



Waste Levy Willingness to Pay (WTP) Analysis Households In West Aceh Regency

Analisis Willingness To Pay (WTP) Retribusi Sampah Rumah Tangga di Kabupaten Aceh Barat

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ABSTRACT

Willingness To Pay (WTP) can be interpreted as how much people are willing to pay. However, there are several problems, namely until now the Willingness To Pay (WTP) waste retribution has not been maximized and this can be seen in the achievement of Regional Original Income (PAD) for waste retribution. Thus, the problem raised in this study is that the willingness to pay of the community to pay waste fees in West Aceh Regency is still low. The purpose of this study is to determine the amount of Willingness to Pay (WTP) of waste retribution paid by households and the factors that affect the WTP of household waste in West Aceh Regency. This research is a type of quantitative research with a cross-sectional study approach. The samples in this study were 378 heads of families, namely 261 people in the Johan Pahlawan sub-district and 117 people in the Meureubo sub-district. The sampling technique was carried out using Krejcie and Morgan Table. Data was collected using a questionnaire, while the statistical test used was logistic regression using stata. The results showed that the Willingness to Pay (WTP) waste retribution paid by households in West Aceh Regency was Rp. 14,542 and the factors related to the WTP of household waste in West Aceh Regency partially (partially) namely income (p -value = 0.001) and public perception in waste management (p -value = 0.031) and the relationship between income and community perception in waste management simultaneously with WTP for household waste retribution (p -value below 0.05).

ABSTRAK

Willingness To Pay (WTP) dapat diartikan sebagai berapa besar orang mau membayar. Namun terdapat beberapa permasalahan yaitu sampai saat ini Willingness To Pay (WTP) retribusi sampah belum maksimal dan hal ini terlihat pada pencapaian Pendapatan Asli Daerah (PAD) retribusi sampah. Dengan demikian masalah yang diangkat dalam penelitian ini adalah willingness to pay masyarakat untuk membayar retribusi sampah di Kabupaten Aceh Barat masih rendah. Tujuan penelitian ini untuk mengetahui besar Willingness to Pay (WTP) retribusi sampah yang dibayar rumah tangga dan faktor-faktor yang mempengaruhi WTP sampah rumah tangga di Kabupaten Aceh Barat. Penelitian ini termasuk jenis penelitian kuantitatif dengan pendekatan cross sectional study. Sampel dalam penelitian ini sebanyak 378 orang Kepala Keluarga (KK), yaitu 261 orang di kecamatan Johan Pahlawan dan 117 orang di kecamatan Meureubo. Teknik pengambilan sampel menggunakan Tabel Krejcie dan Morgan. Pengumpulan data dilakukan dengan menggunakan kuisioner, sedangkan uji statistik digunakan regresi logistik menggunakan stata. Hasil penelitian menunjukkan Besar Willingness to Pay (WTP) retribusi sampah yang dibayar rumah tangga di Kabupaten Aceh Barat adalah Rp 14.542 dan faktor-faktor yang berhubungan dengan WTP sampah rumah tangga di Kabupaten Aceh Barat secara parsial (sebagian) yaitu pendapatan (p -value = 0,001) dan persepsi masyarakat dalam pengelolaan sampah (p -value = 0,031) dan adanya hubungan antara pendapatan dan persepsi masyarakat dalam pengelolaan sampah secara bersamaan terhadap WTP retribusi sampah rumah tangga (p -value di bawah 0,05).

