ECONOMIC VALUATION OF CHAKPHRA FESTIVAL AND BOAT RACE IN SURATTHANI, THAILAND

Nantawan Changkid

[1] Faculty of Management Science, Suratthani Rajabhat University, Thailand
Corresponding Author: nannasy@hotmail.com

ABSTRACT

The purpose of this research was to study the spending habits of participants in festival and to assess the economic valuation of Chak Phra and Boat Race in Suratthani, Thailand. Data were collected from people aged 18 years and older who participated in the Chak Phra ceremony Suratthani province 2019. The questionnaire was distributed to 405 respondents through the accidental sampling method. Data were analyzed using frequency, percentage, mean, standard deviation and the individual travel costing model. The findings showed that the cost of round trip from their residence and the area of Chak Phra festival average is 13.06 baht per trip. The expenses consisting of food and beverages 312.63 baht, expenses for making merit 119.90 baht and others 3.41 baht. They spent time for traveling from residences to the festival and the time required to participate in various activities in festival 31-150 minutes. If they were not participating in the festival, they will spend time doing leisure activities at home / doing private activities. The results of spending behavior data of product categories in the festival totally averaged 741.23 baht / person. Most people buy clothing products, jewelry, cosmetics and shoes. The economic valuation of Chak Phra festival and Boat Races Suratthani: 2019 is equal to 139,344,300 baht.

Introduction

An economic valuation or economic value that Na. Bangchang (2018) defined is an assessment of how much humans value something that is not monetary, such as natural resources and environmental quality, and convert them into monetary value. Therefore, in assessing the economic valuation of things, such as, tourist attractions, recreational activities)i.e. watching music concerts(, public places)i.e. public parks), and traditional and cultural festivals, which have sentimental value and cannot be assessed in monetary form, has to be done using the revealed-preference method that usually calculates from the individual travel cost. Travel Cost Method (TCM) is based on actual behavior or what people actually do rather than willingness to pay. The result of the assessment can be used to support the decision in doing interested activities and helps

the government to design the policy and allocate the budget in that matter. There are many researches concerning the valuation of recreation site using TCM such as: Steven and Allen 1980, Dwyer et al. 1983, Khapman and Stanley 1991, Chen et al. 2004, Herath and Kennedy 2004, Rolfe and Gregg 2012, S .Mohammadi Limaei et al.2014.

Besides, there are some evidences showing that the economic valuation has been applied to health care services for a long time. Firstly, the study from D.M. Dawoud & D.L. Baines (2017) as shown in "Economic Evaluation and Its Types" in Economic Evaluation of Pharmacy Services. Secondly, S. Costa (2017) who examined Economic Evaluation of Pharmacy Services in Portugal. Thirdly, T. Gammie & Z.-U.-D. Bahar (2017) who studied Economic Evaluation of Community and Hospital, Pharmacy Services.

They also concluded that the topic are becoming increasingly commonplace to enable an understanding of which health care services provide value for money and to inform policy makers as to which services will be cost-effective in light of limited health care resources. Fourthly, Sarah Wordsworth & Adrian Towse (2016) who used an economic evaluation as the analytical approach in their work called "Health Economic Perspectives of Genomics". Lastly, C. Jommi (2017) who wrote "An Introduction to Economic of Health Care Programs" in Economic Evaluation of Pharmacy Services.

Furthermore, economic valuation is also employed in transportation sector which can be seen in "Economic Benefits of Active Transportation" from Cameron Gordon (2018). He recommended for policy and practice that economic evaluations should assess packages of interventions rather than narrowly focusing on individual interventions. Valuation should be examined in a more interdisciplinary way. The economic approach has merits and is widely used.

'Suratthani' is a province of Thailand that has a long history associated with traditions and cultures. The evidences are perceived through archaeological sites, religious sites, artifacts, arts and cultures, as well as religious ceremonies and traditional festivals. Traditional festivals in Suratthani regularly involve Buddhism and folk beliefs. The important local traditions include Tod Phapa festival, Chak Phra festival and Suod Tung festival. Chak Phra festival, which is held annually, demonstrates the kind of cultural tourism. Office of the National Economic and Social Development Board)2015(concluded that 'cultural tourism' refers to creative tourism, local tourism and traditional tourism in a specific region. This kind of tourism supports the development of the local in various aspects, such as, generating the local revenue, inducing the community to recognize the importance of local traditions, cultures, and the wisdom of ancestors that has been passed down from generation to generation, and elevating the quality of life of the local people within the community.

