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Strategic Positioning and Operational Challenges of Water Utility Companies: A Case of West Java, Indonesia

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ABSTRACT

Purpose: This study aims to analyze the strategic positioning and operational challenges faced by Water Utility Company X (WUCX) in West Java, Indonesia. It identifies key strengths, weaknesses, opportunities, and threats (SWOT) that affect the company's ability to meet the increasing demand for reliable water services in a rapidly urbanizing region.

Method: The study employs a mixed-methods approach, combining qualitative and quantitative data. Qualitative data were gathered through semi-structured interviews with WUCX senior management, focusing on internal and external factors impacting the company. Quantitative data were drawn from company documents, such as financial reports and surveys. The analysis, based on a SWOT framework, offers a comprehensive assessment of WUCX's strategic position.

Result: The SWOT analysis revealed that WUCX has notable strengths, including an efficient billing system, strong financial stability, and extensive technical service coverage. These strengths position the company to seize opportunities for service expansion through strategic partnerships. However, the analysis also identified key weaknesses, such as aging infrastructure and significant water loss, which could threaten long-term sustainability. Externally, the company faces opportunities like supportive legal frameworks and rising demand, but also threats such as environmental degradation and challenges in coordinating water sourcing.

Practical Implications for Economic Growth and Development: This study offers actionable insights to enhance the strategic positioning and operational efficiency of public utilities like WUCX. These insights can drive improvements in infrastructure management, service delivery, and financial sustainability, ultimately contributing to broader economic growth and development in rapidly urbanizing regions.

Keywords: *SWOT, strategic management, water utility company, west java, indonesia*

INTRODUCTION

Access to clean and reliable water is essential for sustainable development and public health. In Indonesia, particularly in West Java, water utility companies play a critical role in managing and supplying water resources. However, these companies face significant challenges, including infrastructure deficits, financial constraints, and the impacts of climate change. According to the World Bank (2022), around 20% of Indonesia's population lacks access to clean water, underscoring the urgent need for effective management strategies in the water sector. This study aims to analyze the strategic management practices of a water utility company in West Java using a SWOT (Strengths, Weaknesses, Opportunities, Threats) framework, offering insights on how these companies can enhance operational efficiency and service delivery.

The focus of this study is Water Utility Company X (WUCX), a major water utility serving over 175,000 customers in an urban area of West Java, Indonesia. West Java is one of the most densely populated provinces in the country, with an increasing demand for reliable water

services (World Bank, 2022). As a public utility, WUCX operates in a complex regulatory environment and must meet stringent service quality standards while maintaining financial sustainability.

Several studies have examined the strategic management of water utilities using various analytical frameworks. For example, Raharja (2017) conducted a SWOT analysis of the regional water company in Cirebon, West Java, identifying key factors influencing its performance. Similarly, Ali et al. (2019) employed a SWOT analysis to optimize water resource management in Depok City, demonstrating the effectiveness of this framework in addressing local water stress. Regmi and Shiwakoti (2022) further illustrated the versatility of the SWOT framework by combining it with the Analytic Hierarchy Process (SWOT-AHP) to analyze the Nepal Electricity Authority. While these studies underscore the importance of strategic analysis in improving utility management, there is still a gap in comprehensive research focusing specifically on West Java's water utilities.

Strategic management is crucial for organizations seeking long-term sustainability and competitive advantage. For water utility companies in developing regions like West Java, Indonesia, the need for effective strategic management is particularly pronounced due to the unique challenges they face. According to Puyt et al. (2023), the participative nature of strategic management fosters creativity and alignment, ensuring that strategies are not simply top-down but incorporate diverse stakeholder perspectives. Identifying strengths and weaknesses in production systems, and external threats such as policies, allows for the development of integrated strategies that improve both operational efforts and economic outcomes (Yang et al., 2019). Taherdoost & Madanchian (2021) emphasize that SWOT analysis is an effective framework for evaluating an organization's internal strengths and weaknesses alongside external opportunities and threats, aiding in resource management and goal achievement within a defined timeframe.

Weng and Liu (2018) also highlight the use of SWOT analysis to derive suitable development strategies by identifying the strengths, weaknesses, opportunities, and threats related to the research objective. Estaghi et al. (2015) applied the SWOT model to project management, defining strategies across 17 functional areas. Wahyudi et al. (2023) suggest that companies can apply strategies like integration, market penetration, and product development to capitalize on strengths and leverage market opportunities for competing more effectively. Elvas (2010) discusses how small water utilities in the Philippines used SWOT analysis during strategic planning workshops to improve performance, formulate cost-recovery tariffs, and develop project proposals for financing. Oveisi and Barikani (2019) propose developing a comprehensive water resources management plan using the SWOT model.

