domestic resource on the conservation program of the ancient sites. If the overall society has a positive preference towards the cultural heritage preservation policy, then it is government's job to analyze costs and benefits of providing and conserving such historic good.

This research will contribute useful information to government or non-governmental organizations (NGOs), since cultural heritage goods are not traded in the marketplace but exist as intangible benefits for people in the society. Decision-making and policy implementation by public sectors must respect the intrinsic value of cultural heritage sites and implement policies that will attract investment for preservation programs to restore these heritage sites to their former glory for the benefit of the local people, tourists and the Thai nation.

2. Methods

Economic value can be classified into three categories (Goodstein, 2011). The total economic value of a natural resource can be represented as the sum of three components as use value, non-use value and option value. Use value represents the advantage that individuals can obtain when consuming the goods both directly and indirectly. Non-use value is the value that can be gained from the knowledge of existent cultural heritage sites and the benefit from leaving the cultural goods to posterity as bequests. Option value is the value placed on private willingness to pay for maintaining or preserving a public asset, with no likelihood of ever using it. Put another way, these economic values of non-market benefits can be written as an equation:

Total value = Use value + Non-use value + Option value

This survey encompassed a random sample of both users and non-users of cultural heritage sites. Users obtained use value from direct consumption of the cultural goods through the experience of visiting the temples in Chiang Saen. Non-users obtained non-use value through various channels as:

- Bequest benefits – since the temples in Chiang Saen contain significant national cultural heritage and identity, the continued existence of these temples will pass on benefits for future generations.

- Existence benefits –international recognition of the intrinsic value of the existing temples in Chiang Saen can contribute to national pride and identity and attract tourists.

2.1 Contingent Valuation Method

The contingent valuation method (CVM) is used to estimate economic value for ecosystems and economic services. It involves asking people to state their willingness to pay (WTP) or accept for specific cultural goods based on a hypothetical scenario. To explain the welfare measure that is estimated through the CVM, consider the following utility function,

$$V = U(Y, X, Q)$$

where Y is income, X represents the characteristics of the individual and Q is the state of conservation of the temples.

Let Q_0 be the complete physical description of the temples. There is a policy or conservation program to improve the state of preservation of the temples from the current state Q_0 to Q_1 which represents some different physical description of cultural heritage sites. If the combination of Y, X and Q that yields higher utility is preferred to the combination of Y, X and Q that yields a lower level of utility, then the welfare measure to be empirically estimated is given by:

$$V(Y, X, Q0) = V(Y - WTP, X, Q1)$$

where the quality of goods will be improved from Q_0 to Q_1 if the preservation policy is implemented. The value that the individual places on the alteration from Q_0 to Q_1 is then the largest amount of money that he/she would be willing to give up to attain the state with better-conserved temples at Q_1.

In this study, the hypothetical conservation program was developed to elicit the WTP of the public for the cultural assets. However, hypothetical bias can be a constraint in the use of CVM since problems arise when the samples do not take the survey seriously as they will not have to genuinely pay the amount of money. Therefore, the Cheap Talk script of Loomis (2014) was applied to eliminate any hypothetical bias by convincing the respondents to reveal their true WTP. A one-time donation was used as a payment vehicle. This study did not use tax payment or entrance fees as a payment method to prevent personal bias since the area of this study specifically focused only on Buddhist temples. To tax every single individual with different personal beliefs and religions could lead to a bias in WTP responses because the respondents may feel that it was unfair to pay for conservation of the temples with Buddhist significance using only tax. In addition, the selected temples are all free-entry and the quality of each temple varies across area, the entrance fee payment was then not a proper payment vehicle for this study. Each respondent received a sealed envelope which contained a predetermined WTP bid card. The individuals could accept or reject to donate the given amount to the conservation program of cultural heritage sites without the interviewers knowing their answers. This technique can psychologically encourage the respondents to respond to the survey more effectively and show their true WTP towards cultural heritage. The selected individuals were asked the following question:

“Suppose that there was a referendum for everyone to vote for the donation of X Baht to a trust fund for which the interest on endowment would be managed to pay for the maintenance of the historic temples in Chiang Saen. If more than half of the respondents choose ‘YES’ to the trust fund, then the referendum is passed and everyone pays X Baht. All the money received will be managed and administered by the 8th Regional Office of Fine Arts, Chiang Mai (ROFA) who will take responsibility for the northern cultural heritage of Thailand. If more than half of the respondents answer ‘NO’, then no one pays and no money is sent to the 8th Regional Office of Fine Arts, Chiang Mai. Considering your current income, as well as your expenses for food, clothing, utilities, housing, etc., I want you to suppose that we are taking a secret vote. Do you vote for this referendum?”