Chak Phra festival in Suratthani is annually held in the end of October for the average of 9 days long on the end of Buddhist lent day. In 2019, it was planned to be held between $10^{th} - 18^{th}$ October at Tapi Pier, Narit Bridge and Wang Tai Hotel courtyard. In the period of the festival, people generally lay down donation trees in front of the house, which illustrates a uniqueness of the tradition in the province. There are parades of pulling the Buddha on the land and in the river, and performances of light and sound. Over a hundred ceremonial land floats from local Buddhist temples in the province join in the event. Therefore, throngs of people and tourists participate in the festival each year, mostly to learn the local tradition, culture, lifestyle of the people in the community, and visit the tourist attractions of Suratthani, which resulting in the generation of large amount of revenue to the local. The interview from Srimuang Sumalee)2019(showed that the estimate amount of money from the people donating in the ceremonial floats was over 10,000 baht per temple per night, with the average of 100,000 baht per temple throughout the festival. The research of Khunsrikeaw)2018(also pointed that most of the people joining in the event satisfied with the arrangement of the festival. The event brought about the pride and the impressiveness to the people, as well as promoted the participation of the community, uniqueness of the tradition)i.e. Putting up donation trees(, and strength in maintaining the identity of the festival arrangement.

Furthermore, the preliminary data showed that the working group of the project came up with an idea to expand the scope of work by collaborating with the ceremonial land and river float alliance from Ubon Ratchathani province. They also planned to arrange the parades for the people dressing up with Thai fabric and the women wearing Batik fabric, with an anticipation to raise the income from participants spending on costumes and foster the revenue within the province)Yodpinit, 2019(.

Nevertheless, the statistic concerning the valuation of the revenue in this matter has not yet been systematically compiled and studied. This study aimed to examine the spending behavior of participants in Chak Phra festival and to assess the economic valuation of Chak Phra and Tod Phapa festival, and boat races in Suratthani since they are noteworthy to investigate, especially, the economic dimension of the festival, which will be valuable for related authorities who are responsible for the festival arrangement. Besides, the finding will affirm the value of local tradition and elucidate the basic information of the participants including their spending habits, which will be very useful for related authorities to provide products and services properly.

Research Methodology

Population and the sample

The Cochran formula)W.G.Cochran. 1977(is used to calculate an ideal sample size, in this research was 405 people. The sample means the people, age over 18 years old, who travel to attend the Chak Phra festival in Mueang district, Suratthani province. The accidental sampling method was used in the research. Research instrument used was a questionnaire. The draft questionnaire is submitted to four experts in order to check the accuracy and consistency between questions and objectives of the research using the index of Item-Objective Congruence)IOC(. The result was equal to 0.88.

1. Data analysis

1. Using the percentage to analyze the spending behavior of the participants in Chak Phra and Tod Phapa festival, and boat races in Suratthani province.

2. Using the Individual Travel Cost Method)ITCM(to analyze the economic valuation of Chak Phra and Tod Phapa festival, and boat races in Suratthani province.

Results

The economic data related to the individual expense showed that, the average cost of round trip from the residence to the festival is 13.06 baht per trip. The other expenses are food and beverages which is 312.63 baht, merit making 119.90 baht, and others 3.41 baht. The traveling time from the residence to the festival ranges from 31 minutes to 150 minutes)with an average of 1 hour 46 minutes(. The spending time used for the activities in the festival ranges from 31 minutes to 150 minutes)with an average of 1 hour(. Some of the respondents that did not attend the Chak Phra festivals, they spent time doing leisure activities at home or doing personal activities.

