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Abstract: Providing drinking water to the population is a challenge that involves water collection, purification, quality standards, trained personnel, maintenance of facilities, and efficient distribution to households, which even includes raising awareness among users about its use. In Tabasco, there is a State Commission that is responsible for serving customers at all levels, with the aim of providing this resource to families. Therefore, the objective of this research was to determine the perception of users of the drinking water service provided by the Water and Sanitation Committee of the State of Tabasco in the city of Emiliano Zapata Tabasco. To this end, a descriptive method with mixed analysis was applied, a 15-question instrument was developed using the Likert scale, sociodemographic data and item dispersion measures were determined, its validity of application using Cronbach's alpha, as well as the Kaiser-Meyer-Olkin (KMO) test and Bartlett's sphericity test. Sixty-one people were interviewed, selected by the snowball method, from 22 of the 28 neighborhoods registered in the municipal capital. The results showed that it is necessary to review water quality processes, train customer service personnel, manage water administration processes, efficiently supply neighborhoods with comprehensive plans, emphasize care through workshops for users, and conduct home visits. Statistical reliability was 0.835, KMO was 0.881, and sphericity was 3.2474^{E-41} which determines the validity of the responses, it is concluded that it is necessary to establish permanent communication processes with users, address the management of drinking water in neighborhoods, and communicate innovations in treatment and quality of supply to the population to users.

Keywords: Water quality, drinking water, service, supply.

Abstract: Providing drinking water to the population is a challenge that involves the collection of water, its purification, quality standards, trained personnel, maintenance of facilities, and its efficient distribution in homes, which even includes raising awareness among customers in its use. In Tabasco, there is the State Commission, which has the responsibility of serving users at all levels in order to provide this input to families. This is why the objective of this research was to determine the perception of users of the drinking water service provided by the Water and Sanitation Committee of the State of Tabasco in the city of Emiliano Zapata Tabasco.

For this, the descriptive method with mixed analysis was applied, a 15-question instrument was developed using the Likert scale, sociodemographic data, item dispersion measures, and their application validity were determined using Cronbach's Alpha, as well as the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Sphericity. Sixty-one people selected by the snowball method were interviewed from 22 colonies out of 28 registered in the municipal capital. The results obtained indicate that it is necessary to review the water quality processes, train the customer service staff, manage the liquid administration processes, efficiently supply the colonies with comprehensive plans, emphasize care with workshops for users, make home visits, the statistical reliability was presented at 0.835 and a KMO of 0.881 and sphericity of 3.2474^{E-41} that determines the validity of the responses, it is concluded that it is necessary to establish communication processes with users on a permanent basis, attend to the management of drinking water management in the colonies, communicate to users the innovations in treatment and quality in the supply to the population.

Keywords: Water quality, drinking, service, supply.

INTRODUCTION

Mexico is one of the 17 countries in the world with considerable planetary biological diversity in terms of flora and fauna, estimated at 12% of the world's total (National Commission for Protected Natural Areas, 2018), This implies water supply needs to meet environmental and development requirements, which involves using a renewable water volume of 461,640 hm3/year, with a renewable water supply per capita of 3,600 m3/inhabitant/year, available to cover daily requirements. although there is an average recharge precipitation of 743.4 mm per year in the country, with a public supply from underground sources of 74.5%, which is very high and is operated at the administrative level by the country's municipalities (National Water Commission, 2023).

In the state of Tabasco, 97.5% of the population's water comes from the public network and 1.6% from community wells, which highlights the importance of providing drinking water services through an institutional body that operates in the maintenance of infrastructure, extraction, treatment, and distribution of water (National Institute of Statistics, Geography, and

Informatics, 2023). In addition to being located in Administrative Hydrological Region XI Southern Border, with 95.4% of its water rated as excellent or good quality, which is considered high compared to other regions of the country with particular problems due to tributaries related to industrial cities and high population density (CONAGUA, 2021).

