



## ESTIMATION OF TOURISTS' WILLINGNESS TO PAY ENTRANCE FEES FOR A FOREST BATHING SITE IN THE PHILIPPINES

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**ABSTRACT** – Forest bathing is in its infancy in the Philippines. Because of this, the valuation of the health benefits derived from forest bathing in the country has not been studied. This paper aims to value the health benefits derived from a forest bathing facility in Camp John Hay, Baguio through the payment of entrance fees. A survey of 60 people was conducted and results were processed using the Contingent Valuation method. The survey revealed that respondents' mean willingness to pay (WTP) value is USD 15\*\* (Php 770) and the median is USD 10 (Php 500). Respondents with medical conditions gave significantly higher WTP values compared to healthy individuals. Livelihood and revenues are lost because of the restrictions brought about by the COVID-19 pandemic. It is proposed that the John Hay Management Corporation together with the Department of Tourism re-package forest bathing as an activity, which will enhance the citizenry's well-being and propose this to the pandemic task force. The proposed entrance fee is the mean amount inclusive of safety measures prioritizing a registration system and crowd control measures.

\*\* Exchange rate is USD 1 = PHP 50

**Keywords:** Contingent Valuation Method, ecosystem services, forest benefits, health, nature therapy, COVID-19

### INTRODUCTION

Humans evolved in the natural environment for the last seven million years. Physiological anthropologist Masahiko Sato wrote that cities emerged only in the last 300 years when humans moved to urban settings because of the Industrial Revolution. In 1800, three percent of the world population lived in urban areas. In the 1900s, this figure increased to 14% and in 2016 rose to 54%. The United Nations Population Fund estimates that the figure will reach 66% by 2050. Thus, less than 0.01% of human history was spent living in modern societies, while 99.9% have been spent living in the natural environment. All human physiological functions evolved in a natural environment and are made for a natural environment. Genes cannot change over a few hundred years and so humans are still adapted to the natural environment. Humans are, therefore, living in modern societies with their bodies still adapted to nature (Miyazaki, 2018).

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The body's sympathetic nervous system mobilizes the "fight or flight" response, which is an acute response to a stressor. The body's stress response is triggered by both physically and emotionally dangerous situations. Modern life is filled with stimuli, which can trigger the sympathetic nervous system. American clinical psychologist Craig Brod coined the word "technostress" in 1984 to describe the overstimulation resulting from gadget use (Miyazaki, 2018).

Miyazaki (2018) stresses that if the body remains in the activated state for a prolonged period, a state of hyperarousal can take place. The parasympathetic nervous system, on the other hand, regulates the body and restores it to a state of calm, and performs various repairs. Miyazaki (2018) furthers that when the body experiences too much chronic stress over a long period, the parasympathetic system might collapse. Stress-related illnesses include the "the common cold, back, neck and shoulder pain, slower healing, weight gain and loss, sleep dysfunction, depression, dysautonomia, irritable bowel syndrome, ulcers and stomach problems, heart disease, and cancer" (Miyazaki, 2018).

Nature therapy helps regulate the nervous system. It increases physiological relaxation and functions as preventative medicine by improving the body's natural resistance to disease. *Shinrin-yoku* or forest bathing means "bathing in the forest atmosphere" or "taking in or feeling the forest atmosphere through the five senses." Dr. Qing Li (2018) compares it to a bridge between humans and the natural world. Forest bathing then is about immersing oneself in the forest atmosphere.

The total economic value of forests encompasses both use and non-use values. Non-use values include: "option value, bequest value, and existence value". Use values, on the other hand, can be classified into: "direct, indirect, and option values." Direct use values are those which can either be extractive (e.g. use of forest resources from timber, non-timber products, agriculture) or non-extractive (e.g. education, recreation and tourism) (Francisco & Espiritu, 1999). This study focused on the non-extractive, direct use value of forests, which are its health benefits.

The health benefits of forest bathing have been widely documented in several studies. Sifferlin (2016) writes that forest bathing can lower blood pressure, promote cancer-fighting cells, help with depression, anxiety, ADHD symptoms, and inspire feelings of awe, among others. Other sources cite benefits such as improved mood, sleep quality, ability to focus and lower stress levels. Forest bathing is now considered as a national pastime in Japan. It has spread in popularity in mostly temperate countries such as New Zealand, United Kingdom, South Korea, Canada and the United States.

Forest bathing is new in the Philippines. The first forest bathing trail in the country in Camp John Hay, Baguio City was inaugurated in November 2018. Camp John Hay, a former American recreation area, is located about 5,000 feet above sea level and contains more than 50% of Baguio's forest cover. It is currently being managed by John Hay Management Corporation (JHMC) (Alegre, 2018).

To fully experience the benefits of forest bathing, there should be adequate safety features but the trail lacks these. Baguio resident Jared Jeric dela Cruz wrote in his blog, Phmillennia, that he almost slipped on a path leading to a large clearing with bamboo wind chimes along the Blue Trail. He wrote, "there was a path before me, almost entirely obscured by rank beds of ferns, that led downhill directly to the clearing. I descended this path gingerly... By no means was it a steep path, but the soil was somewhat erodible – one wrong step could easily loosen the soil and send me sliding down." Hence, there is a need to enhance the existing safety features on the trail.

Camp John Hay's forest bathing trail lacks adequate safety features. The entrance is currently free of charge. Sufficient flow of funds is needed to ensure the trail's proper maintenance and to provide tourists an authentic, comfortable and safe forest bathing experience.

