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Social Perception Of Drinking Water Quality Service In Latacunga Canton Urban Zone

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Abstract

One of the fundamental needs of life is water. To ensure its potability, societies worldwide have historically implemented regulations establishing minimum requirements for its quality. Consequently, the requirements of contemporary global events have necessitated the establishment of a systematic documentation of the perception and satisfaction of users concerning the quality of a fundamental public service (drinking water). This initiative has facilitated the ongoing enhancement of both water quality and the underlying process. In this particular case study, the focus was on an analysis of the services provided by the Municipal Drinking Water Company of the Latacunga Canton. Given the absence of extant studies related to this social issue, it was deemed pertinent to record the opinions of the inhabitants of the canton "Urban Zone" by means of surveys, in order to collect the necessary data and direct them to the institutions responsible for the service. The methodology employed in this research was probabilistic sampling with variable correlation. The collected information was processed with the SPSS statistical program. It was determined that the qualitative analyses project enough current and real data to evaluate the service in the Canton "Urban Zone." In this case, the families have expressed satisfaction with the quality of the drinking water provided by the Latacunga canton.

Keywords: *Water quality, Social Survey, Drinking water, Perception, Latacunga.*

INTRODUCTION

A persistent challenge confronting Latin America is the optimal sanitation, purification, and distribution of water throughout society. The canton of Latacunga is not immune to this problem; the primary challenge faced by its province is the contamination of rivers and water bodies, primarily due to inadequate wastewater treatment, which is directly discharged into the Cutuchi, Aláquez, and Pumacunchi rivers. The presence of microorganisms, chemical substances, and infectious agents has led to the current purification treatments being insufficient in the face of excessive contamination (DIMAPAL, 2018).

In 2018, the Latacunga canton had a 70.4% coverage of drinking water, which was sourced from three primary catchment areas. The Illigua water supply system, with a capacity of 210 liters per second (l/s), provides water to the central and northern parts of the city. The Calzado water distribution system, with a capacity of 80 l/s, serves the southern and eastern regions. The Loma de Alcoceres Treatment Plant, with a capacity of 170 l/s, supplies water to the southeastern, northeastern, and western high-altitude areas of the city. (DIMAPAL 2018). According to the report presented by the Illustrious Municipality of the Canton of Latacunga in the Organic Law on Transparency and Access to Public Information (LOTAIP), dated March 31, 2023, it is stated that 99% of drinking water is supplied to the canton (LOTAIP, 2023). A curious finding emerged from a comparative analysis of the SEMPLADES report from June 2018 and current data. The analysis revealed that the supply of approximately 11,923,200 cubic meters per month meets or exceeds the supply of 9,000,000 cubic meters per month, which is currently supplied to 99% of the population. This finding prompts further investigation and analysis to understand its implications.The following text is intended to provide a comprehensive overview of the subject matter. According to the most recent census conducted by the INE in 2023, it was determined that a mere 95.9% of the population has indicated that they have utilized this public service (INE, 2023). Moreover, the population's discontent regarding the vital liquid has been expressed and acknowledged, despite the absence of technical support from the survey.

At the inception of this research, an investigation was conducted to identify previous studies that examined the relationship between water quality and the canton. However, a comprehensive review of the existing literature revealed a paucity of research addressing this subject. It was deemed necessary to expand the search landscape to encompass a broader geographical area, thereby reaching beyond the confines of the Latin American region. This bibliographic review enabled the collection of valuable information, thereby providing a foundation for the subsequent analysis of opinions.

According to the study conducted by Ibarra (2018) at the treatment plant in the hill of Alcoceres, it was determined through chemical and microbiological analyses that the plant's laboratories must be reconditioned or improved. The study also found that measuring instruments such as pitcher tests, pH tests, and others must be implemented. These instruments are essential to obtain water suitable for human consumption. Furthermore, the application of superior efficiency reagents during treatment processes is strongly recommended. In addition, the periodic execution of tests is advised to ensure the continuous updating of the dosing process.

In a similar vein, Erreyes' (2012) research examined the satisfaction of citizens with the drinking water service provided by EMAPASA in the urban area of the Saraguro canton in 2012. This study aimed to identify and analyze the primary factors contributing to the substandard provision of the service. The company's failure to provide a basic service has led to significant dissatisfaction among the public, as evidenced by frequent complaints. To address these concerns, a comprehensive improvement plan for the drinking water service in the urban area of Saraguro Canton has been proposed. This initiative aims to rectify the observed deficiencies, enhance the quality of the service, and ensure the satisfaction and well-being of the community.

At the international level, Tito et al. (2020) identified the level of satisfaction with the drinking water service in the Jorge Chávez Urbanization of the City of Juliaca (Peru) in 2019. To measure the level of satisfaction, the researchers applied surveys and obtained validation from the National Superintendence of Sanitation Services (SUNASS). This instrument applied the Likert scale. In addition, the hypothesis stated that it is likely that the level of satisfaction with the drinking water service in the urbanization was low. The results of the study indicated that the level of user satisfaction with the service was negligible. This was attributed to the limited hours of coverage, the inadequate pressure, and the delayed attention from the service provider.