In Tabasco, the water supply and sanitation sector is managed by the State Water and Sanitation Commission (CEAS), which is responsible for 13 of the 17 municipalities with 20 water treatment plants, 355 wells, 527 subsystems, and 16 repumping cisterns, considering that it manages 87.62% of drinking water throughout the state (Planning Committee for the Development of the State of Tabasco, 2019). In the case of water supply for the municipality of Emiliano Zapata, there are 49 sources, of which 47 are deep wells, one is a river intake, and one is of another type. The average daily volume of water extraction is 20,000 cubic meters, and there is a water treatment plant with an installed capacity of 200 liters per second, supplying an annual volume of 5 million cubic meters to the main city (Constitutional City Council of Emiliano Zapata Tabasco, 2021, 28).

CEAS plays a key role in improving water infrastructure, maintaining water distribution systems, and managing sanitation projects. These activities are part of efforts to improve the living conditions of citizens in the region, especially in areas where access to drinking water may be limited. It also carries out actions to promote efficient water use, water resource conservation, and the construction of infrastructure to prevent flooding or drainage problems, in order to contribute to the city's environment and economic and social well-being (CEAS, 2018).

The Water Resources Commission of the Senate of the Honorable Congress of the Union (2022) comments that in the state of Tabasco, attention is needed in terms of water supply in cities due to water quality, lack of pressure in the pipes, breakdowns in water treatment plants, obsolete facilities, monitoring of administration, and institutional coordination (Senate of the Republic, 2022). Situations that must be addressed with the development of deep wells, water reserves, and supply control (De la O Ledezma, López-Ocaña, & Rodríguez-Rodríguez, 2017). Aspects that must be considered in the water supply system in Emiliano Zapata include management, where each neighborhood has officials who collect monthly payments for the service so that water care and supply are carried out in a consistent and timely manner.

Currently, the perception of basic services, such as drinking water, has become a key aspect in assessing the quality of life in many communities. In the context of Emiliano Zapata, Tabasco, it is influenced by multiple factors, such as water quality, prices, and reliability of supply, and refers to how individuals interpret stimuli received from the environment, a complex process involving sensory, cognitive, and emotional aspects, as well as social and cultural contexts. In this sense, water service is based not only on the user's direct experience, but also on the interpretation of factors such as the quality of the water they receive, the associated costs, and trust in service providers, which are concerns for users (Baeza-Gómez, 2016; Gastañaga, 2018).

With regard to water quality specifically, users' perceptions of water cleanliness and potability depend not only on tangible elements such as color or taste, but also on broader factors such as information received from local authorities, previous experiences of contamination or poor service, or the presence of cloudy or foul-smelling water. These subjective elements are equally important when evaluating the quality of water service in any community, as they reflect users' concerns and expectations regarding their environment (Salas-Salvadó, et al., 2020; Silva, 2024).

Conducting a detailed analysis of the perception and satisfaction of drinking water service users allows for a review of the quality of the water services they received, transparency and efficiency in payment management, perception of value for money, and other factors in consumer satisfaction. This makes it possible to put forward concrete proposals that respond to users' needs by promoting a quality water supply and efficient service, as it is crucial to detect problems from the perspective of those who consume it.

One important aspect is to carry out activities in residential homes in the municipality, leaving aside commercial or industrial areas, to ensure that the information collected reflects the concerns and expectations of local families. By focusing attention on those who use water for their daily activities (such as cooking, bathing, and cleaning) to accurately identify the situations they face and how it affects their quality of life. It is about gathering voices for any proposal for improvement that has a real and positive impact on the community (Reyna-Bensusán, 2011).

In summary, the perception of drinking water service in Emiliano Zapata, Tabasco, must be understood not only from the objective perspective of water supply and quality, but also as a

social and cultural process that is influenced by past experiences, values, and the information available to users. Water quality and cost, along with trust in local authorities, are key elements that guide users' perceptions of this essential service. Therefore, the objective of the research was to determine users' perceptions of the drinking water service provided by the Tabasco State Water and Sanitation Committee in the city of Emiliano Zapata Tabasco.

DEVELOPMENT

RESEARCH APPROACH

This project was carried out using a qualitative-quantitative approach, with the aim of collecting and analyzing data that would enable the evaluation of participants' perceptions and opinions (Romo, 1998). A non-probabilistic convenience sample was used, as the subjects selected were those who were available and willing to participate in the study, thus facilitating the collection of information in an agile and effective manner, as well as generating a tool in Google Forms, from which, due to social situations, 61 surveys selected by the snowball method were answered (Casal and Mateu, 2003; Baltar and Gorjup, 2012).

