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THE ROLE OF REGIONAL COMPANIES IN DEVELOPMENT IN TERMS OF THE AVAILABILITY OF DRINKING WATER, CUSTOMER SATISFACTION AND WILLINGNESS TO PAY

Anggiat Sinurat[1], Pinondang Nainggolan[2], Marulam MT Simarmata[3], Wiko Tarigan[4]
Faculty of Economic, Universitas Simalungun, Indonesia
Faculty of Economic, Universitas Simalungun, Indonesia
Faculty of Aggriculture, Universitas Simalungun, Indonesia
Faculty of Economic, Universitas Simalungun, Indonesia
anggiatsinurat@usi.ac.id

Abstract
This research was conducted as a form of collaborative service of Simalungun University lecturers in research on the customer survey of Tirtauli Regional Public Company, Pematang Siantar Regency, This study aims to determine the role of Tirtauli Regional Public Company in developing the area from the perspective of water availability, Real Demand Survey, and Willingness To Pay which are carried out descriptively with the Mixed Method paradigm. Data collection techniques were carried out by distributing questionnaires, interviews by surveyors and documented studies. The results of the study concluded, Tirtauli Regional Public Company have a very important role in developing the region as an institution (socio-economic infrastructure) through drinking water processing as a basic human need that must be fulfilled and sustainable, which is shown by: (1) Water Balance, it turns out that the availability of natural resources clean water managed by the company is still a surplus of 54.10 million liters/day. With the projected population and customer water needs in 2026, there will still be a water surplus of 32.28 million liters/day; (2) Customer satisfaction with a total value of 6.54 (satisfied category); (3) The results of the F-test, that customer education, income, number of family members, and customer satisfaction have a positive and significant effect on Willingness To Pay, but partially the most dominant factor in WTP is customer satisfaction. It is suggested that Tirtauli Regional Publik Company should improve customer satisfaction and carefully consider the policy of increasing water rates, because the company's operations are still economically viable.

Keywords: The Role of Regional Companies, Development, Availability of Drinking Water, Customer Satisfaction, Willingness to Pay

INTRODUCTION

The need for clean water resources for people in urban and rural areas is not limited to quantity but also quality, therefore water needs must be available sufficiently well for human survival. The

level of need for water varies in each settlement location and the socio-economic level of the community. The higher a person's standard of living, the greater the need for water, where the standard of living can be seen from the socio-economic conditions of the community such as education level, income level, number of family members, desire and ability to pay for water, and others, the availability of drinking water must be maintained as a form of resilience. water, both quantity and quality (Hurlimann, 2009). The water source managed by Tirtauli Regional Publik Company is by utilizing raw water sources provided by nature in the form of springs and groundwater around the city of Pematang Siantar and Simalungun Regency. Through a processing process with relatively adequate equipment, raw water is processed into drinking water or clean water that is suitable for consumption.

The 1945 Constitution stipulates that water resources are controlled by the state and used as much as possible for the prosperity of the people in a fair manner, so in fulfilling the state's obligation to provide clean water, the Government issued Government Regulation number 122 of 2015 concerning Drinking Water Supply Systems (SPMA). Tirtauli Regional Public Company, Pematang Siantar Regency, is a regionally owned corporate institution that manages drinking water in Pematang Siantar Regency and distributes it to customer households, the business world, social agencies/institutions.

Along with the development of the population in Pematang Siantar Regency, namely with an average growth of around 1.356 percent/year and also an increasing number of households, the need for clean water is also increasing. The number of drinking water customers of Tirta Uli Regional Public Company Pematang Siantar in 2021 is 70,558 customers and it is estimated that this number will continue to increase in line with the population growth. However, Regional Public Company Air Drinking as an extension of the local government also has an obligation to provide cheap clean water services to people with low incomes. On that basis, the determination of drinking water tariffs is influenced by 2 factors, namely seeking company profits and low tariffs for low-income people.

Tirtauli Regional Publik Company Pematang Siantar, continues to be committed to providing the best service (excellent service) to customers through smooth water distribution, good water quality, an efficient payment system and affordable water prices, so that customers get optimal satisfaction. The number of subscribers is increasing, namely 70,588 customers with a growth of 1.26% in 2021. As a company that manages water resources for the needs of the community, Tirtauli Regional Publik Company seeks to manage a company that is economically feasible to become a healthy company by considering the flow of income and current expenses (Purba et al., 2018). When viewed from the expense side, clean water management does sacrifice a relatively large amount of burden, both fixed costs and variable costs which are classified as investment costs as well as operational and maintenance costs. Meanwhile, the company's main revenue comes from the water tariff per cubic meter which is determined by considering willingness to pay (WTP).

The definition of development is an attempt to improve, improve or advance something that already exists (Siahaan et al., 2022 ; Purba et al., 2019). Regional development in development means various types of activities, both in the government sector and in society, regulated and implemented in order to improve the level of welfare. Development can be interpreted as activities carried out by a region or country to develop the quality of life of its people (Ernan R, 2011). So development must be seen as a process in which there are interrelationships and mutual influences between the factors that

cause these developments to be identified and analyzed carefully so that the sequence of events that arise will realize an increase in people's welfare.

Tirtauli Regional Publik Company Pematang Siantar Regency is seen as having a very strategic role in the development of the Pematangsiantar City area as an institution and socio-economic infrastructure, carrying out the sale of drinking water as a basic need to customers which must be available and sustainable according to the law of supply and demand, supporting economic growth, equitable development (through a wide range of services), improving people's welfare needs to continue to carry out the process of improving services so that it is sustainable. Based on the description above, it is necessary to conduct an in-depth study of the role of Tirtauli Regional Publik Company, Pematang Siantar Regency in regional development from the perspective of drinking water availability, customer satisfaction, and willingness to pay.

LITERATURE REVIEWS

Development Concept and Regional Development

Law Number 26 of 2007 concerning Spatial Planning, area is space which is a geographical unit, along with all elements related to it, whose boundaries and systems are determined based on administrative aspects and or functional aspects. Regional components include natural biophysical components, artificial resources (infrastructure), humans and institutional forms. Thus the term area emphasizes the interaction between humans and existing resources within a certain geographic unit boundary.

Development is a systematic and continuous effort to create conditions that can provide legitimate alternatives for achieving the most humanistic aspirations of every citizen (Rustiadi, 2011). Development can be conceptualized as a process of continuous improvement of a society or a social system as a whole towards a better or more humane life, and development is making or managing something that does not yet exist. Todaro (2006) said that there are at least three core values of the most essential development, namely: adequacy, self-respect and freedom, which are the main goals that must be achieved by every person or society through development. Anwar (2005), regional development carried out to achieve objectives that include aspects of growth, equity and sustainability that have dimensions of location in space and are related to the socio-economic aspects of the region. Development can be interpreted as an activity carried out by a region or country to develop the quality of its people (Ernan R, 2011). So development must be seen as a process where there are interrelationships and mutual influences between the factors that cause these developments to be identified and analyzed carefully so that the sequence of events that arise will be known which will realize an increase in people's welfare from one stage of development to the next stage of development.

