Analysis of Willingness to Pay (WTP) at Vocational High School

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Abstract

The purpose of this study is to estimate and analyze the willingness to pay (willingness to pay) and factors that affect the willingness to pay at Vocational High School in Semarang. The method used is Contingent Valuation Method (CVM) and multiple linear regression analysis. The number of samples in this study were 100 respondents, the sampling technique was done by purposive sampling and proportional sampling. The results of this study indicate that the average willingness to pay (WTP) of households in Vocational High Schools in Semarang is Rp. 167,950.00. Factors that have a significant influence on WTP values are income variables, number of household dependents, age and length of access. Whereas the factors that have no effect on willingness to pay (WTP) are parents' education variables. Based on the results of the study, the suggestions that can be put forward are the management or the government to improve the quality of the Vocational School as well as the development of a transparency policy on the collection and allocation of user fees and other resources.
INTRODUCTION

The main purpose of economic development is to create growth and increase human resources. Along with the development of the theory of human capital, it is increasingly seen that education plays an important role in determining the quality of the workforce and will ultimately affect income and work productivity (Nihayah & Kusmantoro, 2010).

The purpose of the provision of vocational or vocational education which is often referred to as Vocational High School (SMK) should be multi-functional and interrelated. The main function of vocational education is to equip students with the competence to obtain work according to their fields of expertise, while the second function of vocational education is to be able to contribute to self-adjustment and change towards the achievement of national development goals (Nurtanto, 2015). The public interest in taking vocational education is inseparable from the level of absorption of vocational graduates in the labor market (Ngadi, 2014). Various efforts have been made to increase public interest in sending their children to vocational school but it is not as expected because the absorption rate of vocational school graduates in the workforce is not yet high. Samsudi in Susiani, (2009) mentions that ideally national vocational graduates who can directly enter the workforce are around 80-85%, while so far only 61% have been absorbed. The implementation of vocational education or often referred to as Vocational High School (SMK) is currently being the center of attention. The ratio of Vocational High Schools (SMK) and Senior High Schools (SMU) that was 30:70 changed to 70:30 is a challenge for educational developers (Nurtanto & Ramdani, 2016). There is an increase in the number of Vocational Schools spread throughout Indonesia. Every year the increase in the number of these SMKs increases. This happens as a result of the opening of expertise competencies or the establishment of new Vocational Schools to meet the planned ratio. The increase in the number of vocational schools and the number of vocational students in Indonesia can be seen in Table 1.

| Table 1. Number of Vocational Schools and Vocational Students in Indonesia | 2011/2012 | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 |
|---|---|---|---|---|---|
| Number of Vocational Schools (school) | 10,256 | 10,673 | 11,726 | 12,421 | 12,659 |
| Number of Vocational Students (person) | 4,019,157 | 4,189,519 | 4,199,657 | 4,211,245 | 4,334,987 |

Source: BPS-Statistics Indonesia, 2017

In Table 1 it can be seen that there is an increase in the number of SMKs from year to year. In 2011/2012 the number of SMKs in Indonesia was only 10,256 schools and then increased by 23.43% to 12,659 schools in 2015/2016 (BPS, 2017). This phenomenon also occurs in Java, namely the number of SMKs and the number of vocational students each year has increased. The increase in the number of Vocational Schools and students is because Java is the center of economic growth in Indonesia. Based on data obtained from BPS, 2017 it can be concluded that the number of Vocational Schools in Java has increased from year to year. In 2011/20 the number of SMKs was only 5,764 and then increased by 25.72% to 7,274 in 2015/2016 (BPS, 2017). This indicates the existence of vocational
school policies with the aim that graduates who are ready to work are increasingly being achieved by efforts to increase the number of SMKs. The increase in the number of SMKs is of course aimed at realizing government programs, namely to reduce unemployment rate. Unemployment is still a serious problem in Indonesia because almost all regions in Indonesia experience the same problems in field such as unemployment, especially educated unemployment (Sari AK, 2012).

Based on data obtained from BPS, 2017 it can be concluded that the number of Vocational students in Java from 2011/2012 to 2015/2016 continues to increase even though in 2014/2015 the number of SMK students decreased but in 2015/2016 experienced increase again. In 2011/2012 the number of vocational students was only 2,498,091 which increased by 11.21% to 2,778,204 in 2015/2016 (BPS, 2017). This indicates the interest of the community to continue to the higher level of vocational education.