If the individuals chose 'YES' to the given question, then they were asked to state their maximum WTP. If the individuals, chose 'NO', then they were asked follow-up questions in the WTP valuation section to state their motivation behind zero WTP responses out of a list of numerous possible reasons. Reasons that reflected true null WTP included 'I have no spare income, otherwise I would pay', 'I feel the restoration of historic temples is unimportant' and 'I prefer to make the payment directly to the temple(s)'. Likewise, the survey also included reasons that reflected objection to the payment vehicle or disbelief in the proposed preservation program as, ('I do not believe paying will solve the problem' and 'I do not like the payment method'), free-riding behavior ('I think it is the government's responsibility') and lack of understanding (I fail to understand the question on willingness to pay).

Once the survey was completed, a multivariate analysis of WTP was conducted. Various techniques can be applied to calculate the value of expected WTP. One method proposed by Bishop and Heberlein (1979) used a logit model to respond to the bid level and the mean WTP was determined by numerical integration of the area below the logistic distribution function truncated from 0 to maximum bid. However, Hanemann (1984) argued that a numerical integration from 0 to infinity (∞) would be a better measure for calculating mean WTP as long as the value was constrained as a non-negative random variable. In cases where WTP was not constrained as nonnegative, the correct formula to calculate the expected WTP would require a numerical integration from -∞ to ∞ as proposed by Johansson et al. (1989). In this study, WTP is assumed to be a non-negative random variable as the willingness of the public is an amount of money which cannot be a negative value. Mean WTP was calculated by applying the sample mean of each estimated parameter and the mean WTP formula proposed by Hanemann (1984). A mathematical method can be written as:

$$Mean\ WTP\ = \frac{ln(1 + e^{\alpha + \sum \gamma_k S_k})}{\beta}$$

where α is an intercept coefficient which is a constant's coefficient, β is a slope coefficient which is a bid's coefficient, γ is a coefficient of variables, excluding bid variable, S is the mean value of each coefficient and k represents all socio-economic characteristic variables.

2.2 Survey Description

2.2.1 Study area

Table 1: Description of seven selected temples in Chiang Saen

Temple	Year built	Archaeological significance
1.Athi Tonkaew	1506	The temple consists mainly of a rectangular shrine (vihara) made of bricks and a wooden roof, the chapel (ordination hall) and the bell – shaped pagoda of Lanna style on a high indented square base. This temple was classified by the Fine Arts Department, Ministry of Culture as a historic site that needed urgent conservation action.
2.Chedi Luang	1291	The biggest temple in Chiang Saen located on the site nearby Chiang Saen National Museum. The name “Chedi Luang” was derived from the great pagoda with its height of 88 metres and width of 24 metres, made of brick plastered with stucco, with traces of the bronze covering. The pagoda was built in the style of Lanna and is considered to be the biggest bell – shaped pagoda in Chian Saen.
3.Pasak	1295	The temple comprises the main Lanna style – Pagoda which was influenced by the art of Bagan style, the main shrine made of bricks and laterite, and the chapels.
4.Pra Buad	1346	According to legend, Phaya Kue Na had this temple constructed around A.D. 1346. The significant structures are the round bell – shaped pagoda located north of the temple and the shrine 13 metres long and 20 metres wide. Inside the shrine is a pedestal base with a stucco Buddha image.
5.Pra Yuen	1506	The only archaeological site left is the octagonal Lanna style pagoda which contains the Buddha relics. It is stated in the legend that King Khamfoo, son of King Saen Phu built the pagoda in A.D. 1331 to house 140 relics of Lord Buddha.
6.Pradhat Chomkitti	1486	According to the Fine Arts Department Chronicle Vol. 61, King Phangkharaja and his son, Prachao Prohm established this temple to enshrine the Buddha’s hair on the top of ‘Doi Noi’ hill in A.D. 945. The temple has been restored many times. The pagoda was built in the form of a high chamber with a niche on each of its four sides and a bell – shaped superstructure with stucco decorations. Around the base of the pagoda is a courtyard surrounded by a boundary wall with a staircase on the eastern side.
7.Pradhat Songpinong	13^{th} – 15^{th} century	The site consists of the chapel, the Lanna style pagoda, the bell – shaped pagoda, the shrines and several ancient buildings made of bricks. In 2005, there was a discovery of a bronze Lanna Buddha image, fragments of Hariphunchai Buddha image and porcelains from the Chinese Ming dynasty.