In the context of a water utility company, SWOT analysis can evaluate strengths such as advanced technology or a skilled workforce, weaknesses like aging infrastructure or high operational costs, opportunities such as market expansion or sustainable practices, and threats like water scarcity or regulatory changes.

The novelty of this study, compared to prior research, lies in its comprehensive and multifaceted application of SWOT analysis to assess both internal operational deficiencies and external environmental vulnerabilities of a large public utility in West Java, Indonesia. Unlike earlier studies that often focused narrowly on financial indicators or localized performance variables, this research combines qualitative insights from senior management with quantitative data from corporate reports to provide a holistic understanding of Water Utility Company X’s (WUCX) strategic challenges. Additionally, the study introduces an innovative prioritization system within the SWOT framework, assigning weights to factors based on their immediacy and relevance, enabling more precise strategic planning aligned with the organization's objectives. This approach sets it apart from previous research, which lacked this level of analytical depth.

SWOT analysis is a strategic planning tool that helps organizations identify their internal strengths and weaknesses, along with external opportunities and threats. The methodology follows a systematic approach, beginning with the assessment of the organization's internal

capabilities and limitations. It then evaluates external factors, requiring an understanding of the broader environmental context. Opportunities may emerge from regulatory changes or technological advancements, while threats could result from economic downturns or increased competition (Gao et al., 2017). By categorizing these factors, organizations can develop strategic initiatives that leverage strengths, address weaknesses, seize opportunities, and counter threats. Despite its significant role in the region, WUCX faces several challenges that jeopardize its operational efficiency and ability to meet customer expectations. These include aging infrastructure, which causes frequent service disruptions, and financial constraints that limit investments in necessary upgrades. Through SWOT analysis, a water utility company can identify these critical internal and external factors and develop strategies to enhance performance and long-term sustainability.

METHOD

This study employs a case study research strategy, which is particularly effective for an in-depth analysis of contemporary issues within real-life contexts. As Yin (2018) highlights, the case study design is ideal for exploring the strategic challenges faced by Water Utility Company X (WUCX) in West Java, Indonesia. It allows for a detailed examination of both internal and external factors influencing the company's operations. WUCX was selected as the focal case due to its critical role as a water utility provider in a densely populated and rapidly urbanizing region. Serving over 175,000 customers, WUCX's strategic importance in West Java makes it a representative case for studying broader challenges facing public utilities in Indonesia. To ensure confidentiality, the company has been anonymized, allowing the findings to be generalized to similar contexts.

This study adopts a mixed-methods approach, integrating qualitative and quantitative data to provide a comprehensive understanding of WUCX's strategic position. Creswell (1999) advocates for mixed-methods research, as it combines insights from diverse data sources, enhancing the robustness of the findings. Qualitative data will be collected through semi-structured interviews with senior management, designed to explore the company's internal dynamics, including perceived strengths, weaknesses, external opportunities, and threats. The semi-structured format allows flexibility to probe deeper into emerging issues during the interviews (Kvale, 2009). Quantitative data will be drawn from WUCX's internal documents, such as financial statements, performance reports, and customer satisfaction surveys. This data will be analyzed to identify trends and patterns that are essential for the SWOT analysis. The quantitative data will also validate insights from the qualitative interviews, grounding the analysis in empirical evidence.

The SWOT analysis begins by identifying internal factors within the organization, categorized as either strengths or weaknesses. Strengths represent positive internal factors that provide a competitive advantage, such as financial health, a skilled workforce, advanced technology, strong brand reputation, or efficient processes. Weaknesses are internal factors that may hinder performance, including outdated technology, financial constraints, poor customer service, low employee morale, or inefficiencies.

Next, external factors are assessed and categorized as opportunities or threats. Opportunities are positive external factors the organization can capitalize on, such as emerging markets, technological advancements, regulatory support, or shifting consumer preferences. Threats, on the other hand, are external risks, including economic downturns, increased competition, regulatory changes, or environmental challenges.

After identifying internal and external factors, the next step is to assess the urgency of each factor by assigning a weight. Each factor is weighted between 0 and 1, with the sum of all weights for internal (strengths and weaknesses) and external (opportunities and threats) factors totaling 1. These weights reflect the relative importance of each factor in influencing the organization's strategic decisions.