## Objectives

Operating on the assumption that the trail is in need of improvement, this study aims to find out:

1. the features which respondents are willing to: include in entrance fees, not include in entrance fees and include as optional features
2. the tourists' mean and median willingness-to-pay (WTP) in the form of entrance fees to put in place:
  - A. Measures to ensure an authentic forest bathing experience
    - To train and accredit tour guides as forest therapists;
    - To provide lockers where tourists can leave their gadgets;
  - B. Measures to enhance the comfort
    - To maintain the trail's cleanliness and develop dedicated spots for relaxation;
    - To place nature-inspired trash bins along the trail;
    - To provide at least three portable toilets strategically located throughout the trail which should not coincide with the dedicated areas for forest bathing;
  - C. Measures to ensure safety
    - To require forest bathers to leave a valid ID and to make a compulsory registration that would include name, address, contact number and person to contact in case of emergency;
    - To put in place crowd control measures by regulating the number of people allowed to enter the trail on a given time to deter crime and observe physical distancing measures;
    - To install perimeter fences around the boundary of the Camp John Hay forest bathing trail;
    - To install steps with handrails along the steep, slippery or unstable parts of the trail;
    - To provide first aid training, certification, and portable first aid kits for forest guides;
    - To replace existing signages with clearer ones. Emergency numbers and maps indicating where they are on the trail will be included; and
    - To provide GPS tracking device to locate lost or sleeping forest bathers.
  - D. Factors affecting individual's Willingness to Pay entrance fees

## METHODOLOGY

### Contingent Valuation Survey of 60 Filipino respondents

Contingent Valuation is a "method of estimating the value a person places on a good or service" (FAO, n.d.). Contingent Valuation Method (CVM) has been used to value the benefits derived from nature therapy and is the only technique capable of estimating how much people value non-market goods (Pearce et al, 1994). Since this paper measured the monetary value of an intangible, public, non-market good, the CVM was used. Because of the Enhanced Community Quarantine (ECQ) being enforced at the time of the study, an online survey of 60 respondents was deployed from April 14, 2020 to April 24, 2020. An audio explaining the scenario was embedded before the WTP y questions, as well as images to help respondents envision the features that will be paid for. The cost of each amenity was included to help respondents estimate their WTP.

## **Review of Related Literature**

### **Forest Bathing**

Shinrin-yoku or forest bathing means “bathing in the forest atmosphere” or “taking in or feeling the forest atmosphere through the five senses.” (Li, 2018). Dr. Qing Li (2018), the President of the Society for Forest Medicine in Japan, likens it to a bridge between humans and the natural world. Dr. Li (2018) wrote that, “the key to unlocking the power of the forest is in the five senses.” And by letting “nature enter through your ears, eyes, nose, mouth, hands and feet...”

The term Shinrin-yoku was coined by Japanese Forestry Agency Director, Tomohido Akiyama in 1982. It was originally intended to “link forest visits to health and wellness-ecotourism” (Clifford, 2018). According to Ogle, 2018 & Banyard (2019) it was a national health program, which aimed to address high stress levels at work and high cases of autoimmune diseases. Dr. Yoshifumi Miyazaki began his shinrin-yoku research in 1988. His research about the effects of Yakushima cedar on stress hormones in the body led to a large research budget from the Japanese government for health impacts of forest bathing in 2004. To date, Japan has 62 healing forests, 31 forest therapy bases, and four therapy roads (Forest Bathing Society).

Forest bathing is now considered as a national pastime in Japan. It has spread in popularity in mostly temperate countries such as New Zealand, United Kingdom, South Korea, Canada and the United States. An adult group forest therapy session in New York costs USD 100 (Php 5,000) for a session of two hours. A private forest therapy session, on the other hand, costs USD 165 (Php 8,250) (Treebath).

### **Health Benefits of Forest Bathing**

The health benefits of forest bathing have been widely documented. In Lee, et al. (2011), it was found that the forest setting “decreased cortisol rates, and significantly increased scores of positive feelings” among the subjects. In another paper by Xiang, et al. (2012), the group, which underwent forest bathing, has shown “reduced oxidative stress and pro-inflammatory level and lower cortisol levels”. Forest bathing was also found to have “therapeutic effects on human hypertension and inflammation and inspires preventive efficacy against cardiovascular disorders” among elderly hypertensive patients (Gen Xiang, 2012). Forests produce phytoncides, a form of essential oils emitted by trees to protect themselves from germs and insects. Inhaling this was proven to improve immune system (Li, 2010).

Sifferlin (2016) summarizes the health benefits of forest bathing as follows: it can lower blood pressure, promote cancer-fighting cells, it can help with depression and anxiety, and it can help with ADHD symptoms, and inspire feelings of awe, among others. Other sources cite benefits such as improved mood, sleep quality, ability to focus and lower stress levels.

### **Camp John Hay**

Camp John Hay is located in the southeastern side of Baguio, about 5,000 feet above sea level and contains more than 50% of Baguio's forest cover. The protected forest watershed has tall pine trees and green undergrowth (Alegre, 2018). Camp John Hay is currently managed by John Hay Management Corporation (JHMC) as a tourist site. JHMC sources its funding from the Bases Conversion and Development Authority (BCDA) and not from the General Appropriations Act (GAA) (JHMC 2011 Annual Report). These are some of the tourist attraction sites in CJH and their rates:

#### Treetop Adventure

- Superman Ride: P300
- Silver Surfer Ride: P200
- Canopy Ride: P250
- Skywalk + Trekking: P150
- Tree Drop: P150

#### Combo Packages:

- Canopy Ride + Silver Surfer: P400
- Canopy Ride + Superman Ride: P500
- Canopy Ride + Silver Surfer + Superman Ride: P700
- All activities: P900

Yellow Trail Hike (Now Forest Bathing Trail) – Free

Butterfly Sanctuary – Php 70

Bell House & Cemetery of Negativism – Php 75

Source: The Poor Traveler.net

### **Forest Bathing in the Philippines**

The first forest bathing trail in the country, formerly known as the Yellow Trail Hike, was formally inaugurated on November 11, 2018 in Camp John Hay Baguio City. According to Department of Tourism-CAR Regional Director Venus Tan, this is a move to “revive Baguio as a recreational and wellness destination with forest bathing as a major tourism activity (Alegre, 2018).”

According to John Hay Management Corporation (JHMC) (2019), Camp John Hay forest bathing trail spans four kilometers with eight stations for people to rest and meditate. According to Mr. Rongee Larry Aboy, Guest Relations Associate at the Manor, Camp John Hay, admission is currently free inclusive of a non-DOT accredited guide. No registration is required. As of this writing, Baguio City is under General Community Quarantine (GCQ) and all forms of leisurely activities are prohibited.

