THE STRATEGY TO IMPROVE CLEAN WATER SERVICES IN BENGKULU PROVINCE

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Abstract
Based on the conditions of the three PDAM offices in Bengkulu Province, it shows that the availability of clean water in Bengkulu Province is as follows: 1) the quality of clean water is still low and the suitability of clean water sources does not meet quality standards; 2) the needs of water are increasing (quantity); 3) the need for clean water continues to increase over time (continuity); 4) clean water management is not optimal (affordability) based on the Performance Evaluation by BPKP on PDAM Bengkulu Province in 2019. This type of research is a descriptive with qualitative approach and this research is located in three location namely Central Bengkulu Regency, North Bengkulu Regency and Bengkulu City. The number of specimens in this research was 400 PDAM consumers. Based on the results of the SWOT analysis of improving service quality, it was found that EFAS and IFAS were in quadrant II (0.126; -0.245) with a diversification strategy. This result focuses on the 4 Ks (quantity, quality, continuity and affordability) according to J. Nijman (1997) and Barata (2003). Therefore, the regional drinking water company owned by the regional government of Bengkulu Province has improved the quality of clean water services which will have an impact on community welfare and independence in receiving public services in the clean water sector. The strategy to improve clean water services in Bengkulu province requires management based on customer satisfaction, clean water availability, quality, quantity and continuity based on regulations and business plans of companies that manage clean water owned by each PDAM office. Clean water services and management will also provide basic services for community needs, increasing profits, and retribution to regional income (PAD).
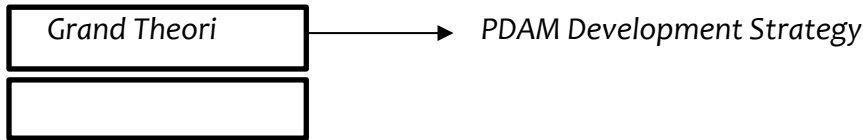
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INTRODUCTION

BUMD Drinking Water service coverage decreased from 35.15% in fiscal year 2018 to 30.66% in fiscal year 2019. This is due to the achievement of service coverage nationally influenced by raw water problems, where the capacity is decreasing and the source is increasingly far from service centres and the distribution of quantity is uneven. In the achievement of drinking water quality in customers based on Permenkes Number 492 of 2010 decreased from 81.11% in 2018 to 48.48% in 2019, meaning that the fulfilment of all drinking water quality parameters in accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 492 of 2010 concerning Drinking Water Quality Requirements, 2010 and Regulation of the Minister of Health of the Republic of Indonesia Number 736 / Menkes / Per / VI / 2010 concerning Procedures for Supervision of Drinking Water Quality, 2010 is only around 48.48%, while the number of BUMD Drinking Water that meets all drinking water quality parameters is only 12 BUMD Drinking Water in Indonesia. The decline in drinking water quality is also influenced by the decline in raw water quality and the decline in the work effectiveness of drinking water management units (technical age). To achieve the RPJMN 2020-2024 target of 100% healthy drinking water BUMDs, the central government will provide program support in the form of optimisation, functionalisation, or new development programs for national water supply. BUMD Air Minum can develop its investment by analysing financing alternatives including bank loans, non-government facilities such as CSR, joint projects through government cooperation with companies (PPP), between companies (B-to-B), performance-based contracts (KBK), installment-based contracts (KBA). The research gap in the research to be carried out is based on phenomena that occur in previous studies, including: 1). The quality of clean water is very low / clean water quality standards below health service standards; 2). The quantity of clean water sources is still lacking; 3). Continuity does not last for 24 hours; and 4). Price affordability is not in accordance with the provisions of the Minister of Home Affairs Regulation No. 21 of 2020 concerning amendments to the Minister of Home Affairs Regulation No. 71 of 2016 concerning Calculation and Determination of Drinking Water Tariffs. Another cause of the failure of the implementation of strategic planning for clean water improvement is the frequent changes in strategic policies with the change of leadership, both national and regional, so that the programmes and activities implemented also change. Based on the exploration conducted by the author at PDAM Bengkulu Province, it was found that the strategy to improve services at PDAM was still not optimal. This is evident from the following indicators: 1). Water distribution has not been enjoyed by all people in Bengkulu Province, most people in Bengkulu Province still have difficulty getting clean water. The number of people who have been served in Bengkulu Province is 53.15% and there are still 46.85% of the population who have not been served by PDAMs in Bengkulu

Province. 2). Currently, the provision of clean water provided by the PDAM in Bengkulu Province has not been able to provide satisfactory service to existing customers and has not reached all parts of the regencies and cities in Bengkulu Province that have a high level of dependence on clean water services provided by the PDAM in Bengkulu Province. Areas that have not been covered by the PDAM in Bengkulu Province are, for example, North Bengkulu 5 sub-districts, Central Bengkulu 7 sub-districts. 3). Fluctuating water discharge. This is caused by declining raw water sources, and due to precipitation in the raw water transmission pipeline network. So that it can have an impact on service to customers, and cause uneven water distribution. and 4). The level of water loss is quite high. The greater the leakage, the greater the loss received by the company, which in turn makes the company unhealthy. Standard procedures to prevent water loss that is too large (the standard for water loss is set at 20%), of course, must be carried out gradually, even up to comprehensive improvement. Based on the description above, the author is interested in raising the situation that occurs in the Regional Drinking Water Company (PDAM), so the formulation of the problems of this research is 1). What are the strengths, weaknesses, opportunities, and challenges in improving the quality of PDAM services in Bengkulu Province? 2). What are the strategies to improve the quality of PDAM services in Bengkulu Province?