Tabasco, in southeastern Mexico, is known for its high per capita water consumption. However, despite being one of the states with the most water resources, it faces challenges in providing equitable and adequate access to water, affecting part of its population (Mexico Tourist Guide, 2024). Although it is the state with the highest per capita water consumption, around 244,696 people do not have constant access to drinking water (Government of the State of Tabasco, 2024).

The Los Ríos region, which includes the municipalities of Balancán, Centla, Emiliano Zapata, Jonuta, Macuspana, and Tenosique, is characterized by its greater distance from the state capital and its rural nature. Despite having large areas of land dedicated to agriculture and livestock, limited industrial activity restricts the growth of infrastructure and basic services in the region. Emiliano Zapata has a population of approximately 37,000 inhabitants (Mexico Tourist Guide, 2024) and high drinking water coverage, reaching 97.39%, which makes it a municipality with access to water in almost all its homes (Government of the State of Tabasco, 2024). This municipality, located in the Los Ríos region, has access to affordable water from the Usumacinta River and in neighborhoods located in deep well hills, although some residents mention

that during the rainy season, the water becomes cloudy due to its origin, which generates some dissatisfaction with the quality of the service.

The neighborhoods investigated, José Armin and Las Lomas among others, have the infrastructure to access drinking water, although residents have reported that during the rainy season, the water that reaches their homes is of poor quality, leading to dissatisfaction with the service. This phenomenon occurs mainly when rains disrupt the supply, which is a cause for concern for residents in these areas.

RESEARCH DESIGN

In this approach, surveys were used as the main data collection tool. To analyze the results, statistical measures such as standard error, mean, median, mode, and standard deviation were applied to understand the distribution and trend of the data. In addition, correlation and linear regression analysis were performed to explore relationships between the variables studied. Cronbach's alpha was calculated to review the values of the instrument, where it is usually assumed that an acceptable value should be between 0.7 and 0.9, as well as the Kaiser-Meyer-Olkin (KMO) test and Bartlett's sphericity. However, some texts indicate that a minimum value of 0.6 can also be considered "acceptable," so we could think that in this case we are close to the lower limit (Roco-Videla et al., 2024; Tuapanta-Dacto et al., 2017).

Measurement Tool

This instrument is a section of the one designed by the Water Use and Resource Management Program at UNAM and the National Water Commission. Water Use and Resources at UNAM and the National Water Commission. Its reliability and validity were confirmed through its application in 2011 to 1,300 households by the Inter-American Development Bank in Argentina, in addition to its application in Mexico to 80 households in Ocotlán Morelos, Oaxaca State, in 2014. Its application took into account the problems existing in that region with relevant proposals for solutions for water supply sources, willingness to pay for the service, and actions for the management, care, and administration of local water resources (Program for Support of Hydraulic Development in the States of Puebla, Oaxaca, and Tlaxcala, 2014). Based on the above, the following instrument was suggested:

Answer the following questionnaire based on your experience with the drinking water service in your neighborhood. Age, Gender, Name of neighborhood 1. Very important, 2. Important, 3. Fair, 4. Not very important, 5. Not important at all.

Table 1. *Measurement tool for assessing drinking water service.*

No.	Question
1	How good is the service provided by CEAS drinking water personnel?
2	How important is it to you that water is distributed on the days agreed for your consumption?
3	What is your opinion regarding the quality of the drinking water?
4	How would you rate the cost of the drinking water service?
5	How would you rate the frequency of water supply in your neighborhood?
6	How satisfied are you with the information provided about water outages?
7	How often do water shortages occur in your neighborhood?
8	How would you rate the transparency of drinking water service management?
9	How adequate do you consider the water supply schedule to be?
10	How effective is the response of staff to complaints related to the water service? ?
11	How would you rate communication about additional services (filters, treatments, etc.)?
12	How concerned are you about the quality of drinking water in your neighborhood?
13	How likely are you to recommend the drinking water service to others?
14	Based on your perception, what would you change about the drinking water management in your neighborhood? Quality, price, frequency of supply, information, and communication
15	What improvements would you suggest for the drinking water service in your neighborhood?

