

Analysis of availability to pay wtp (willingness to pay) in efforts to develop "cipanas" hot water tourism west java, Indonesia

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Abstract

The management of natural resources in terms of ecological, social and economic functions and maintaining the aesthetic value of an object and the environment by encouraging environmental quality and the sustainability of rural life, can be a value of pride and identity of a village. As a tourism object for Cipanas Hot Springs in Subang Village, West Java, Indonesia, development efforts are also intended for the common welfare (*bonnum commune*) both economically, socially and sustainably and this requires good management and costs that are not small. also visitors to pay for the management of Cipanas hot spring tours. The research aims to identify visitor characteristics, calculate the willingness to pay (WTP) value using the Contingent Valuation Method (CVM) to estimate the costs incurred by visitors, and the multiple regression method is used to analyze what factors influence the amount of willingness to pay visitors. The data collection technique used purposive sampling technique for a sample of 60 respondents. This type of research uses descriptive analysis with a quantitative approach. The results showed that as many as 52% of the respondents were willing to pay for the development of a tourist attraction for the Cipanas hot spring in the Regency. Factors that influence the willingness to pay visitor respondents include age, gender, education, income, type of work. The average WTP value is IDR 10,583 / person, while the factors that influence the respondents' WTP value are income and gender.

Keywords

Willingness to Pay (WTP), Contingent Valuation Method (CVM), Influencing Factors, consumer

To cite this article: Yudanegara, A.; Sinaga², O, and Roespinoedji, D. (2021) Analysis of availability to pay wtp (willingness to pay) in efforts to develop "cipanas" hot water tourism west java, Indonesia. *Review of International Geographical Education (RIGEO)*, 11(6), 563-574. doi: 10.48047/rigeo.11.06.70

Submitted: 10-10-2020 • **Revised:** 14-12-2020 • **Accepted:** 18-02-2021

Introduction

The village as a government that directly and real touches the needs of the community for welfare. If the village is able to independently provide for the needs of its citizens, then the village will be able to prosper the residents as well as provide income for themselves. The village is the basis of a strong national social system for developing political, social, cultural, economic and defense and security systems. In order to accommodate the potential of the village and fulfill the needs of the villagers, through Law no. 32 of 2004 concerning Regional Government, the government provides great support so that villages have business entities that are able to develop and drive the local economy. Village-Owned Enterprises (hereinafter abbreviated as BUMDes) become a forum for village governments and their citizens to proportionally carry out economic empowerment programs at the village level. The existence of BUMDes is expected to be able to stimulate and move the wheels of the village economy. Quoting the Village Law no. Article 1 of 2014 Article 1, Village-Owned Enterprises, hereinafter referred to as BUM Desa, is a business entity whose entire or most of its capital is owned by the village through direct participation originating from separated village assets to manage assets, services, and other businesses. for the maximum welfare of the village community. BUMDes can also be an instrument and optimize its role as a legal local economic institution at the village level to improve community welfare and village income. In line with this, Permendes No. 4 of 2015 article 3 stipulates that the establishment of BUMDes aims to improve the village economy, optimize village assets, develop business cooperation between villages / third parties, create market opportunities and networks, open employment opportunities, improve community welfare through improved public services, increase community income village and village original income. The reference to the two rules above clearly confirms that the assets and business units managed by BUMDes are aimed at improving the welfare of the community.

Cipanas Hot Spring Tourism is one of the businesses managed by the Malar Walatra BUMDes in Subang Village, with the advantage of being the only owner of natural hot springs in South Kuningan. Hot water is high in minerals and is good for health and skin. This natural hot spring tourist attraction has 1 therapy pool with natural temperature, 1 adult plunge pool, and 2 children's plunge pools. Also supporting this tourism business, BUMDes Malar Walatra has developed a business selling souvenirs typical of Subang, food court, parking lot to meet the needs of visitors when traveling to Cipanas hot springs. Consumers of the Malar Walatra BUMDes business come from residents of Subang Village, residents in the sub-district and outside the sub-district, residents from outside Kuningan Regency and even foreign tourists. The average monthly income from the assistants is Rp. 500,000. The workforce is 36 people consisting of 11 tourism managers, 10 shop managers, 14 motorcycle taxis and 2 parking managers.