There are 988 temples located in Chiang Rai Province and 160 of these are located in Chiang Saen district (Buddhist Monastery Division, 2016). Seven temples were chosen as the survey area which was classified by three criteria. First, temples built in the era of Yonok Nak Phan Kingdom were selected since Chiang Saen was once the capital city of the kingdom of Yonok Nak Phan and many significant temples were established during the 13th – 18th century which have now become the most valuable cultural heritage of Northern Thailand. Second, the temples must be registered by the Department of Fine Arts, Thailand. Registered temples have accessible information regarding archaeology and architecture collected and provided by the Fine Arts Department and this can be very useful when conducting a questionnaire and hypothetical scenario. Third, the temples must not be classified as abandoned as many abandoned temples are located in Chiang Saen City and their histories are ambiguous. The selected temples are listed in Table 1.

2.2.2 Contents of the questionnaire

The questionnaire was divided into four parts. The first ascertained individuals' attitudes towards cultural heritage and elicited the use and non-use values of respondents regarding the temples in Chiang Saen. Textual information was presented describing the history and current state of Chiang Saen cultural assets. The second part consisted of the willingness to pay valuation. A hypothetical scenario and photos were used to ask respondents to state their WTP for the preservation programme. Respondents were asked to pay a one-time donation to a trust fund administered by the 8th Regional Office of Fine Arts, Chiang Mai (ROFA), followed by some level of certainty questions. The third part comprised a socio-economic characteristics survey to collect socio-economic data and the final section contained questions regarding the respondents' opinions about the survey and whether it was realistic and easy to understand.

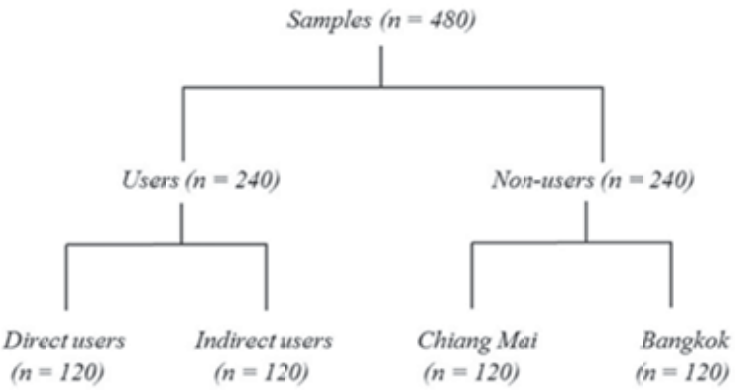
Table 2: Contents of questionnaire used in the survey

Question Category	Content of the question
PART I Attitude towards cultural heritage	Questions about public attitudes toward Chiang Saen temples e.g. How important to you are each of the following reasons for preserving these temples? - It is important to have these temples so that I or my family can visit them - It is important to have these temples so that other people can visit them - It is important to have these temples so that future generations can visit them - It is important to have these temples because their names appear in Thai history - It is important to have these temples for passing on Buddhism to future generations, etc.
PART II Willingness to pay valuation	- Suppose that we are taking a secret vote for the establishment of the trust fund for temple preservation. Do you vote for this referendum? - Reasons for willing to pay - Reasons for not willing to pay
PART III Socio-Economic Survey	Gender, Age, Religion, Education, Occupation, Monthly income
PART IV Questions about this questionnaire	How strongly you agree or disagree with each of the following statements - I find the questions in the survey are unrealistic - I find the questions in the 1st part of this survey are difficult to understand - I find the questions in the 2nd part of this survey are difficult to understand - I find the hypothesis and scenario in this survey are difficult to understand - The current state of the temples *is better than* presented here - The current state of the temples *is worse than* presented here

2.2.3 The survey and selection of respondents

The survey was divided into three phases, with the first involving a draft survey as an open-ended questionnaire to determine bids of willingness to pay which were then used in a pre-test survey to avoid a starting point bias of stated WTP. The second phase conveyed the pre-test survey with a closed-ended questionnaire to 50 samples of the general public in Bangkok. Bid amounts of stated preference on cultural assets were determined at 50, 100, 300 and 500 Thai Baht. The first two bids were the most frequently selected by the samples at roughly 80% and the two latter bids were the least frequently chosen at less than 10%. Then, the main survey was carried out. During interview, each respondent received a sealed card that specified a predetermined WTP (bid amount) to prevent the interviewer knowing their answer.