A number of residents of Semarang continues to increase. In 2012 the population was only 1,559,198 then increased by 11.98 percent to 1,729,428 in 2016 (BPS, 2017). The increase in population was also followed by the rate of population growth which tended to increase and the rate of economic growth fluctuated. The population growth rate increased by 0.70 percent during 2012-2016, from 0.96 percent to 1.66 percent, while the rate of economic growth in 2016 was 5.69 percent. This has decreased compared to 2012.

The decline in the economic growth rate of the of Semarang in 2016 is still above the rate of economic growth in Central Java, which is only 5.28 percent. Besides that, it is still the main support for Central Java's economic growth rate. The economic growth rate of Semarang provides the biggest contribution to economic growth in Central Java, which is 13.45% (BPS, 2017).

The high rate of economic growth in Semarang is supported by investment in Semarang that rising sharply. The Semarang One-Stop Investment Office (DPMPTSP) noted that investment achievement in the first quarter of 2018 had reached Rp. 5.8 trillion. The amount of investment that entered in the first quarter of 2018 was still dominated by the country at 70%, while the remaining 30% from foreign investors. The investment in Semarang is focused on trade and services, especially manufacturing. The increase in investment will increase the number of companies in the of Semarang.

The of Semarang has the highest number of companies in Central Java, which amounted to 3,735 companies in 2017. The high number of companies has not been able to overcome the high unemployment rate in Semarang, which from 2012 to 2015 has increased. Based on data from the Semarang Central Bureau of Statistics in 2012 to 2015 the number of unemployed has increased. In 2012 the number of unemployed was 46,081, in 2013 as many as 49,733, in 2014 as many as 68,978 and in 2015 as many as 51,229 and was the highest number of unemployed compared to other cities in Central Java. This can be seen in Table 2 below.

In Table 2 it can be seen that the of Semarang has the highest number of unemployed compared to the five cities in Central Java which amounted to 51,229 people. The increase in the number of unemployed people in Semarang is dominated by unemployed SMK graduates. Unemployment of SMK graduates is included in the type of educated unemployment. Educated unemployment occurs because of the lack of harmony between educational development planning and the development of employment. This is the main cause of this type of unemployment. The fact is that educational institutions in Indonesia only produce job seekers, not job creators (Sari AK, 2012).

The number of unemployed with the last education of Vocational High Schools in Semarang has the highest contribution compared to unemployment with other recent education. In 2015 the contribution of unemployed to the last education of vocational schools in the of Semarang was 37.59%. Educated unemployment occurs because of the lack of harmony between educational development planning and the development of employment. On the other hand these educated unemployed prefer formal
employment and they have the willingness to work in a place that directly puts them in a good position, can get many facilities and immediately get a salary in a large position (Sari A. K, 2012).

Table 2. Total Unemployment in Cities in Central Java in 2015

| No. | City      | Unemployment (people) |
|-----|-----------|-----------------------|
| 1.  | Magelang  | 3,927                 |
| 2.  | Surakarta | 12,877                |
| 3.  | Salatiga  | 5,794                 |
| 4.  | Semarang  | 51,229                |
| 5.  | Pekalongan| 6,131                 |
| 6.  | Tegal     | 9,723                 |

Source: BPS-Central Java in Figures, 2017

The highest contribution of SMK graduates is contrary to the fact that the trend in the number of SMKs and the number of SMK students in Semarang has increased. The number of SMKs in Semarang has increased from year to year. In 2008 the number of Vocational Schools in Semarang was only 75 schools and then increased by 18.67% to 89 schools in 2016 (BPS, various years). The increase in the number of SMKs in Semarang has led to an increase in the number of students who continue their studies at Vocational Schools in Semarang. The number of vocational students in Semarang has increased from year to year. In 2008 the number of vocational students was 33,262 people then increased by 17.40% to 39,050 people in 2016 (BPS, various years).

In the context of administering education both at the macro (state) level and at the micro level (institution) which is considered important is the issue of financing, financing is an absolute element that must be available. Based on preliminary observations made randomly at Vocational Schools in Semarang, information was obtained that the magnitude of the Education Development Contribution (SPP) for State Vocational Schools was in the range of Rp. 65,000 to Rp. 100,000. Whereas for Private Vocational Schools the amount of Education Development Donation (SPP) is in the range of Rp. 200,000 to Rp. 300,000. The amount of the cost of burden on the one hand and the value of benefits obtained from education on the other hand, affect the behavior of the community as a whole in choosing the type of education and training (Danim, 2003).