The Support Value (SV) is a qualitative measure that evaluates how much a factor supports the achievement of the organization's objectives. Each factor is scored from 5 ("Very supportive") to 1 ("Not supportive"), helping prioritize the most critical factors. For example, a strength with a high support value would be a crucial asset to leverage, while a weakness with a low support value might be less urgent to address.

The Relevance Value (RV) assesses how closely related each factor is to the organization's mission or strategic objectives. Like the support value, relevance is scored from 5 ("Very relevant") to 1 ("Not relevant"). This measure ensures that factors most directly influencing the organization's goals are prioritized in strategic planning.

To determine the organization's strategic positioning, the Total Weighted Score (TWS) is calculated by combining the weighted support and relevance scores for each factor. A higher TWS indicates a stronger strategic position, providing guidance on appropriate strategic actions. Additionally, the Average Relevance Score (ARS) offers insights into how closely related the factors are to the organization's mission, while the Weighted Relevance Score (WRS) reflects both importance and relevance to strategic objectives.

A SWOT matrix is then developed, categorizing factors into strengths, weaknesses, opportunities, and threats. This matrix serves as a strategic tool, providing a visual representation of the factors affecting WUCX and guiding the identification of strategic options. Finally, strategies will be formulated based on the SWOT matrix, with each strategy critically evaluated for feasibility and potential impact on WUCX's performance.

RESULT AND DISCUSSION

This section provides a detailed analysis of the SWOT factors for WUCX, focusing on strengths, weaknesses, opportunities, and threats. The analysis is supported by quantitative data from company reports and surveys distributed to employees. This dual approach offers a comprehensive understanding of both the internal and external environments affecting WUCX. The findings are enhanced by support and urgency values, which help prioritize strategic actions. We conclude with the IFAS (Internal Factor Analysis Summary) and EFAS (External Factor Analysis Summary) matrices, along with strategic recommendations.

WUCX's key strengths include its advanced technological capabilities and financial stability. High ratings in these areas, as shown in the weighted factors, highlight the company's ability to maintain efficient operations and sustain competitive advantages in the water utility sector. Notable strengths include effective billing systems and extensive technical service coverage, both of which directly contribute to revenue and customer satisfaction. This alignment with strong internal processes and financial health positions WUCX well to leverage its strengths in pursuing strategic initiatives.

Despite these strengths, the company faces significant weaknesses that need addressing to prevent operational inefficiencies. Aging infrastructure, a high operational ratio, and substantial water loss pose risks to the company's long-term sustainability. These weaknesses are further compounded by a moderate employee-to-customer ratio and inadequate training programs, which may impede the company's ability to innovate and enhance service quality. Addressing these weaknesses is crucial for maintaining WUCX's market position and operational effectiveness.

Externally, WUCX has several promising opportunities. Legal protection as a public utility and comprehensive business and budget plans provide a solid foundation for future expansion. Increasing demand for water services, potential partnerships, and government support offer avenues for expanding service coverage and optimizing assets. Additionally, the growing need to address non-revenue water (NRW) through cooperation presents an opportunity to improve operational efficiency and reduce losses, thereby enhancing profitability.

However, the external environment also presents significant threats that could undermine WUCX's success if not managed properly. Key threats include decreasing availability of raw

water due to environmental degradation and ineffective funding sources, both crucial for ensuring sustainable water services. Furthermore, lack of enforcement for delinquent payments and inadequate coordination between local and provincial governments in water sourcing could disrupt operations and financial stability. Climate change, especially in the context of poor mitigation strategies, also poses a major threat with potential long-term impacts on water availability and service continuity. Environmental degradation significantly contributes to the decreasing availability of raw water, placing additional strain on existing infrastructure. As water supply diminishes, outdated systems face increased demand, leading to more leaks and water loss. This degradation not only affects water availability but also worsens the wear and tear on infrastructure that was not designed to meet modern demands. The issue of high water loss is exacerbated by insufficient funding. Ineffective funding sources limit WUCX's ability to invest in necessary upgrades or replacements for aging systems. Without adequate financial resources, even routine maintenance can be delayed, accelerating infrastructure deterioration and increasing water loss. Additionally, poor coordination between local and provincial governments in water sourcing can lead to inefficient resource allocation, complicating efforts to address infrastructure issues. Misalignment on water management strategies creates operational inefficiencies that further weaken existing systems.