Figure 4: Sample Design



The geographical selection of respondents is depicted in Figure 2. Random samples of 480 people, in four sampling areas across Thailand, were individually asked as representatives of Thai population:

User	1) Direct use citizens as tourists at Chiang Saen historic cultural sites and students, teachers and scholars at the Faculty of Humanities and Faculty of Fine Arts, Chiang Mai University, the 8th Regional Office of Fine Arts, Chiang Mai and Chiang Saen National Museum. 2) Local people in Chiang Saen City, since they indirectly experienced cultural heritage through the consumption of other economic services enabled by the discovery of antiques in the hypogea beneath the temples or the preservation plan (e.g. restaurants, souvenir shops, market, lodging, etc.).
Non-user	3) Students, teachers and the general public in Bangkok 4) Students, teachers and the general public in Chiang Mai City centre

The first two sampling targets were categorized as users since their fields of interests and specializations pertained to the direct and indirect use of Chiang Saen cultural assets. Correspondingly, the last target group was sorted as non-users as they made infrequent use of the cultural heritage but benefitted from its existence.

3. Results

3.1 Public Attitudes towards Cultural Heritage

The sample summary revealed that, on average, approximately half of the respondents had visited at least one or two historic sites in Chiang Saen once in their lives. A total of 49.74% of the interviewees had visited by at least one ancient temple in Chiang Saen at some point in their lives and 50.26% had never been to the places before. The most visited site was Pradhat Chomkitti Temple. The survey findings on the attitudes of respondents regarding perception on the conservation of cultural assets in Chiang Saen are reported in terms of percentage in Table 3 which shows how the public perceived the importance of Chiang Saen cultural assets.

The respondents were asked how important the cultural assets were to them or their families. Results indicated that the cultural assets were important for more than half who were grateful that the temples existed so that they could visit them. This question aimed to elicit the direct use values of the interviewees. The respondents were also asked about indirect use values of cultural heritage using the tenth question. More than 60% stated that the temples were meaningful to them because they contributed economically to the local people.

For non-use values, Chiang Saen ancient temples were perceived as being an inheritance for posterity. The third statement in the questionnaire was applied to explore the bequest value of the public with the result that almost 80% praised the historic temples as their bequest to theirdescendants and only 7% disagreed with the statement. The public regarded the existence of the temples as being worthwhile. This existence value was determined from the fourth to the ninth statements in the questionnaire and results indicated that more than 50% believed that the existence of the temples contributed to national pride and identity.

Table 3: Public attitudes toward the significance of existing historic temples (percentage)

Statement	1	2	3	4	5	9
1. It is important to have these temples so that I or my family can visit them.	2.29	10.42	24.78	27.71	31.67	3.13
2. It is important to have these temples so that other people can visit them.	0.42	2.50	14.79	27.50	52.91	1.88
3. It is important to have these temples so that future generations can visit them.	1.67	6.04	15.00	27.29	48.75	1.25
4. It is important to have these temples because they inspire pride in our heritage.	0.21	5.00	14.58	25.00	53.54	1.67
5. It is important to have these temples because they contribute to the aesthetic value of the northern region of Thailand.	0.83	5.83	18.54	30.00	41.67	3.13
6. It is important to have these temples because they are part of Thai way of life.	1.88	5.63	23.96	24.58	42.07	1.88
7. It is important to have these temples because their names appear in Thai history.	1.88	15.20	28.13	25.83	23.96	5.00
8. It is important to have these temples for passing on Buddhism to future generations.	0.42	2.08	15.42	19.58	58.96	3.54
9. It is important to have these temples to remember memorable events in history.	2.08	11.88	32.08	22.50	28.96	2.50
10. It is important to have these temples because they economically contribute to the locals.	0.42	8.13	15.21	52.70	21.04	2.50

Remark: 1 = Not important, 2 = Slightly important, 3 = Moderately important, 4 = Very important,5 = Extremely important, 9 = Don't know

Table 4: Descriptive Statistics

Variable	Users			Non-users		
	Mean	Min	Max	Mean	Min	Max
WTP	0.56	0	1	0.68	0	1
Bid	237.5	50	500	237.50	50	500
Gender	0.5	0	1	0.48	0	1
Age	43.33	20	73	46.06	18	76
Education	16.74	9	21	15.20	9	21
Occupation	0.13	0	1	0.16	0	1
Income	14,395.43	3,500	57,000	15,437.85	4,500	85,000

3.2 Willingness to Pay Responses

Analysis of the data indicated that about 60% of the interviewees were willing to pay for conservation of the temples and approximately 40% were not. Table 4 presents brief statistics of public WTP. To identify the motivations behind their answers, the respondents were asked to state why they were either willing or unwilling to pay for the conservation of historic heritage from the possible list of reasons given in the questionnaire.