Keywords : Willingness To Pay, Garbage Retribution

Kata Kunci : Willingness To Pay, Retribusi Sampah

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INTRODUCTION

Globally, the amount of waste in cities is growing faster than the pace of urbanization. In 2012, the cities of the world produced 1.3 billion tons of garbage per year and 1.2 kg per person per day. With rapid population growth and urbanization, municipal landfills are expected to continue to increase to 2.2 billion tonnes by 2025. Landfills in Africa are around 62 million tonnes per year ranging from 0.09 to 3 kg per person per day, with an average of 0.65 kg/capita/day. In developing countries, waste management requires a large expenditure of 30-50 percent of the city's operating budget. However, the city collects only half of the waste generated ((WHO), 2005). Indonesia, with the fourth largest population in the world, is currently facing serious problems in handling solid waste, especially those produced by households. The Director General of Waste, Waste, and Hazardous Toxic Materials (B3) Management reported that the volume of household waste and the like in 2018 reached 66.5 million tons. With the increase in the population of residents in each area or city, the amount of waste in each household is increasing. This is a problem for large cities with dense populations such as Jakarta, Surabaya, and others in dealing with problems faced every day (BPS, 2013). In general, environmental problems are caused by factors of natural events, rapidly increasing population growth, over-utilization of natural resources, industrialization, and transportation. In addition, there are other causes of damage, namely waste (*refuse*) and hazardous and toxic material waste (B3). In this case, the intended waste is waste that is solid and is a residue of household consumption (Manik, 2003).

Households that are major producers of waste and suffer from the effects of uncollected waste, therefore households must be able to participate in improving sustainable waste management. Thus, the contribution of the population to waste management improvement services plays a big role in improving the community. However, there is limited evidence of willingness to pay (WTP) for improved waste management and related factors in the surrounding community. *Willingnes To Pay*

(WTP) can be defined as how much people have the willingness to pay (consumers' willingness to pay). Factors that can affect WTP vary, including education, income, and frequency of waste transportation. Waste management in an area will affect the quality of the environment in the area even though the impact is not direct. The problem of urban waste arises from improper waste management, especially in big cities in Indonesia. Incomplete collection systems, lack of transportation, and limited landfill capacity are typical technical, social, and cultural problems (Katno, 2012).

Based on Law Number 18 of 2008 article 4 and article 5, that waste management aims to improve public health, and environmental quality and make waste a resource. The central and local governments have to ensure the implementation of a good and environmentally sound waste management process. Based on law Number 18 of 2008 article 11 concerning Waste Management explains that everyone has the right to get services in waste management properly and environmentally sound from the Central Government, Regional Governments, or other parties who are given responsibility. The government's efforts to implement effective policies and build appropriate facilities to solve the problem of household waste should consider the WTP levy on waste management from the community. When choosing a suitable waste management system for a particular region, decision-makers must consider the technical aspects and costs of implementation, as well as the attitudes of residents, environmental awareness, behavior, and willingness to pay (WTP) (Barr and Gilg, 2007).

Based on the author's observations in West Aceh Regency, until now, not all kampong have their own TPS so the accumulation of waste occurs on vacant lands that are not designated as TPS. This is because garbage transport cars do not enter every village, and there are also some people who are not willing to pay garbage money quotes to garbage collection services, they prefer to throw their own garbage into vacant lands as well. For this reason, it

is necessary to know the amount of willingness to pay the waste levy in West Aceh Regency, how much the Head of Household wants to spend to pay the cost of waste, and the factors related to *Willingness To Pay*.

METHOD

Research design is a framework used to carry out research (Notoatmodjo, 2012). According to Fachruddin (2009), the design of the research is a framework or detail of work procedures that will be carried out at the time of research, so it is expected to provide an overview and which direction will be carried out in carrying out the research, as well as provide an overview of the research has been completed or completed. This study is descriptive using *a cross-sectional* design. This research is carried out through measurements or observations at the same time or once upon a time (Hidayat, 2007). The reason for using the design of this study is because you want to know the relationship between independent variables and dependent variables where the measurement of the two variables is carried out at the same time.

The location of this study is located in the regency district of West Aceh, namely Johan Pahlawan and Meureubo districts, the two sub-districts are collecting household waste contributions. The population of this study is all heads of families (KK) located in 2 sub-districts in Aceh Bara Regency totaling 24,207 people. Then, the sample in this study was 377 people. Data collection is carried out by distributing questionnaires to respondents. While data analysis uses editing, coding, transferring, and tabulating.

RESULTS

Amount of WTP Value of Waste Retribution in West Aceh Regency

The average value of the WTP waste levy is Rp 14,542. This average value is less than the amount of waste retribution set by the West Aceh Regency Government, which is Rp. 15,000, - as stipulated in Qanun West Aceh Number 2 of 2014 concerning the Waste/Hygiene Service Levy. According to Syakya (2005), WTP is a method that

determines what level a person can afford to pay. The greater the willingness to pay the waste levy, the greater the government to increase the tariff on waste management services (Amiruddin, 2008).