Historically, the notion of development and its strategy have evolved, starting from a development strategy that emphasizes economic growth, then growth and employment opportunities, growth and equity, shifting to an emphasis on basic needs, growth and the environment, and sustainable development. Development goals related to 5 keywords, namely: (1) growth; (2) link strengthening; (3) balance; (4) independence; and (5) sustainability. Furthermore, the Ministry of Settlement and Regional Infrastructure (2002) states that one of the basic principles in regional development is that market mechanisms must also be a prerequisite for regional development planning. Regional development is various types of activities, both in the government sector and in society,

regulated and implemented in the framework of efforts to improve the level of welfare. Regional development itself is related to the notion of development. In order to achieve ideal regional development conditions, it is necessary to formulate a strategy for the development of infrastructure and facilities that support economic growth, equitable development, increase political stability and social welfare (Hanafiah, 1992). Regional development can also be considered as a form of positive intervention for development in a region. Effective strategies are needed for an accelerated development. Theoretically, regional development strategies are classified into two strategic categories, namely demand side strategy and supply side strategy (Rustiadi, 2011 ; Adiprasetyo & Cahyadinata, 2020).

Based on the understanding of the experts above, it can be concluded that Tirtauli Regional Publik Company, Pematang Siantar Regency has a very important role in the development of the Pematangsiantar City area as an institution and socio-economic infrastructure, in the form of a company in its business of running water treatment (from water sources) selling drinking water (as a necessity basis) to customers which must be available and sustainable according to the law of supply and demand, supporting economic growth, equitable development (through wide coverage of services), increasing political stability and social welfare, it is necessary to carry out a process of improving services so that it is sustainable on an ongoing basis.

Demand and Supply

The theory of demand and theory of supply can be used as a basis for explaining the demand and supply of drinking water. Demand is defined as the quantity of goods or services desired and purchased by considering the factors that influence that demand (Gasper, 2005). Many factors influence consumer demand (Q^dx) to consume a good, including: the price of the good itself (Px), the price of other goods as complementary or substitute (Py), people's income as consumers (I), consumer tastes (T), population (N), advertising (A), estimates of future conditions regarding the availability of goods in the future (E) and other factors.

With the factors that affect the demand for that product, a demand function model is created with the formula: $Q^dx = f$ (Px, Py, I, T, N, A, E,..),, so that any changes to the factors that affect demand will affect the quantity of goods demanded (Qdx). To find out how each factor influences demand on the quantity of goods, a multiple linear regression formula is used (Gujarati, 2010) with the equation: $Y = a + b_1Px + b_2Py + b_3I + b_4T + b_5N + b_6A + b_7 E + e$. Where: Y is the total demand as Qdx, a is a constant, b1...b7 is the regression coefficient and e is the error term.

The water demand function is presented as the elasticity of demand which is the percentage change in the amount of water demanded due to the percentage change in water prices, and is elastic (Pindyck R, 2005). As a public good, the elasticity of drinking water tends to be perfectly elastic, because with a certain price fixing, the demand for water becomes infinite. However, drinking water as an economic good tends to be elastic, where relatively small changes in price will result in quite large changes in demand. As a basic need, the demand for drinking water can, as an exception, not follow the law of demand but like the law of supply, where even though the price rises, the demand continues to rise along with the development of the population. Supply is the amount of goods or services that are willing to be offered by companies taking into account the various factors that affect supply (Pindyck, 2005). Various factors that affect the supply of goods or services, including the price

of goods and services (Px), the price of other similar goods (Py), the cost of production for (Bi), the technology used (Tg), the number of companies that produce similar goods (Nf), future estimates of the availability of these goods and services (E), as well as various other factors (Salvatore, 2005).

To find out how the influence of the factors that influence supply on the range of goods offered can be known by using the multiple regression equation method (Gujarati, 2010) with the formula $Y = a + b_1Px + b_2Py + b_3Bi + b_4Tg + b_5Nf + b_6 E + u$. Where: Y is the number of goods supplied Q^dx, a is a constant, $b_1,...b_6$ is the regression coefficient, and u is the error term.

Viewed from the side of drinking water as a public good or social good, water supply can be perfectly elastic, where at a certain price level the quantity of water offered is unlimited or at any level the price of water offered is fixed. However, drinking water is an economic good as a normal good that changes in price in proportion to changes in supply, where if the price rises, supply also increases in proportion to the increase in price for the sake of obtaining company profits. On that basis, in terms of determining drinking water tariffs, all factors that influence the supply must really be considered.

Consumer Satisfaction

Consumers consume or buy water by considering the satisfaction or utility obtained from the drinking water they consume. Total consumer satisfaction in consuming is the sum of the utilities of a number of goods consumed, while marginal utility (MU) is the change in total use value caused by a change in one unit of goods consumed. While on the other hand, the value of an item is realized from its price, therefore maximum consumer satisfaction occurs when the additional use value (MU) of each additional unit of goods consumed equals the amount of money or price (Price, P) paid by consumers. for the addition of one unit of goods consumed and written by the formula, MU = P (Salvatore, 2005). This use-value theoretical approach can explain the use-value and satisfaction of drinking water customers. Communities who are customers of drinking water always try to maximize their satisfaction with drinking water consumption from the amount of money paid per meter of drinking water consumed. Therefore, consumers expect the marginal utility (MUx) received from each additional water consumed per unit equal to the price (Px) paid for the additional water consumption ($Mu_x = P_x$). If MU > P, there is a consumer surplus, conversely if MU < P, then there is a consumer deficit.

If the water comes from a river, then the treatment process can be carried out by coagulation, fliculation, settling, filtering and disinfection. Coagulation aims to affix the coagulant and stir it quickly so that it disperses into the water and agglomerates of particles occur that become deltas so that they are easily deposited or filtered during the settling process. Meanwhile, dissection aims to kill microorganisms in the water. Treatment of water originating from springs to become drinking water suitable for consumption, processing is carried out, namely conditioning and disinfection, while artesian well water treatment is carried out by means of aeration, sand filtering and infection. Various efforts made by the company in the process of drinking water treatment to obtain drinking water according to drinking standards which are distributed to customers, must cost a relatively large amount.