According to the spending behavior, an average total expense in buying products in the festival is 741.23 baht per person. Most of the respondents bought products in 3 categories;)1(clothing, shoes, jewelry, cosmetic and bag)2(bedding, kitchenware, electrical appliance, home decoration and furniture, and (3) kids toy, tree and pet. The greatest proportion of expenditure (71.65 percent) was on the first category, followed by the second (19.58 percent) and the third (8.77 percent) respectively. The result can be illustrated as follow.
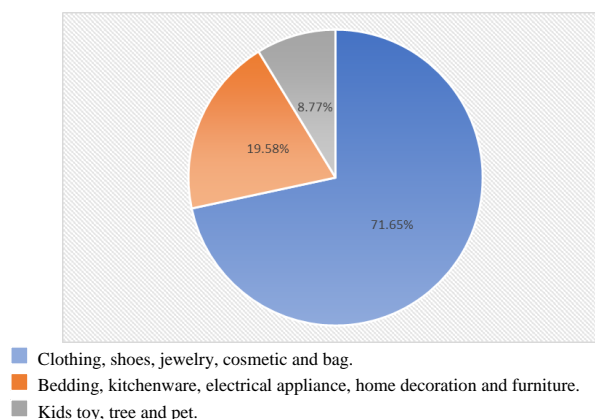

Figure 1: Result of the spending behavior classified by product categories in Chak Phra festival

Source: From calculation

The Individual Travel Cost Method)ITCM(or Clawson method is used in this study to assess the economic valuation of Chak Phra and Tod Phapa festival, and boat races in Suratthani, Thailand: 2019. Travel Cost Method (TCM) is an economic valuation used to calculate the value of some goods or services that cannot be obtained through market price such as forest parks, ecosystems, beaches and recreation. This method was initially introduced by Clawson (1959) and has been modified by a number of researchers. The procedures of the assessment can be presented as follow.

Step 1

Considering the cost of traveling to attend the festival with the number of time attending, we use the Ordinary Least Square method)OLS(in the form of simple regression analysis and linear relationship as follow.

D　　=　　$\alpha + \beta TC$

Assigning

D　　means the number of time attending the festival.)per year(

TC　　means the cost of traveling to attend the festival.)per trip(

α, β　　means parameter value.

Calculation result can be written as an equation number 1 and Table 1 as follow.

$$D \quad = \quad 3.315 - 0.001TC \qquad \ldots)1($$

Table 1: Simple regression analysis illustrated the relationship between the cost of travelling and the number of time attending the festival.

Independent variable	Coefficient	T	Significant level
constant	3.315	12.049	0.000*
TC	-0.001	-3.638	0.000*

Source: from calculation

From the equation number 1 and Table 1, it can be concluded that, the individual cost of travelling to attend the festival significantly associated with the number of time attending the festival. Therefore, it

$$D \quad = \quad 3.315 - 0.001TC$$

Step 2

Calculating the maximum cost of travelling that individuals willing to pay)replace the number of time attending to the festival with 0 to solve the

was used to find the demand curve of the number of time travelling to the festival and can be written as an equation number 2.

$$D \quad = \quad 3.315 - 0.001TC \qquad \ldots)2($$

equation and find the maximum cost of travelling(. It can be written as an equation number 3.

$$D \quad = \quad 3.315 - 0.001TC \qquad \ldots)3($$
$$TC \quad = \quad 3,315 \text{ baht}$$

The maximum cost of travelling or 'Choke Price' that made individuals not willing to attend the festival is equal to 3,315 baht

Calculating the number of time travelling to the festival, we use the average cost of travelling of

405 people to find the average of 221.73 baht. The result is approximately 2.61 per time. The equation can be written as an equation number 4.

$$D \quad = \quad 3.315 - 0.001TC \qquad \ldots)4($$

$$D = 3.09$$

Step 3

Calculating the consumer surplus by finding the area under the demand curve and integrate between the average individual cost of travelling

and the maximum cost of travelling. The consumer surplus, the demand curve and the result from step 1 and step 2 can be illustrated as Figure 3.