THEORETICAL FRAMEWORK

According to Dougherty & Pfaltzgraff (1990) Theory is an intellectual tool that functions: 1). Help structure our knowledge, ask important questions, and guide the formulation of priorities in research and select methods used in research; 2). Help connect knowledge in one field to another; and 3). Provide a framework for evaluating policy recommendations, both explicit and implicit, that exist in the social sciences. This research requires a sequential philosophical arrangement from Grand Theory, Middle Range Theory, to Applied Theory. Grand Theory is the basis for the birth of other theories at various levels. The Grand Theory used for this research is service quality. Middle Theory is a theory that is at an intermediate level where the focus of the study is macro and micro. The Middle Theory used is the performance of a PDAM company. Applied Theory is a theory that is at the micro level and ready to be applied in conceptualisation (Dougherty & Pfaltzgraff, 1990). Applied Theory used is strategy, PDAM service quality (Quantity, Quality, Continuity and Affordability). Substantive Theory consists of the variables of this study, namely service quality, management strategy, and company performance, then the authors identify Grand Theory, Middle Theory and Applied Theory to be applied to this study can be mapped as follows:

Grand Theori → *PDAM Development Strategy*

Middle Theori   ⟶   *Strategies to Improve Service Quality*

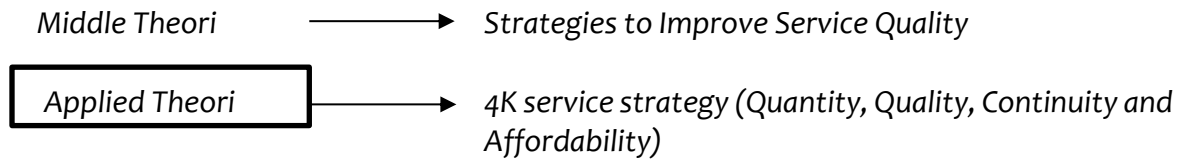*Applied Theori*   ⟶   *4K service strategy (Quantity, Quality, Continuity and Affordability)*

Figure 1. *Grand Theori, Middle Theori dan Applied Theori*

Here are some alternative strategies that can be used, including: 1). Alternative Strengths-Opportunities Strategy is used to gain the advantages available in the external environment, the Strengths-Opportunities Strategy is presented through the elaboration of virtues in using opportunities. Building a clean water management scheme by utilising as many opportunities as possible to increase. 2). Alternative Strengths-Threat strategies are used to stay away from the impact of risks outside the environment and take advantage of virtues, Strengths-Threat schemes are obtained through the elaboration of virtues and stay away from risks. The scheme to improve clean water management in Bengkulu Province will be created based on the use of strengths owned by the community of clean water consumers in Bengkulu Province to overcome threats. 3). The Weaknesses-Opportunities Strategy alternative is used to reduce the impact of weaknesses so that opportunities are available. The implementation of this strategy is based on opportunities within the organisation that are exploited and reduce its shortcomings. The desire to be achieved is to get a scheme to develop policies to improve better clean water management in Bengkulu Province by minimising vulnerabilities appropriately. and 4). Alternative Weaknesses-Threat Strategy is used to reduce weak points and stay away from threats to stand strong. This scheme reduces the existence of vulnerabilities and stays away from risks. Based on the alternative strategies above, SWOT analysis is therefore one of the most important steps in developing a strategy. The goal is to use opportunities and strengths to develop the best strategy, remove threats and stay away from weaknesses. With the existence of a strategic management scheme, one of the consequences of implementing strategic management is decision making with the involvement of various fields within the organisation. This analysis means that an organisation must maximise strengths and opportunities while minimising weaknesses and threats, so as to get a balance between internal conditions and external conditions so as to determine the policy strategy to be implemented. The following is a SWOT framework analysis table:

Table 1. SWOT Framework

		Internal	
		Strenght	Weakness
Eksternal	Opportunity	A strategy that elaborates on strengths to capitalise on opportunities.	A strategy that reduces weaknesses to capitalise on opportunities.
	Threat	A strategy that elaborates on strengths to avoid threats.	A strategy that cuts weaknesses and avoids threats.