Cruz et al. (2020) argued that in Costa Rica, there is a pressing need to enhance the quality of drinking water services for a substantial segment of the population, with the objective of ensuring the human right to this vital resource. The objective of this study was to assess the perception of the population of four cantons of the province of Cartago (Alvarado, Jiménez, Oreamuno and Turrialba) with regard to the public drinking water service they receive in their community. The analysis conducted encompassed a comprehensive examination of both the geographical distribution of the population and the characteristics of the service providers. This approach was undertaken to elucidate the similarities and contrasts that emerge in each instance. A survey was conducted to ascertain the opinions of users of the water systems in these localities. The study revealed significant asymmetries among the existing systems, with certain issues pertaining to the continuity of service and the organoleptic properties of the liquid. The study enabled the identification of a robust correlation between the variables of:

i) level of consumer satisfaction,
(ii) problems identified in the system,
(iii) actions that are implemented in homes to mitigate these shortcomings.

The experience resulting from this study was complementary to traditional service quality indicators and has a high potential to be replicated in other systems in Costa Rica and the Caribbean.

As Marquez (2017) notes, the maintenance of regular records concerning user perceptions of quality is imperative in all public services. The fundamental purpose of this activity is to facilitate continuous institutional improvement. In this particular case of Xalapa, Veracruz, the service provided by the Municipal Commission of Drinking Water and Sanitation was studied. It has been documented that the state of Veracruz is among the five entities with the highest water usage, yet it also has one of the lowest percentages of the population with access to drinking water. Consequently, the National Water Commission (Conagua) has determined that there is a discrepancy in this regard. Furthermore, the population's discontent was evident through public demonstrations in the city, during which various issues were highlighted, including concerns regarding the collection of fares and the inadequate supply. To address this need, a systematic approach was employed to record the opinions of the participants. This method entailed the administration

of stratified questions, with the objective of acquiring the pertinent data. The collected information was subsequently formalized and submitted to the designated institutional entity for further consideration. The methodology employed in this study was a probabilistic sampling, and the collected data was processed using a statistical program designed for the social sciences. The analysis revealed that opinion studies are capable of generating sufficient data to evaluate the impact of this service within the community. In this case, the citizens, irrespective of their level of marginalization, regarded the service provided as satisfactory, characterized it as fair to good.

METHODS

The objective of the present study is to propose a methodology that can be replicated in other drinking water distribution systems in Ecuador. This approach prioritizes the perception of the inhabitants and utilizes indicators of quality to assess the drinking water service. The indicators encompass infrastructure, the quality and quantity of water, with the objective of enhancing the management of this fundamental public service. The research commenced with a comprehensive search for background information and the current context in which the service is provided in the study area. In this regard, the tributaries of the area, drinking water, protection of springs, and wastewater treatment systems were considered. Contacts were initiated with the municipal authorities to establish counterparts, and a comprehensive study was conducted on the physical and demographic characteristics of the canton. Subsequently, in collaboration with the population of the canton, a statistical analysis was conducted to assess the perception of the service. A forum was then facilitated to share the various problems and challenges encountered by each sector. The present article delineates exclusively the results pertaining to the perception of the quality of the drinking water service, in addition to the recommendations that should be considered in order to enhance the service.

To identify the perception of the users, a questionnaire with a cross-sectional design, of a descriptive nature, was applied. The questionnaire was meticulously structured into two sections. The initial section pertains to sociodemographic references, thereby facilitating the collection of pertinent information regarding personal aspects. This approach enables the subsequent correlation of study results with the broader data set of the population under investigation. The second part of the presentation was articulated with questions of a social nature, and was divided into three areas: Information, Opinion, and Attitude: A Case Study of Consumer Engagement in Evaluating Drinking Water Services The modules under consideration contain a total of 18 questions, employing a Likert scale response format, multiple choice options, and open-ended inquiries.

The structure of the items to approach the perception of the users of the drinking water service in Latacunga is as follows:

Information: The organoleptic characteristics of water, which are easily perceived by consumers, can provide a valid assessment of its quality, even without specialized knowledge of water treatment. These characteristics include color, flavor, aroma, and residues. Furthermore, it is capable of maintaining the volume of water that reaches the home by regulating the amount that exits the home.

It is the prerogative of the consumer to evaluate the quality, reliability, and continuity of the service.

The consumer's evaluation of the quality of the service can be measured on a scale based on the cost of the service that he pays on his payroll.