Table 1. SWOT Total Weighted Score

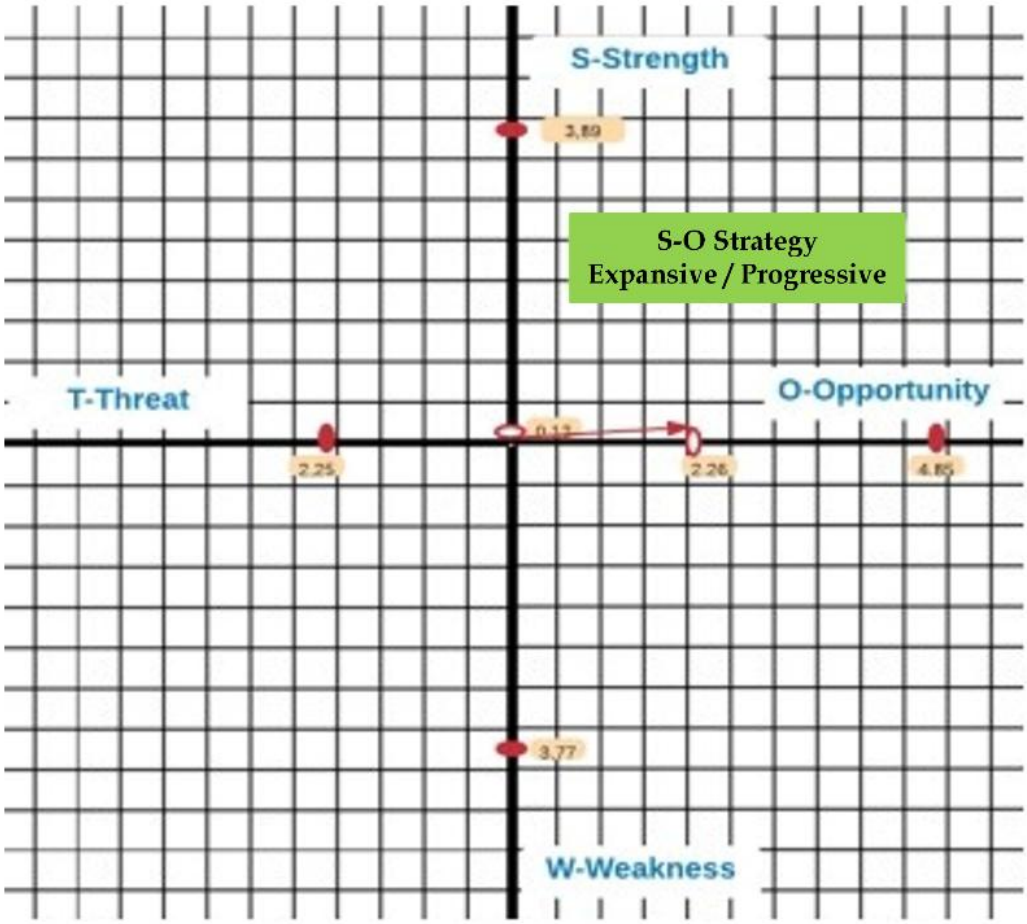
SWOT	No	Indicators	WF (%)	SV	WSS	ARS	WRS	TWS (WRS+WSS)
Strength	1	Topography of the city	0.59%	2	0.01	4.00	0.02	0.04
	2	Cash Ration	8.88%	4	0.36	2.76	0.24	0.60
	3	Billing Effectiveness	10.65%	5	0.53	3.46	0.37	0.90
	4	Solvency	2.37%	3	0.07	3.81	0.09	0.16
	5	Coverage of Technical Services	5.92%	4	0.24	3.57	0.21	0.45
	6	Complaint Resolution	4.73%	4	0.19	3.16	0.15	0.34
	7	Customer Water Quality	2.37%	5	0.12	3.54	0.08	0.20
	8	Production Ratio	5.92%	5	0.30	3.51	0.21	0.50
	9	Service Operating Hours	3.55%	4	0.14	3.49	0.12	0.27
	10	Water Meter Replacement/Calibration	5.33%	4	0.21	3.43	0.18	0.40
	11	Employee-to-Customer Ratio	0.59%	3	0.02	3.41	0.02	0.04
Weakness	12	Return on Equity (ROE)	8.88%	5	0.44	3.58	0.32	0.76
	13	Operational Ratio	8.28%	4	0.33	2.86	0.24	0.57
	14	Customer Growth	7.10%	4	0.28	3.54	0.25	0.54
	15	Domestic Water Consumption	6.51%	4	0.26	3.38	0.22	0.48
	16	Water Loss	9.47%	5	0.47	3.43	0.32	0.80
	17	Water Pressure at Service Connections (SR)	4.73%	4	0.19	2.92	0.14	0.33
	18	Employee Training Ratio	1.78%	4	0.07	3.32	0.06	0.13
	19	Training Cost Ratio	2.37%	4	0.09	3.08	0.07	0.17
Opportunities	20	Monopoly Management of SPAM (Water Supply Systems)	0.59%	3	0.02	3.27	0.02	0.04
	21	Legal Protection for the Existence WUCX	10.59%	5	0.53	3.41	0.36	0.89
	22	Existence of a Business Plan (Corporate Plan)	10.00%	5	0.50	3.33	0.33	0.83
	23	Existence of a Corporate Budget Plan	5.29%	4	0.21	2.89	0.15	0.36