BUMDes Malar Waatra has received support from both the central and regional governments in the form of coaching both in management and support for providing capital for improvement. In addition, support is in the form of assistance in business orientation to increase community exposure to the program, increase in income for both the community and BUMDes, the absorption of new workers and an increase in the number of products absorbed by the market such as the number of tourists who come to increase. Following up on these assistance activities, this study is to analyze the impact of the benefits of the existence of a tourism business unit managed by BUMDes, both financially and non-financially to the people who are directly affected by this BUMDes business unit. Based on the results of this research, later in 2021 it will be used as a reference and recommendation for conducting research / service on tourism business units or services managed by BUMdes in different villages.

Referring to the description above, there are several problems identified in this study, namely, 1) What is the average WTP of visitors to the Cipanas hot springs managed by BUMDes Malar Walatra? (2) What are the factors that affect the WTP of visitors to the Cipanas hot spring so that they can develop a business in managing hot spring tourist attractions by BUMDes Malar Walatra? The objectives of this study are: (1) consumer characteristics related to willingness to pay; (2) estimate the amount of WTP (Willingness to Pay) value given by visitors in an effort to conserve the tourism object's environment. (3) analyzing the factors that influence the WTP value of visitors in the effort to manage tourism objects.

Research Method

Research Methods and Design

The determination of the research area was carried out because of the collaboration between Parahyangan Catholic University and ASTRA International through the Kampung Berseri Astra Desa Sejahtera (KBADS) program in mentoring BUMDes and the West Java Provincial Government program, one village one product by building a network of cooperation between the government, private sector, universities and community use. reduce rural and urban economic inequality which has been a problem in West Java.

The research method used is a descriptive method with a quantitative approach, which according to [Sekaran and Bougie \(2019\)](#) as a research based on the philosophy of positivism, is used to research on certain populations or samples, data collection uses research instruments, data analysis is quantitative / statistical, with the aim of describing and testing the hypotheses that have been set. The descriptive method aims to describe or describe a phenomenon, namely the characteristics of consumers of "Cipanas" hot spring tourism related to the willingness of consumers to pay and the factors that affect the value of willingness to pay the entrance fee for the natural hot spring tour "Cipanas", Kuningan district. The sampling method uses purposive sampling, according to [Sekaran and Bougie \(2019\)](#), namely the sampling technique with certain considerations. Purposive sampling is a non-probability sampling, which means it does not provide equal opportunities for every population. The criteria set in this study to be sampled are tourism managers, traders, motorcycle taxis, local residents and tourist visitors. Descriptive analysis describes and provides an overview of the respondents in this study based on demographic characteristics including age, education, gender, income, level of employment. Data collection techniques using questionnaires, direct surveys and interviews.

Population and Sample Determination

According to [Thamhain \(2014\)](#) population is the totality of all objects or individuals who have certain, clear and complete characteristics to be studied. The population of this research is the consumers of "Cipanas" hot spring tourism in Kuningan Regency, managers, traders, motorcycle taxis, parkers and local residents totaling 600 people. While the sample of the population of 60 respondents was taken 10% of the total population.

The sample is a part or representative of the population under study. Determination of the sample used in this study using a type of random sampling method. This sampling technique is given this name because in taking the sample, the researcher "mixes" the subjects in the population who are considered to be the same. The way is by giving a questionnaire to the selected sample. To find out the representative sample size obtained based on the Slovin formula ([Thamhain, 2014](#)).

Data Analysis Method

The factors that influence the value of willingness to pay were analyzed using multiple linear regression analysis with SPSS tools. Multiple linear regression analysis is a technique to see the relationship of the dependent variable which is influenced by more than one independent variable in a mathematical model ([Afifi, May, Donatello, & Clark, 2019](#)). The dependent variable used in this study is the WTP value given by the respondent. Independent variables that are thought to affect the respondents' WTP value are age, gender, education, income, level of employment. The multiple linear regression analysis model used in this study are:

$$Y = a_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 D_1 + b_5 D_2 + e$$

Information :

Y = Travel ticket WTP value per person

a₀ = Constant

X₁ = Age (1 = 19-24; 2 = 25-35; 3 = 36-50; 4 = 51- 65)

X₂ = education (SD = 1; SMP = 2; SMA = 3; S1 / D3 = 4)

X₃ = income per month (1 = <1 million; 2 = 1 million <Xi <2 million; 3 = 2 million <Xi <2.5 million; 4 => 2.5 million)

D₁ = Dummy Gender (0 = Female; 1 = Male)

D2 = Dummy Job Status (0 = employee; 1 = non employee)