The questionnaire incorporated the dimensions, variables, and indicators necessary to achieve the objective. The study population comprised individuals residing in the canton of Latacunga, situated within the province of Cotopaxi, in the designated "urban sector." These individuals had access to direct intake of the general drinking water network and were classified as domestic users, irrespective of their tariff or sector of residence. It is imperative to underscore that the respondent was required to possess a discernment of the economic value of this public service. Furthermore, the number of individuals in the respondent's household was to be documented to accurately calculate the expansion factor at the time of generating the population sample.

The sampling method employed was probabilistic and stratified, with the total number of inhabitants with drinking water service in the city of Latacunga serving as the stratification criterion. The analysis encompassed both urban and rural parishes, thereby considering them as sectors. The delineation of these regions was conducted by the National Institute of Statistics and Censuses. The formula applied for sampling was as follows: Cronbach's alpha is a statistical measure of internal consistency, used in the field of psychology to assess the reliability of a set of measurements.

$$n = \frac{N * Z_{\alpha}^{2} * p * q}{e^{2}(N-1) + Z_{\alpha}^{2} * p * q}$$

Where:
n=Sample size searched
N=Population Size
Z= Statistical parameter that depends on the confidence level
e= Maximum Accepted Estimation Error
p = Probability of the expected event occurring (success)
q = Probability that the expected event will not occur (failure)
Table (1): Z values$_{alpha}$ depending on the level of confidence.

Confidence level	Z_{alpha}
99.7%	3
99%	2.58
98%	2.33
96%	2.05
95%	1.96
90%	1.645
80%	1.28
50%	0.674

According to the most recent census data presented by the National Electoral Council (INEC), the urban area of Latacunga is home to 125,651 inhabitants. It is important to note that the information provided will be used to calculate values from the aforementioned table. This will result in a confidence level of 98% and a maximum estimation error of 2%. Given the absence of prior research on the social perception of the service and water quality in the canton, we opted to employ maximum variance to determine p and q, thereby setting p = q = 0.5. This stipulation implies that each individual had a 50% probability of selecting an option. The survey was administered in person to each resident. The data were then analyzed using descriptive statistics. Subsequently, an association study was conducted to identify the relationships between the variables. This bivariate analysis necessitated the assessment of statistical significance (Pearson's Chi-square statistical coefficient) and the utilization of a reliability of 98% and an error rate of 2%. The statistical management program was used to process the information. The utilization of EXCEL was employed.
It is imperative to note that the estimation of the sample value was derived through the implementation of an expansion factor, which was obtained from the primary page of INEC. This expansion factor indicates that the average number of individuals per household in the city of Latacunga is 3.42. The estimated population for the survey was 580 individuals.

RESULTS

Figure 1, which illustrates the geographical distribution of respondents, indicates that 100% of the participants belong to the urban sector of Latacunga, while no responses were registered from the rural sector. The total concentration of the sample is consistent with the objective of the study, which is to analyze the social perception of the quality of drinking water in the Latacunga canton urban sector.

Figure (1): Percentage of the sector of residence

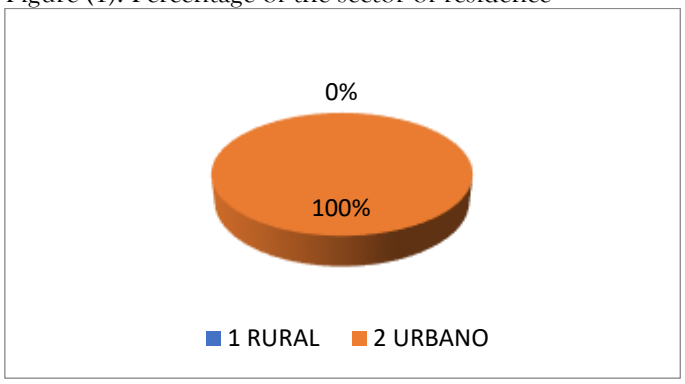

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Figure 2 shows a distribution in which 63% of respondents are men and 37% women. This difference in participation suggests a greater male representation in the sample, since social perceptions regarding water quality may be influenced by gender factors, such as the role in household water management, sensitivity to health aspects or direct exposure to problems related to water resources.

Figure (2): Percentage of gender of each respondent

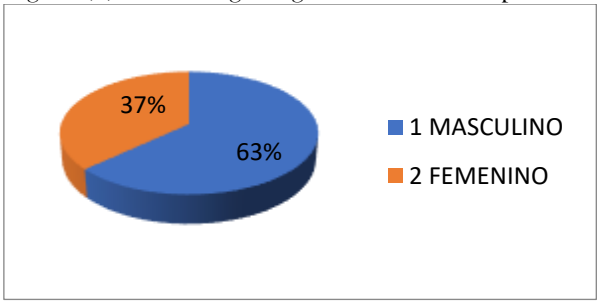
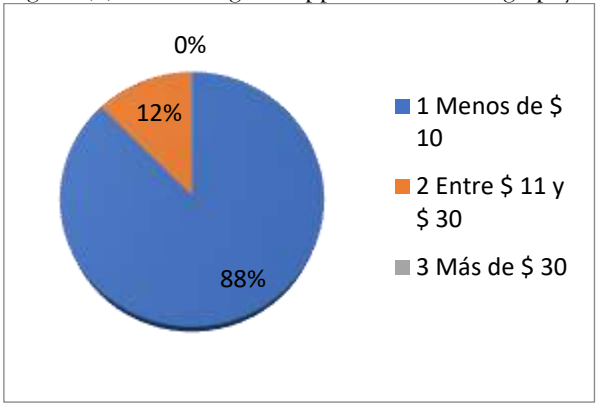