Table 5: Willingness to pay statistics

Bid (Baht)	WTP > 0	WTP = 0	Total sample
50	92 (76.67%)	28 (23.33%)	120
100	82 (68.33%)	38 (31.67%)	120
300	67 (55.83%)	53 (44.17%)	120
500	59 (49.17%)	61 (50.83%)	120
Total	300 (62.50%)	180 (37.50%)	480

3.3 Reasons for Willing to Pay

The main reasons for willingness to pay included 'for passing on Buddhism to their children' at roughly 33%, followed by 'for national pride' (23%) and 'for future generations' (19.33%).

Table 6: Reasons for Positive WTP Responses

Statement	Number of Respondents	Percentage
For passing on Buddhism to your children	99	33.00
For the pride of our nation	69	23.00
For future generations	58	19.33
For my own benefit	27	9.00
For society as a whole	23	7.67
For remembering historic events of our nation	12	4.00
For the appearance of the temples' names in Thai history	7	2.33
Other reasons	5	1.67

3.4 Reasons for Not Willing to Pay

The major reason underlying zero WTP response was that roughly 40% of the individuals would like to pay but they could not because they had no disposable income.

Table 7: Reasons for Null WTP Responses

Statement	Number of Respondents	Percentage
I have no spare income. Otherwise, I would pay	69	38.33
I do not like the payment method	39	21.67
I prefer to make the payment directly to the temple(s)	34	18.89
Statement	Number of Respondents	Percentage
I do not trust the administration committee	11	6.11
I do not believe paying will solve the problem	10	5.56
I fail to understand the question on willingness to pay	10	5.56
I think it is the government's responsibility	7	3.88
I feel the restoration of historic temples is unimportant	0	0.00
Other reasons	0	0.00

3.5 Multivariate Analysis

Table 7 characterizes the variables used in the estimation which included the socio-economic characteristics of the respondents. The effect of the socio-economic factors on the WTP regarding cultural heritage in Chiang Saen was estimated.

The findings in Table 8 showed that bid variable.highly affected public willingness to pay regarding the decision of acceptance or denial to contribute to the trust fund. The negative coefficient of the slope implied that the higher the predetermined bid, the lower probability of getting a positive WTP. This pertained to the WTP statistics in Table 4. People were less likely to willingly pay for the conservation of cultural heritage when the bid amount increased. Respondents' age, education, gender and monthly income also clarified statistical significance on the public WTP decision. Advancing age increased the likelihood of a null WTP. Likewise, a male respondent was less likely to willingly pay for the preservation compared to female individuals. A higher educated individual was more likely to state a higher WTP than a lower educated person. Higher income showed higher WTP compared to lower income. User variables also showed a strong statistically significant effect on WTP which implied that when comparing users and non-users of the temples, respondents who obtained the use value from the cultural heritage were more likely to praise the historic sites than non-users. The analysis was pursued further to study the explanatory power of the socio-demographic characteristics of the public on WTP for the conservation of historic temples by expanding the model into two parts as shown in Table 9.

Table 9 presents the WTP modeling results of users and non-users. Two variables, Chs and Bkk, were introduced to illustrate the geographical distribution of respondents sampled for WTP. As discussed in methodology, the respondents were sampled from different areas to increase the distribution of probability to obtain valid results. The Chs variable was added to examine whether direct users (tourists, archaeological students and teachers) or indirect users (locals in Chiang Saen ancient city) were more likely to have an optimistic perception and attitude towards cultural sites. Results indicated that there was no difference on the effect of public attitudes towards conservation of historic temples whether for indirect use or direct use. The Bkk variable was introduced to investigate whether non-users from different areas and backgrounds displayed diverse perspectives on archaeological sites. Results showed that non-users in Chiang Mai were more likely to be willing to pay for the preservation program than non-users in Bangkok.

The mean WTP was calculated from the formula mentioned before as follows:

$$For\ users;\ \ Mean\ WTP = \frac{ln\left(1+ e^{-0.252+1641.9}\right)}{0.0037} = 623.6458$$

$$For\ non-users;\ \ Mean\ WTP\ = \frac{ln(1+\ e^{-0.4688+921.8744})}{0.0035} =\ 256.0320$$

Thus, mean WTP values were 623 Thai Baht for users and 256 Baht for non-users. Multiplying the mean WTP by the study population, the total aggregate values of Chiang Saen ancient temples were estimated at 29.99 million Baht per annum for individuals who experienced use values of Chiang Saen temples and 39.94 million Baht per annum for non-users as Chiang Mai and Bangkok citizens.