The equation is analyzed using SPSS 21, which is used to determine the effect of the independent variables (age, sex, income, education and work status per month) on the dependent variable (WTP value of "Cipanas" hot spring tourism). This effect can be statistically measured from the coefficient of determination, the statistical value of f, and the value of the t statistic. The f statistical test is carried out to determine whether all the independent variables included in the model have a joint influence on the dependent variable. Decision making criteria: a. $f\text{-count} > f\text{-table}$ ($\alpha = 5\%$) then H_0 is rejected, meaning that overall the independent variables have a significant effect on the dependent variable. b. $f\text{-count} < f\text{-table}$ ($\alpha = 5\%$) then H_0 is accepted, meaning that overall the independent variables do not significantly affect the dependent variable. The t statistical test was conducted to determine the extent of the influence of each independent variable on the dependent variable by assuming the other independent variables were constant. Decision making criteria: a. $t\text{-count} > t\text{-table}$ ($\alpha = 5\%$) then H_0 is rejected, meaning that the independent variable has a significant effect on the dependent variable. b. $t\text{-count} < t\text{-table}$ ($\alpha = 5\%$) then H_0 is accepted, it means that the independent variable has no significant effect on the dependent variable.

Willingness to Pay (WTP) or willingness to pay is an individual's willingness to pay for an environmental condition or an assessment of natural resources and natural services in order to improve environmental quality (Hanley & Spash, 1993). The Contingent Valuation Method (CVM) is a survey-based methodology to estimate how much a person / society values goods, services, and convenience.

To obtain the average value of WTP, steps are taken by calculating the Average Value of WTP that will be issued by respondents who are willing to pay can be calculated using the formula below

$$TWTP = \sum_{i=1}^n WTP_i \left(\frac{n_i}{N}\right) P$$

With:

EWTP = The average WTP value of visitors

Wi = the amount of WTP that is willing to be paid

i = respondent who is willing to pay

n = number of respondents

Results And Discussion

Consumer characteristics result in differences in the needs and desires of consumers, without understanding the characteristics inherent in consumers, it will result in the inaccuracy of business actors in producing, marketing, and selling their products (Sima, Gheorghe, Subić, & Nancu, 2020).

1. Age Every consumer will have different needs according to their age (Stampa, Schipmann-Schwarze, & Hamm, 2020). Based on the life cycle humans are grouped into 11 age groups, however in this study only 4 age groups were found. These age groups are early adulthood (19-24th), advanced adult (25-35th), middle-aged (36-50th), and old (51-65th).

Table 1.

Respondents by Age Group in Relation to Willingness to Pay

| No. | Value of WTP (Rp.) | Age Group | | | | Total people | of Total (%) |
|-------|--------------------|-----------|---------|---------|---------|--------------|--------------|
| | | 19 - 24 | 25 - 35 | 36 - 50 | 51 - 65 | | |
| 1 | 7.500 - 10.000 | 1 | 10 | 5 | 0 | 16 | 27% |
| 2 | 10.001 - 15.000 | 5 | 15 | 5 | 2 | 27 | 45% |
| 3 | 15.001 - 20.000 | 2 | 10 | 4 | 1 | 17 | 28% |
| TOTAL | | 8 | 35 | 14 | 3 | 60 | 100% |

In table 1., it is known that respondents in the early adulthood group (20-35 years) are most willing to pay the price of all price range options. According to Abdillah (2014), in this age group price is still the main consideration compared to the benefits obtained, because in this age group the respondents are still young and productive. The elderly adult group is the respondent who has the least willingness to pay it, it is estimated that they are less interested in traveling.

Gender

According to [Ioanas \(2020\)](#), gender differentiates each individual population with the sexes of women and men. The results showed that there were more female respondents than men. As many as 36 women and 24 men. According to [Setiyadi, Hartono, and Darwanto \(2017\)](#), women tend to want to experiment and be more consumptive. There are more female respondents than men, this is because natural hot spring tourism is perceived to have health benefits by women as well as being a vacation destination. Most household needs in decision making are carried out by women as housewives, so it is not surprising that women dominate in making tourism selection decisions.