Figure 3 reveals that 88% of respondents in the urban sector of Latacunga report a monthly payment of less than $10 for drinking water service. 12% claim to pay between $11 and $30, while no user reported payments higher than $30 per month. These data suggest that, in general, drinking water service in the urban area of Latacunga is perceived as economically accessible to most households.

Figure (3): Percentage of approximate average payments of the user's monthly payroll



As illustrated in Figure 4, 65% of the respondents attained a secondary education as their highest level of formal education. The next highest percentage of respondents had received a primary education (27%), while only 7% had obtained a third-level qualification (higher education). A mere 1% of the sample indicated that they had not received formal education, and none of the parents reached the fourth level of education, which is defined as postgraduate. An understanding of the sociocultural context of families in the urban sector of Latacunga is predicated on an analysis of pertinent data. The family's educational level exerts a direct influence on the construction of environmental issues, such as water quality.

Figure (3): Respondent's highest percentage of education

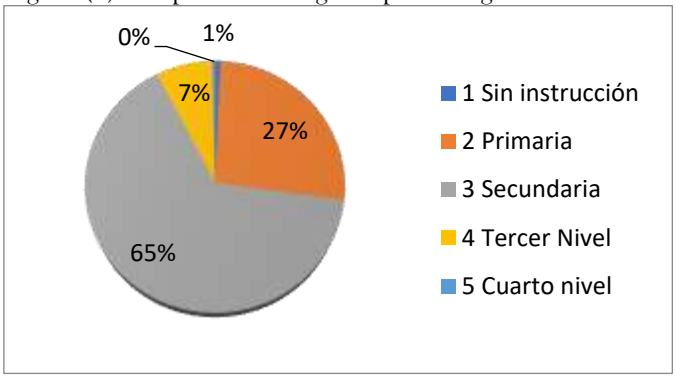
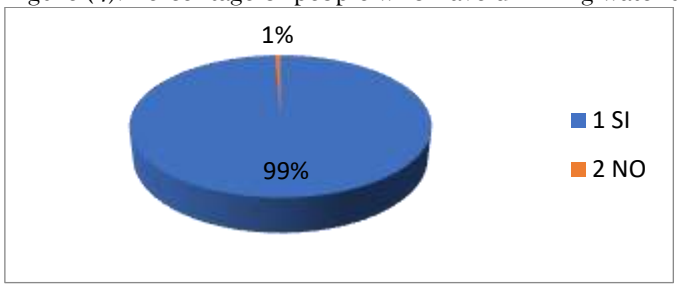


Figure 5 shows that 99% of those surveyed claim to have access to drinking water service, while only 1% indicate that they do not have access to this resource. This data reflects an almost total coverage of the drinking water system in the urban area of Latacunga, which is consistent with institutional efforts to guarantee access to water as a basic right in urban contexts. However, access to the service does not necessarily imply satisfaction or positive perception of its quality.

Figure (4): Percentage of people who have drinking water service



As illustrated in Figure 6, the results indicate that 92% of respondents perceive the water reaching their homes to be transparent, which is a favorable indicator from the sensory and perceptual perspective. However, 8% of the participants have reported some type of coloration, distributed in different intensities: faint (3%), low (2%), dark (3%), and very dark (0%) coloration. Despite the minimal prevalence of negative perceptions, their occurrence indicates the potential for incidents affecting the visual quality of the water resource. These incidents may be associated with factors such as system failures or inadequate maintenance of the network.

Figure (5): Percentages of coloration observation in drinking water

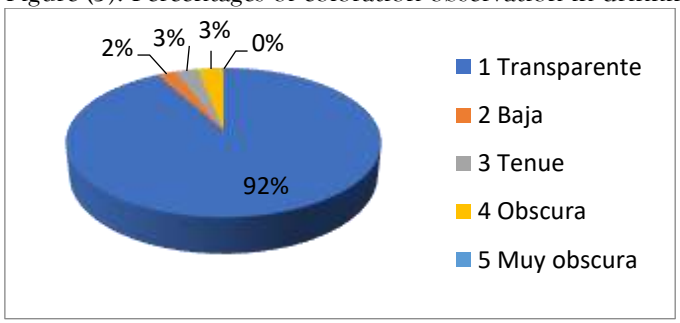


Figure 7 demonstrates a favorable perception concerning the odor of the water supplied to households in the Latacunga urban sector. The most salient fact is that 95% of the surveyed subjects reported not having perceived any olfactory sensation in the water. This finding indicates that, from the perspective of olfactory perception, the majority of the population studied perceives water quality as being satisfactory. However, it is important to note that a minority of the population has experienced odors in water: 2% perceive a low smell, another 2% faint, 1% as unpleasant, and 0% as very unpleasant. Despite the negligible magnitude of these percentages, they do serve as an indication of the presence of odor-related issues in the water sample. These issues have the potential to give rise to concerns and to influence one's overall assessment of the water quality.