Raffi's research (2005) explained that some members of the community think that waste management is only the responsibility of the government. This results in the community only acting as the party being served, and does not need to provide any contribution, including making payments for waste levy money because the funds needed to finance waste handling should already be available in the government budget so that the next handling is the responsibility of the government. In this group, this is in line with research that states that education has a significant relationship with WTP (Emalia, Z., and Huntari, D., 2016). The results of this study are different from the research of Yunis, M., (2012) which states that there is no relationship between education and WTP.

DISCUSSION

The Relationship between Education and WTP Waste Retribution in West Aceh Regency

Education has a broad function, one of which is as a life changer for a society for the better and guides the community agar to recognize shared responsibility in society (Emalia, Z., 2016). This study is in line with previous studies which stated that heads of families with high levels of education tend to have the willingness to pay 11,669 or 11 times higher than the head of the family with an education level is 2,457, meaning that the level of education has a positive influence on the variable of willingness to pay (WTP) (Emalia, Z., and Huntari, D., 2016). The results of the analysis obtained $p\text{-value} = 0.420 > 0.05$. This result shows that there is no relationship between education and WTP waste retribution in West Aceh Regency. Education does not always encourage human beings to behave in accordance with social norms (Korpi et al., 2019).

Relationship between the Number of Family Members dengan WTP Waste Retribution in West Aceh Regency

Based on research that has been carried out, generally, people in West Aceh Regency have a small number of family members. The greater the number of family members, the greater the number of household manufacturers, including the ability and willingness to pay for waste management services (Indramawan, 2014). However, the number of family members is closely related to the amount of household expenses. The greater the number of family members, the higher the amount of expenses that must be borne. The high level of disbursements causes the allocation of income used to pay for integrated waste management to decrease. The results of the analysis obtained p-value = 0.088 > 0.05. This result shows that there is no interest between the number of family members and the WTP waste levy in West Aceh Regency. The results of this study coincided with a study conducted by Annisa, S., (2015), which stated that the number of family members did not have a significant influence on the WTP of household waste.

Employment Relationship with WTP Waste Retribution in West Aceh Regency

Based on research that has been carried out on 378 respondents with job characteristics obtained generally work. Work has an effect in determining the ability and willingness of the community to pay for waste management services, you have a job, it will determine the income that decides the person has the ability and willingness to pay for waste management services (Indramawan, 2014). Work greatly affects the willingness to pay. Respondents who are bekerja have a higher chance of being willing to pay for waste management because they have a stable income. So people who have jobs tend to be willing to pay higher. The results of the analysis obtained p-value = 0.993 > 0.05. The results showed that there was no relationship between age and WTP for waste retribution in West Aceh Regency. This is in accordance with Indramawan's research (2014)

which states that employment status does not have a significant effect on the willingness to pay the community. The results of this study are different from the research conducted by Rahim, et al (2012) which stated that employment status has an effect in determining willingness to pay. Because if you have a job, it will affect income, which is the main fundamental to deciding whether you are willing to pay or not. Working respondents have a higher chance of being willing to pay for 38 integrated waste management, as they have a stable income. So people who have jobs tend to be willing to pay higher (Larasati & Puspikawati, 2019).

Revenue Relationship with WTP Waste Levy in West Aceh Regency

Based on research that has been carried out on 378 respondents with the characteristics of the income level of the family obtained, the majority of respondents have income below the UMR. The household income referred to in the study is income not only derived from the head of the family, but the total overall income received in a household if there are other family members who are also working but still live under one roof. Income has a huge influence on the level of consumption. Usually, this is indicated if income increases, then household consumption is increasingly increasing to meet daily needs. The results of the analysis obtained p-value = 0.001 < 0.05. These results show that there is a relationship between income level and waste levy WTP in West Aceh Regency. This coincides with previous research which stated that the amount of income had a significant effect on WTP (Emalia, Z., and Huntari, D., 2016).