Table 2.
Respondents by Gender in Relation to Willingness to Pay

| No. | Value of WTP (Rp.) | Gender | | Total of people | Total (%) |
|-------|--------------------|--------|--------|-----------------|-----------|
| | | Male | Female | | |
| 1 | 7.500 - 10.000 | 7 | 9 | 16 | 27% |
| 2 | 10.001 - 15.000 | 16 | 23 | 39 | 65% |
| 3 | 15.001 - 20.000 | 1 | 4 | 5 | 8% |
| TOTAL | | 24 | 36 | 60 | 100% |

In [table 2](#). it can be seen that the most female respondents are willing to pay at the price of Rp.10,001 - Rp. 15,000, which is 23 people, and 9 respondents are willing to pay the price of Rp. 7,500 - Rp. 10,000. This is because women tend to be attracted to a product more quickly based on their belief in the benefits of the product. In addition, as many as 4 female respondents were willing to pay a price of Rp. 15,001 - Rp. 20,000, this is because they chose ticket prices that were not too far from the price of tickets for other similar tours. Based on the research results, it is known that male respondents do not really care about price because men like simple things and do not have too much consideration in making decisions about natural hot spring tourism options. The distribution of male willingness to pay is more in the middle price of Rp.10,001 - Rp. 15,000.

Education

Education has an important effect on one's perspective and point of view, the higher the level of one's education, the better the way of thinking in dealing with a problem or decision to purchase an item ([Stampa et al., 2020](#)). In this study, it is known that of the 60 respondents who have the latest education level of S1 / D3 as many as 18 people, this is reasonable because the higher the level of education a person cares about health. Others are scattered mostly in SMA and SD. According to [Stampa et al. \(2020\)](#) consumers with better education will be very responsive to information, education, and will also affect the choice of products and brands. This will provide an opportunity for managers of natural hot spring tourism "Cipanas", the higher the level of consumer education will provide a good assumption of the consumer's perspective on the importance of the benefits of natural hot water bath for health and refreshing from everyday fatigue.

Table 3.
Respondents based on Education Level in Relation to Willingness to Pay

| No. | Value of WTP (Rp.) | Education | | | | Total of people | Total (%) |
|-------|--------------------|-----------|-----|-----|-------|-----------------|-----------|
| | | SD | SMP | SMA | D3/S1 | | |
| 1 | 7.500 - 10.000 | 2 | 2 | 5 | 3 | 12 | 20% |
| 2 | 10.001 - 15.000 | 12 | 5 | 11 | 15 | 43 | 72% |
| 3 | 15.001 - 20.000 | 0 | 2 | 3 | 0 | 5 | 8% |
| TOTAL | | 14 | 9 | 19 | 18 | 60 | 100% |

In [table 3](#). it is known that there are 5 respondents with high school education and all are willing to pay the price of Rp. 7,500 - Rp. 10,000. This is because they are housewives and the income

they have is from their husbands. Respondents with D3 / S1 education are 15 people, 12 Elementary School students and 11 Senior High School respondents are willing to pay at a price of Rp.10,001 - Rp. 15,000. This is because they compare ticket prices in the "Cipanas" tour with ticket prices for similar natural hot springs tours that have the same benefits.

Profession

Most of the respondent's occupation will determine income, when the job is already in a permanent status, usually the income will also remain (Abdillah, 2014). Of the 60 respondents, it is known that the number of respondents has more employment status than non-employees. The number of respondents who work as employees is 38 people and 22 people are non-employees.

Table 4.

Respondents Based on Work Status in Relation to Willingness to Pay

| No. | Value of WTP (Rp.) | Work Status | | Total people | Total (%) |
|-------|--------------------|-------------|---------------|--------------|-----------|
| | | employees | non employees | | |
| 1 | 7.500 - 10.000 | 10 | 12 | 22 | 37% |
| 2 | 10.001 - 15.000 | 17 | 10 | 27 | 55% |
| 3 | 15.001 - 20.000 | 11 | 0 | 11 | 8% |
| TOTAL | | 38 | 22 | 60 | 100% |

In table 4. there are no respondents who have non-employee employment status who are willing to pay the price of IDR 15,001 - IDR 20,000. This is because non-employees do not have a steady income and are financially independent so it is not surprising that the willingness to pay is also low. Respondents who have an even distribution of employee employment status are willing to pay at a choice of price ranges. Most of the respondents who have non-employee employment status are housewives, so their income depends on their husband's income. Some considerations are needed before deciding to visit for a natural hot spring tour whether it is beneficial for your husband or other family members. The results showed that hot spring tourism visits were carried out based on the needs of family members or themselves who needed health.

Income

Income will affect the decision-making process in buying an item, the lower a person's income, only goods that he thinks are important, in other words, put aside health benefits and consider the price more. The income measured from a consumer is usually not only the income received by an individual, but is measured by the income received by all members of the consumer's family (Stampa et al., 2020). The following is the respondent's explanation based on income regarding willingness to pay the ticket price for the "Cipanas" hot spring tour.

Table 5.