Source: Program to Support Hydraulic Development in the States of Puebla, Oaxaca, and Tlaxcala, (2014).

DISCUSSION AND ANALYSIS OF RESULTS

With regard to the socio-demographic data from 61 surveys conducted, 65.57% of respondents were women and

34.42% men, in 22 of the 28 registered neighborhoods in the municipal capital, with only 0.96% of homes without piped water registered in Emiliano Zapata due to Territorial Development Committee activities (2021), as well as considering the age range of respondents from 24 to 55 years old, who responded via an online questionnaire.

According to the questions in Table 2, based on item one, the service provided by drinking water personnel, it was noted that 44.3% perceive the service provided by personnel as fair, 34.4% rated it as good or very good, highlighting positive aspects, but there is evidence of a need for improvement in response times, treatment, and problem solving, as an average of 2.87 confirms this trend, and a standard deviation of 1.07 reflects moderately dispersed opinions.

This suggests the need to improve customer service by training service providers to increase customer service and satisfaction, thereby improving communication.

Question two prioritizes the importance of water distribution on agreed days. This refers to agreements that on certain days water would be supplied according to the needs of the population, especially since it is water extracted from wells. Sixty-seven point two percent of respondents consider it important to distribute water on agreed days, 24.6% rate it as important, reflecting the punctuality of distribution as a priority for most users who require improvements. With an average response of 1.48, which is low, and little difference between opinions, according to the standard deviation of 0.83, the importance of punctual delivery is highlighted.

With regard to drinking water quality (item three), 45.9% of respondents consider drinking water quality to be good, while 32.8% rate it as fair and 21.3% as poor. Although the majority have a positive perception, there is still room for improvement in quality and compliance with official Mexican standards. The average opinion score is 2.64 and the standard deviation is 0.98, which implies low to intermediate opinions that are cause for concern and must be addressed.

Regarding the cost of drinking water service in item four, 41.0% of respondents consider it good, while 34.4% rate it as fair and 24.6% as needing significant improvement due to deficiencies in water care and quality. There is a favorable perception, but a significant portion believes that substantial improvement is needed. The average of 2.57 and the standard deviation of 1.04 indicate divided opinions, so it is important to review the capacity of the service and its cost, which is managed by monthly fees, not by the expense referred to in meters that do not exist in residential connections.

With item five, how would you rate the frequency of water supply in your neighborhood, it is noteworthy that 39.3% of respondents perceive it as fair, followed by 36.1% who rate it as good. This reflects a notable perception of consistent supply, especially considering that 11.5% rate it as poor and point to clear areas for improvement. The average of 2.75 confirms this trend, while the standard deviation of 0.98 shows an intermediate perception with room for improvement in terms of greater regularity of service.

In terms of satisfaction with the information provided about water outages in item six, 19.7% are satisfied, 39.3% of respondents feel it is average, while 32.8% are dissatisfied. The majority perceive communication about water outages to be insufficient, with a clear need for improvement.

Transparency and timeliness of information, with an average of 3.10 and a standard deviation of 0.93, suggests that current communication could be improved to increase user satisfaction. The frequency of water shortage problems in their neighborhood (item seven): 32.8% of respondents indicate frequent shortages, followed by 26.2% who mention that it happens sometimes, and 21.3% who say that this problem rarely occurs. while 19.7% report that water shortages always occur, with an average rating of 2.69 and a standard deviation of 1.12. For this reason, promoting water conservation is important, as most of the water supply comes from the Usumacinta River, and it is necessary to encourage a change in its use and conservation in households.

Regarding transparency in the management of drinking water services in item eight, 24.6% consider it high, 45.9% of respondents rate transparency as fair, while 14.8% perceive it as low and 11.5% rate it as very low. A significant portion sees opportunities for improvement in communication and service management.

Regarding the water supply schedule in item nine, 8.2% consider it very adequate, 42.6% of respondents consider it adequate, followed by 29.5% who rate it as fair, and 14.8% who perceive it as inadequate. On average, it is rated at 2.67, while the standard deviation of 0.99 shows a slight variation, although a more positive perception prevails, reflecting the agreements reached by the water committee with citizens, who consider the opinions to be correct.