Source : (Rangkuti, 2015)

By applying SWOT analysis, this research is expected to reveal internal factors and external factors by recognising strengths, weaknesses, opportunities and threats that are considered important in achieving its goals. Service quality diensions, are dimensions of service quality where each service offered has several aspects that can be used to determine the level of quality. According to Parasuraman, Valerie A. Zeithaml and Berry, (in Fandy Tjiptono and Gregorius Chandra, 2011: 198) suggested that in further development there are five dimensions of service that are often used to measure service quality. According to Kotler and Armstrong (2008: 69), quality service products have an important role in shaping customer satisfaction. The more quality the products and services provided, the higher the satisfaction felt by customers. If customer satisfaction is higher, it can lead to profits for the business entity. One of the main ways to maintain a service company is to provide services with higher service quality than competitors consistently and meet customer expectations. If the perceived service quality is less than what is expected then the customer becomes disinterested in the service provider, but if the opposite happens there is a possibility that customers will continue to use the service provider again. Specifically for the target of access to drinking water, the Government to ensure the quality and availability and fulfilment of drinking water services for the community that meet 4 standard criteria or known as 4K. The 4 K criteria standards include: 1). Quality, in accordance with health standards Permenkes No. 492/Menkes/Per/IV/2010 concerning Drinking Water Quality Requirements rules (Regulation of the Minister of Health of the Republic of Indonesia Number 492 of 2010 concerning Drinking Water Quality Requirements, 2010) states that, "clean water is water used for daily purposes whose quality meets the requirements

that can be drunk". The environment is an important factor in the sustainability of clean water for the needs of urban and rural communities, with a lack of awareness of protecting the environment in water sources having an impact on the lack of water quality, so that in fulfilling their needs, people switch to buying water from PDAM for their basic needs.Water treatment activities by Regional Drinking Water Companies (PDAM) in urban and rural areas have a mission to carry out economic development and increase the level of health in the community through the distribution of drinking water that is feasible and safe for activities both for households and industrial commerce; 2).Quantity, covering the standard drinking water needs of 60 litres/person/day in accordance with the Minister of Public Works Regulation No. 14/PRT/M/2010 on Minimum Service Standards (SPM) in the Field of Public Works and Spatial Planning; 3).Continuity, meeting water needs for a minimum of 24 hours in accordance with Government Regulation No. 16 of 2005 concerning the Development of Drinking Water Supply Systems and minimum pressure conditions reaching 5-10 metres at the furthest point of service in accordance with Minister of Public Works Regulation No. 18/PRT/M/2007 concerning the Implementation of Drinking Water Supply System Development; and 4).Affordability, easily accessible at an affordable cost that does not exceed 4% of people's income in accordance with the Regulation of the Minister of Home Affairs No. 23 of 2006 concerning Technical Guidelines and Procedures for Setting Drinking Water Tariffs in Regional Drinking Water Companies.When viewed based on the understanding according to Chandler (1962), "Strategy is a tool to achieve corporate goals in relation to long-term goals, follow-up programs, and resource allocation priorities", according to Yogi (in Ahmad, J, 2018).Stating the definition of service, namely:"an effort to help prepare (take care of) what others need". According to Suryokusumo (2008: 31), "Public service performance is closely related to the success of achieving the stages of the process of improving services to the community which are manifested in milestones of success" According to Agus Dwiyanto (quoted from Suryokusumo, 2008: 37), public service performance indicators are productivity, service quality, responsiveness, responsibility and accountability, and others which are grouped into two main categories, namely result-oriented performance indicators and process-oriented public service performance indicators. The water sector received special attention at the World Summit on Sustainable Development (WSSD) in Johannesburg, 2-4 September 2002. Clean water is the culmination of the five areas (abbreviated WEHAB) covered: water, energy, health, agriculture and biodiversity. The leading position shows that water (or more broadly, sanitation and water resources) has significant importance, sensitivity and depth in development including economic, social and environmental aspects.The action framework on drinking water indicates that by 2015 it will halve from the current situation, one billion people without access to drinking water and two billion with poor sanitation.Indonesia's water policy framework relates to investment-based water development in urban areas. The investment approach is

influenced by three factors: (a) raw water characteristics, considering water source type, quantity and quality, and reliable flow; (b) government policy, focusing on land use planning, economic growth and investment, and demographics; and (c) production technology, considering economic efficiency, distribution and service provision (Nugroho, 2003).The research model will answer two (2) research questions which are as follows: 1). What are the strengths, weaknesses, opportunities and challenges in improving the quality of service of PDAMs in Bengkulu Province, 2). What are the recommended strategies to improve the quality of PDAM services in Bengkulu Province? The first research question will be answered with a research model using variables $X1.X2$, $X3$, $X4$ and a. While the second research question is a recommendation from research question one.That is, the strategy to be used in improving the quality of water management services.The Drinking Water Supply System (SPAM) is an integral part of the water supply infrastructure.In its policy, the Indonesian government has set a goal to achieve universal access (100%) to the drinking water sector by 2024. The Drinking Water Safety Plan (RPAM) is a government policy in ensuring the livelihood of the community in the field of drinking water specifically for the purpose of providing drinking water which has standard criteria known as 4K, namely: 1). Quantity, according to the standard drinking water requirement of 60 litres/person/day, 2). Quality, in accordance with the standards of Permenkes No. 492 of 2010, 3). Continuity, sufficient water needs for at least 24 hours, and 4). Affordability, easily accessible at an affordable cost.