Figure 6: Percentages of odor in the water that reaches each home

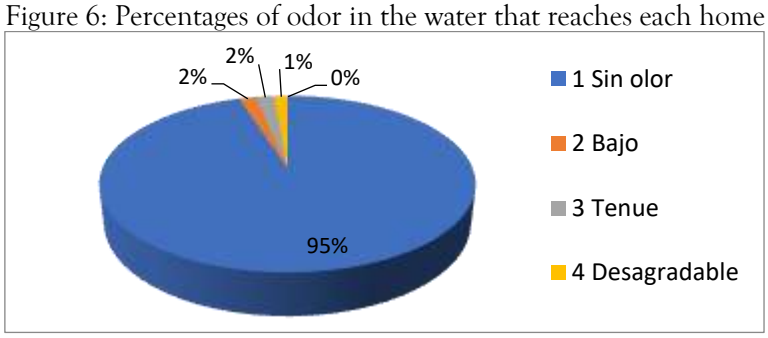


Figure 8 shows that 96% of the most respondents perceive that the water that reaches their homes does not have a characteristic taste. This could be interpreted as an initial positive perception of the quality of the water in terms of taste. While a small percentage of respondents report having felt some taste, ranging from Low 2%, faint 1% to Unpleasant 1%. The "Very unpleasant" category got no response. But you have to be careful with low values as it may be happening due to lack of maintenance in the pipes or reservoirs.

Figure (7): Percentage of characteristic flavor in the water that reaches homes

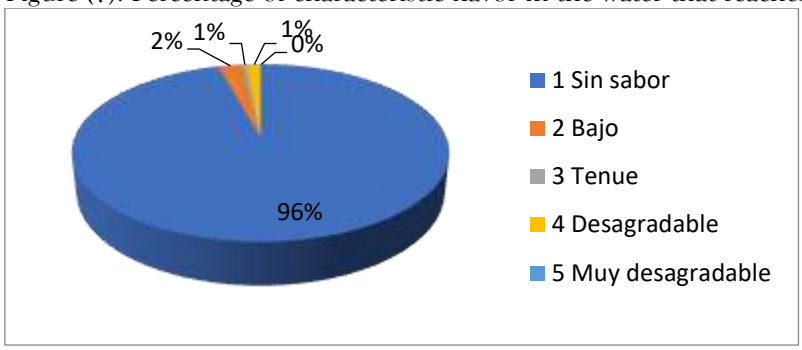
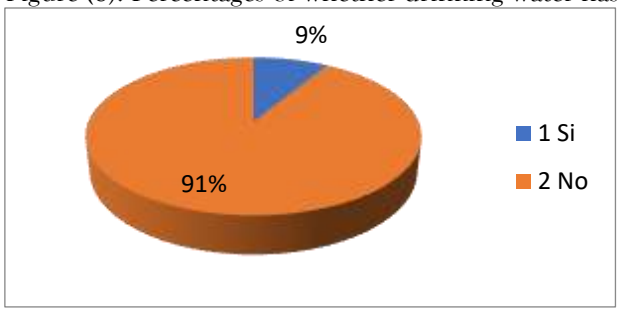


Figure 9 indicates that the overwhelming majority of respondents, 91%, reported not having observed solid residues in the water supplied to their homes. This suggests a general perception of water that is free of visible particulate matter. However, 9% of respondents have observed the presence of solid waste in the water. Despite constituting a minority, this percentage is noteworthy and suggests the possibility of a water quality issue.

Figure (8): Percentages of whether drinking water has ever arrived with solid waste



As illustrated in Figure 10, a substantial majority of respondents, amounting to 99%, reported an absence of stomach discomfort associated with water consumption. This finding indicates that the general population does not perceive tap water as a significant source of disease. However, it is important to note that 1% of the population constitutes a minority opinion. This viewpoint could be indicative of potential water quality issues, possibly resulting from inadequate reservoir maintenance or ineffective water treatment at the microbiological level.