Cost of travelling

3,315

0
221.73

3.09   3.32

Demand curve

Number of times attending the festival
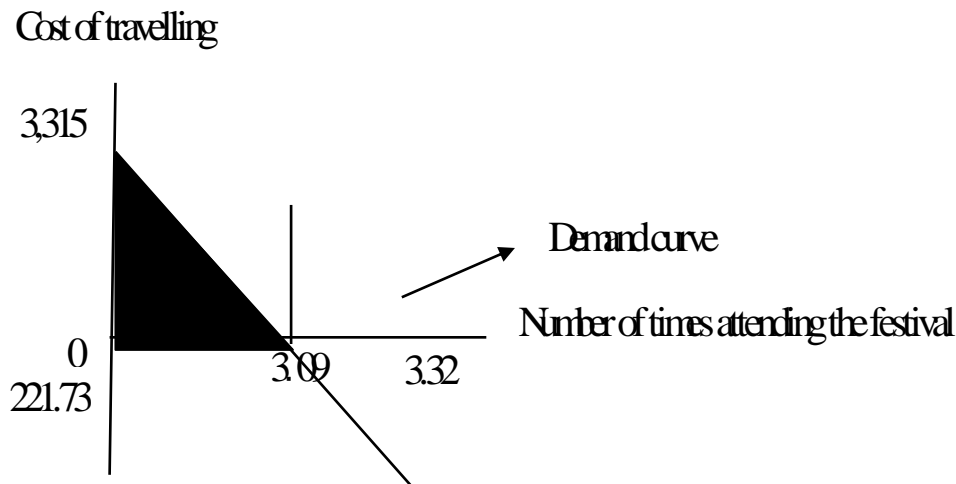
Figure 2: Demand curve of the festival attendance
Source: from calculation

From figure 2, the shadow area shows the consumer surplus which is the excess between the

average individual cost of travelling and the maximum cost of travelling.

$$CS = \int_{TCi}^{TC\,max} f(Tci)\,dTCi$$

$$= \int_{TCi}^{TC\,max} (3.315 - 0.001)\,dTCi$$

$$= 3.315TC \Big|_{221.73}^{3.315} \quad \frac{-0.001TC^2}{2} \Big|_{221.73}^{3.315}$$

$$= 3.315\,(3{,}315 - 221.73) - \left[-\frac{0.001(3{,}315)^2}{2} - \frac{0.001(221.73)^2}{2} \right]$$

$$CS = 4{,}784.16$$

The consumer surplus of the participants is equal to 4,784.16 baht.

Step 4

The average consumer surplus)ACS(can be calculated by dividing the consumer surplus with

$$\text{ACS} = \frac{CS}{D}$$

$$= \frac{4{,}784.16}{3.09}$$

$$= 1{,}548.27$$

The average consumer surplus per person per year is equal to 1,548.27 baht

Step 5

To calculated the economic valuation or the consumer surplus of the participants. We multiplying the average consumer surplus with the number of total participants.

$$\text{CS} = \text{ACS} \times \text{number of total participants}$$

$$= 1{,}548.27 \times 90{,}000$$

)The average number of participants is 10,000 people per day with the total of 90,000 people per year. This is the estimated number which provided by Surratthani Provincial Administrative Organization, the department of Education, Religion and Culture.

$$= 139{,}344{,}300 \text{ baht}$$

The economic valuation of Chak Phra and Tod Phapa festival, and boat races in Surat thani province: 2019 that reflects on the consumer surplus values 139,344,300 baht per year.

Discussions and Conclusions

It can be concluded that, the economic valuation of Chak Phra and Tod Phapa festival, and boat races in Suratthani, Thailand: 2019, which reflects from the consumer's surplus of participants, is equal to 139,344,300 baht per year. The value represents the access price to the festival. It also shows the willingness of the people to participate the event even though the cost of travelling is higher than the cost individuals actually pay in the present. It can be assumed that the value of a festival is reflected by how many people are willing to pay to attend the festival. This results conformed to Rattavejakul Wacharapong &

the number of time travelling to the festival. It can be illustrated as follow.

Silpachawong Udomsak (2013) found that, the economic evaluation of East Tanon- Tongchai forest in Thailand is equal to 22,710,221,337 baht per year. An average of the consumer's surplus of a trip to East Tanon- Tongchai forest is 3,387.93 baht. The number is higher than the admission fees of four national parks in 2013 which are Doi Inthanon National Park (50 baht), Obluang National Park (40 baht), Op Khan National Park (40 baht) and Mae Wang National Park (40 baht). This reflects that travelers are willing to pay an admission fee in a higher rate as compare to the current rate.