Mambukal Mountain Resort in Murcia, Negros Occidental has also opened a forest bathing trail. It covers 23.6 hectares and includes parts of Mount Kanlaon Natural Park (Masculino, 2020). Entrance fees to the resort are Php 50 for adults and Php 20 for children.

### **Contingent Valuation Method**

Contingent Valuation is a “method of estimating the value a person places on a good or service” (FAO, n.d.). Respondents are asked how much they are willing to pay (WTP) to obtain a certain good or how much they are willing to accept (WTA) to give up a good or service (FAO, n.d.). Willingness to Pay (WTP) is the “maximum amount a person is willing to pay to obtain a non-market good.” Willingness to Accept (WTA) or Willingness to Sell (WTS) is the “smallest amount a consumer will accept to give up the consumption of a non-market good” (Cruz & Calderon, 2000). The term “contingent” is used because the good or service to be valued is hypothetical (Pearce et al, 1994). CV method aims to “obtain an accurate estimate of the benefits or costs of a change in the level of provision of some public good” for use in a cost-benefit analysis. It requires that the scenario should be “understandable and meaningful to respondents and from incentives which might bias the results.” (Mitchell & Carson, 1989).”

The Contingent Valuation is a popular method for valuing ecosystem services such as the value of outdoor recreation facilities. Carson (2011) wrote that economists used the CV method to estimate the value of various recreational facilities. Darling in 1973 conducted personal interviews to inquire on willingness to pay for the amenities of three urban parks in California. In the same year, Sinden placed monetary values for recreational facilities, which resulted to one of his first books on “non-market valuation focused on outdoor recreation” (Carson, 2011).



Carson (2011) adds that from the 1970s to 1990's, recreation remained "the most popular application [of the CV method] and the ranges and types of recreation expanded."

Contingent Valuation survey generally has three parts: (1) questions asking about prior knowledge and attitudes toward the good, (2) a description of the hypothetical scenario, (3) WTP/WTA valuation questions, and (3) demographic questions (Carson, 2011). There are several ways to elicit valuation answers: (1) "bidding game" wherein respondents are asked a series of questions which could either be in ascending or descending order until a maximum amount they are willing to pay is found, (2) direct or open-ended questions, (3) close ended questions (dichotomous, Yes/No questions). Close-ended questions are generally preferred because respondents have to exert less cognitive effort.

Contingent Valuation method has been used to value the benefits derived from nature therapy. Lee, et al (2008) measured the mean willingness to pay of individuals in Busan, South Korea for the physical and mental benefits derived from horticultural therapy (HT). The study found that mean WTP is USD 170 per month per individual.

This study aims to find out how much tourists are willing to pay for the health and psychological benefits brought about by enhanced forest bathing facilities. Since these environmental benefits are intangible non-market goods, the only practical way to measure its monetary value is by using the Contingent Valuation Method. Another advantage of the CV method is it "allows the presentation of scenarios outside the range of current consumer experience" (Carson, 2011) which is the case in this paper.

## **RESULTS AND DISCUSSIONS**

A sample of 60 respondents was surveyed from April 14, 2020 to April 24, 2020. The survey roughly follows the structure prescribed by Carson (2011): (1) prior knowledge about forest bathing, (2) an introduction to forest bathing and its benefits, (3) a description of the baseline (without entrance fee) and hypothetical scenarios (with features and entrance fees) as well as objectives of the study (4) willingness-to-pay questions, and (5) demographic information/attitudinal questions.

### **Demographic profile**

Majority of the respondents were millennials comprising 63% of the sample. There were no respondents from the Silent Generation (1945 and earlier) and Gen Z (2004 to present) groups. Majority (65%) were Bachelor's degree holders, while 32% have Masters or Doctorate degrees. Two percent of the respondents have either vocational/associate degrees or college units. The respondents were represented throughout the various income groups with the majority of them (75%) being middle class. Majority of the respondents (52%) did not have dependents. The typical respondent was a millennial, a Bachelor's degree holder, belongs to the middle-class income group, and has no dependent.

The demographic profile of the respondents is summarized in the table below:

**Table 1**  
Demographic profile of respondents

Demographic Characteristic		Respondents	Percentage
<b>Age</b>	Silent generation (1945 and earlier)	0	0%
	Baby Boomers (1946 to 1964)	6	10%
	Gen X (1965 to 1981)	16	27%
	Millennials (1982 to 2004)	38	63%
	Gen Z (2004 to present)	0	0%
		<b>60</b>	<b>100%</b>
<b>Educational attainment</b>	No Formal Education - Elementary	0	0%
	High school	0	0%
	Vocational/Associate Degree	1	2%
	Some college	1	2%
	Bachelor's Degree	39	65%
	Master's or Doctorate degree	19	32%
	<b>60</b>	<b>100%</b>	
<b>Monthly income<sup>1</sup></b>	Poor (Less than Php 9,250)	1	2%
	Low income (Php 9,520 – Php 19,040)	5	8%
	Lower middle income (Php 19,040 – Php 38,080)	24	40%
	Middle middle income (Php 38,080 – Php 66,640)	15	25%
	Upper middle income (Php 66,640 – Php 114,240)	6	10%
	Upper income (Php 114,240 – Php 190,400)	4	7%
	Rich (Php 190,400 +)	5	8%
		<b>60</b>	<b>100%</b>
<b>Number of dependents</b>	0	31	52%
	1	12	20%
	2	9	15%
	3	4	7%
	4	3	5%
	5	1	2%
	<b>60</b>	<b>100%</b>	

Note. <sup>1</sup>PIDS Policy Notes 2018-18 titled Defining and Profiling the Middle Class - <https://pidswebs.pids.gov.ph/CDN/INFOCUS/pidsupdates76.html>

The representativeness of this sample to the Camp John Hay forest bathing area tourists is unknown since the CJH forest bathing trail does not maintain a registration system. One respondent has experienced forest bathing in CJH.

### Other factors

This section presents other factors, which may affect respondents' willingness to pay the entrance fees for forest bathing facilities. Majority of the respondents have declared that they have no health conditions which might benefit from forest bathing (67%), 24% have existing medical conditions, while 9% are suffering from psychological problems. Majority (78%) said that they were health conscious, 13% wrote that they were not, while 8% indicated that they were occasionally health conscious. Majority of the respondents were environmentalists (75%) while 62% are working in the environment sector.