Relationship of Public Perceptions in Waste Management towards WTP Household Waste Levy in West Aceh Regency

Based on research that has been conducted on 378 respondents with maternal occupational characteristics, it is obtained that generally, people in West Aceh Regency have a good perception of waste management. The results of the analysis obtained p-value = 0.031 < 0.05. This result

suggests that there is a relationship between community perceptions of waste management and WTP for waste retribution in West Aceh Regency. This research has similarities with research conducted in Manokwari City stating that the perception of the waste collection actually affects the amount of community willingness to pay the waste management levy (Timing, G., D., et al, 2016). The public's perception of waste management, which has been carried out by the Manokwari District Government in West Manokwari District, was obtained through respondents' answers to four aspects of waste management. These aspects include housing, collection, transfer, and transportation, as well as final disposal of waste. This research also has similarities with research conducted by Hermawan (2005) showing that the better the perception of housewives towards environmental cleanliness, the better their participation in maintaining environmental cleanliness. Manurung's research (2008) also pointed to the same results, students who have the perception that a clean environment is important will tend to participate in maintaining environmental cleanliness.

Relationship of Knowledge and Awareness of Environmental Cleanliness with WTP Waste Levy in West Aceh Regency

Based on research that has been carried out on 378 respondents with maternal occupational characteristics obtained generally not good. Increasing public knowledge will have an impact on people's behavior toward improving the environment due to waste. The results of the analysis obtained $p\text{-value} = 0.465 > 0.05$. These results show that there is no relationship between the level of knowledge and the WTP of waste retribution in West Aceh Regency. This research has similarities with research conducted in Makassar City stating that there is no relationship between knowledge and WTP (Rahim, I., R., et al, 2017). The waste problem includes 3 parts, namely the downstream, process, and upstream. Downstream, garbage disposal is constantly increasing. In the process part, limited resources

from both the community and the government. Upstream, in the form of suboptimal systems applied to the final processing (Mulasari, 2016). Most people think that burning waste is part of waste processing. This kind of attitude is likely to be influenced by knowledge and maturity of age (Mulasari, 2012).

Based on research conducted on 378 respondents, generally, awareness of the cleanliness of the environment in West Aceh Regency is not good. The generation of solid waste cannot be stopped but must be managed, reduced, or minimized properly. According to law Number 18 of 2008 concerning waste management Chapter I Article I; it is stated that waste management is a systematic, comprehensive, and sustainable activity that includes waste reduction and handling. The results of the analysis obtained $p\text{-value} = 0.071 > 0.05$. These results show that there is no relationship between environmental cleanliness awareness and waste levy WTP in West Aceh Regency (Sahil et al., 2016).

The Relationship between Waste Disposal Culture and WTP Household Waste Levy in West Aceh Regency

Based on research that has been conducted on 378 respondents, it was obtained that the culture of disposing of community waste in West Aceh Regency is not good. The creation of a culture of disposing of garbage in its place is certainly the hope of all parties and has a far-reaching impact on the environment and its surroundings. The results of the analysis obtained $p\text{-value} = 0.887 > 0.05$. These results show that there is no relationship between the culture of waste disposal and the WTP of waste retribution in West Aceh Regency. Basically, society in a broad sense has various characters, of course, between one society and another (Larasati & Puspikawati, 2019).

The most dominant factor affecting WTP waste retribution in West Aceh Regency

After being carried out multivariate tests, 1 variable of determining factors was obtained which has a dominant relationship with waste retribution

in West Aceh Regency, namely income. This is because the higher the income of the people, there will be increase in consumption and willingness to pay hygiene dues so that local governments will be financially able to carry out waste management. Therefore, the community will increase the value of willingness to pay to help the government carry out better waste management (Torres et al., 2022).

CONCLUSION

Based on the results of the discussion that the Amount of Willingness to Pay (WTP) waste levy in West Aceh Regency is Idr 14,542,-. Then, in reality, there is no relationship between education and WTP for household waste retribution in West Aceh district, this is because there is no employment relationship to WTP household waste levy in West Aceh Regency. There is a relationship between family income and WTP for household waste retribution in West Aceh Regency. Researchers suggest that the government should be concerned about the problem of rampant waste which is very disruptive to order so that it needs to be dealt with immediately.

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