Table 8: Variable Description

Variable	Description/Question	Coded
WTP(dependent variable)	Suppose that we are taking a secret vote. Do you vote for this referendum?	0 = No, 1 = Yes
Bid	Bid amount	50, 100, 300, 500
Age	The respondent's age	
Gender	The respondent's gender	0 = Female, 1 = Male
Education	The respondent's education	
Occupation	The respondent's occupation	
Income	The respondent's income	
Users		0 = Non-users 1 = Users
Chs		0 = Indirect user 1 = Direct user
Bkk		0 = if the non-user was sampled in Chiang Mai 1 = if the non-user was sampled in Bangkok

Table 9: Overall WTP Modeling Results

Variable	Coefficient (Std. Error)	p-value
Constant	-0.0679 (0.0545)	0.251
Bid	-0.0031*** (0.0012)	0.009
Age	-0.0097** (0.0043)	0.023
Gender	-0.0279*** (0.0067)	0.000
Education	0.2111*** (0.0735)	0.004
Occupation	0.0782 (0.0730)	0.284
Income	0.1257*** (0.0233)	0.000
Users	0.0687*** (0.0257)	0.007
Log-Likelihood	-291.94446	
Number of Observations	480	

Remark : * Significant at the 1% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 10: WTP of users and non-users results

Variable	Users		Non-users	
	Coefficient (Std. Error)	p-value	Coefficient (Std. Error)	p-value
Constant	-0.4688 (0.7779)	0.547	-0.2520 (0.9400)	0.789
Bid	-0.0035*** (0.0012)	0.005	-0.0037*** (0.0008)	0.000
Age	-0.0930** (0.0430)	0.038	-0.0328* (0.0194)	0.090
Gender	-0.0551** (0.0235)	0.015	-0.8206*** (0.3018)	0.007
Education	0.0714*** (0.0242)	0.003	0.4695*** (0.1342)	0.000
Occupation	0.0182 (0.1060)	0.913	0.1642 (0.1134)	0.148
Income	0.0643*** (0.0174)	0.000	0.1137*** (0.0273)	0.000
Chs	0.2846 (0.5692)	0.612		
Bkk			-0.1404*** (0.0544)	0.009
Log-Likelihood	-143.46747		-146.46168	
N	240		240	

Remark : * Significant at the 1% level, ** Significant at the 5% level, *** Significant at the 1% level

4. Conclusions and Policy Implications

4.1. Concluding Remarks

Public willingness to pay for the conservation of cultural heritage in Chiang Saen ancient city was estimated. Results revealed that Thai people had optimistic perceptions and attitudes towards cultural heritage in Chiang Saen ancient city. Most of the samples stated positive WTP for the preservation program. Thus, deterioration of cultural heritage sites was not acceptable and Thai people were willing to pay an amount of money to conserve cultural sites.

Empirical results also indicated that a small proportion of respondents at 37% showed a null WTP and were not willing to pay to protect historic temples from deterioration. Some repudiated association with the preservation program because of free-rider behavior, while others disagreed with some sections in the survey such as the hypothetical scenario and payment method. They did not like the payment method or did not believe that paying for a conservation program would resolve the problem. Some refused to pay simply because they did not have disposable income, while others expressed disinterest regarding the heritage conservation issue. The genuine null WTP responders were of the opinion that any change in cultural heritage in Chiang Saen ancient city would not affect the welfare of the population. Put simply, one section of the Thai population does not see any economic potential in cultural assets and is unconcerned regarding the fate of the historic temples in Chiang Saen ancient city.

The econometric result showed that positive WTP responses were high in the richer, younger and more educated segments of the population. Also, females were more likely to be enthusiastic about cultural heritage protection than males. Notably, the decision whether to pay for the preservation of ancient heritage depended on the main determinants as gender, education, age and income. In addition, individuals who obtained value from Chiang Saen cultural heritage stated their preference over cultural assets differently. Individuals who were users of heritage tended to praise the historic sites more than non-users. One possible reason for this was that users' interests and benefits pertained to the existence of the ancient temples. Comparing between non-users in Bangkok, a capital city located in central Thailand, and Chiang Mai, a northern city located next to Chiang Rai, the two groups of non-users showed diverse

perspectives on cultural goods. Individuals from Chiang Mai were more likely to conserve Chiang Saen historic sites than Bangkok citizens. This could be because Chiang Mai citizens had a stronger background in Northern Thailand culture and history.

4.2. Policy Use of Value Estimates

There are three possible policy uses of the estimated values achieved through this research.