Willingness To Pay (WTP) for Drinking Water

WTP is defined as a way of analyzing a user's willingness to pay the price of a product or service received (Hanley, 1993; Fitria Adillah, 2013). WTP is the highest price that consumers are willing to pay in order to get the benefits of goods or service and to see how much the buyer appreciates the item

or service. WTP can also be interpreted as a person's willingness to pay for an environmental condition or assessment of natural resources and natural services in order to improve environmental quality (Hanley and Spash, 1993). The WTP analysis can be used as a reference in calculating the tariff for a product or service based on the wishes of the community, for example, payment for clean drinking water from the Regional Drinking Water Company.

Willingness to pay for drinking water is closely related to the satisfaction received by consumers, which can be seen from the total utility (TU) and marginal utility (MU) for the quality of drinking water and the price of water. However, the consumer's income level, education level, is an alternative to the willingness to pay for drinking water. Good water quality as seen from its clear color and odorless will encourage consumers to not hesitate to pay. Likewise the price, the pricing of drinking water rates always takes into account the socio-economic conditions of the community but also pays attention to the sustainability of drinking water providers. For this reason, an assessment of the drinking water sector needs to be carried out to find out and develop alternatives in the method of providing drinking water. Jordan and Elnagheed (1993) quoted by PDAM Pekalongan (2018) made an analysis of efforts to improve the quality of clean water through the contingent valuation method (CVM), that to improve the quality of drinking water is correlated with increased income, level of education and doubts about water quality. Meanwhile the variables (dummy) for female respondents, young age group, black skin color, domiciled in rural areas give higher WTP of drinking water. The Contingent Valuation Method (CVM) is a survey-based methodology for estimating the customer's rating of the goods, services, and conveniences they consume.

Regulation of the Minister of Health of the Republic of Indonesia (Permenkes RI) Number: 907/MENKES/SK/VII/2002, the definition of drinking water is water that goes through a processing process or without a processing process that meets health requirements and can be drunk directly. While health requirements include bacteriological, chemical, radioactive and physical requirements.

The Willingness to Pay (WTP) analysis can be used to determine the factors that affect the ability to pay by the community. The regression equation model calculates the value of WTP is: $WTP = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + ... + \beta i Xi + \varepsilon$. Where: WTP = respondent's WTP value; α = intercept value or constant; $\beta 1..\beta i$ = regression coefficient value; X1...Xi = factors affecting WTP; e = errot term.

From the point of view of companies that process and offer goods, pricing is taking into account planned profits and is usually above the bread event point (BEP) (Salvatore, 2015). A price that covers only average total cost (meaning average total cost, ATC) means the company is at a breakeven point or BEP. The company earns a profit if the price set is above the average total cost, ATC. Conversely, if the price setting is below the total average, ATC, even though it is above the average variable cost (AVC), the company suffers a loss but can still operate because it is still able to cover the average variable cost (AVC). Furthermore, as a company that manages water resources, it aims to seek profits that will be deposited to the Regional Government as BUMD Profits. The company's profit can only be achieved if revenue at a predetermined rate is higher than the average total cost (P>ATC).

RESEARCH METHODS

To find out how the role of Tirtauli Regional Publik Company, Pematang Siantar Regency in the development of the Pematangsiantar City area, this research is seen from 3 aspects, namely:

analysis of the availability of water resources, customer satisfaction, the effect of customer satisfaction on WTP analysis.This study was designed using a descriptive survey method to collect data from drinking water customers from Tirtauli Regional Publik Company, Pematang Siantar Regency. The type of data needed in this research is primary data and secondary data. Primary data was collected by distributing questionnaires to customers, which included: gender, house category and home ownership, area of the house, area of the yard of the house complex, number of family members living in the house, water source used, area of the house, water use in the household, employment, monthly income, monthly household expenses. While the secondary data needed includes: general description of the city of Pematang Siantar, general description of Tirtauli Regional Publik Company Pematang Siantar regarding the number of drinking water customers, water rates, water sources from Tirtauli Regional Publik Company and water quality from the North Sumatra Provincial Environmental Service.

Primary data collection was carried out using questionnaire techniques and guide surveys. With the questionnaire technique, respondents are free to choose answers that are already listed, both closed answers, semi-open and open answers. Through the guide survey technique, respondents are given the freedom to provide answers to questions guided by the surveyor.

Secondary data was collected from the BPS Pematang Siantar In Figures book in several editions, while the general description of the company and the water resources managed were obtained directly from the Office of Tirtauli Regional Publik Company Pematang Siantar. Water quality data was obtained from the North Sumatra Provincial Environmental Office

Population and Sample

The population in this study were all drinking water customers of Tirtauli Regional Publik Company in 10 service areas, namely 8 sub-districts in Pematang Siantar Regency and the Perumnas Batu Enam area, institutions/agencies and the Simalungun Regency area adjacent to the city of Pematang Siantar, with a total of 70,558 customer households. The determination of the sample was carried out using the Krejcie Morgan table (obtained a sample size of 381 customers). The sample members were drawn randomly based on the distribution per service area. The sample strata by service area are: Siantar Marihat with 22 (5.77); Siantar Marimbun with 26 (6.82%); South Siantar with 24 (6.29%); West Siantar with 48 (12.59%); North Siantar with 53 (13.91%); East Siantar with 41 (10.76%); Siantar Martoba with 53 (13, 91%); Siantar Sitalasari as many as 38 (9.97%); Perumnas Batu Enam as many as 65 (17.06%); Outskirts of Simalungun Regency as many as 7 (1.83%); Institutions as many as 4 (1.04%);

Data Analysis Techniques

The analysis technique in this study is descriptive analysis, which is a method for examining the status of a group of people, an object, a set of conditions, a system of thought (attitude or response), or a class of events in the present (Nazir, 2005).

3.4.1 Water Balance Analysis

Water balance calculations are carried out to check whether the available water is sufficient to meet the water needs of the location concerned. There are 3 (three) main elements distinguished: a) Availability of water b) Water demand and c) Water balance (Suprapto, 2016). Water balance analysis is carried out in the following steps:

a) Projecting the population for the next 5 years (2023-2027) is calculated using the geometric growth formula (According to BPS, the average population growth of Pematang Siantar Regency is 1.356% per year), using the following formula: Pn = Po (1.356/100).
b) Availability of water is calculated based on data on total potential water discharge per second at water sources (springs and drilled wells) to obtain water discharge in liters per day. Availability of water per day (liters) = Number of water debits in liters/second (60 x 60 x 24). Where 1 minute = 60 seconds; 1 hour = 60 minutes; 1 day = 24 hours).
c) Water demand is calculated based on the projected population at service coverage multiplied by the water requirement per person per day according to Minister of Public Works Regulation No. 14 of 2010. Pematang Siantar is a Medium City (need = 110 liters/per capita/day). Water demand (liters/capita/day) = total population (projection) x average water demand (liters/person/day).
d) Water balance, calculated by subtracting the total availability of drinking water with the needs of the population in the service area, so that the situation is known as a surplus or minus (excess or shortage). Water balance = Water availability - Water demand.