**Table 2**

*Other factors – health conditions, health consciousness, industry and attitude toward the environment*

Other factors		Respondents	Percentage
<b>Health conditions</b>	None	40	67%
	Medical <sup>1</sup>	14.5	24%
	Psychological <sup>2</sup>	5.5	9%
		<b>60</b>	<b>100%</b>
<b>Health consciousness</b>			
<b>Health consciousness</b>	Yes	47	78%
	No	8	13%
	Moderate	5	8%
		<b>60</b>	<b>100%</b>
<b>Working in the environment sector</b>			
<b>Working in the environment sector</b>	Yes	37	62%
	No	23	38%
		<b>60</b>	<b>100%</b>
<b>Environmentalist</b>			
<b>Environmentalist</b>	Yes	45	75%
	No	15	25%
		<b>60</b>	<b>100%</b>

Note. <sup>1</sup>Cited medical conditions include hypertension, allergic rhinitis, heart disease, high blood pressure, diabetes, asthma, and lower back pain.

<sup>2</sup>Cited psychological conditions include Bipolar disorder type 2, stress, and anxiety

### Knowledge and experience about forest bathing

Most of the respondents are familiar with forest bathing (60%), while 40% have not heard the term before. Respondents were asked how they felt after wandering in a forest and most reported that they felt “relaxed, refreshed, energized, invigorated, calm, rejuvenated, inspired, at peace, happy, grateful, and relieved.” A respondent said that he “felt better physically and mentally.” Another respondent reported that he felt oneness with the Earth’s forests. These are consistent with the literature on the positive effects of forest bathing.

Most of the respondents (58%) claimed that they have experienced forest bathing. Majority of the respondents (95%) believed in the benefits of forest bathing, while 3% were unsure. No respondent claimed not to believe in forest bathing’s health effects.



**Table 3***Respondents' knowledge, experience and beliefs about forest bathing*

<b>Knowledge, Experience and Beliefs on Forest Bathing</b>		<b>Respondents</b>	<b>Percentage</b>
<b>Previous knowledge on forest bathing</b>	Yes	36	60%
	No	24	40%
		<b>60</b>	<b>100%</b>
<b>Experienced forest bathing</b>	Yes	35	58%
	No	25	42%
		<b>60</b>	<b>100%</b>
<b>Belief in the benefits of forest bathing</b>	Yes	57	95%
	No	0	0%
	Not sure	3	5%
		<b>60</b>	<b>100%</b>

Respondents were asked to tick the level of importance of each health benefit of forest bathing to them. Among the health benefits listed, 72% respondents considered the reduction of stress levels as very important, 28% said it is important. Seventy percent (70%) considered mood improvement as very important, while 30% ticked it as important. Other benefits which were considered very important are: the improvement of sleep quality (67%), ability to focus (67%), feelings of awe (53%), alleviation of depression, ADHD (52%), improvement of immune functions (48%), blood pressure reduction (43%), and cancer prevention (42%). These may have been so because of the psychological stress brought about by the pandemic.

**Table 4***Level of importance attached to the health benefits of forest bathing*

<b>Benefits derived from forest bathing</b>	<b>V.I.</b>	<b>%</b>	<b>Important</b>	<b>%</b>	<b>S.I.</b>	<b>%</b>	<b>N.I.</b>	<b>%</b>	<b>blank</b>	<b>%</b>	<b>Total</b>
Blood pressure reduction	26	43%	33	55%	1	2%	0	0%	0	0%	60
Cancer prevention	25	42%	26	43%	8	13%	1	2%	0	0%	60
Improvement of immune functions	29	48%	28	47%	3	5%	0	0%	0	0%	60
Improvement of mood	42	70%	18	30%	0	0%	0	0%	0	0%	60
Improvement of sleep quality	40	67%	18	30%	2	3%	0	0%	0	0%	60
Improvement of ability to focus	40	67%	17	28%	2	3%	0	0%	1	2%	60
Alleviation of depression, ADHD	31	52%	24	40%	4	7%	0	0%	1	2%	60

Reduction of stress levels	43	72%	17	28%	0	0%	0	0%	0	0%	60
Feelings of awe	32	53%	24	40%	4	7%	0	0%	0	0%	60
<b>Mean percentage</b>		<b>57%</b>		<b>38%</b>		<b>4%</b>		<b>0%</b>		<b>0%</b>	<b>100%</b>

Note. VI – Very Important, SI – Slightly Important, NI – Not Important, blank – no answer

CV method will produce invalid results if respondents are unfamiliar with the good. The sample's knowledge and experience with forest bathing, as well as the explanation on what forest bathing is, resolves this.

### Willingness to Pay

The baseline scenario (no entrance fees) and the hypothetical scenario were described to the respondents. A photo of each feature and its estimated cost were shown to the participants to help them envision the amenity that will be paid for. After this, respondents were asked if they were willing to pay entrance fees. Majority (82%) said they were willing to pay while 18% said they were unwilling to pay.

**Table 5**

*Respondents willing to pay and unwilling to pay the entrance fees*

Willingness to pay entrance fee	Number	Percentage
Yes	49	82%
No	11	18%
	<b>60</b>	<b>100%</b>

### Unwillingness to pay

When asked why they were unwilling to pay, four (36%) said they prefer the status quo, four (36%) also believed that the amenities described are immaterial for a better experience, while 18% said they have better alternatives closer to their residence.

**Table 6**

*Reasons for respondents' unwillingness to pay the entrance fee*

Reasons for unwillingness to pay entrance fee	Number	Percentage
Prefer the status quo	4	36%
Features are irrelevant to enhance my experience	4	36%
Better alternatives closer to home	2	18%
Cannot afford to pay	1	9%
	<b>11</b>	<b>100%</b>

Majority of the individuals (73%) who were unwilling to pay are not working in the environment sector. Budget may also be a factor. The only respondent (R52) among the whole sample who came from the Poor income class declined to pay the entrance fee because she cannot afford it. Respondent 43 opted not to pay because of better alternatives closer to home. Forty five percent (45%) belong to the lower-middle income group. Respondents from the rich and

upper-middle class income class groups said that the features are irrelevant to enhance their experience.