(a) The estimated values can be used for project costing before decision-making on undertaking investment for the conservation of heritage sites.

(b) The estimation results can be useful to dictate the level of investment activity to protect cultural assets.

(c) The valuation estimates can be beneficial in decision-making by policymakers or authorities when weighing the advantages or disadvantages since they impart some details about public preference and attitude towards the cultural goods.

4.3. Practical Implications

From the results and conclusions, they implied that cultural heritage in Chiang Saen provide some benefits or values to both users and non-users since there were certain groups of people studied in this research that showed positive willingness to pay to conserve the temples in Chiang Saen. Hence, a government may play a role in protection part to preserve temples in Chiang Saen from deterioration and dilapidation to maintain the public benefit. Public policymaker can refer the results from this study to its decision making when the preservation plan of Chiang Saen temple is considered. However, this research considered only a small size of samples. It may not be a good representative of the whole nation decision but it could be a good starter of making a decision of preserving the ancient temples in Chiang Saen. This is because there were only seven archaeological temples that were selected in this study and the findings showed that people in particular areas (Chiang Saen, Chiang Mai and Bangkok) have a positive attitude towards the cultural goods in Chiang Saen. If future research is conducted to study the economic valuation of temples in Chiang Saen using the bigger size of samples, say, randomly from the whole country's population, the empirical findings would definitely show positive results and attitude of the public towards the cultural heritage.

This study presents a case of affirmation for public support regarding national historic cultural heritage sites. Cultural heritage sites in Chiang Saen ancient city now fall under the administration umbrella of the 8th Regional Office of Fine Arts, Chiang Mai (ROFA) and the National Office of Buddhism (NOB). ROFA is instructed to preserve, conserve and revive the cultural assets, to promote and disseminate the knowledge, wisdom and culture of the nation and to raise awareness and participation of Thailand's cultural heritage in the younger generation. ROFA provides technicians, specialists and technical support on cultural heritage, not financial assistance, while NOB is mandated to maintain and manage the temples as dissemination centers of Buddhism to the communities. Thus, there is a lack of financial backing to invigorate any preservation activity which is currently funded through public donations.

The Thailand Charter on Culture Heritage Management (Rungrujee, 2014) lists diverse guidelines for conservation and management based on participation from all concerning parties, especially people who live in the sites, as well as respect for the equality of human rights. It states, "all steps of cultural heritage conservation process must be studied and researched to obtain the correct and broad understanding on the cultural heritage site. Conservation of cultural heritage is a multidisciplinary work that requires an integration of scientific standards of all involving professions to apply the knowledge to the conservation of each specific site appropriately."

Policy implications of the historic temple conservation scheme have been previously proposed regarding the preservation and restoration of historic temples in the central part of Thailand (Seenprachawong, 2006). These can be developed and applied to this paper to preserve cultural heritage in Chiang Saen ancient city.To achieve the goal of conserving cultural heritage in Thailand, a proper management plan should be undertaken. Some practical policy implications are listed as follows:

(a) The trust fund can be established and administered by the Provincial Offices of Buddhism (POBs) located in 76 provinces throughout Thailand which are aligned to the NOB. The Temple Development and Restoration Division and the Religious Property Management Division administer, promote, develop and operate development activities for temples, monasteries and religious properties. Public donations will be transferred to finance a trust fund administered by interlocking directorates comprising representatives from POB, NOB and

ROFA. The interest earned should be returned to the trust fund to finance conservation works on temples. A working fund, therefore, will be created. The trust fund will be able to finance all activities without government support.

(b) Additional funds can come from fund-raising activities organized by the POBs and ROFA. For instance, they could sell small gifts, key rings, t-shirts, souvenirs, etc. and organize traditional performances such as Rabam Chiang Saen (Regional Thai dance) at heritage sites during traditional festivals to disseminate Thai cultures and Chiang Saen historical and cultural traditions. These activities will raise awareness and pride in national identity and increase concern for cultural heritage preservation.

(c) It is also important that local residents and local government such as the Municipality play crucial roles in the conservation plan as they are mostly involved in the cultural heritage area and cultural heritage sites are the property of all Thai nationals. Local communities and people have rights and duties to participate in the conservation and management of cultural heritage, especially by ensuring that the sites are not vandalized or functionally damaged.

Thai people should share responsibility for the protection and conservation of cultural heritage as a tangible symbol of the rich, diversified history of our nation. Cultural heritage sites represent a living reminder of a bygone age. They must be respected, cherished and lovingly managed as an inheritance to proudly pass down to our children.