Conclusion: If the availability of water is greater than the need for water, it means a water balance (surplus or excess). If the availability of water is less than the need for water, it means a water balance (minus or shortage/crisis).

RDS Analysis (Customer Satisfaction)

In this survey, customer satisfaction of Tirtauli Regional Publik Company Pematang Siantar is aimed at obtaining a level of satisfaction through a questionnaire designed and based on: (1) distribution, including fairly regular water availability, quantity available, availability that needs to be added and continuity of distribution: (2) regarding production, including better water quality than well water and rain, in terms of smell, taste, the level of water clarity is very good; (3) regarding meter recording, including officers, recording schedule; (4) regarding payments including payment counters, schedules and access and procedures; (5) regarding complaints including complaints, ease of reporting, attitude, availability of complaint media; and (6) regarding tariffs.

Questionnaire is a data collection technique that is carried out by giving a set of questions or written statements to respondents to answer. The semantic differential scale, namely the scale for measuring attitudes, is arranged in a continuum line where very positive answers are located on the right side of the line, and very negative answers are located on the left side of the line, or vice versa. The semantic differential scale contains a series of bipolar characteristics such as hot-cold, very satisfied - very dissatisfied, and so on. The bipolar characteristics have 3 basic dimensions of a person's attitude towards objects, namely: (1) potential, namely the physical strength or attraction of an object; (2) evaluation, namely things that are favorable or unfavorable to the object; and (3) activity, namely the level of movement of an object. The data obtained by measuring with a differential semantic scale is interval data. The following is a table using the differential semantic scale as follows:

Table 1. Differential Semantic Scale

Very Satisfied	9	8	7	6	5	4	3	2	1	0	**Dissatisfied**

Source: I Komang S. & I Kadek S.A., 2020).

Each question relates to the variables in the operationalization of this variable where all variables are then measured using instruments measuring the level of satisfaction through the

indicators stated in the questionnaire that fulfill the questions in the form of a differential semantic scale type. To analyze each question or indicator, the frequency of answers for each category (answer options) is calculated. After each indicator has a number, the researcher then makes a continuum line, with the following formula:

$$\textbf{NJI (Interval Level Value)} = \frac{\textbf{Highest} - \textbf{Lowest Score}}{\textbf{Total Question Criteria}}$$

Table 2. Customer Response Scale Categories

Scale	Category
$0{,}0 \leq x < 1{,}8$	Very Dissatisfied
$1{,}8 \leq x < 3{,}6$	Dissatisfied
$3{,}6 \leq x < 5{,}4$	Enough
$5{,}4 \leq x < 7{,}2$	Satisfied
$7{,}2 \leq x < 9{,}0$	Very Satisfied

Source: Research Processed Results, 2022

After the average value of the respondents' answers has been known, then the results are interpreted with the help of a continuum table, in the following way: (a) minimum index = 0; (b) maximum index = 9; (c) intervals: 9-0 = 9; (d) interval distance: (9-0)/5 = 1.8). Based on these tools, the scale categories are obtained as in table 2.

Analysis of the Influence of Dimensions Customer Satisfaction with WTP through the CVM Approach.

Analyzing the Effect of Customer Satisfaction (X) on WTP (Y) is used a modified multiple linear regression analysis (Gujarati, 2010). Dimensions of customer satisfaction are measured by 4 variables, namely: customer education; Customer Revenue; Number of customer family members and customer service satisfaction. The following formula is obtained: $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$. Where : Y is WTP Customer; a is a constant; b_1, b_2,b_3, b_4 are regression coefficients; X_1 is: Customer Education; X_2 is Customer Revenue; X_3 is the number of customer family members and X_4 is customer satisfaction.

The CVM method is carried out by conducting a survey in the service area of Tirtauli Regional Publik Company Pematang Siantar. CVM is carried out based on a survey that is used to provide an assessment of environmental goods or commodities. To calculate the CVM value, you can ask the community directly how far they are willing to pay for changes in environmental quality. Based on the results of the WTP Customer data tabulation on the willingness of respondents from Tirtauli Regional Publik Company, Pematang Siantar Regency.

Sure (1997) means that CVM is an analytical method with survey techniques in which the researcher asks respondents directly about the value or price given to certain goods or services that do not have a market such as environmental goods, if the market is really available or if there are ways method of payment such as the set tax rate. The implementation of the CVM method in this study was assessed according to the value of R^2 (coefficient of determination) generated by the multiple linear regression model. Decision: Mitcell and Carson (1989) in Hanley and Spash (1993) and Priambodo

and Najib (2016) tolerate an R^2 value of up to 15%, so it is concluded that the results of carrying out the CVM survey in research can be trusted for its truth and reliability (Priambodo and Najib, 2016).

Framework

In carrying out studies and determining the eligibility of drinking water tariffs in the Drinking Water Supply area using the following framework:

Figure 1. RDS Development Framework

Furthermore, the stages in the implementation process starting from the preparation stage to reporting the research results are as presented in Figure 3.2 which is presented on the following page:

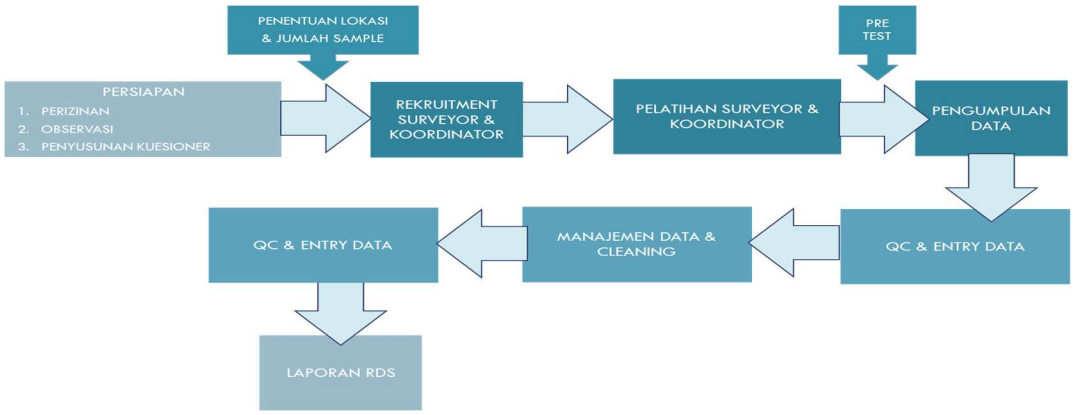

Figure 2. Data Needs Survey Framework

RESEARCH RESULTS AND DISCUSSION

Overview of the City of Pematang Siantar

Based on the 2021 book by the Central Bureau of Statistics for the city of Pematang Siantar, Pematang Siantar Regency is located on the line 2^0 53' 20" - 3^0 01' 00" north latitude and 99^0 1' - 99^0 6' 35" east longitude and is in the middle of the region. Simalungun Regency. The area of Pematang Siantar is 79,971 km^2 and is located at 400-500 meters above sea level. The city of Pematang Siantar is located right in the middle of the Simalungun Regency, divided into 8 sub-districts and 53 sub-districts. The development of its population over the last 10 years (2010-2020) is 1.356 percent per year. The total population in 2021 is 268,254 (59,627 households).