Respondents based on income relating to willingness to pay

| No. | Value of WTP (Rp.) | Income/month | | | | Total of people | Total (%) |
|-------|--------------------|--------------|------------------|--------------------|----------|-----------------|-----------|
| | | < 1 ml | 1 ml < Xi < 2 ml | 2 ml < Xi < 2.5 ml | > 2.5 ml | | |
| 1 | 7.500 - 10.000 | 15 | 1 | 2 | 3 | 21 | 35% |
| 2 | 10.001 - 15.000 | 4 | 3 | 19 | 8 | 34 | 57% |
| 3 | 15.001 - 20.000 | 2 | 0 | 1 | 2 | 5 | 8% |
| TOTAL | | 21 | 4 | 22 | 13 | 60 | 100% |

Based on table 6., it is known that 21 people who have a monthly income of <IDR 1,000,000, 4 people are willing to pay at a price of IDR 10,001-IDR 15,000, 2 people are willing to pay at a price of IDR 15,001 - IDR 20,000. This is because the majority of respondents are housewives whose husbands do not have a fixed income, so they act rationally or adjust to income. Respondents who have an income of Rp. 1,000,000 - Rp. 2,000,000 have the least amount of 4 people, 1 person is willing to pay at the price of Rp. 7,500 - Rp. 10,000, and 3 people at the price of Rp. 10,001 - Rp.

15,000, none who are willing to pay at the price of IDR 15,001 - IDR 20,000. Logically, the respondent's income of Rp. 1,000,000 - Rp. 2,000,000 per month is still in the range of UMK in Kuningan Regency which is Rp1,882,642 so that it is still able to be compared with respondents who have an income of <Rp. 1,000,000 per month, but there are more useful needs. In contrast to respondents who have an income of > Rp. 2,000,000, there are 35 people and 30 people are willing to pay a price > Rp.10,001 - Rp. 15,000. This is because the respondent's willingness to pay is also high. High incomes cause respondents to overlook prices and place greater importance on the health benefits of bathing in natural hot springs.

Willingness to Pay Analysis of “Cipanas” Hot Water Tourism in Kuningan Regency

1. Based on the results of a survey conducted on 60 respondents, it is known that 39 respondents are willing to pay for tickets at a price of more than Rp. 9,432 (can be seen in [table 6](#)). Respondents - these respondents are willing to pay above the price offered because they believe that the hot spring tourism area provides many benefits. A total of 21 respondents were willing to pay for tickets with prices lower than IDR 9,432 (can be seen in [table 6](#)). This condition is because these respondents have limited income so they act rationally (adjusting to income). In addition, some respondents are also not sure about the benefits of hot water tourism managed by BUMDes, so they choose a cheaper price.

2. The calculation of the WTP value is as shown in [table 6](#) below:

Table 6.

Value of WTP, Number of respondents and Cumulative Frequency

| Value of WTP (Rp.) | Number of Respondents | WTP (Rp) | % | % Cumulative |
|---|-----------------------|--------------------|-----------------|--------------|
| 1 | 2 | 3 = (1 X 2) | 4 = 2/Σ2 | |
| 7,500 | 11 | 82,500 | 18% | 18% |
| 9,000 | 10 | 90,000 | 17% | 35% |
| 10,000 | 25 | 250,000 | 42% | 77% |
| 12,500 | 6 | 75,000 | 10% | 87% |
| 15,000 | 3 | 45,000 | 5% | 92% |
| 17,500 | 3 | 52,500 | 5% | 97% |
| 20,000 | 2 | 40,000 | 3% | 100% |
| TOTAL | 60 | 635,000 | 100% | 100% |
| Average Value of WTP (Σ3/Σ2) | | 10,583 | | |
| average price prevailing in the market (2018 & 2019) | | 9,432 | | |

Based on the [table](#) above, it can be seen that the distribution of values that respondents are willing to pay and the number of respondents who chose this value. The value of WTP that most respondents chose in this study was Rp 10,000.00. The average value of the respondents' WTP is Rp. 10,583 per visit, whereas the average visit ticket price at the time of the study was Rp 9,432. The average value of the research results of Rp. 10,583 indicates an excess price that the respondents are willing to pay is Rp. 1,151. In economic terms, the excess of this ticket price is called consumer surplus. Consumer surplus is the excess price that consumers are willing to pay above the equilibrium price. The high and low value of an item depends on the consumer who gives an assessment, so a new item has meaning for a consumer if the item has a high added satisfaction so that the consumer is willing to pay a high price too. Most of the respondents in this study compared the ticket prices for the “Cipanas” hot spring tour with the ticket prices for other similar tours that have benefits.