RESEARCH METHOD

This type of research is descriptive research with a qualitative and quantitative approach using non-parametric statics, which explains factual phenomena conceptually. Factual findings from research are tested with existing theoretical concepts. The approach taken is a survey of a number of respondents selected based on certain criteria. The analysis section used in this research is the 4 K service strategy (Quantity, Quality, Continuity and Affordability) of PDAMs in the Bengkulu Province region, to examine and formulate the strengths, weaknesses, opportunities and challenges in improving the quality of PDAM services in Bengkulu Province, as well as to examine and formulate strategies to improve the quality of PDAM services in Bengkulu Province and formulate PDAM development strategies after the quality of service is met.This research variable uses SWOT types and quadrant positions from the SWOT scheme through questionnaires so that scores and weights are obtained.The target audiences were PDAM customers/consumers and stakeholders in the development of regency/city PDAMs in Bengkulu Province, the weights were calculated based on the survey results for further analysis.The scheme used is as follows:

Table 2. SWOT Weighting Model

Code	Rate	Description
SK	1	Very less, if the issue does not affect the current situation very much.
KR	2	Less, if the issue does not affect the current situation
CP	3	Enough, if the issue cannot be justified at this time
BA	4	Good, if the issue affects the current situation
SB	5	Very good, if it greatly affects the current condition

Source: from various sources and research results

According to Ansori (2019), the number of weights in each assessment matrix is equal to 1 (one), so depending on the number of variables selected, the weight of each respondent does not need to be the same and can be formulated as follows:

$a\,(SB) + b\,(BA) + c\,(CP) + d\,(KR) + e\,(SK) = 1.00$

Where:
a = number of SB matrices in one evaluation matrix
b = number of BA in one evaluation matrix
c = the number of CP matrices in an evaluation matrix
d = the number of KR matrices in an evaluation matrix
e = number of SK matrices in one evaluation matrix
SB = very good score weight
BA = Good score weight
CP = sufficient value weight
KR = weight of less value
SK = weighted score Very Poor

to simplify the value of the comparison ratio between SK and SB, it is made equal to 2 (two), so that:

$SK : KR : CP : BA : SB = 1: 2: 4: 8: 16:$

If $SB = x$, then:

$$BA = \frac{1}{2}x$$
$$CP = \frac{1}{4}x$$
$$KR = \frac{1}{8}x$$
$$SK = \frac{1}{16}x$$

so that :

$$a\,(x) + b\left(\frac{1}{2}x\right) + c\left(\frac{1}{4}x\right) + d\left(\frac{1}{8}x\right) + e\left(\frac{1}{16}x\right) = 1.00$$
$$x = 16/\,(16a + 8b + 4C + 2d + e)$$
$$x = SB$$

Rating calculations use the following references:

Tabel 3. SWOT Rating Model

Code	Rate	Description
STU	1	Theme delivery is not very urgent
TU	2	Theme delivery is not urgent
KU	3	Theme delivery lacks urgency
UG	4	Urgent theme delivery
SU	5	Theme delivery is urgent

Source: from various sources and research results

The following formula is used for the total value of each aspect after getting the rating and weight value with the opinions given by respondents for each aspect attribute, as follows:

Value (strength-weakness) =
∑ (rating(Sn)xweight(Sn)) + ∑ (rating(Wn)xweight(Wn))

Value (opportunity-threat) =
∑ (rating(On)xweight(On)) + ∑ (rating(Tn)xweight(Tn))

To complete the preliminary information about the speciality of the community beneficiaries of clean water, related to the understanding of research perceptions, as shown in the table below:

Table 4 Internal strategy strength indicators for improving the quality of PDAM services in Bengkulu Province

No	Strength Indicator	Assessment of Current Condition (performance)					Urgency of Handling				
		1	2	3	4	5	1	2	3	4	5
1	Availability of clean water										
2	Clean water quality										
3	Quantity of clean water										
4	Clean water continuity										
5	Affordability of clean water price										

No											
6	Satisfaction with clean water services										
7	Standardisation of water management										
8	Excellent service for consumer complaints										

Table 5. Internal strategy indicators of weaknesses in improving the quality of PDAM services in Bengkulu Province

No	Weakness Indicator	Assessment of Current Condition (performance)					Urgency of Handling				
		1	2	3	4	5	1	2	3	4	5
1	Low awareness of paying water usage bills										
2	Low awareness of consumers to maintain clean water infrastructure Illegal connection										
3	Low consumer awareness in using clean water efficiently										
4	Low consumer awareness of regulations / rules for using clean water										
5	There are still consumer incomes that are still below the minimum wage										
6	Masih adanya pendapatan konsumen yang masih dibawah UMR										
7	Not yet optimal clean water governance										
8	Lack of excellent service for consumer complaints										

Tabel 6. External strategy indicators of opportunities to improve the quality of PDAM services in Bengkulu Province

No	Indicators of Opportunity	Assessment of Current Condition (performance)					Urgency of Handling				
		1	2	3	4	5	1	2	3	4	5
1	Broad market share of clean water consumers										

2	Investment in cooperation with local government, central government, and abroad										
3	There is still a lot of raw water potential available for clean water development										
4	Rapid technological advances in clean water development										
5	Rapid investment in three districts/cities										
6	The selling price of water is still relatively affordable by clean water consumers										
7	Increased standardisation of sanitation and environment										
8	Increased business opportunities										

Table 7. External strategy threat indicators for improving the quality of PDAM services in Bengkulu Province