Regarding item 10 on the effectiveness of staff responses to service-related complaints, 37.7% consider it average, followed by 24.6% who perceive it as effective. However, 31.2% (sum of somewhat ineffective and not at all effective) express dissatisfaction, highlighting the need to improve the handling of complaints, which has an impact on the overall processes of customer service and unsatisfactory services, with an average rating of 3.05 and a standard deviation of 1.09, as it involves staff training, promotion, advertising, customer service, and home visits.

In the evaluation of communication about additional services (item 11, filters, treatments, among others), half of the respondents (49.2%) believe that communication about additional services is average, 26.2% consider it to have significant flaws, only 21.3% rated it as good. Budgets and planning are required for the development of an efficient process for these additional services, with an average response of 2.36 and a standard deviation of 0.95. as maintenance of facilities and equipment is necessary to avoid inconsistencies in the physicochemical characteristics of the water (Ramos-Herrera et al., 2012).

In relation to item 12 on the level of concern about drinking water quality in their neighborhood, most respondents have moderate concern about drinking water quality (47.5%), while 45.9% show high and very high concern. This reflects the perception of water quality as an important but not alarming issue, although a significant segment has greater concern, with an average of 3.0819 and a standard deviation of 0.9538. It is important to note that Mexico is one of the countries with the highest consumption of bottled water, which is why the existing conditions are expressed in this section of the survey (Silva, 2024).

Regarding question 13, on the likelihood of recommending the drinking water service, 34.4% are neutral, 21.3% consider it likely, while 19.7% consider it unlikely. Thirteen point one percent are inclined to consider it very likely, or indicate that they do not have a strong opinion on the matter. Corroborated with the average of 2.8852, this suggests a general trend toward a negative or neutral assessment, due to mistrust regarding consumption and use (Borbolla-Sala, 2003).

According to their perception in item 14 on changing the management of drinking water in their neighborhood, 31.1% of respondents mentioned the frequency of supply as the main aspect to be improved, followed by service with 24.6% and quality with 19.7%. Other points mentioned were information and communication (13.1%) and price (11.5%), reflecting different priorities among users for service improvement, with an average of 3.07 showing a balanced trend between different aspects to be improved. During the rainy season, the turbidity of the water affects its use in homes and can be a source of disease due to the solids present if ingested.

Regarding item 15 concerning suggestions for improving the drinking water service, it is considered that water quality should comply with NOM-127-SSA1-2021 (Ministry of the Interior, 2022), efficient service, maintenance of equipment and pipes, review of supply frequency, immediate response to leaks, training of company personnel, campaigns for efficient use of water, encouragement of service payment, and implementation of the proper functioning of committees in neighborhoods (Rodríguez et al., 2020).

Table 2. *Item dispersion measures*.

Item	Mean ± Standard error	Standard deviation	Medium	Fashion
1	2.8688 ± 0.1372	1.0719983	3	3
2	1.4754 ± 0.1061	0.8287854	1	1
3	2.6393 ± 0.1259	0.9837477	2	2

4	2.5737 ± 0.1331	1.0401765	2	2
5	2.7540 ± 0.1251	0.9773389	3	3
6	3.0983 ± 0.1185	0.9256514	3	3
7	2.6885 ± 0.1432	1.1186448	3	2
8	2.6657 ± 0.1277	0.9980856	2	2
9	3.0655 ± 0.16699	1.3275146	3	4
10	3.0491 ± 0.1391	1.0866804	3	3
11	2.3606 ± 0.1259	0.9837477	3	3
12	3.0819 ± 0.1221	0.9538533	3	3
13	2.8852 ± 0.1442	1.1269185	3	3
14	3.0655 ± 0.1277	0.9978118	3	3
15	3.1639 ± 0.1284	1.0030009	3	3

Source: Own elaboration (2025).

The reliability statistics for the instrument show a Cronbach's alpha of 0.824, with high internal consistency of the instrument and its responses (Tuapanta-Dacto et al., 2017). This allows us to highlight the requirements requested, opportunities for improvement, and valid response averages, while the standard error indicates the accuracy of the model (Table 3).