The characteristics of the respondents are related to willingness to pay. The results of this study indicate that the respondent is female, middle age, has a Bachelor's or Diploma's latest education, is an employee, and earns Rp. 2 million - Rp. 2.5 million has the highest amount of willingness to pay in the price range of Rp. 10,001 - Rp. 15,000 per visit to tourist attractions.

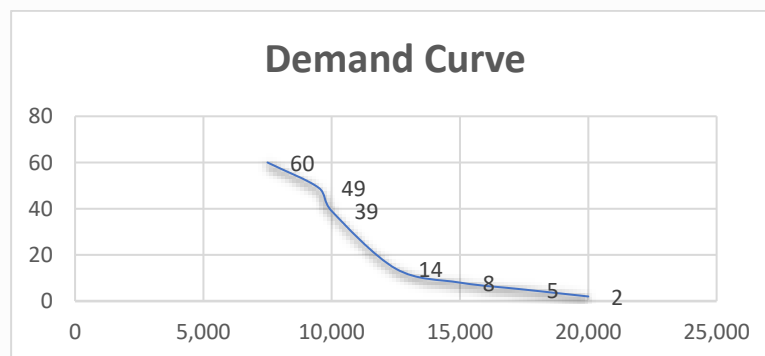
The maximum average value of willingness to pay visitors to the Cipanas hot spring tour is IDR 10,583 per person visit. This value is higher than the prevailing ticket price of Rp. 9,432 so that a consumer surplus of Rp. 1,151 is obtained. The demand for visitors to the Cipanas hot spring tour at a price of Rp. 9,432 is 65% and visitors who cannot reach are 35%, while visitor demand at Rp. 10,583 is 23% and visitors who cannot reach are 77%.

3. The cumulative frequency of WTP values is as shown in the table below

Table 7. Value of WTP, Number of respondents and Cumulative Frequency

| Value of WTP (Rp.) | Number of Respondents | Cumulative Frequency |
|--------------------|-----------------------|----------------------|
| 20,000 | 2 | 2 |
| 17,500 | 3 | 5 |
| 15,000 | 3 | 8 |
| 12,500 | 6 | 14 |
| 10,000 | 25 | 39 |
| 9,500 | 10 | 49 |
| 7,500 | 11 | 60 |
| TOTAL | 60 | |

Based on table 7, it is known that the WTP value and the number of respondents who chose a certain WTP value. The demand curve is formed using the relationship between the WTP value chosen by the respondent and the cumulative frequency of the number of individuals who chose a particular WTP value. The assumption is that individuals who are willing to pay a certain (high) value are definitely willing to pay a WTP value that is below it. This is more clearly seen in the chart below.



Gambar 1. Demand Curve

Based on the graph above, it can be seen that the higher the WTP level, the less number of respondents are willing to pay. This provides an explanation that the respondent's ability to pay is less the higher the price. An increase in ticket prices will reduce demand, because the set price has made the manager get a profit but has not been able to get the maximum profit. This condition is due to lost potential. This potential should be taken advantage of by the manager or known as deadweight loss. Hot spring tourism managers can get the maximum benefit if this lost potential is maximized. In this study, 24 potential visitors were found in the deadweight loss area, meaning that they wanted to visit but were not reachable due to high prices. This condition is an opportunity for managers to get maximum profit, by developing tourist vehicles and increasing the volume of ticket sales.

Factors Affecting Respondents' Willingness to Pay (Willingness to Pay) Hot Spring Tourism "Cipanas" Kuningan Regency

The factors that were thought to influence respondents in determining the WTP value were analyzed using multiple linear regression analysis. Multiple linear regression was chosen because it makes it easier for researchers to know how much influence the independent variables used in

this study have on the dependent variable being tested simultaneously. The real level used in testing the significance is $\alpha = 5\%$, meaning that the level of confidence in the results of this study is 95%. Before interpreting the output from SPSS, it is necessary to test the classic regression assumptions to see the validity of the regression in predicting the results. The use of this assumption is a consequence of using Ordinary Least Square (OLS) in calculating the regression equation. This assumption is carried out by several tests, namely: (1) normality test, (2) multicollinearity test, (3) heteroscedasticity test, and (4) autocorrelation test.

Normality test

Normality testing is done to see the normal distribution of the data, one way is to look at the graph. The histogram graph of the SPSS output results is normally distributed. It is proven that the shape of the data in a normally distributed graph will also follow the normal consumption pattern where the shape of the graph follows the shape of a bell. In the PP plots graph, the data is spread normally, as evidenced by the PP plots values that do not deviate from the diagonal line.