Figure 9: Percentage if they have had stomach pains due to drinking water consumption

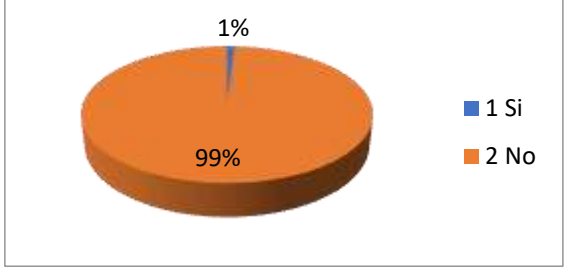


Figure 11 shows that 100% of the respondents answered "No" to the question of whether they have developed a fever as a result of drinking water consumption, while 0% indicated "Yes". This information is significant

within the study, as it suggests that cases of fever directly related to the consumption of drinking water are non-existent or very infrequent in the perception of the inhabitants.

Figure (10): Percentage if they have had a fever due to drinking water consumption

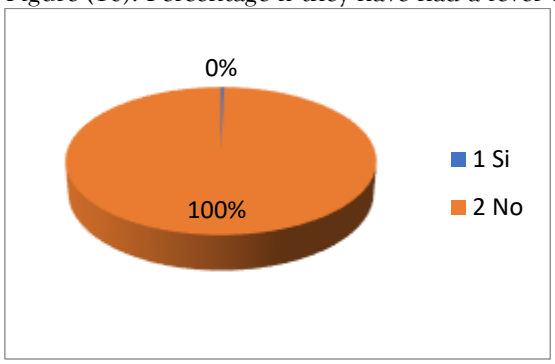


Figure 12 illustrates that 94% of respondents answered affirmatively regarding the constancy of water pressure throughout the day, while only 6% indicated that it is not constant. This result shows a high perception of stability in the drinking water service, particularly in relation to the quantity or flow that reaches homes.

Figure (11): Percentage if the pressure is constant throughout the day

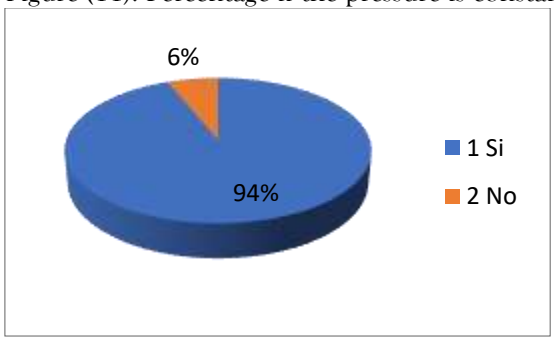


Figure 13 shows that 98% of respondents indicated that they have not experienced frequent cuts in drinking water service, while only 2% said the opposite. This trend reinforces the perception of continuity and reliability of the drinking water service in the urban area of Latacunga. The near absence of reports of frequent outages suggests that the distribution system operates with high levels of operational efficiency.

Figure (12): He has had frequent cuts in service

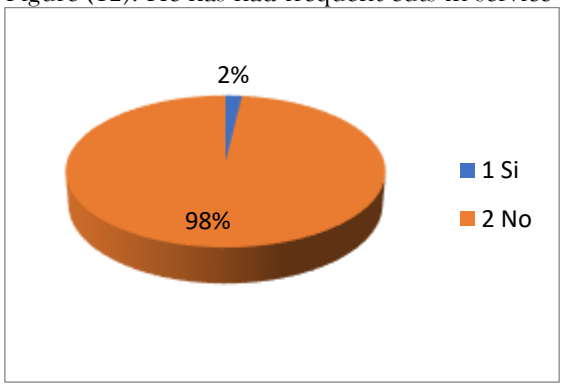


Figure 14 presents that 97% of the respondents responded that no improvements have been observed in the drinking water service during the last few years in the Latacunga canton of the urban sector and a minority of 2% responded that improvements have been observed.

International Journal of Environmental Sciences
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Figure (13): Observation of improvements over the past few years

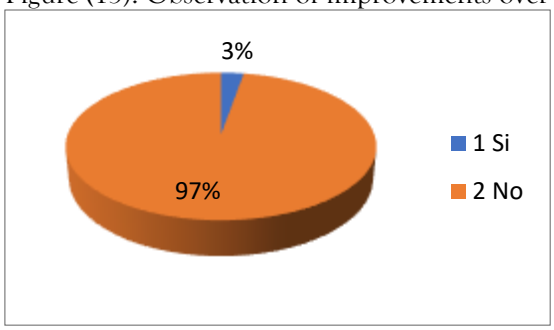
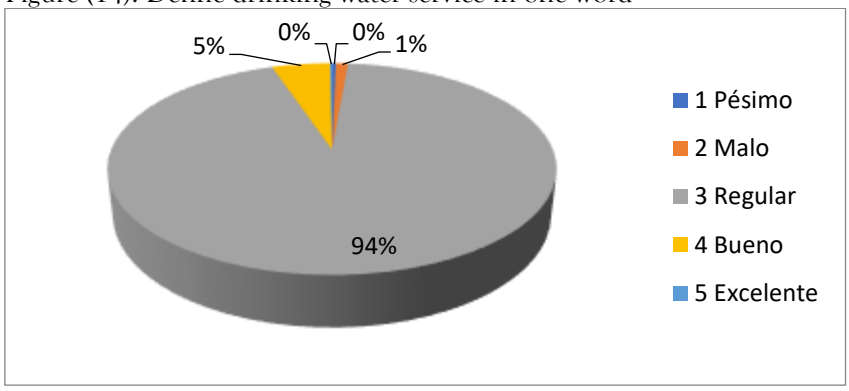