Although this research has reached its aims, there were several inescapable limitations. This study was conducted only a small size of the sample due to the budget constraint, limited time and the response rate of the questionnaire. However, survey techniques were applied to subdue those hardships such as visual and textual details of the conservation programme of ancient temples, sampling technique, data collection technique, etc. The small sample size might lead to a slight problem that is the multivariate analysis result. From the result discussions, it was obvious that respondents' age showed a negative impact on WTP. The implication of this result is that advancing age leads to a less positive WTP response. Put differently, younger people are more likely to pay some amount to protect the temples in Chiang Saen from deterioration than the elderly do. This seems practically illogical because, in general, older people who are sustained wealthier than the younger will be more willing

to pay their money to conserve the temples for the future generations. This event then may result from a small size of the sample in this study. This study can be pursued further in the future by extending the sample size of the study to examine the consistency of the results, particularly respondents' age, to obtain a higher level of confidence of empirical information.

The research can be done further by using different payment vehicles in the study since this study's results showed that there were a certain group of people who denied paying some amounts to conserve the temples in Chiang Saen simple because they did not like the payment method. The incoming research can use taxes, fees, etc. as payment vehicles and compare each payment method to find out the most proper method of payment for the preservation of the ancient temples. In addition, the future study can be done by comparing the finding from different locations of the population such as urban population versus rural population to see whether their behavior is different. Likewise, the future study can be done by conducting the survey with population from different part of Thailand, say, Northern, Western, Southern and Central Thailand and compare the results find in the study to conclude and imply more appropriate and fitted policy that is acceptable for whole nation.

References

Ashworth, G.J., & Tunbridge, J.E. (2011). *The Tourist-Historic City (Routledge Advances in Tourism)*. (S. Page & En, Eds.) (1st ed.). New York: Routledge.

Bishop, R.G., & Heberlein, T.A. (1979). Measuring Values of Extramarket Goods: Are Indirect Measures Biased?. *American Journal of Agricultural Economics*, 61(5), 926–930.

Bowitz, E., & Ibenholt, K. (2009). Economic impacts of cultural heritage - Research and perspectives. *Journal of Cultural Heritage*, 10(1), 1–8.

Buddhist Monastery Division. (2016). Thailand's Temple List. Retrieved from http://www.onab.go.th/en/ (January 27, 2017). (In Thai)

Fredrickson, T. (2014). Big earthquake shakes Thailand's North. Bangkok Post. Retrieved from http://www.bangkokpost.com/learning/learning-news/408301/big-earthquake-shakes-thailand-north (November 14, 2016)

Goodstein, E.S. (2011). *Economics and the Environment*. (N. J. Hoboken & J. Wiley, Eds.) (6th ed.). New Jersey, USA: Prentice-Hall.

Hanemann, W.M. (1984). Welfare evaluations in contingent valuation experiments with discrete responses. *American Journal of Agricultural Economics*, 66(3), 332–341.

Johansson, P.O., Kriström, B., & Mäler, K.G. (1989). Welfare Evaluations in Contingent Valuation Experiments with Discrete Response Data: Comment. *American Journal of Agricultural Economics*, 71(4), 1054–1056.

Local Government Association. (2013). Driving Growth through local government investment in the arts, 32. Retrieved from http://www.local.gov.uk/c/document_library/ get_ file?uuid=5d54ddf4-1025-4720-810a-fd077d5dbf5b&groupId=10180 (November 18, 2016)

Loomis, J. B. (2014). Strategies for overcoming hypothetical bias in stated preference surveys. *Journal of Agricultural and Resource Economics*, 39(1), 34–46.

MGR Online. (2011). Fine Arts Department prepared a major restoration of the historic buildings in Chiang Saen after big quakes. *Manager News Online*. Retrieved from http://www. manager.co.th/Local/ViewBrowse.aspx?BrowseNewsID=1202

Princess Maha Chakri Sirindhorn Anthropology Centre. (n.d.). Chiang Saen City. Retrieved from http://www.sac.or.th/databases/archaeology/archaeology/ (November 1, 2016). (In Thai)

Rungrujee, B. (2014). Thailand Charter on Culture Heritage Management. *ICOMOS Thailand Newsletter*. ICOMOS Thailand, 26–27, 4.

Seenprachawong, U. (2006). *Economic Valuation of Cultural Heritage : A Case Study of Historic Temples in Thailand*. Singapore: Tanglin.

Yangkul, A. (2013). History of the Kingdom of Yonok Chiang Saen. Retrieved from http://eve270338.blogspot.com/2013/07/blog-post_7033.html. (November 26, 2016). (In Thai)