SWOT	No	Indicators	WF (%)	SV	WSS	ARS	WRS	TWS (WRS+WSS)
	24	Prioritization by the government (Budget, Policy, Licensing)	9.41%	4	0.38	3.32	0.31	0.69
	25	Government Supervision of WUCX Performance	2.94%	4	0.12	3.35	0.10	0.22
	26	Public (Customer) Attention and Concern for Service Performance	2.94%	4	0.12	3.16	0.09	0.21
	27	Need to Raise Drinking Water Tariffs	8.82%	5	0.44	3.32	0.29	0.73
	28	Service Coverage Expansion through Cooperation	2.94%	4	0.12	3.35	0.10	0.22
	29	NRW (Non-Revenue Water) Efficiency through Cooperation	8.24%	4	0.33	3.35	0.28	0.61
	30	Asset Optimization through Partnership Schemes	0.59%	5	0.03	3.35	0.02	0.05
Threats	31	Lack of Law Enforcement or Sanctions for Delinquent Payments	7.06%	4	0.28	3.26	0.23	0.51
	32	Inadequate Coordination Between Local and Provincial or Central Governments in Raw Water Sourcing	6.47%	4	0.26	3.30	0.21	0.47
	33	Decreasing Availability of Raw Water Due to Environmental Degradation	6.47%	4	0.26	3.32	0.22	0.47
	34	Ineffective Sourcing of Funding	5.29%	4	0.21	3.56	0.19	0.40
	35	Land Use Mismanagement	2.35%	4	0.09	3.08	0.07	0.17
	36	Climate Change: Poor Mitigation Preparation May Affect Water Availability Continuity	2.35%	4	0.09	3.59	0.08	0.18
	37	Dependence on Raw Water Supply from Policies of Other Institutions	4.71%	4	0.19	3.14	0.15	0.34
	38	Stability and Security Disruptions	2.94%	4	0.12	3.62	0.11	0.22

Source: Processed data (2024)

Based on the Total Weighted Scores, the following values are obtained: TWS for Strength is 3.89, TWS for Weakness is 3.77, TWS for Opportunity is 4.85, and TWS for Threat is 2.76. These scores are depicted in Figure 1 below. WUCX is positioned in Quadrant I, which suggests an expansive or progressive strategy. This positioning indicates that the company has both the strengths and opportunities necessary to turn these opportunities into tangible benefits and competitive advantages.

Figure 1. Quadrant Position



Source: Processed data (2024)

Discussion

WUCX's strengths, including effective billing systems, robust financial stability, and extensive technical service coverage, provide a solid foundation for the company to explore and capitalize on new growth opportunities. The high score in opportunities emphasizes the potential for expanding service coverage and leveraging supportive legal frameworks, positioning WUCX to increase its market share and improve service delivery. WUCX's efficient billing systems streamline financial transactions, ensuring accuracy and customer satisfaction, which is crucial for maintaining financial health and operational efficiency, as demonstrated in other sectors where robust systems are vital (Halim, 2022). Financial stability enables WUCX to invest in new technologies and expand its service offerings, reflecting the importance of financial health seen in other industries like banking (Mardiyana et al., 2022). WUCX's comprehensive technical services enhance its competitive edge by meeting diverse customer needs, similar to the strategic advantage observed in sectors like public transportation, where extensive service coverage is a key strength (Murti & Hariyoko, 2024). Embracing new technologies can further enhance service delivery and operational efficiency, aligning with industry trends where technology adoption drives growth (Sundari et al., 2022).