Multicollinearity Test

The multicollinearity assumption states that the independent variable must be free from multicollinearity symptoms. Symptoms of multicollinearity are symptoms of correlation between independent variables, this symptom is shown by a significant correlation between independent variables. To see the multicollinearity symptom, it can be seen in the collinierity statistics of the VIF column in the [table](#) below:

Table 8.

Relationship between Independent Variables and VIF Value

| Coefficients ^a | | | | | | | | |
|---------------------------|-----------------|-----------------------------|------------|--------------------------------|-------|------|-------------------------|-------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients Beta | T | Sig. | Collinearity Statistics | |
| | | B | Std. Error | | | | Tolerance | VIF |
| 1 | (Constant) | 5469.110 | 1199.168 | | 4.561 | .000 | | |
| | X1_USIA | 293.728 | 449.022 | .072 | .654 | .516 | .662 | 1.511 |
| | X2_PENDI | 401.296 | 398.622 | .126 | 1.007 | .319 | .520 | 1.923 |
| | X3_PENDA | 1561.878 | 302.050 | .515 | 5.171 | .000 | .817 | 1.224 |
| | D1_JK | 1428.267 | 605.939 | .235 | 2.357 | .022 | .816 | 1.226 |
| | D2_STATUS PEKER | -897.524 | 640.103 | -.148 | - | .167 | .731 | 1.368 |
| | | | | | 1.402 | | | |

a. Dependent Variable: WTP

VIF results that are close to one show no multicollinearity symptoms, while VIF values above 10 indicate multicollinearity symptoms. The results of the SPSS output in [Table 8](#) above, none of the variables have a VIF value above 10. The values on all variables are less than 10, so the model does not show any multicollinearity symptoms.

Autocorrelation Test

In order to determine the correlation between errors in the analysis period and the previous period, the autocorrelation test was used using the Durbin-Watson statistical test pioneered by [Watson and Durbin \(1951\)](#). To see the symptoms of autocorrelation, you can see the SPSS output below:

Table 9.

The Relationship of Independent Variables and Durbin Watson's Value

| Model Summary ^b | | | | | | | | | | |
|----------------------------|-------------------|----------|-------------------|----------------------------|--------------------------------------|----------|-----|-----|---------------|---------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics R Square Change | F Change | df1 | df2 | Sig. F Change | Durbin-Watson |
| 1 | .750 ^a | .563 | .522 | 2090.01761 | .563 | 13.905 | 5 | 54 | .000 | 1.650 |

a. Predictors: (Constant), D2_STATUSPEKER, D1_JK, X1_USIA, X3_PENDA, X2_PENDI
b. Dependent Variable: WTP

The Watson Durbin test is used for level one autocorrelation and requires a constant in the regression model with no lag variable between the independent variables. Watson's Durbin value is 1.650 and the table dU value is 1.639 so that $d > d_U$ and $d < 4 - d_U$. The scores of $1,650 > 1,639$ and $1,650 < 2,361$, so it can be concluded that there are no autocorrelation symptoms.

Heteroscedasticity Test

The heteroscedasticity test was carried out to determine whether the regression model contained an inequality of variance from one residual observation to another. According to [Washington, Karlaftis, Mannering, and Anastasopoulos \(2020\)](#), the problem of heteroscedasticity can be identified by using formal and informal methods. This test can be done using a scatterplot using the SPSS software tool. In the scatterplot, it can be seen that there are different patterns between the variances of the residuals. So it can be concluded that the regression equation fulfills the heteroscedasticity assumption.

Model Test

This is to determine the factors that influence the willingness to pay for consumers of "Cipanas" natural hot spring tourism in Kuningan Regency. Independent variables that are thought to affect willingness to pay are age (X1), education (X2), income (X3), gender (D1), employment status (D2), while other variables not included in the equation model are considered constant. The statistical test used is the f statistical test and t statistical test. The results of the analysis using the SPSS 21 tool can be seen in [table 8](#) and [table 9](#).

Based on [table 9](#), it can be seen that the adjusted R Square value is 0.522 or 52%, meaning that 52% of the WTP value of natural hot water tourism is influenced and can be explained by the independent variables in the model. While the remaining 48% is influenced by other variables that are outside the model.