No	Threat Indicator	Assessment of Current Condition (performance)					Urgency of Handling				
		1	2	3	4	5	1	2	3	4	5
1	Availability of clean water with quality standards										
2	Environmental damage to ecosystems around raw water										
3	High pollution of raw water in upstream and downstream areas										
4	Extreme climate change										
5	Land use change/conversion										
6	The existence of competitors in the water supply business										
7	The existence of natural disasters										
8	Economic uncertainty										

Furthermore, the internal and external indicators were utilised based on the current conditions of water suppliers and community customers in Bengkulu Province through careful observation and discussion with the supervisor/promoter, which can be explained as follows: 1). The internal indicators of strength for the Regency/Municipality PDAMs in Bengkulu Province are the 8 indicators, including the availability of clean

water and so on, which have not been weighted but are independent variables. The above order is not a weighting, while the weighting is done after filling out the questionnaire by respondents using SWOT analysis. 2). Internal indicators of weaknesses owned by Regency / City PDAMs in Bengkulu Province are 8 indicators, including Low awareness of paying water usage bills and so on have not been weighted but are independent variables. The above order is not a weighting, while the weighting is carried out after filling out the questionnaire by the SWOT analysis respondents. 3). External indicators of opportunities owned by Regency / City PDAMs in Bengkulu Province 8 indicators, Among others, the size of the market share of clean water consumers and so on have not been weighted but are independent variables. The above order is not a weighting, while the weighting is done after filling out the questionnaire by the SWOT analysis respondents. and 4). The external indicators of threats posed by the Regency / City PDAMs in Bengkulu Province are 8 indicators, including the availability of clean water with quality standards and so on have not been weighted but are independent variables. The order above is not a weighting, while the weighting is done after filling out the questionnaire by the SWOT analysis respondents. The sample in this study was determined using purposive sampling technique, which is a sampling technique with certain considerations, as long as the person being sampled fulfils the specified criteria and the person is related to the research data. The calculation of the number of respondents uses the Slovin formula (1960) as follows:

$$n = \frac{N}{1 + N.e^2} \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3.6)$$

where :

n   : Number of Respondent Specimens
N   : Total Number of Communities
e   : percentage of error in specimen collection that can be tolerated (maximum 20%)

The sample of respondents represents the stakeholders of the Regency/City PDAMs in Bengkulu Province; (1) Bengkulu City Government, (2) North Bengkulu Regency Government, (3) Central Bengkulu Regency Government and the sample addressed to consumers of Bengkulu Province, namely; (1) consumers of Bengkulu City, (2) consumers of North Bengkulu Regency, (3) consumers of Central Bengkulu Regency clean water totalling 418 respondents. There are 20,000 clean water consumers in Bengkulu City, 5,526 in Central Bengkulu Regency and 13,603 in North Bengkulu Regency. So the total specimens are as follows:

$$n = \frac{39.129}{1 + 59.392.e^2}$$

where e is taken as 5% then:

$$n = \frac{39.129}{1 + 59.392.(0,05)^2} = 397,32 \text{ multiplied to 400 Respondents}$$

To answer the research questionnaire addressed to the consumers of clean water in this study rounded up to 400 sample respondents from consumers/customers of PDAM in three districts/cities consisting of 175 customers in Bengkulu City, 100 customers in Central Bengkulu Regency, and 125 customers in North Bengkulu Regency which is based on the representation of the number of consumers/customers of PDAM in 3 (three) regencies/cities of Bengkulu Province, while policy makers and/or stakeholders amounted to 18 samples, namely the provincial government of Bengkulu and 3 (three) districts/cities based on aspects of guidance, planning, supervision and management of PDAM, which is as shown in the table:

Tabel 8. Sampel Responden

No	Sampling	Total Population	Number of Sample Respondents
1	Stakeholders	18	18
2	Clean Water Consumers	39.129	400
A	Bengkulu City	20.000	175
B	Central Bengkulu Regency	5.526	100
C	North Bengkulu Regency	13.603	125
	Total (1+2)	39.147	418

Source: from various sources and research results

With details of 18 policy maker respondents (government) are as follows: 1). BPKP (Development Finance Supervisory Agency), 2). Mayor, 3). Chairman of the DPRD (Regional People's Representative Council) of Bengkulu City, 4). Bappeda of Bengkulu City, 5). PUPR (Public Works and Housing) Office of Bengkulu City, 6). Regional Government of Central Bengkulu Regency (Regent), 7). Chairman of the Regional House of Representatives (DPRD) of Central Bengkulu Regency, 8). Bappeda (Regional Development Planning Agency) of Bengkulu Tengah Regency, 9). Dinas PUPR (Public Works and Housing) of Central Bengkulu Regency, 10). Regional Government of North Bengkulu Regency (Regent), 11). Chairman of the DPRD (Regional People's Representative Council) of North Bengkulu Regency, 12). Bappeda (Regional Development Planning Agency) of North Bengkulu Regency, 13). PUPR (Public Works and Housing) Office of North Bengkulu Regency, 14). DPD (Regional Leadership Council) Perpamsi Kota madya, 15). BPPW (Balai Prasarana Permukiman Wilayah) Bengkulu Province, 16). Director of PDAM Bengkulu City, 17) Director of PDAM North Bengkulu, and 18) Director of PDAM Central Bengkulu. The number of samples to answer the research questionnaire addressed to policy makers (government) was 18 institutions as sample respondents representing the government and stakeholders of Bengkulu Province, namely: (1) Bengkulu City Government, (2) North Bengkulu Regency Government, (3) Central Bengkulu Regency Government and a sample addressed to consumers of Bengkulu Province, namely; (1) Bengkulu City consumers, (2) North