The findings from this study will significantly help the related authorities to manage the festival to the greatest potential. Firstly, it will benefit to the office of Education, Suratthani Municipality, especially in setting up the stalls in the festival which is one of their responsibility. The respondents' expenditure is useful for the office of Suratthani Municipality to manage the product collection. Clothing, shoes, jewelry, cosmetics and bags should be provided to respond the customers' satisfaction. Secondly, the Art and Cultural Bureau, Suratthani Municipality, who is responsible for the expenditure of the festival, will use the data to estimate and set up a budget for the next fiscal year. Lastly, the Tourism Authority of Thailand, Suratthani Office, will use the economic valuation to consider the appropriate price of tour packages for the tourists that wish to visit the festival. This paper also contributes to Pongkaew, who is the marketing personnel of the Tourism Authority of Thailand, Suratthani Office. He used this paper to support an action plan to drive the national strategy in order to promote and preserve the tradition and culture of Suratthani.

References

[1] C.Jommi. (2017). An Introduction to Economic of Health Care Programs.

http://www.sciencedirect.com/topic/social-sciences/economic-evaluation.

[2] Cameron Gordon. (2018). Economic Benefits of Active Transportation. http://www.sciencedirect.com/topic/social-sciences/economic-evaluation.

[3] Clawson M. & Knestsch J.L. (1966). Economics of Outdoor Recreation. Baltimore, John Hopkins Press, 348.

[4] Clawson M. & Knetch J.I. (1960). Economic of Outdoor Recreation. Baltimore, John Hopkins Press, 143.

[5] Clawson M. (1959). Method of Measuring the Demand for an Value of Outdoor Recreation. *Washington, DC, Resources for the Future*, 36.

[6] Cochran W.G. (1977). Sampling Technjques. New York, John Wiley &Sons, 428.

[7] D.M.Dawoud & D.L.Baines. (2017). Economic Evaluation and Its Types. http://www.sciencedirect.com/topic/social-sciences/economic-evaluation.

[8] Khunsrikeaw Terayut. (2018). The Satisfaction of Visitors towards Chak Phra Festival and Suratthani Boat Race: 2018. Suratthani: Municipality Office of Suratthani.

[9] Na. Bangchang Orrapun. (2018). Concept of Economic Value and Implement. *Document for Seminar at Khao Yai National Park*, 26-28 February 2018.

[10] Office of the National Economic and Social Development Board.)2015(. *Journal of Economic and Social.* Thailand**:** Bangkok.

[11] Pongkaew Tepsin (2020). Conference of an action plan to drive the national strategy. (August 28,2020)

[12] Rattavejakul Wacharapong & Silpachawong Udomsak. (2013). Economic Evaluation of East Tanon- Tongchai Forest. Bangkok: National Institute of Development Administration.

[13] S.Costa. (2017). Economic Evaluation of Pharmacy Services in Portugal. http://www.sciencedirect.com/topic/social-sciences/economic-evaluation.

[14] S.Mohammadi Limaei et al. (2014). Economic Evaluation of Natural Forest Park using the Travel Cost Method (Case Study; Masouleh forest park north of Iran). *Journal of Forest Science*, 60, 2014(6), 254-261.

[15] Sarah wordsworth & Adrian Towse. (2016). Health Economic Perspectives of Genomics.

http://www.sciencedirect.com/topic/social-sciences/economic-evaluation.

[16] Somjai, S., Jermsittiparsert, K., & Chankoson, T. (2020). Determining the Initial and Subsequent Impact of Artificial Intelligence Adoption on Economy: A Macroeconomic Survey From ASEAN. Journal of Intelligent & Fuzzy Systems, 39(4), 5459-5474. DOI: 10.3233/JIFS-189029.

[17] Srimuang Sumalee.)2019(. Information of Chak Phra Festival and Suratthani Boat Race: 2019. Suratthani Provincial Administration Organization)Interview: September 26, 2019(

[18] T. Gammie & Z.-U.-D. Bahar. (2017). Economic Evaluation of Community and Hospital Pharmacy Services. http://www.sciencedirect.com/topic/social-sciences/economic-evaluation.

[19] Yodpinit Akekapoj. (2019). Essentials of Chak Phra Festival. Municipality Office of Suratthani. (Interview: August 14, 2019)