Gross Regional Domestic Product (GRDP)

Recording of the PDRB data for the city of Pematang Siantar for 2010-2021 which is a development of the economic structure. GRDP according to current prices in 2017 amounted to

12,443.86 million rupiahs; 2018 of 13,176.71 million rupiah (growing 5.89 percent); 2019 of 13,933.25 million rupiah (growing 5.42 percent); 2020 amounted to 13,920.09 million rupiah (growth negative - 0.09 percent) and 2021 amounted to 14,208.20 million rupiah (growth 2.07 percent). In 2020 the regional economy experienced negative growth and in 2021 recovered again in line with the reduced impact of the Covid-19 Pandemic.

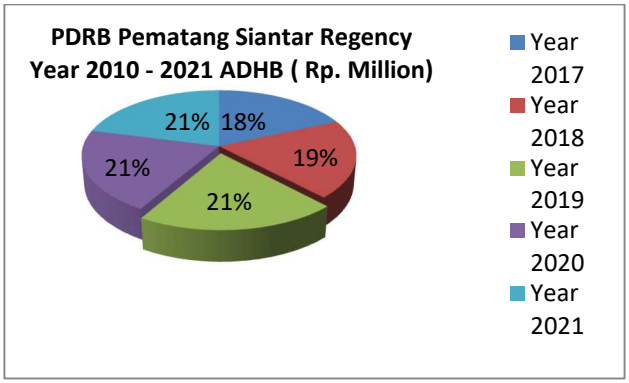

Figure 3. GRDP of Pematang Siantar Regency 2010-2021 ADHB 2010 (%)
Source: Pematang Siantar Regency in Figures, 2017-2021 (processed).

Profile of Tirtauli Regional Publik Company Pematang Siantar

Tirtauli Regional Publik Company, formerly known as PDAM Titrta Uli, is a regional drinking water supply company that was founded in 1916, initially managed by the Siantar State plantation located on Jalan Merdeka, precisely in the Simarito field. In 1920 the Dutch government took over the simarito water source from the Siantar State plantation and changed it to "Gemente Water Leding Bedrijf, with an agreement that it would still serve water distribution to the Siantar State Plantation. Subsequent developments, in 1978 its name was changed to Tirtauli Regional Publik Company Pematang Siantar, by Decree of the Mayor of Pematang Siantar Number 97/10BP/WK, which is currently called Tirtauli Regional Publik Company Pematang Siantar. The vision of Tirtauli Regional Publik Company, Pematang Siantar Regency is: "To become an advanced regional public company with excellent service quality and participate in improving people's welfare."

Drinking Water Production of Tirtauli Regional Publik Company Pematang Siantar

The table 3 shows that, in 2015-2021 the drinking water production of Tirtauli Regional Publik Company has increased from 19,147,748.00 (m^3) in 2015 to 19,862,417.13 (m^3) in 2021. Drinking Water Production is distributed by Tirtauli Regional Publik Company in 2015 -2021 also experienced an increase from 14,893,160.00 (m^3) in 2015 to 19,720,480.01(m^3) in 2021. Meanwhile, the value of Tirtauli Regional Publik Company Drinking Water Production for 2015-2021 has increased from IDR 59,217,033,440 to IDR 59,851,416,690 in 2021.

Table 3. Tirtauli Regional Publik Company Drinking Water Production Data and Value (Rp) for 2015 - 2021

Year	Production (m^3)	Distributed (m^3)	Remaining (m^3)	Value (Rp)
2015	19.147.748,00	14.893.160,00	4.524.588,00	59.217.033.440
2016	20.714.480,41	14.562.864,00	6.151.616,00	56.019.401.770

2017	16.696.871,00	14.043.465,00	2.653.406,00	57.749.194.980
2018	19.817.566,92	19.710.130,70	107.436,22	50.953.792.670
2019	34.247.582,35	19.709.493,70	14.538.088,65	50.953.881.671
2020	19.780.996,56	13.999.187,00	5.781.809,56	62.229.682.900
2021	19.862.417,13	19.720.480,01	141.937,12	59.851.416.690

Source: Tirtauli Regional Publik Company (processed), 2022.

Development of Drinking Water Customers of Tirtauli Regional Publik Company, 2015-2021

Table 4 shows that, in 2016 drinking water customers from Tirtauli Regional Publik Company decreased by (-10.14%), but in the following years, namely 2017 and 2018, the number of customers increased by 5.64% in 2017 and 2.09% in 2018. However, in 2019 drinking water customers (households) at Tirtauli Regional Publik Company did not experience any growth at all. Then in 2020 the number of drinking water customers has increased again, with a total of 66,842 customers or an increase of 4.690% and in 2021 there has been another increase of 1.26%, so that in 2021 the number of customers will be 70,588 households.

Table 4. Number of Customers of Tirtauli Regional Publik Company Pematang Siantar

Year	Household	Companies, Hotel,	Places of Worship/Social	Institution	Total	Percent (%)
2015	57.989	1547	548	689	68.774	-
2016	59.018	1528	569	680	61.795	- 10,14
2017	16.524	1520	583	651	65.278	5,64
2018	63.832	1567	589	696	66.644	2,09
2019	63.832	1567	589	646	66.644	0
2020	66.842	1601	594	674	69.711	4,60
2021	67.767	1537	588	666	70.588	1,26

Source: Central Bureau of Statistics for the City of Pematang Siantar Various Years, 2022.

Availability of Drinking Water from Water Sources

According to the raw water source data it is known that there are 26 raw water sources used by the company as a source of clean water for Tirtauli Regional Publik Company Pematang Siantar, with a total water availability of 995.88 liters/second or daily raw water availability of 86,044,032 liters/second. Water distribution system from the source to the location of the customer's house by gravity method (8 water sources) and pumps (18 water sources). Based on the feasibility standard for clean water, a minimum requirement for each person is 49.5 liters/capita/day of clean water. The UNESCO world body itself in 2002 has established the basic human right to water at 60 liters/person/day. The Directorate General of Human Settlement, Ministry of Public Works, subdivides the standards for drinking water based on the area classification in Permen PU No. 14 of 2010 namely: Rural (60 liters/per capita/day); Small Town (90 liters/per capita/day); Medium City (110 liters/per capita/day); Big City (130 liters/per capita/day); Metropolitan Municipality (150 liters/per capita/day). Pematang Siantar Regency is a Medium City, so the standard requirement for people/day is 110 liters/day. On that basis, the projected water needs of the population and clean water customers for 2021-2026 can be calculated as shown in table 5.