The problem of the relative high cost of Vocational School student tuition that must be paid by households but there is the fact that the highest number of unemployed people in Semarang is from vocational graduates so it creates the desire of the author to do research on whether there is a fact that the cost of school is high and the high unemployment rate of vocational school graduates has an impact on the willingness to pay households in paying the cost of education for vocational schools in the of Semarang given that financing is an absolute element that must be available.

RESEARCH METHODS

This research is descriptive quantitative research using primary data obtained from the questionnaire respondents are parents in A-accredited Vocational School. Research location in Semarang. The population of this n empirically based on the number of students attending school in A-accredited Vocational School in Semarang, which is 25,312 students. The sample in this study at selected using purposive sampling techniques and proportional sampling. From calculations using the Slovin formula, the number of samples of 100 parents of Vocational high school students who were accredited A was used as respondents in this study.

The data collection method used in this study is the method of observation, literature study, documentation and questionnaires. The method of data analysis in this study was the Contingent Valuation Method (CVM) approach and multiple linear regression analysis.

The implementation process to obtain the value of willingness to pay, there are five stages according to Fauzi, (2004), among others: building market hypothesis, obtaining willingness to pay value, calculating the willingness to pay average value and summing the data to get total value of willingness to pay. Multiple linear regression analysis was used to

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Source: BPS-Central Java in Figures, 2017
determine the factors that influence the willingness of households to pay the cost of education at Vocational High Schools in Semarang. The equation of multiple linear regression models is as follows:

\[ WTP = \alpha + \beta_1 PDPT + \beta_2 POT + \beta_3 JTRT + \beta_4 US + \beta_5 AKS + e_i \]

Where:
- \( WTP \) = Value of Willingness To Pay
- \( \alpha \) = Intercept
- \( \beta_1, \ldots, \beta_5 \) = Coefficients
- \( PDPT \) = Income
- \( POT \) = Parental Education
- \( JTRT \) = Responsibility
- \( US \) = Age
- \( AKS \) = Duration of Access
- \( e \) = Error terms

**RESULTS AND DISCUSSION**

Geographically, Semarang is between lines 6° 50' - 7° 10' South Latitude and lines 109° 35' - 110° 50' East Longitude. The Contingent Valuation Method approach in this study was used to analyze the level of willingness to pay households in Vocational High Schools in Semarang. Willingness to pay is obtained by distributing questionnaires to 100 households in the of Semarang. Each willingness to pay value obtained shows the amount paid by the household. Of the 100 respondents in total they were willing to pay school fees at Vocational High Schools in Semarang.

The average values of willingness to pay for respondent Semarang by the ratio of the total willingness to pay that respondents with the total number of respondents who are willing to pay so the average value of willingness to pay is obtained:

\[ \sum WTP = \frac{16,795,000,00}{100} = \text{Rp.} 167,950,00 \]

The following are the regression results between income, parents' education, the number of dependents of the household, age and length of access. Based on the results of calculations that have been done using software Eviews 9, the results obtained as shown in Table 3 above. So that the resulting regression model equations.

| Variable | Coefficient | Prob. |
|----------|-------------|-------|
| C        | -170,441    | 0.003 |
| PDPT     | 0.036       | 0.000 |
| POT      | 4,553       | 0.085 |
| JTRT     | 20,956      | 0.002 |
| US       | 4,419       | 0.000 |
| AKS      | -2,519      | 0.000 |

R-squared 0.593
Prob(F-Statistics) 0.000

Source: Data Processed

\[ WTP = -170,4401 + 0.036 PDPT + 4,553 PDPT + 20,956 TANGGUNGAN + 4,419 USIA - 2,519 AKSES + e_i \]

Based on the results of multiple linear regression can be concluded as follows:

The constant value of -170.4401 denoting that when the value of all the independent variable is 0 (zero), then the value of willingness to pay for -170.4401. The coefficient value of the income variable is 0.036 and is positive (+), meaning that if someone's income increases by one thousand rupiahs, then the value of the PAPs who are willing to be paid for school fees at the Vocational High School in Semarang will increase by 36 rupiah, with the assumption that the other independent variables are considered constant. Parental education variables do not affect the WTP value.

The coefficient value owned by the variable number of household dependents is equal to 20,956 and is positive (+). This means that if the number of dependents from a person increases by one person, then the value of the PAPs who are willing to be paid for school fees at the Vocational High School in Semarang will increase by 20,956 rupiah, assuming that the other independent variables are considered constant. The coefficient of the age variable has a value of 4,419 and has a positive sign (+). It can be interpreted that if the age of a person increases by one year, then the magnitude of the value of
PAPs willing to be paid for school fees at Vocational High Schools in Semarang will increase by 4,419 rupiah, assuming that the other independent variables are considered constant.