WUCX should focus on expanding its service coverage through strategic partnerships and collaborations. By increasing its service areas, WUCX can tap into unmet demand, enhance customer access, and strengthen its competitive position. Addressing operational weaknesses, such as high water loss and inefficiencies, is crucial. Targeted investments in

technology and infrastructure will not only reduce costs but also improve service reliability and sustainability, reinforcing WUCX's market leadership. Building on its strength in billing effectiveness, WUCX should innovate in customer service, particularly by integrating digital platforms to enhance customer engagement and operational transparency. This will help maintain customer satisfaction and loyalty, essential for long-term success. The SWOT analysis highlights the importance of market expansion and cross-border partnerships in a globalized economy. Strategic alliances can help WUCX enter new markets and meet unmet demand, enhancing service coverage (Widyaningrum et al., 2024). Collaborations can also support sustainable growth by sharing resources and expertise, which is vital for long-term resilience in a dynamic business environment (Ivanenko et al., 2024). Identifying and addressing operational inefficiencies, such as high water loss, is crucial. Targeted investments in technology and infrastructure can reduce costs and improve service reliability (Pratama & Handayani, 2024).

While WUCX is well-positioned for growth, the analysis also identifies significant external threats, such as environmental degradation and challenges in coordinating water sourcing. To mitigate these risks, WUCX should implement comprehensive risk management strategies, including proactive stakeholder engagement and the adoption of sustainable practices. These measures will help safeguard the company's operations against potential disruptions and ensure long-term resilience.

As climate change accelerates, WUCX faces the dual challenges of erratic weather patterns and urbanization, which strain water resources and infrastructure. To address these challenges, WUCX can learn from utilities like Thames Water, which has successfully used smart meters and leak detection technologies to reduce water loss (Pointl et al., 2024). Implementing similar technologies can help WUCX improve water conservation and operational efficiency. Sustainable practices such as Sydney Water's integration of desalination plants and water recycling programs can serve as models for WUCX, ensuring a reliable water supply while promoting sustainability by reducing reliance on traditional water sources (Pointl et al., 2024). Partnerships with environmental organizations, such as Suez's collaborations to combat pollution and promote renewable energy usage, highlight the benefits of cross-sector partnerships. WUCX could benefit from similar collaborations to enhance environmental stewardship and sustainability (Ransom, 2024). Additionally, exploring innovative financing mechanisms, such as debt-for-climate swaps, which have advanced sustainable wastewater projects in developing countries, could support WUCX's water management initiatives (Elmahdi & Jeong, 2024).

CONCLUSION

The aim of this study was to analyze the strategic positioning and operational challenges of Water Utility Company X (WUCX) within the context of a rapidly urbanizing region in West Java, Indonesia. The study sought to identify key strengths, weaknesses, opportunities, and threats (SWOT) facing WUCX and to provide actionable recommendations for enhancing its service delivery and customer satisfaction.

The SWOT analysis revealed that WUCX has significant strengths, including effective billing systems, robust financial stability, and extensive technical service coverage. These strengths create a strong foundation for the company to explore new growth opportunities, particularly through expanding service coverage via strategic partnerships. However, the analysis also identified critical weaknesses, such as aging infrastructure, high water loss, and operational inefficiencies, which pose substantial risks to long-term sustainability. The external environment offers promising opportunities, such as legal protections and increasing demand for water services, but also presents significant threats, including environmental degradation and challenges in coordinating water sourcing.

Based on the SWOT analysis, WUCX should focus on expanding its service coverage through strategic partnerships and collaborations to address unmet demand and strengthen its competitive position. Addressing operational inefficiencies by investing in technology and

infrastructure is crucial for improving reliability and sustainability. Additionally, WUCX should innovate in customer service by integrating digital platforms to enhance customer engagement and operational transparency. These strategies will help WUCX maintain customer satisfaction, strengthen market leadership, and ensure long-term resilience.

Future research should explore the impact of digital transformation on customer service and operational efficiency in public utilities, particularly in developing countries. Additionally, studies could investigate the effectiveness of different partnership models in expanding service coverage and improving service delivery. Given the increasing threats of environmental degradation and climate change, further research is also needed to develop and evaluate sustainable practices in water resource management and infrastructure resilience.

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