Figure 15 illustrates 94% of respondents rating it as "Fair". This data suggests that, although the service is not considered deficient by the majority, it does not reach high levels of satisfaction either. In other words, citizens do not perceive critical problems, but neither do they value the quality of the service as satisfactory or remarkable. The 5% of responses that rate it as "Good" represents a minority that perceives an acceptable quality, while negative opinions: 1% "Bad" and 0% "Terrible", indicating a low perception of extreme dissatisfaction. On the other hand, the 0% that rate the service as "Excellent" shows that, for the sample surveyed, a maximum quality standard is not reached.

Figure (14): Define drinking water service in one word



In Figure 16, 95% of respondents consider the monthly value paid for drinking water service to be "Normal," reflecting a general perception of rate equity. This data is relevant in the context of public services, since it indicates a level of acceptance acceptable to the economic cost of the service. 4% consider it "High" and only 1% perceive it as "Very Low", while no responses are reported at the "Low" and "Very High" extremes, which reinforces the idea that the cost does not generate significant concern among users.

Figure (15): Consideration of the payment of the monthly payroll

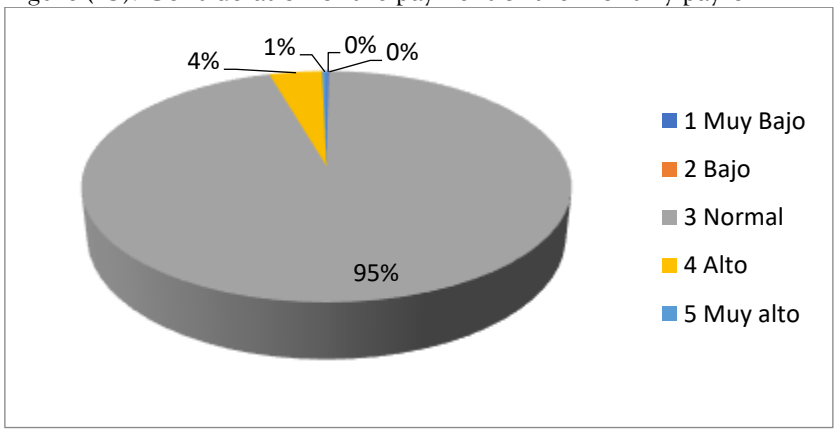


Figure 17 shows that 95% of respondents are highly willing to pay more for the service, as long as this leads to a tangible improvement in the quality of drinking water. While 5% would not agree to pay an additional cost.

Figure (16): Willing to pay more in the monthly payroll to have a better quality of water

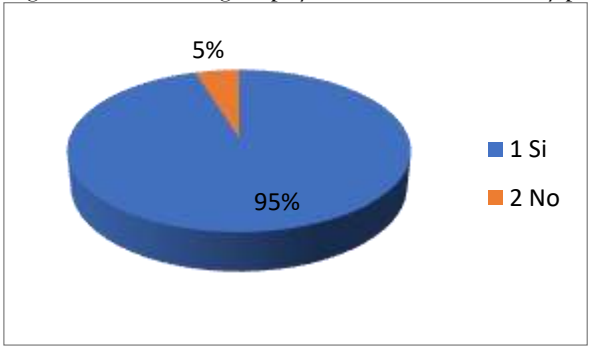


Table (2): Correlation of variables

Correlations								
		Water quality	Water Characteristic	Waste or disease	Water Service	Pressure, Cut, and Enhancements	Define and Cost	Pay more for an upgrade
Water quality	Pearson correlation	1	,956**	-,106*	,236**	,100*	-0,017	,460**
Water characteristics	Pearson correlation	,956**	1	-,393**	,233**	,108**	-0,027	,460**
Waste or disease	Pearson correlation	-,106*	-,393**	1	-0,050	-0,054	0,038	-,119**
Water Service	Pearson correlation	,236**	,233**	-0,050	1	,591**	,694**	,319**
Pressure, Cut, and Enhancements	Pearson correlation	,100*	,108**	-0,054	,591**	1	0,000	.103*
Define and Cost	Pearson correlation	-0,017	-0,027	0,038	,694**	0,000	1	-,204**
Pay more for an upgrade	Pearson correlation	,460**	,460**	-,119**	,319**	.103*	-,204**	1

**. The correlation is significant at the 0.01 level (bilateral).

*. The correlation is significant at the 0.05 level (bilateral).

A direct and substantial relationship is demonstrated between the perception of water quality and its physical characteristics. The correlation of 0.956 between "water quality" and "water characteristics" indicates that users who perceive good quality also associate favorable physical properties (smell, color, taste). This finding suggests a comprehensive perception in which quality is evaluated not only from technical parameters but also sensory ones.