Bengkulu Regency consumers, (3) Central Bengkulu Regency consumers of clean water totalling 400 respondents with the distribution as shown in the following table:

Table 9 Distribution of Clean Water Consumer Informant Samples

No	District/City	Number of Respondents
1	Government and stakeholders of Bengkulu Province; (1) Bengkulu City Government, (2) North Bengkulu Regency Government, (3) Central Bengkulu Regency Government	18
2	Bengkulu City	175
3	Central Bengkulu Regency	100
4	North Bengkulu Regency	125
	Quantity	418

Source: research results

RESULT AND DISCUSSION

Based on the Bengkulu Province Regional Drinking Water Company (PDAM), the number of consumers of the Bengkulu Province PDAM in 2022 reached 145,226 customers, as shown in the table below:

Table 10: Number of PDAM Customers in Bengkulu Province in 2020-2022

Regency/City	Number of Customers		
	2020	2021	2022
South Bengkulu	9.923	11.030	12.386
Rejang Lebong	10.198	11.250	13.158
North Bengkulu	11.983	12.478	13.603
Kaur	2.691	3.567	4.197
Seluma	15.961	16.361	19.907
Mukomuko	2.981	3.691	4.600
Kepahiang	2.998	3.923	5.000
Lebong	3.518	4.145	5.904
Bengkulu Tengah	2.734	3.419	5.526
Bengkulu City	15.187	17.145	20.000

Source: Regional Drinking Water Company (PDAM) Bengkulu Province. 2022

Based on the table above, it shows that there is an increase in water demand every year, especially in Bengkulu city reaching 20,000 consumers and Seluma reaching 19,907. the increasing number of consumers is due to the proliferation of mortgage housing in

every district and city in Bengkulu Province. In this study, researchers took 418 respondents consisting of 400 PDAM customers from the General category as many as 77 respondents, the Industrial category 65 respondents and the household category 258 respondents, as well as 18 Stakeholders spread across the Regency / City of Bengkulu Province consisting of North Bengkulu Regency, Central Bengkulu and Bengkulu City as respondents, as in the table below:

Table 11 Number of PDAM Customer Respondents in Bengkulu Province

Customers	Bengkulu City	%	North Bengkulu	%	Bengkulu Tengah	%	Total	%
General	54	12,9	13	3,1	10	2,4	77	18,4
Industry	30	7,2	25	6,0	10	2,4	65	15,6
Household	91	21,8	87	20,8	80	19,1	258	61,7
Stakeholders	6	1,9	6	1,2	6	1,2	18	4,3
Total	181	43,8	131	31,1	106	25,1	418	100

Source: Results of research data processing 2023

The table above shows that the use of clean water for household needs is highest in Bengkulu City, reaching 91 (12.8%) of the respondents. Furthermore, North Bengkulu reached 87 (20.6%) of the respondents and Central Bengkulu reached 80 (19.1%) of the respondents. This shows that water is one of the most vital sources of livelihood in modern economic life. Water plays a major role, and it is a human need for industrial, household and other uses. Based on a survey of 418 respondents of PDAM customers in Bengkulu Province with details of Kota Bengkulu 183 respondents, North Bengkulu 130 respondents and Central Bengkulu 105 respondents, it can be seen in the table below:

Table 12 Number of PDAM Respondents by Age

Age (Th)	Bengkulu City	%	North Bengkulu	%	Bengkulu Tengah	%	Total	%
<20 – 30	21	5,0	26	6,2	49	11,7	96	23,0
31 – 40	61	14,6	34	8,1	22	5,3	117	28,0
41 – 50	64	15,3	34	8,1	25	6,0	123	29,4
51 – 60	34	8,1	25	6,0	5	1,2	64	15,3
61 – 65	3	0,7	11	2,6	4	1,0	18	4,3
Total	183	43,8	130	31,1	105	24,2	418	100,0

Source: Results of research data processing 2023

Based on the table above, it shows that the highest PDAM consumers aged 41 years to 50 years reached 123 (29.4%) of the total respondents with details of Bengkulu City as many as 64 customers, North Bengkulu as many as 34 customers and Central Bengkulu as many as 25 customers. This shows that the average water consumer at the

age of 41 years to 50 years is an old customer of the PDAM, during which time there is a lot of clean water usage because at this age many have built houses equipped with clean water facilities sourced from the PDAM, both among housing complexes and in ordinary settlements. Based on a survey of 418 respondents of PDAM customers in Bengkulu Province with details of Kota Bengkulu 183 respondents, North Bengkulu 130 respondents and Central Bengkulu 105 respondents can be seen in the table below:

Table 13 Number of PDAM Respondents by Education

Education	Bengkulu City	%	North Bengkulu	%	Bengkulu Tengah	%	Total	%
< SD	10	2,4	10	2,4	2	0,5	22	5,3
SMP	37	8,9	18	4,3	8	1,9	63	15,1
SMA	55	13,2	28	6,7	15	3,6	98	23,4
>S1	81	19,4	74	17,7	80	19,1	235	56,2
Total	183	43,8	130	31,1	105	25,1	418	100,0

Source: Results of research data processing 2023

Based on the table above, the highest level of consumer education is at the > S1 level of 56.2% with details of Bengkulu City at 81 (19.4%) of the total number of respondents, North Bengkulu at 74 (17.7%) of the total number of respondents and Central Bengkulu at 80 (19.1%) of the total number of respondents. While the lowest is the elementary school education level of 5.3%, junior high school level of 15.1%, high school education level of 23.4%. This shows that the level of education of consumers in the S1 category is high due to the level of income security. Based on a survey conducted on 418 respondents of PDAM customers in Bengkulu Province with details of Bengkulu City as many as 183 respondents, North Bengkulu as many as 130 respondents and Central Bengkulu as many as 105 respondents can be seen in the table below:

Table 14 Number of PDAM Respondents by Gender

Pendidikan	Bengkulu City	%	North Bengkulu	%	Bengkulu Tengah	%	Total	%
Male	119	28,5	103	24,6	92	22,0	314	75,1
Female	64	15,3	27	6,5	13	3,1	104	24,9
Total	183	43,8	130	31,1	105	25,1	418	100,0

Source: Results of research data processing 2023

Based on the table above, the largest proportion of PDAM customer gender is male at 75.1% with details of Bengkulu City at 119 (28.5%) of the total respondents, North Bengkulu at 103 (24.6%) of the total respondents and Central Bengkulu at 92 (22.0%) of the total respondents. This shows that the head of the family is still more dominant in housing ownership compared to women. Based on the external strategy threat, there

are 8 (eight) indicators of strategies to improve the quality of PDAM services in Bengkulu Province with a total opportunity value of 3.000. Therefore, the IFAS and EFAS weighting for the strategy to develop and improve the quality of PDAM services in Bengkulu Province is as shown in the table below:

Table 15 IFAS and EFAS Weighting for the Strategy to Develop and Improve the Quality of PDAM Services in Bengkulu Province..

	IFAS		EFAS	
Consumer And Stakeholders	Strength	Weaknesses	Opportunities	Threats
	3.126	3.000	2.755	3.000
	3.126 – 3.000 = 0.126		2.755 – 3.000 = - 0.245	

Source: research data processing results 2023

Based on the table above on the strengths, weaknesses, opportunities, and challenges in improving the quality of PDAM services in Bengkulu Province, the strengths have been able to overcome weaknesses with the results on the x-axis = 0.126, meaning that internally clean water services with the 4 K variables (quality, quantity, continuity, and affordability) are already in development services. While externally or on the y-axis, the existing challenges are still (-) negative at - 0.245, meaning that efforts are still needed to overcome these challenges, a service strategy is needed to seize more optimal opportunities (+). Indicating the strategy for improving clean water services in Bengkulu province is in quadrant II with x-axis = 0.126 and y-axis = -0.245 as in the figure below.
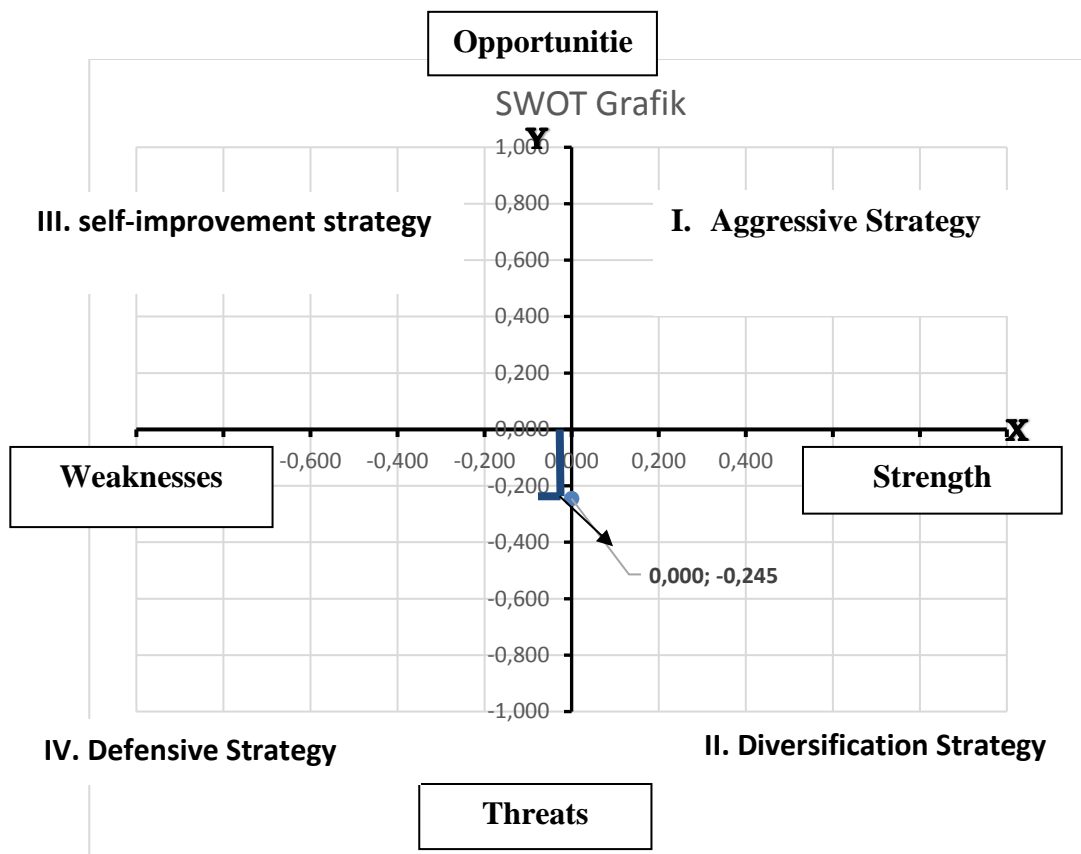
Figure 2. IFAS and EFAS quadrant images of strategies for improving clean water services in Bengkulu province.