Table 5. Calculation of Population Projection, Water Needs and Clean **Water Balance** for 2021-2026

Year	Population Projection	Water Demand	Water Availability	Water Balance	, Information
2021	271.822	29.900.420	86.044.032	56.143.612	Surplus
2022	275.437	30.298.070	86.044.032	55.745.962	Surplus
2023	279.100	30.701.000	86.044.032	55.343.032	Surplus
2024	282.812	31.109.320	86.044.032	54.934.712	Surplus
2025	286.537	31.519.070	86.044.032	54.524.962	Surplus
2026	290.384	31.942.240	86.044.032	54.101.792	Surplus

Source: Projected Results, 2022.

Based on the data in table 6, it is known that the population of Pematang Siantar Regency in 2026 is 290,384 people. The need for water in 2026 is 31,942,240 liters/day. With a constant supply of 86,044,032 liters/day, there is still a surplus of 54,101,792 liters/day of clean water.

Table 6. Customer Projections, Customer Water Needs and Clean Water Balance for 2021-2026

Year	Household Customers	Number of Customers Using Water (person)	Water Demand (person/day)	Balance Sheet	Information (surplus/minus)
2021	70.588	282.352	31.058.720	30.776.368	Surplus
2022	71.477	285.910	31.450.060	31.164.150	Surplus
2023	72.367	289.467	31.841.400	31.551.932	Surplus
2024	73.256	293.025	32.232.740	31.939.715	Surplus
2024	74.146	296.583	32.624.079	32.327.497	Surplus
2026	75.035	300.140	33.015.419	32.715.279	Surplus

Source: Projected Results, 2022.

Based on customer projection data, customer water needs and clean water continuity in 2021-2026, it is known that the number of customers of Tirtauli Regional Publik Company City of Pematangsiantar in 2026 is 75,035 RTs, (290,384 people). The number of customers using water in 2026 is 300,140 people (assuming 1 household has an average of 4 people). So the projection of the need for water per person/liter/day in 2026 is 33,015,419 liters/day. Assuming that the amount of water availability is constant, and the need for water per person is 110 liters/day), it is projected that there will still be a surplus of clean water of 32,715,279 liters/day.

Clean water is water used for daily needs whose quality meets health requirements and can be drunk when it has been cooked. The quality standard used is Regulation of the Minister of Health No. 416 of 1990 concerning Requirements and Supervision of Water Quality. Quality Standard: Minister of Health Regulation No.416/MENKES/Per/IX/1990 Appendix I Concerning Clean Water Quality Requirements and includes class I water that is fit for drinking (North Sumatra Provincial Environmental Office, 2022).

Real Demand Customer Survey Results

In the Real Demand Survey of Tirtauli Regional Public Company Pematangsiantar customers, 381 customer respondents were surveyed with the characteristics of the respondents described as follows:

Respondents by Customer Gender

The data shows the identity of Customer Respondents by Gender. Of the 381 respondents surveyed, there were 225 men and 156 women. The largest number of male respondents were in the Perumnas area, Siantar sub-district, Simalungun Regency, while the largest number of female respondents were in the Siantar Martoba area.

Respondents According to Customer Education Level

The data shows the identity of Customer Respondents by Education Level. Of the 381 respondents surveyed, there were 25 elementary schools, 32 junior high schools, 248 high schools/vocational schools, and 76 people with D3/S1/S2 levels of education. Respondents with the highest level of education were in the North Siantar, West Siantar, East Siantar and Permnas districts of Simalungun Regency, while the respondents with the lowest education (SD) were in the Siantar Martoba and Perumnas areas.

Respondents by Customer Age

The data shows the identity of Customer Respondents by Age. Of the 381 respondents surveyed, there were 13 people aged less than 30 years, 57 people of 30-40 years, 88 people of 41-50 years, 125 people of 51-60 years, 69 people of 61-70 years and 70 years and over as many as 25 people. Most respondents were aged 51-60 years, namely 125 people (33%), 67 people and 70 years and over, 7 people. Most respondents were at the age of 51 - 60 years as many as 114 people (31.58%).

Respondents According to Customer Occupation

The data shows the identity of Customer Respondents by type of daily work. Of the 381 respondents surveyed, there were 11 people with ASN status, 3 people from the TNI and 2 POLRI respectively, 1 BUMN employee, 22 private employees, 222 entrepreneurs, 26 farmers and others. - another 64 people. Most of the respondents were employed as entrepreneurs, namely 222 people (58%).

Respondents' Income

The data shows the identity of Customer Respondents according to the average level of income per month. Of the 381 respondents surveyed, there were 122 people who earned an average income of IDR 2,000,000-IDR 2,999,000, and 99 people who earned an average income of IDR customers who earn an average income of Rp. 1,000,000-1,999,000.- are 92 people and respondents with an income level of more than Rp. 10,000,000.- are only 4 people (1%).

Customer House Size

The data shows the identity of Customer Respondents According to the area of the respondent's house drinking water customers. Of the 381 respondents surveyed, there were 126 people (33%) with a house area of 101-200 m^2, 207 people (54%) who had a house area of 0-100 m^2, 39 people who had a house area of 201-300 m^2. (10%).

4.7.7 Category of Houses Occupied by Customers

The data shows the identity of Customer Respondents according to the category of houses occupied by drinking water customer respondents. Of the 381 respondents surveyed, there were 339 people

(89%) who owned permanent houses, 42 people (11%) who owned semi-permanent houses, while many of the customer respondents who owned permanent houses were located in the Perumnas area.

Status of Customer's Home Ownership

The data shows the identity of Customer Respondents according to the ownership status of the house occupied by the drinking water customer respondent. Of the 381 respondents surveyed, 321 people (84%) occupied their own houses, while 60 (16%) were customer respondents who occupied houses with tenant status. Respondents with the status of tenants of the most occupied houses were in the service area of Perumnas, Siantar District, Simalungun Regency.