Table 3. *Reliability statistics*.

Cronbach's alpha	Cronbach's alpha based on standardized items	No. of items
0.824	0.835	15

Source: Own elaboration (2025).

On the other hand, exploratory factor analysis (EFA) presents equivalent variables such as KMO of 0.881 (Table 4), establishing robust significance according to the data presented, with accurate information, indicators such as standard deviation and reciprocal averages, as well as a Bartlett sphericity of high significance, allowing for a correspondence analysis with valid and effective results (López-Aguado and Gutiérrez-Provecho, 2019). This implies a comprehensive view of how respondents perceive the different aspects of the drinking water service in Emiliano Zapata, showing intermediate satisfaction with the service, although with notable variations between the different items analyzed.

Table 4. *Kaiser-Meyer-Olkin (KMO) test and Bartlett's sphericity*.

Measure KMO of sampling adequacy		0.881
Bartlett's sphericity test	Approx. Chi-square	431.850
	gl	105
	Sig.	3.2474^{E-41}

Source: Own elaboration (2025).

When calculating the coefficient of variation between the averages (with a correlation value of 0.4079645), a moderate rating is observed. Although there are differences in the responses, there is a certain consistency in the way users evaluate aspects of the service (Medivelso and Rodríguez, 2018). This analysis provides valuable insight into how users link these factors and how they influence their overall satisfaction, providing a solid basis for recommending actions and optimizing drinking water service in the study area (Figure 1).

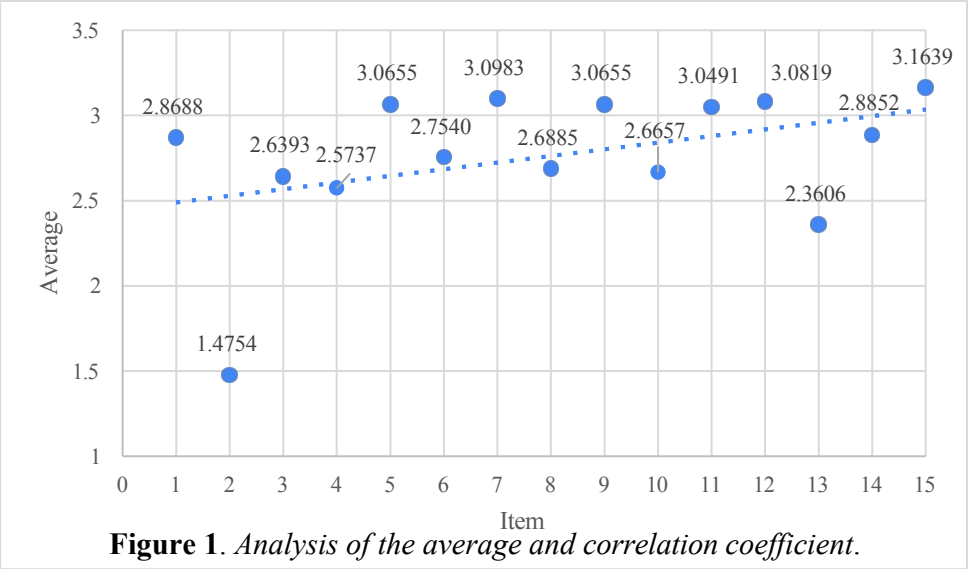

Figure 1. *Analysis of the average and correlation coefficient.*

Source: Own elaboration (2025).

For the chi-square parameters, when evaluating the opinions of men and women according to the instrument, significant differences between opinions on drinking water service are considered to exist. The results indicate differences between the observed and expected frequencies. The calculated value of 3.1184 (Table 5) is lower than the critical value in the table, suggesting statistically significant differences in the opinions of men and women, but they are decisive for improving the service,

especially since women, due to their role in the home, are the administrators of water and are responsible for its efficient use.

Table 5. *Chi-square significance*.

Calculated R chi	3.1184
Tabulated R chi	9.4877
0.05% significance	

Source: Own elaboration (2025).