The coefficient of the old access variable is 2.519 and has a negative sign (-), so the meaning is if the length of access from home to one's school is one minute, then the value of the WTP that is willing to be paid will decrease by 2,519 rupiah, assuming that other independent variables are considered permanent.

Based on the results of calculations using the Contingent Valuation Method approach, of the total number of respondents as many as 100 households, respondents as a whole were willing to pay for school fees at Vocational High Schools in Semarang. For the total value of total willingness to pay obtained is Rp. 4,251,150,400.00 per month, with an average value of willingness to pay Rp. 167,950.00 per month. With this amount of value, it shows that there is a concern for households regarding children's education in Vocational High Schools in Semarang.

Based on the results of the regression obtained, the income variable has a significant influence on the willingness to pay (WTP) of households in Vocational High Schools in Semarang. Income here is based on the rupiah obtained by the household for one month from the income obtained by all household members. The relationship that has an income variable with a large WTP value is positive. This means that when the income received by households increases, the amount of the willingness to pay (WTP) of these households will increase.

The regression results obtained are in accordance with the theory which says that the higher the income, the greater the value of Willingness to Pay (WTP) to be paid (Simanjuntak, 2009). The higher the income, the higher the economic capa, so that the higher the ability and opportunity for individuals to be able and willing to pay the school fees charged by the Vocational High School in the of Semarang. Respondents who have higher incomes make it possible to have a higher level of willingness to pay school fees charged compared to other low-income respondents.

Keynes states that income is an economic variable that is closely related and important to the level of one's ability to carry out consumption activities, in this case as a person's effort to fulfill life's needs and improve the standard of living of his family. So that there is a positive relationship between income and consumption (Prasetyo, 2012). The higher the income a person has, then the level of ability to consume or pay is also considered to be higher (Saptutyningsih, 2007).

The results of this study are similar to the research of Rosyadi, Sasongko, & Hoetoro (2016) regarding willingness to pay households in paying the cost of superior secondary education in Malang, where the study shows that household income variables have a positive and significant effect on willingness to pay home stairs. If there is an increase in household income, it will increase the willingness to pay for the household.

This study also complies with the study conducted by Sari & Setiarti (2015) willingness to pay for improving the quality of train services. The results of this study indicate that income levels have a positive effect on willingness to pay (WTP). This is caused by the higher the level of income of a person, the easier it is for someone to spend money on other needs such as to improve quality. The influence that occurs between income and willingness to pay is strengthened by the study of Permata (2012) which states that willingness to pay is generally influenced by several factors, one of which is the income of consumers of household income. Based on the results of the study of Ekanem, Okon, & Ekpoh (2012) also mentioned that the tuition fee levy depends on the ability of the household based on the income received towards the education costs that must be spent as long as students take education. If household income can cover the budget for household needs and especially the cost of education, the household will be willing to pay the cost of education.

Based on the results in the field it was found that overall respondents were willing to
pay, this was because the majority of respondents had an average income level of Rp 2,301,500.00. The amount is close to UMR of Semarang, which is Rp 2,310,087.00, which means that when income is high, respondents are financially able to afford school fees. This also caused a high level of public interest in continuing schooling at Vocational High Schools in Semarang.

Parental education is education that has been taken by parents at the formal education level in Indonesia. Measured in units of years. For example basic education (6 and 9 years), secondary education (12 years) and higher education (15, 16, 18, and 21 years). The regression results show that the education level variable does not have a significant effect on the large willingness to pay (WTP) of households in Vocational High Schools in Semarang.

The results of this study are different from the results of research from Rosyadi, Sasonko, & Hoetoro (2016) regarding willingness to pay households in paying superior secondary education fees in Malang, where in the study parents’ education variables had a positive and significant effect on willingness to pay.

Based on the regression results, it is known that the variable number of household dependents has a significant influence on the willingness to pay (WTP) of households in Vocational High Schools in Semarang. The relationship owned by the variable number of household dependents with willingness to pay is positive, this means that when the number of household dependents increases, the willingness to pay (WTP) of households will increase.
have an average number of dependents of 2 and 3 people per household, this number does not burden household income on average. If seen from the level of income, the average income of the respondents is Rp 2,301,500.00. The amount is close to UMR of Semarang, which is Rp 2,310,087.00 which means that when income is high, respondents are financially able to afford school fees.