Permanent Residents Live in the Customer's House

The data shows the identity of the Customer Respondent According to the Number of Residents Permanently Living in the Customer's House occupied by the respondent. Of the 381 respondents surveyed, there were 65 people occupying the house. Many residents remained at the customer's house according to the service area in Perumnas, followed by Siantar Utara District 53 people, Siantar Martoba 53 people, West Siantar 48 people,

Expenditure of Customer Community

The data presents the identity of customer respondents according to the average spending level of the customer community per month by sub-district (IDR million) / household per month. Of the 381 respondents surveyed, there were 215 people (56%) who had an average expenditure of IDR 1,000,000,- - IDR 1,999,000,- - IDR 2,999,000, - as many as 110 people (29%), who have an average expenditure of IDR 3,000,000.- - IDR 3,999,000, - as many as 40 people (10%), who have an average expenditure of IDR 4,000 ,000,- - IDR 4,999,000, - for 5 people (1%).

Water Usage of Tirtauli Regional Publik Company

The data shows the identity of Customer Respondents according to the Customer's Monthly Water Usage (m^3). Of the 381 respondents, there were 74 people (19%) who had a monthly water usage of less than 10 m3, 170 people (45%) who had 10 - 20 m3 monthly water usage, 21 - 30 m^3 monthly usage, 54 people (14%). who have a monthly water usage of 31 - 40 m^3, as many as 34 people (9%). Meanwhile, there are no customers who have monthly water consumption of more than 70 m^3 (0%).

Cost of Customer's Monthly Water Needs

The data shows the identity of Customer Respondents According to the Monthly Cost of Customer's Water Needs per Family (in thousands of rupiah). Of the 381 respondents surveyed, there were 179 people (47%) who had Water Usage per Month less than IDR 100,000, who had Water Usage Per Month IDR 100 - 150,000 Monthly IDR 151,000-200,000, - as many as 43 people (11%), and customers who have Water Usage Per Month (m^3) less than IDR 350,000 do not exist (0%).

Effect of Willingness To Pay (WTP) on Customer Satisfaction

Willingness to Pay is a consumer's willingness to pay for an environmental condition or assessment of natural resources and natural services in order to improve environmental quality. Consumers assess how appropriate the price to pay compared to the uses and benefits to be obtained. WTP calculations are carried out directly (direct method) by means of the Contingent Valuation Method (CVM).

Table 7. Willingness to Pay Customers of Tirtauli Regional Publik Company City

of Pematang Siantar

No	WTP Value	Number of Respondents (People)	Persentase (%)
1	20% tariff increase	42	11,02
2	15% tariff increase	178	46,72
3	10% tariff increase	100	26,25
4	0% tariff increase (fixed)	61	16,01
Total		381	100

Source: Primary Data Processed, (2022).

Based on table 7, answers were obtained from 381 respondents who were surveyed for WTP alternative recommendations, with WTP Customer values for a 20% increase in water tariffs by 42 respondents (11.02%), a 15% increase in water rates by 178 respondents (46.25%) and a 10% increase in water rates by 100 respondents (26.25%) and customer respondents who were not willing to increase the water tariff of Tirtauli Regional Publik Company, Pematang Siantar Regency, by 61 respondents (16.01%). The amount of drinking water tariff that still applies to Tirtauli Regional Publik Company of Pematang Siantar Regency is based on the Decree of the Mayor of Pematang Siantar Number: 690-587/WK of 2002 concerning Drinking and Non-Drinking Water Tariffs. The amount of drinking water tariff has never been reviewed until 2022 although there is an opportunity to review it in accordance with Minister of Home Affairs Regulation No. 23 of 2006 concerning Review of Drinking Water Tariff.

According to the output of multiple linear regression analysis in table 4.46 it shows that the multiple linear regression equation obtained is: $Y = 0.0247 + 0.0065X_1 - 0.0008 X_2 - 0.0023 X_3 + 0.0130X_4$. Where : Y is WTP Customer; X_1 is Customer Education; X_2 is Customer Revenue; X_3 is the number of family members and X_4 is customer satisfaction. The test results of Multiple Linear Regression analysis obtained an Fcount value of 3.8274 with a significance value of 0.0046 (smaller than alpha 0.05). Means: Customer Education, Customer Income; Number of Family Members and Customer Satisfaction simultaneously have a significant effect on WTP Customers of Tirtauli Regional Public Company. The results of the partial test (t-test) show that the variable customer satisfaction (X4) has a positive and significant effect on willingness to pay drinking water bills, with a t-statistic value of 3.405 and a significance value of $0.005 < \alpha$ (0.05).

By looking at these similar facts it can be concluded that the most dominant factor on willingness to pay is customer satisfaction with Tirtauli Regional Publik Company's services. The level of customer satisfaction is shown in Table 4.44, that the distribution of the category is satisfied, the production is in the category satisfied, the meter recording is in the category satisfied, the payment system is in the category very satisfied, handling complaints is in the category satisfied, and the water tariff is in the category quite satisfied. Correlation value (r) of 0.197 means the relationship between the level of Customer Education, Customer Income; Number of Family Members and Customer Satisfaction with WTP Customers of Tirtauli Regional Public Company has a "weak" level of correlation. The R^2 value of 0.03912 means that variations in Customer WTP (Y) can be influenced by variations in Customer Education, Customer Income variables; The number of family members and

customer satisfaction is 3.912 percent, while the rest (96.088%) is influenced by other variables not discussed in this study.

DISCUSSION

The level of customer satisfaction with service is an important factor in developing a service delivery system. The system is a responsive service to customer needs, minimizes costs and time, and maximizes service to the target population. In determining the level of customer satisfaction, one of the factors that must be considered for the company is the quality of service.

Based on the results of the data tabulation of customer respondents' answers, the level of customer satisfaction, that the number of respondents/customers (381 respondents) gave a positive value for the services provided by Tirtauli Regional Publik Company Pematang Siantar. Elements of the payment system provide quite a number of account payment counters, the schedule for paying Tirta Uli Pematang Siantar account bills is clear, fees paid are proportional to the amount of water used, access to locations where water bill payments are easy, service at Tirta Uli water bill payment counters is friendly, procedures Easy and fast payment of arrears gives high satisfaction with a score of 7.3 (very satisfied).

For water distribution, it includes the regular availability of Tirta Uli Pematang Siantar water for you and your family, the quantity of water availability increases from year to year, the availability of Tirta Uli Pematang Siantar water needs to be added for your needs, and the distribution of Tirta Uli Pematang Siantar water continuously for 24 hours a day gives a satisfaction score with a satisfied predicate (6.9). Customer satisfaction of Tirtauli Regional Publik Company Pematang Siantar for production which includes Tirta Uli water is currently of drinking water quality, the water quality is better than groundwater or rainwater, in terms of smell, taste, the level of water clarity is very good, the water quality is getting better than year to year, and customers use more water from year to year giving a satisfaction score of 7.2 (satisfied).