Based on the figure above, the strategy for improving clean water services is a disfresification strategy or quadrant II (strangeth of threds), namely the following strength and weakness indicators are the use of clean water must use clean water quality standards, improving the quality of clean water can reduce the surrounding ecosystem, the amount or quantity of clean water will reduce the high pollution of raw water upstream and downstream, The need to anticipate the availability of clean water sustainability in the event of extreme changes, changes or experts in land functions do not cause an increase in the price of clean water, then clean water service satisfaction requires clean water governance from both business and public service aspects, the need for anticipation from clean water managers in the face of economic uncertainty, the central government is expected to make regulations on clean water governance based on aspects of excellent public services. As in the table below.

Table 16 SWOT Matrix of PDAMs in Bengkulu Province

EFE IFE	STRENGTH (S)	WEAKNESSES (W)
	Determine 5 - 10 internal strength factors	Determine 5 - 10 internal weakness factors

OPPORTUNITIES (O) Define 5 - 10 External Opportunity factors	STRATEGI SO Create a strategy that uses strengths to capitalise on opportunities	STRATEGI WO Create a strategy that uses strengths to minimise weaknesses to seize opportunities
TREATHS (T) Define 5 - 10 external threat factors	STRATEGI ST Create a strategy that uses strengths to overcome threats	STRATEGI WT Create strategies that minimise weaknesses to avoid threats

(Source: Rangkuti, 2005)

In the table above, it can be explained that the ST strategy uses strengths to overcome threats. So that the use of clean water must use clean water quality standards, improving the quality of clean water can reduce the surrounding ecosystem, the amount or quantity of clean water will reduce the high pollution of raw water upstream and downstream, the need to anticipate the availability of clean water sustainability in the event of extreme changes, changes or land function experts do not cause an increase in the price of clean water then clean water service satisfaction requires clean water governance from both business and public service aspects, the need for anticipation from clean water managers in the face of economic uncertainty, the central government is expected to make regulations on clean water governance based on aspects of excellent public services.

CONCLUSION

The strategy for improving PDAM clean water services in Bengkulu province, based on the results of the study, is a diversification strategy where improving service quality by optimising strengths to seize opportunities to overcome threats. Management governance based on customer satisfaction, clean water availability, clean water quality, clean water quantity and clean water continuity is required based on the regulations and business plans of companies that manage clean water owned by each PDAM in Bengkulu Province. Such clean water services and governance will also provide basic services for the needs of the community, increase company profits / profits contribute to Regional Original Revenue (PAD) from Regional Owned Enterprises (BUMD) in the regencies / cities in the Bengkulu Province region. to achieve optimal services towards the 4 (four) K, the following efforts can be made: 1) evaluate Full Cost Recovery (FCR) tariff adjustments in accordance with the provisions of the applicable laws and regulations, 2) improve the quality of human resources and the number of PDAM human resources in the Regency / City in the Bengkulu Province area, 3) utilise SCADA technology, and 4) increase service coverage and increase the number of house connections to obtain PAD, and 5) District / City Regional Governments to immediately

operationalise regional SPAM facilities in Central Bengkulu Regency by proposing financing through the APBN or APBD..

SUGGESTIONS

It is expected that the quality of PDAM services in Bengkulu Province using an aggressive strategy in SWOT analysis is located in quadrant I, meaning that strengths have been able to overcome weaknesses, opportunities have been able to overcome threats so that the condition of PDAM services will satisfy consumers / customers of PDAMs in Bengkulu Province. It is expected for academics or for professional groups to continue this research on each PDAM in the territory of Bengkulu Province in 9 (nine) districts and 1 (one) city. Thus, the local government is expected to improve the infrastructure to achieve the 4 K's (quality, quantity, continuity and affordability) by proposing a development programme for clean water facilities and infrastructure in the districts/cities within Bengkulu Province through the State Budget and World Bank loans. It is expected that PDAM customers in Bengkulu Province can maintain clean water network facilities and use clean water effectively and efficiently. It is expected that in the utilisation of clean water services, the PDAM must prepare a complaint contact to submit suggestions and input related to service improvement using digital applications.

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