Relevant aspects arise with the CNA (2024), which reports that in terms of surface water quality in the country at 450 sites, 60.9% did not present acute toxicity, although in its traffic light system, 25.3% were green, 21.8% were yellow or preventive, and 50.9% were red, which suggests that the water is contaminated and may have an impact on the population that uses it. In the case of groundwater, out of 606 sites suitable for drinking water supply and agricultural irrigation, 55.4% were green, 12.9% were yellow, and 31.7% in the red. These data refer to the development of care schemes with plans, programs, and budgets at the national, state, and municipal levels that contribute to a quality water service for domestic use.

Specific case in the state of Tabasco in the city of Villahermosa at sites sampled 14 to 16 times per year, in the monitoring of Biochemical Oxygen Demand (BOD5), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), and Fecal Coliforms (FC), at all sites in different quarterly samples, fecal coliforms are found to be out of range with heavily contaminated quality (FC > 10,000 NMP) in this city (Government of the State of Tabasco, 2024). In the case of Station 26: Usumacinta River (Boca del Cerro Bridge, on the Emiliano Zapata-Tenosique Highway), Tenosique, Tabasco, for the month of June 2024, BOD5 is excellent, COD is acceptable, and CF is heavily contaminated, similar to the tributaries of the central city, which is a concern for the population due to the excess of contaminants in the tributaries and catchment basins (Government of the State of Tabasco, 2024, a). which is why the Senate of the Republic (2022) recommended making the necessary adjustments to the procedures and processes for providing drinking water to users in order to prevent disease and other damage to health (Montero-Contreras, 2016).

The existing observations are clear and are complemented by recommendations made in 2023 (Constitutional City Council of Emiliano Zapata Tabasco, 2023) by external consultants who evaluated the municipality in terms of drinking water service, in which they make it clear that attention should be paid to poor areas

poor areas of the municipality, maintaining a functional drinking water infrastructure and implementing projects for priority areas, achieving inter-institutional coordination, and developing efficient administration, with the aim of satisfying the social development of the municipality's inhabitants.

If we consider the definition issued by the World Health Organization (2018, 1) on drinking water, "every effort should be made to make it as safe as possible and not cause any significant health risks throughout a lifetime," aspects that are not occurring as the water is not suitable for human consumption due to existing impurities and, although for domestic use, the treatment conditions for drinking tap water must be reviewed to ensure compliance with regulatory requirements and to prevent diseases and other conditions that harm the population, especially the vulnerable (Guerrero-Legarreta, 2023).

CONCLUSIONS

The analysis conducted on the perception and satisfaction of drinking water service users in Emiliano Zapata, Tabasco, has revealed several key areas for improvement. Although service coverage is high and infrastructure is available to residents, water quality, especially during the rainy season, remains one of the biggest problems reported. The turbidity of the water, which directly affects its potability, generates mistrust among users, who demand a significant improvement in the water filtration and treatment process. In addition, service management, although acceptable, has been rated as fair in terms of efficiency and response to complaints. Communication with users has also been identified as an area requiring attention, as they consider information about water outages and service-related problems to be inaccurate.

To improve service quality and meet the needs of the community, it is crucial to implement effective treatment and filtration technologies that ensure safe, high-quality drinking water at all times. Likewise, strengthening communication channels with users, creating digital platforms and alert systems, would allow for a transparent and efficient flow of information, improving relations with residents. It is also essential to optimize the response to complaints by creating a more agile and effective customer service system, which would help restore confidence in the management of the service.

At the same time, it is important to promote education and awareness about responsible water use, with a focus on prevention as the key to mitigating future supply-related situations. Finally, it is advisable to establish a continuous monitoring system that allows for regular measurement and evaluation

the quality of water and the efficiency of the service on a regular basis, as this facilitates the early identification of problems and a swift and effective response to incidents.

FUTURE WORK

Develop proposals for work on processes to standardize water purification, with the aim of providing a quality product and efficient service delivery.

Establish studies for the implementation of a culture of water management among the general population, involving educational materials and their impact on learning at different ages.

Promote research into the chemical and physical analysis of water in supply tributaries, as well as the quality of water reaching homes in neighborhoods and communities, in order to provide high-quality drinking water for domestic use.

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