### Amenities

To answer objective 1, respondents were asked which among the features they are willing to pay for inclusion in the entrance fees, included as optional features and not those, which they were not willing to pay for. Features are classified into: 1) those, which facilitate an authentic forest bathing experience, 2) those that enhance the comfort of the overall experience and 3) safety features (See objective 1).

Respondents prefer to include the comfort and safety features in the entrance fee. Among the popular features respondents consider for inclusion in the entrance fee are: three portalets (67%), maintenance and relaxation areas (65%), first aiders (65%), better signages (65%), trash bins (63%), registration system (60%), additional handrails and steps (55%), and perimeter fence (50%). Other features which the respondents wish to include in entrance fees include: crowd control (48%), and GPS tracking device (38%). Twenty-nine respondents (48%) prefer to include crowd control in the entrance fee. This may have been so because of the physical distancing measures adopted due to the COVID pandemic. Measures, which facilitate an authentic forest bathing experience, were mostly ticked as optional features.

The amenities which all respondents (willing to pay entrance fees) believe are necessary are: a registration system, first aiders, and better signages, which are all safety features.

**Table 7**

*Features respondents are willing to include in entrance fees, included as optional features and not willing to include in the EF*

Features	Include in EF	%	Optional feature	%	Do not include	%
<i>I. Authentic forest bathing experience</i>						
Forest therapists	17	<b>28%</b>	24	<b>40%</b>	3	<b>5%</b>
Lockers	19	<b>32%</b>	25	<b>42%</b>	1	<b>2%</b>
<i>II. Enhanced experience</i>						
Maintenance & relaxation areas	39	<b>65%</b>	8	<b>13%</b>	1	<b>2%</b>
Trash bins	38	<b>63%</b>	7	<b>12%</b>	2	<b>3%</b>
Three portalets	40	<b>67%</b>	7	<b>12%</b>	1	<b>2%</b>
<i>III. Safety features</i>						
Registration system	36	<b>60%</b>	9	<b>15%</b>	0	<b>0%</b>
Crowd control	29	<b>48%</b>	16	<b>27%</b>	1	<b>2%</b>
Perimeter fence	30	<b>50%</b>	9	<b>15%</b>	5	<b>8%</b>
Additional hand rails and steps	33	<b>55%</b>	10	<b>17%</b>	2	<b>3%</b>
First aiders	39	<b>65%</b>	8	<b>13%</b>	0	<b>0%</b>

Clearer signages	39	65%	8	13%	0	0%
GPS tracking device	23	38%	18	30%	5	8%
<b>Mean Percentage</b>		<b>53%</b>		<b>21%</b>		<b>3%</b>

### Willingness-to-Pay value

The questionnaire used the “bidding game” elicitation method with a series of close-ended questions, asking about respondents’ willingness to pay from the highest (Php 1,500) to the lowest amount (Php 500) which is followed by an open-ended question (“How much would be maximum amount that you are willing to pay as entrance fees for a forest therapy session for an unlimited period of time?”). Respondents were informed that they will not pay the amounts. They were reminded that what is being valued are the health and psychological benefits derived from the improved facilities while considering their budget constraints and alternatives.

The highest WTP value is Php 2,000 while the lowest is Php 100. Ten respondents (17%) said they are willing to pay Php 500 for the entrance fee in exchange for all the aforementioned features. Php 500 is also the amount the respondent who has experienced forest bathing in Camp John Hay has selected.

Four respondents (7%) reported that they are willing to pay Php 250 and another 7% Php 100 for the entrance fees. Three percent (3%) or two (2) respondents each have declared that they will pay Php 1,000, and Php 800 for the entrance fees. Two respondents (3%) said they will pay Php 2,000, while one respondent (2%) is willing to pay Php 150 for entrance fees. It is notable that five respondents (54, 58, 39, 16, and 21) declared higher values in the open-ended question than in the dichotomous questions.

The mean amount the respondents are willing to pay is Php 771 for all the amenities for an unlimited period of time. The median WTP value is Php 500. The mean amount is close to Treetop Adventure’s Canopy Ride + Silver Surfer + Superman which costs Php 700, while the median WTP is equivalent to Canopy Ride + Superman Ride, which entrance fees cost Php 500.

**Table 8**

*Maximum amounts respondents are willing to pay for an improved forest bathing experience, the type of question from which the answer was obtained.*

<b>Willingness to Pay (Unlimited time)</b>			
<b>Maximum Price (in Php)</b>	<b># of Respondents</b>	<b>%</b>	<b>Type of Question</b>
2,000.00	2	3%	Open-ended
1,500.00	19	32%	Dichotomous (Y/N)
1,000.00	2	3%	Dichotomous (Y/N)
800.00	2	3%	Open-ended
750.00	3	5%	Dichotomous (Y/N)
500.00	10	17%	Dichotomous (Y/N)
300.00	2	3%	Open-ended
250.00	4	7%	Open-ended

150.00	1	2%	Open-ended
100.00	4	7%	Open-ended
-	11	18%	Dichotomous (Y/N)
	<b>60</b>	<b>100%</b>	<b>Total</b>

After being asked about their willingness-to-pay values, respondents were asked to select the primary reason why they have declared this amount. Since the objective of the entrance fees as stated in the survey is to enhance the health benefits from the forest bathing experience, the majority of the respondents (53%) ranked this as their primary reason for declaring their WTP. This could also be attributed to people's heightened health consciousness because of the pandemic. Twenty four percent (24%) of the respondents believe the amount they declared is commensurate to the new features of the trail. Sixteen percent (16%) selected that the primary reason for their declared amount is to promote forest bathing as an ecotourism activity in the country and to promote the conservation of forests. Six percent (6%) selected increased income for tour guides for the price they declared.

### Factors affecting WTP value

Two factors have significantly affected respondents' willingness-to-pay values, which are:

#### 1. Reason for Willingness to Pay value

The promotion of forest bathing as an ecotourism activity has the lowest mean WTP value. This is because a number of respondents who wish to promote forest bathing as an ecotourism destination clamor for lower entrance fees to make it more accessible to visitors.