The results of this study are in accordance with Rosyadi, Sasongko, & Hoetoero (2016) regarding willingness to pay households in paying the cost of superior secondary education in Malang, where in the study showed that household dependent variables had a positive and significant effect on the willingness to pay households. The positive influence of the number of dependents is because households in the three leading secondary education institutions have an average number of dependents of 2 and 3 people per household, the amount on average does not burden household income. In addition, the high expectations of households for superior secondary education in terms of the benefits obtained both short and long term make households willing to sacrifice their assets to pay for the education costs of household members to obtain superior secondary education services.

The results of this study are reinforced by the results of a study conducted by Cahyaningrum & Iasmaini, (2014) which states that the number of household members has a positive and significant effect on household expenditure for education in East Java. Meanwhile Zuraidah (1999) based on the results of a study conducted by employees of the Bogor Agricultural Institute of IPB, said that family dependency had an effect on household expenditure on education and health.

Based on the regression results obtained, the age variable has a significant effect on the willingness to pay (WTP) of households in Vocational High Schools in Semarang. Age is used to measure a person's maturity in making a relationship decision that has an age variable with a willingness to pay (WTP) is positive. This means that when parents age increases, the willingness to pay (WTP) of households will increase.

The results of this study are consistent with the research conducted by Sari & Setiartiti, (2015) on willingness to pay for improving the quality of train services using the Contingent Valuation Method (CVM). This study shows that age has a positive effect on willingness to pay (WTP). This is due to the increasing age of a person, the wider the way to think in understanding the importance of service quality. The results of this study are also similar to the study conducted by Sasmi (2016), which explains that the age variable has a positive and significant effect on willingness to pay.

Based on the findings in the field, the respondents as a whole were willing to pay the school fees at the Vocational High School because the age of the respondents was still classified as productive age, there were no respondents who exceeded the productive age of 64 years.

Access to school is the student's travel time from home to school measured by minutes. Based on the results of the regression model estimation, it shows that the variable length of access to school has a significant effect on the willingness to pay (WTP) of households in Vocational High Schools in Semarang. The relationship between the length of access variable and the willingness to pay (WTP) of households is negative. This means that when the travel time goes to school, the willingness to pay (WTP) of households in Vocational High Schools in Semarang will decline.

The results of this study are in accordance with the research conducted by Rosyadi, Sasongko, & Hoetoero (2016) regarding household willingness to pay in paying the costs of superior secondary education in Malang, where in the study showed that access to school negatively affected and significant to willingness to pay.

The influence of the access variable on willingness to pay shows the same results as the study conducted by Gertler & Glewwe (1990) in rural Peru, which in the study stated that
households are willing to pay the cost of education if there is a secondary education institution in their village at the request of the household to reduce travel time to schools in the. The closer the distance to school to secondary school, the willingness to pay for households is increasing, because most middle school students work to help parents as farmers. If the travel time to school is getting closer, then students have more time to help parents work as farmers.

The results of this study are also reinforced by research conducted by (Saqib, 2004) on the willingness to pay (WTP) in primary schools in rural Pakistan. The study shows that access to travel time to school has an effect on willingness to pay parents in rural areas of Pakistan. The closer the travel time to school, the more willing parents are to send their children to school in elementary school. These findings are in accordance with the results in the field, parents will choose the Vocational High School that is closer to their home, because if the distance to the house to school takes a long time, then the household will spend a lot of money. For example, the cost of living for a child if the distance to go to school is not possible every day from home.

According to Khasanah (2012) in his study of the decision making of parents in choosing elementary schools obtained the fact that the location of the school had an influence on the decision to choose a school. The assessment of the school location is the distance traveled, transportation and security and the convenience of going to school, so that the positive influence of the location of the school can be obtained on the decisions of parents. An assessment of the location of the school and access to school in the results of this study are equally influential, parents will really consider the location or access to school in deciding the educational institution for their children.

Based on the findings in the field, the respondents as a whole were willing to pay because the average length of time respondents access to school was ± 20 minutes so the respondents did not allocate too much additional costs in the form of transportation costs for their children (students) to go to school.

CONCLUSION

Based on calculations and discussions, conclusions can be drawn in the study is the average value of willingness to pay (WTP) household at Vocational High School in the of Semarang is Rp 167,950.00 per month and variables that significantly influence the willingness to pay (WTP) of households in Vocational High Schools are income variables, number of household dependents, age and length of access. Whereas the variable that does not affect the willingness to pay (WTP) of households in Vocational High Schools in Semarang is parental education variable.

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