The F test aims to determine whether all the independent variables included in the model have a joint influence on the dependent variable, it can be seen in the [table](#) below:

The results of the F test show that the ANOVA significance value obtained is $0.000 < 0.05$ and the F-count is $13,905 > 2.38$ which means that the independent variables (age, gender, education, occupation, and income) have a significant effect on the dependent variable (WTP). hot spring tour "Cipanas"). The results of the analysis can be determined by the arrangement of the estimated equation model for the value of "Cipanas" hot spring tourism as follows:

$$\text{WTP} = 5469 + 294X1 + 401X2 + 1562X3 + 1428D1 - 898D2$$

A more detailed description of the results of the calculation of multiple linear regression tests on the factors that affect the WTP value of "Cipanas" hot water tourism are as follows:

Table 10.
Relationship between Independent and Dependent Variables

| ANOVA ^a | | | | | | |
|--------------------|------------|----------------|----|--------------|--------|-------------------|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 303701958.546 | 5 | 60740391.709 | 13.905 | .000 ^b |
| | Residual | 235881374.787 | 54 | 4368173.607 | | |
| | Total | 539583333.333 | 59 | | | |

a. Dependent Variable: WTP

b. Predictors: (Constant), D2_STATUSPEKER, D1_JK, X1_USIA, X3_PENDA, X2_PENDI

Age Variable (X1)

The age variable has a positive regression coefficient value of 294, this indicates that the higher the level of the age group, the higher the WTP value by 294 rupiah. Along with the increase in the age category will increase the willingness to pay by Rp. 294 per person. The t-count value is 0.564 <t-table 0.6789 and the significance is 0.516 > 0.05, so the age variable has no effect on the WTP for Cipanas hot water tourism.

Educational Variables (X2)

The education variable has a positive regression coefficient value of 401. The regression coefficient value of the education variable shows that the higher the level of education of the consumer, the higher the willingness to pay by Rp 401 per person. The t-count value is 1.007 > t-table 0.6789, and the significance is 0.319 > 0.05, so the education variable has an effect on the WTP of Cipanas hot water tourism but it is not significant.

Variable Income (X3)

The income variable has a positive regression coefficient value of 1562. The regression coefficient value of the income variable shows that the higher the level of consumer income, the higher the value of willingness to pay by Rp.1,562 per person. The t-count value is 5.171 > t-table 0.6789, and the significance is 0.000 < 0.05, then the income variable has a significant effect on the WTP of Cipanas hot water tourism.

Variable Gender (D1)

The gender variable has a positive regression coefficient value of 1428. The regression coefficient value for the gender variable shows that the more female consumers, the more the willingness to pay is Rp 1428 per person. The t-count value is 2.357 > t-table 0.6789, and the significance is 0.020 < 0.05, so the gender variable has a significant effect on the WTP of Cipanas hot water tourism.

Variable Job Status (D2)

The job status variable has a negative regression coefficient value of 898. The regression coefficient value of the job status variable shows that the more employee customers, the lower the willingness to pay by Rp. 898 per person. The t-count value is - 1.402 <t-table 0.6789, and the significance is 0.167 > 0.05, so the job status variable has a negative and insignificant relationship to the WTP of Cipanas hot water tourism.

Conclusion

1. Consumer characteristics are related to willingness to pay, the results of this study indicate that consumers are female, middle-aged, have a Bachelor's or Diploma's latest education, are employees, and have high income who have the highest willingness to pay in the price range. more than the WTP value.
2. Consumers are willing to pay above the price offered because they believe that the hot spring tourism area provides many benefits. Some consumers are willing to pay for tickets at a price lower than the average price prevailing in the market. This condition is because consumers

have limited income so they act rationally (adjusting to income). In addition, some consumers are also not so sure about the benefits of hot water tourism managed by BUMDes, so they choose a cheaper price.

3. The average value of WTP is greater than the average market price. This indicates an excess price that consumers are willing to pay. This excess ticket price in economic terms is called consumer surplus. Consumer surplus is the excess price that consumers are willing to pay above the equilibrium price. The high and low value of an item depends on the consumer who gives an assessment, so a new item has meaning for a consumer if the item has a high added satisfaction so that the consumer is willing to pay a high price too. Respondents in this study mostly compared ticket prices for hot water in Cipanas with ticket prices for other similar tours that have benefits.

4. The factors that significantly influence the willingness to pay for Cipanas hot water tourism are gender and monthly income. Theoretically this is appropriate, because according to Fauziah, Muttaqin, Suwarman, and Sadisun (2015) the higher the level of consumer income, the higher the purchasing power. This purchasing power will describe the number of products and services that a consumer and his entire family can buy and consume.

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