**Table 9**

*Reasons for Willingness to Pay value.*

Reasons for WTP	Mean WTP
Cost commensurate to value	P 982.61
Maximize benefits	P 941.3
<b>Promotion of ecotourism</b>	<b>P 564.52</b>
Added income for tour guides	P 1,290.74

#### 2. Medical conditions which might benefit from forest bathing

Respondents with medical conditions, in general, have nominated a high WTP value. This is because the health benefits from forest bathing have been well-known and was proven by several scientific studies. This also coincides with the majority's (53%) primary reason for their willingness to pay value, which is to maximize the health benefits from forest bathing.

**Table 10**

*WTP value of healthy respondents and those with medical/psychological conditions*

Medical conditions which might benefit from forest bathing	Mean WTP
None	P 665.38
<b>Medical/Psychological/Both</b>	<b>P 930.95</b>

Among the 22 respondents who have declared low/below median WTP (Php 0 to Php 300) values, only six have medical and psychological conditions. Respondent 52 who has P 0 WTP, is poor and cannot afford entrance fees while Respondent 43 has better alternatives and belongs to the lower income group. Respondents 30 and 24's primary reason for their WTP is the promotion of forest bathing as an ecotourism activity; hence, to make it accessible to the public they declared a low amount.

The respondents proffered a host of suggestions. One wrote, "There should have more value for this like [a] healthy meal that goes along with it - for the Php 800.00." A number of respondents clamored for lower entrance fees for various reasons:

- "Forest bathing in the Philippines is still at a novel stage, thus it should be priced and packaged competitively."
- "To promote forest bathing to the larger public especially those of low income earners so they can also experience its benefits."
- "Affordability, especially that plenty of locals which are also adventurous are not well-off and can only afford that much for an entrance fee."
- "Fees should be affordable to many for sustainability."

A respondent said she does not mind paying high entrance fees. She wrote, "...It lessens the stress all the more when you know you can concentrate on communing with nature. Having a more expensive Entrance Fee is another form of deterrent to those who are only there to prey on other people."

## CONCLUSION

Forest bathing is in its infancy in this Philippines. This pioneer study aimed to find out how much tourists are willing to pay for entrance fees, which features they are willing to pay for, and the factors, which affect their WTP values. To answer these objectives, a survey was deployed from April 14 to 24, 2020, amid the COVID health crisis. The study found that the majority (95%) of the respondents fully believe in its health benefits and most (57%) deem that these benefits are very important to them. It appears that the pandemic has affected most of the respondents' psyche. The most important health benefit for them is reduction of stress levels (72%), followed by mood improvement (70%), improvement of sleep quality (67%), ability to focus (67%), feelings of awe (53%), alleviation of depression and ADHD (52%), and improvement of immune functions (48%).

Camp John Hay can impose entrance fees to its visitors since the majority (82%) are willing to pay entrance fees. Among those unwilling to pay, budget seemed to be a constraining factor, while 7% believed that the features are irrelevant to enhance their experience and another 7% prefer the baseline scenario. The features which most respondents deemed essential for inclusion in the entrance fees are: portalets (67%); maintenance, first aiders, clearer signages (65%); trash bins (63%); registration system (60%); additional handrails (55%); perimeter fence (50%); and crowd control (48%). Most respondents prefer to have forest therapists (40%) and lockers (42%) included as optional features.

The study found that the mean willingness to pay value is USD 15 (Php 770) and the median amount is USD 10 (Php 500). The primary reason for most respondents' WTP value is to enhance their health and psychological well-being (53%). Two factors have significantly affected individuals' willingness to pay values: (1) primary reason for forest bathing, and (2) existence of medical or psychological benefits which might benefit from forest bathing. Those respondents whose reason for their WTP value is promotion of ecotourism provided low amounts because they want it accessible to many. Respondents with medical conditions



gave significantly higher mean WTP compared to healthy individuals. A number of respondents argued for lower entrance fees for accessibility, competitiveness, and sustainability.

## RECOMMENDATIONS

Baguio City is under the General Community Quarantine (GCQ) at the time of the study and writing of the manuscript. Leisurely activities were prohibited hence it was difficult to gauge when the trail would re-open. This results in loss of revenue and livelihood. To avert the local economy's further decline, JHMC should do the following:

1. Re-package its forest bathing trail by capitalizing on its scientifically-proven health benefits. Amid the COVID-19 crisis, people suffering from mental anguish in their homes will need a place to commune with nature to unwind and de-stress. The study also revealed that people suffering from medical and psychological conditions are likely to pay significantly higher amounts than healthy individuals. Also, the most oft-cited reason for respondents' WTP values is to maximize the health and psychological benefits brought by forest bathing.
2. Propose, together with the Department of Tourism (DOT) – CAR, to the IATF to consider the resumption of its forest bathing trail operations. The proposal will contain the following:
  - The medical and psychological benefits and the citizenry's well-being;
  - Adherence to GCQ protocols. The following will be implemented: cleaning and disinfection, online pre-registration and online modes of payment, registration and crowd control system. A registration system will aid in the contact tracing of potential virus carriers, and also help JHMC in identifying its potential market. A group of nine people maximum will be allowed for four hours. Tour guides cum first aiders should ensure distancing and adherence to safety measures;
  - To promote forest bathing without compromising the safety of forest bathers, the median amount of P 500.00 should be placed as the entrance fee, for a period of four hours as it is the optimal time for forest bathing. Php 500.00 is closer to other park entrance fees in CJH, which makes it relatively competitive. The cost may be lowered and subsidized by the Bases Conversion and Development Authority (BCDA) where JHMC sources its funding from.
  - Capital expenditures and one-time expenses such as portalets, clearer signages, additional handrails, trash bins, computers, printer, and marketing costs should be shouldered by JHMC. Once demand rises, the subsidies can be removed. Recurring expenses like salaries of tour guides cum first aiders, forest therapists, security, admin, and maintenance staff as well as maintenance and admin costs should be passed on to tourists.
3. Conduct an information drive about the medical and psychological benefits of forest bathing.