Elements of meter recording carried out which included the meter recording staff were very polite and professional, water meter calculations were on time and the number was correct, the condition of the water meter was rarely damaged, and the scheduled arrival of the water meter recording officer on schedule also gave a satisfaction score (6.7). Elements of complaint handling perceived by customers include complaints of water complaints received and resolved quickly, ease of reporting very good complaints, the attitude of the complaint receiving officer is very friendly, solving reported problems is fair, availability of complaint media, and placement of employees is in accordance with their qualifications as well giving a satisfied score (6.0).

Related to tariffs which include the per m3 rate that is set quite adequately, progressive usage rates are quite realistic, the customer classification system is according to customer conditions, the increase in water rates is adjusted to the increase in the basic rates of electricity, fuel, raw materials or other production costs, the annual rate increases by approx. 10% -20% of the previous tariff, increased tariffs are charged evenly to all customers, high usage due to higher tariffs, and are willing to pay more if Tirta Uli's services increase, giving a neutral or sufficient value with a high value of 5.2 due to higher tariffs larger, and are willing to pay more if Tirta Uli's service increases, giving a neutral or sufficient score with a value of 5.2. Based on the tabulation of customer data as a whole, it was also found that the customer satisfaction of Tirtauli Regional Publik Company, Pematang Siantar Regency, was 6.54

(at the level of the "satisfied" category).

According to the research results, it is known that the volume of drinking water availability from 26 raw water sources used by Tirtauli Regional Publik Company, with a total water availability of 995.88 liters/second or daily raw water availability of 86,044,032 liters/second. Water distribution system from the source to the location of the customer's house by gravity method (8 water sources) and pumps (18 water sources). Based on customer projection data, customer water needs and clean water continuity in 2021-2026, it is known that the number of customers of Tirtauli Regional Publik Company City of Pematangsiantar in 2026 is 75,035 RTs (290,384 people). The number of customers using water in 2026 is 300,140 people (assuming 1 RT has an average of 4 people). So the projection of the need for water per person/liter/day in 2026 is 33,015,419 liters/day. Assuming a constant volume of water availability, and the need for water per person is 110 liters/day), it is projected that there will still be a surplus of clean water of 32,715,279 liters/day with the quality standard: Clean Water Quality and included in class I water that is suitable for drinking according to Regulation of the Minister of Health of the Republic of Indonesia No.416 of 1990 concerning Requirements and Monitoring of Water Quality. The results of this study conclude that the sustainable water sources that will be managed by the company and drinking water that will be purchased by customers from the regional company are still available and sustainable (surplus). Data on the number of customers that continues to grow from 68,774 customers in 2015 to 70,588 customers in 2021 also illustrates the availability of surplus drinking water resources. Excess water surplus to be used for various economic activities that require water resources such as: Bottled water business, ready-to-drink water, swimming pools, and others so that water resources that have been wasted so far can result in increased company income or the use value of clean water that is for human life or other economic activities that contribute to the regional economy of Pematang Siantar Regency and the development of the Pematangsiantar City area from the aspect of natural resources.

The potential availability of clean water that can be managed by Tirtauli Regional Publik Company, Pematang Siantar Regency, clearly illustrates the achievement of water sovereignty in the Pematangsiantar City area. surplus. There is another 2.80 percent of households that are not yet customers of clean water from Tirtauli Regional Publik Company in Pematang Siantar Regency. Therefore, the expansion of service coverage to Simalungun Regency can still be expanded (expansion).

The results of research on the level of customer satisfaction, that of the 381 respondents gave a positive value for services related to the payment system provided by Tirtauli Regional Publik Company Pematang Siantar giving high satisfaction with a value of 7.3 (very satisfied). distribution of water with the predicate satisfied (6.9). for water quality production the better the satisfaction value is 7.2 (satisfied). The element of meter recording that was carried out also gave a satisfied value (6.7). The complaint handling element also gives a satisfied score (6.0). Related to tariffs, it gives a neutral (sufficient) value with a value of 5.2. Based on the RDS customer data tabulation as a whole, it was also found that customer satisfaction was 6.54 (the level of the "satisfied" category). It was concluded that Tirtauli Regional Publik Company, Pematang Siantar Regency, must continue to strive to provide excellent service in order to satisfy customers. Because the creation of customer satisfaction will provide benefits for the company. Among them is the relationship between the company and the

customer is well maintained and provides a good basis for creating customer loyalty to companies providing goods or services.

According the results of multiple linear regression analysis, the multiple linear regression equation model is obtained: $Y = 0.0247 + 0.0065X_1 - 0.0008 X_2 - 0.0023 X_3 + 0.0130X_4$. This means that if the education level of the customer; income; number of family members, and customer satisfaction zero (0) then the WTP is 0.0247 units. An increase in the Customer Education level by 1 unit will increase the WTP by 0.0065 units; an increase in customer income by 1 unit will reduce WTP by 0.0008 units; an increase in the number of family members will reduce the WTP by 0.0023 units; an increase in customer satisfaction by 1 unit will increase the WTP by 0.013 units. According to the acquisition of an R^2 value of 0.0391 (3.91 percent <15 percent), it can be concluded that the results of the implementation of the CVM survey in this study can be trusted (Priambodo and Najib, 2016). Thus, the business continuity of Tirtauli Regional Publik Company Pematang Siantar Regency will be maintained in the future as a business institution and socio-economic infrastructure, because as long as the company is able to maintain its level of service, customer loyalty to the company to pay water bills can be maintained. Through the willingness of customers to pay for water bills, the company's revenue to cover operational expenses can be maintained so that the company earns profits in each financial reporting period.

CONCLUSSION AND RECOMMENDATION

Based on the research problems and discussion described above, the following conclusions can be formulated: (1) Tirtauli Regional Public Company Pematang Siantar have a very important role in regional development as an institution (socio-economic infrastructure) through the business of drinking water treatment as a basic human need that must be fulfilled and sustainable, as indicated by: Water balance, customer satisfaction, and willingness to pay; (2) Based on customer projection data and customer water needs for 2021-2026, it is known that in 2021 the availability of clean water resources managed by the company will still have a surplus of 54.10 million liters/day. With the projected population and customer water needs in 2026, there will still be a water surplus of 32.28 million liters/day with "class 1" quality clean water. (3) The level of satisfaction of respondents with the services of Tirtauli Regional Publik Company seen from distribution, production, meter recording, payment, handling of complaints has a value of 6.54 in the "satisfied" (moderate category); (4) Fcount 3.8274 with a significance value of 0.0046, means: Customer Education, Customer Income; The number of Customer Family Members and Customer Satisfaction simultaneously have a significant effect on the willingness to pay Customers of Tirtauli Regional Public Company; (5) R^2 value of 0.03912 means that variations in willingness to pay can be influenced by variations in the variables Customer Education, Customer Income; Number of Family Members and Customer Satisfaction 3.912 percent, the remaining 96.088 percent is influenced by other factors.

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