Forest bathing is a timely solution to the health crisis brought by the COVID-19.

## REFERENCES

- Albert, J., Santos, A. & Vizmanos, J. (2018). *Defining and Profiling the Middle Class*. Philippine Institute for Development Studies [Infographic]. Retrieved from <https://pidswebs.pids.gov.ph/CDN/INFOCUS/pidsupdates76.html>
- Alegre, J. (2018). *Forest bathing in Baguio*. Retrieved from <https://www.philstar.com/lifestyle/modern-living/2018/07/07/1831158/forest-bathing-baguio>
- Baguio City Guide. *Six things to do at Camp John Hay*. Retrieved from <https://www.baguiocityguide.com/things-to-do-at-camp-john-hay/>
- Banyard, I. (2019). *The origin of forest bathing and forest therapy*. <https://www.ianbanyard.com/home/the-origin-of-forest-bathing-forest-therapy/>
- Business Mirror. (2019). *Rediscovering the healing power of Baguio's forest*. Retrieved from <https://businessmirror.com.ph/2019/01/27/rediscovering-the-healing-power-of-baguios-forest/>
- Carson, R. (2011). *Contingent Valuation: A Comprehensive Bibliography and History*. Cheltenham: UK Edward Elgar Publishing. Retrieved from [https://books.google.com.ph/books?hl=en&lr=&id=SDrtsqMlb2cC&oi=fnd&pg=PR1&dq=Carson+R.+2011+Contingent+Valuation:+A+Comprehensive+Bibliography+and+History+Cheltenham,+UK+Edward+Elgar+Publishing+&ots=Lb6mhuNKoy&sig=ZfhpNjohgYGXLzSA7zSOB-7m\\_2dw&redir\\_esc=y#v=onepage&q=Carson%20R.%202011%20Contingent%20Valuation%3A%20A%20Comprehensive%20Bibliography%20and%20History%20Cheltenham%2C%20UK%20Edward%20Elgar%20Publishing&f=false](https://books.google.com.ph/books?hl=en&lr=&id=SDrtsqMlb2cC&oi=fnd&pg=PR1&dq=Carson+R.+2011+Contingent+Valuation:+A+Comprehensive+Bibliography+and+History+Cheltenham,+UK+Edward+Elgar+Publishing+&ots=Lb6mhuNKoy&sig=ZfhpNjohgYGXLzSA7zSOB-7m_2dw&redir_esc=y#v=onepage&q=Carson%20R.%202011%20Contingent%20Valuation%3A%20A%20Comprehensive%20Bibliography%20and%20History%20Cheltenham%2C%20UK%20Edward%20Elgar%20Publishing&f=false)
- Catajan, M. E. (2019, February 10). *Camp John Hay tourist arrivals increase*. Sunstar. Retrieved from <https://www.sunstar.com.ph/article/1787010>
- Clifford, M. A. (2018). *Your Guide to Forest Bathing: Experience the Healing Power of Nature*. Conri Press. Retrieved from [https://books.google.com.ph/books?hl=en&lr=&id=KZ50-DwAAQBAJ&oi=fnd&pg=PP1&dq=history+of+forest+bathing+&ots=n4n0rA2C-qh&sig=C2tmcvu4bHFS\\_YhOQGmBOdlW4qg&redir\\_esc=y#v=onepage&q=history%20of%20forest%20bathing&f=false](https://books.google.com.ph/books?hl=en&lr=&id=KZ50-DwAAQBAJ&oi=fnd&pg=PP1&dq=history+of+forest+bathing+&ots=n4n0rA2C-qh&sig=C2tmcvu4bHFS_YhOQGmBOdlW4qg&redir_esc=y#v=onepage&q=history%20of%20forest%20bathing&f=false)
- Cruz, C. & Calderon, M. (2000). ENRM 231 Economics of Upland Resources. UP Open University.
- Dela Cruz, J. *Along the forest bathing trail: Hiking through Baguio's last forest*. Retrieved from <https://phmillennia.com/along-the-forest-bathing-trail/>
- Food and Agriculture Organization. *Introduction and General Description of the Method of Contingent Valuation*. Retrieved from <http://www.fao.org/3/X8955E/x8955e03.htm>
- Forest Therapy Society. (n. d.) *What is "Forest Therapy Base."* Retrieved from [https://www.fo-society.jp/quarter/cn49/62forest\\_across\\_japan.html](https://www.fo-society.jp/quarter/cn49/62forest_across_japan.html)
- Francisco, H. & Espiritu, N. (1999). *Valuation of Forest Resources in Watershed Areas: Selected Applications in Makiling Forest Reserve*. Journal of Philippine Development.

- John Hay Management Corporation. (2011). Annual Audit Report of the John Hay Management Corporation. Retrieved from <https://www.jhmc.com.ph/documents/Annual%20Audit%20Report%20on%20JHMC%20for%202011.pdf>
- John Hay Management Corporation. (2019). *Therapy in the Woods*. Retrieved from [https://www.jhmc.com.ph/therapy-in-the-woods/King of the Mountain Trail Run Philippines. FOREST BATHING TRAIL LOOP ULTRA](https://www.jhmc.com.ph/therapy-in-the-woods/King%20of%20the%20Mountain%20Trail%20Run%20Philippines%20FOREST%20BATHING%20TRAIL%20LOOP%20ULTRA). Retrieved from <http://kotmtrailrun.com/forest-bathing-trail-loop-ultra/>
- Lee, C. K., Park, S., Mjelde, J., Kim, T. & Cho, J. (2008). *Measuring the Willingness-to-pay for a Horticulture Therapy Site Using a Contingent Valuation Method*. American Society for Horticultural Science. Retrieved from <https://doi.org/10.21273/HORTSCI.43.6.1802>
- Lee, J, Park, B.J., Tsunetsugu, Y., Ohira, T., Kagawa, T., Miyazaki, Y. (2011). *Effect of forest bathing on physiological and psychological responses in young Japanese male subjects*. Volume 125, Issue 2, February 2011, Pages 93-100. <https://doi.org/10.1016/j.puhe.2010.09.005>
- Li, Q., et al (2007). *Forest bathing enhances human natural killer activity and expression of anti-cancer proteins*. DOI: 10.1177/03946320070200S202
- Li, Q. (2009). *Effect of forest bathing trips on human immune function*. *Environ Health Prev Med* 15, 9–17 (2010). <https://doi.org/10.1007/s12199-008-0068-3>
- Li, Q. (1 May 2018). 'Forest Bathing' Is Great for Your Health. Here's How to Do It. Time.com. Retrieved from <https://time.com/5259602/japanese-forest-bathing/>
- Manila Standard. (2019). *Group urges Filipinos to do 'forest bathing'*. Retrieved from <https://www.manilastandard.net/lifestyle/home-living/298696/group-urges-filipinos-to-do-forest-bathing-.html>
- Masculino, G. (2020). *PUMs get to stay in Negros Occidental resort for 14-day quarantine*. Manila Bulletin. Retrieved from [https://news.mb.com.ph/2020/03/23/pums-get-to-stay-in-negros-occidental-resort-for-14-day-quarantine/?\\_\\_cf\\_chl\\_jschl\\_tk\\_\\_=36c27c324ff6ae327472af9786c53619c81a1b99-1587269551-0-ATTTwoRDvPnXkxFui\\_IdBwp0eo-Eajp04PvEDA6Z6qmSLQFkJYPqWod-j1j6bbbKf3t-coIAgonE0kDNMEAl6IL\\_39z6eGC2WXN8Unslk6hAQLh\\_rdi0rBR9cVgvLilhf2cP-jA1RxtVt0mxQ0SpvRGqSaGISzEIN2rX-B\\_VKSmnpy42C-jS1v018nUul8ZmYSmgE-jl8X4KX2iwH\\_DXKDMhJ-XCS-Ys3j-NTb1Thkje5H8xK3zvrc\\_99bkfMosuxwcCWx14X-z9BaN-skyYHIUZK-8b2qMVhdnt4RFZ-6eaEEljZEmn3pvpjcJLudNiPIKFbmEeaQXM-jXA24\\_C17i6NtAo\\_KVLPferakyWArMNBfM0K\\_Rf-lp22IYolmC1Cd24dYRg](https://news.mb.com.ph/2020/03/23/pums-get-to-stay-in-negros-occidental-resort-for-14-day-quarantine/?__cf_chl_jschl_tk__=36c27c324ff6ae327472af9786c53619c81a1b99-1587269551-0-ATTTwoRDvPnXkxFui_IdBwp0eo-Eajp04PvEDA6Z6qmSLQFkJYPqWod-j1j6bbbKf3t-coIAgonE0kDNMEAl6IL_39z6eGC2WXN8Unslk6hAQLh_rdi0rBR9cVgvLilhf2cP-jA1RxtVt0mxQ0SpvRGqSaGISzEIN2rX-B_VKSmnpy42C-jS1v018nUul8ZmYSmgE-jl8X4KX2iwH_DXKDMhJ-XCS-Ys3j-NTb1Thkje5H8xK3zvrc_99bkfMosuxwcCWx14X-z9BaN-skyYHIUZK-8b2qMVhdnt4RFZ-6eaEEljZEmn3pvpjcJLudNiPIKFbmEeaQXM-jXA24_C17i6NtAo_KVLPferakyWArMNBfM0K_Rf-lp22IYolmC1Cd24dYRg)
- Miyazaki, Y. (2018). *Shinrin Yoku: The Japanese art of Forest Bathing*. Portland Oregon: Timber Press. Retrieved from [https://books.google.com.ph/books?hl=en&lr=&id=115xDwAAQ-BAJ&oi=fnd&pg=PP1&dq=history+of+forest+bathing+&ots=nk5fNgnwoG&sig=0SU-a8LbMSE6dbewc0YyaAwNzST8&redir\\_esc=y#v=onepage&q=history%20of%20forest%20bathing&f=false](https://books.google.com.ph/books?hl=en&lr=&id=115xDwAAQ-BAJ&oi=fnd&pg=PP1&dq=history+of+forest+bathing+&ots=nk5fNgnwoG&sig=0SU-a8LbMSE6dbewc0YyaAwNzST8&redir_esc=y#v=onepage&q=history%20of%20forest%20bathing&f=false)
- Mao, G.X., et al (2012). *Therapeutic effect of forest bathing on human hypertension in the elderly*. DOI: <https://doi.org/10.1016/j.jjcc.2012.08.003>

- Mao G.X., et al. (2012). *Effects of Short-Term Forest Bathing on Human Health in a Broad-Leaved Evergreen Forest in Zhejiang Province, China*[J]. *Biomedical and Environmental Sciences*, 25(3): 317-324. doi: 10.3967/0895-3988.2012.03.010
- Ogle (2018). *What on earth is forest bathing? (And where on earth did it come from?)*. Adventure.com. Retrieved from <https://adventure.com/forest-bathing-oregon-japan-history/>
- Payne, M. & Delphinu, E. (2019). *The most natural of natural therapies: A review of the health benefits derived from Shinrin-Yoku (Forest Bathing)*. *Advances in Integrative Medicine*. Volume 6, Supplement 1. <https://doi.org/10.1016/j.aimed.2019.03.316>
- Pearce, D. et al (1994). *Project and Policy Appraisal: Integrating Economics and Environment*. OECD, Paris. Retrieved from <http://www.ibiblio.org/villani/ca8dwcvt.htm#1.6>
- Rappler.com. (2014, December 24). *10 places in Baguio that remind us why it's still 'Little America.'* Rappler.com. Retrieved from <https://www.rappler.com/life-and-style/travel/ph-travel/56434-places-baguio-little-america>
- Sifferlin, A. (2016). *The Healing Power of Nature*. Time.com. Retrieved from <https://time.com/4405827/the-healing-power-of-nature/>
- The Poor Traveler. (2019, April 19). Retrieved from <https://www.thepoortraveler.net/2014/01/camp-john-hay-manor-hotel-baguio-city/>
- Treebath. Book Adult Forest Therapy Programs. Retrieved from <https://www.tree-bath.com/register-adult-forest-therapy>