Satisfaction with the water service exerts a significant influence on the user's capacity to delineate the service and acknowledge its associated costs. The high correlation (0.694) between "Water service" and "Define cost" indicates that an efficient service enhances the user's comprehension of its value, thereby facilitating pricing and collection processes.

The perception of waste or disease has been demonstrated to be inversely related to water characteristics. A study revealed a negative correlation of -0.393, indicating that when users perceive waste or health risks, they tend to evaluate the characteristics of the water negatively. This underscores the significance of upholding microbiological and visual standards.

There is a propensity to allocate a greater financial sum toward enhancements; however, this determination is influenced by the perception of quality and the quality of service received. The positive correlations between "Paying more for an improvement" and both "Water quality" (0.460) and "Water service" (0.319) reveal that the willingness to contribute financially increases when the user already experiences an acceptable level of service. This suggests the presence of a relationship of trust with the drinking water department.

DISCUSSION

The findings of this study indicate a predominantly neutral perception regarding the quality of drinking water service in the urban area of Latacunga, with 94% of respondents rating it as "Regular." However, the cost of the service is widely accepted (95% consider it "normal"), and most importantly, the majority is willing to pay more in case this results in a tangible improvement in water quality. This attitude is indicative of an explicit social demand for improvements in two domains: first, the quality of the service provided; and second, the physical-chemical and microbiological quality of the water consumed by citizens. In this context, it is imperative to consider the observations made by Ibarra (2018), who underscores the pressing necessity to refurbish the laboratories of the Loma de Alcoceres treatment facility, given the present absence of fundamental equipment necessary for the effective regulation of water treatment processes.

The accumulation of sediments in catchments and reservoirs, as well as the lack of cleanliness in distribution networks, has led to a progressive reduction in available flow, especially in peripheral areas or higher altitudes, where pressure is considerably lower. This deficiency impacts both the quantity and quality of water, due to the potential proliferation of microorganisms in stretches where the flow is low or non-existent for several hours per day.

The implementation of a technical improvement plan would be pertinent in Latacunga. This plan must include specific actions to ensure the system's effectiveness and reliability. Such actions include the hydraulic readjustment of the system to guarantee constant pressure, the periodic cleaning of catchments and reservoirs, and the improvement of the supply flow. These actions may include the increase of collection points, the reduction of losses in the network, or the modernization of control valves.

The findings of this study reveal a discrepancy between the infrastructure of the service and the social perception of water health security. Notwithstanding the fact that the water is delivered to residences via a piping system, a segment of the population expresses concerns regarding its potability, citing concerns about its quality and safety. This mistrust is further compounded by the fact that a considerable proportion of users eschew direct consumption of tap water, opting instead for alternatives such as bottled or boiled water. This behavior is indicative of a pervasive perception of risk that remains unaddressed by the management of the system.

A contributing factor to this distrust is the inadequate maintenance of the reservoirs, a critical weakness of the system as reported by users. The absence of regular and sufficient cleaning at these storage points has two main consequences. First, it results in the deterioration of the quality of the treated water. Second, it leads to the contamination of the resource before its final distribution. This assertion stands in direct opposition to the fundamental principle of water treatment, which posits that effective treatment at the initial stage is but one component of a multifaceted approach. The second component is the assurance of a clean and well-maintained infrastructure throughout the distribution network up to the point of consumption.

However, access to piped water alone does not guarantee its potability. It is important to note that the mere passage of water does not guarantee adequate treatment, nor does it ensure the absence of microbiological or chemical contaminants. Therefore, it is imperative that the management of the service incorporates rigorous monitoring and maintenance protocols, in addition to educational initiatives, with the objective of rebuilding public trust in the drinking water system.

CONCLUSIONS

The majority of respondents in the urban area of Latacunga rate the quality of drinking water service as "regular," indicating a social perception of neutral conformity. This rating suggests that, despite the presence

of the service, there are significant shortcomings in terms of quality, continuity, and confidence in the direct consumption of water.

The residents of Latacunga, in the urban sector, not only recognize the issues with the drinking water system, but also actively demand structural solutions. These include improving water treatment, regularly cleaning reservoirs, refurbishing laboratories, and optimizing flow and pressure in the network. This perception can represent an opportunity for participatory and more efficient management of water resources.
The surveys conducted in urban areas have provided valuable insights into the deficiencies in each parish. While the majority of respondents perceive the quality of water in their homes as consistent, it is important to note that there is a minority who do not share this perception. This diversity of opinion underscores the need for authorities to consider the views of these individuals to enhance the quality of services provided.
A critical evaluation of the drinking water system's performance, as perceived by users, emerges as a valuable source of insight, transcending the confines of technical parameters. This perspective, derived from the users' daily experiences, offers a nuanced and holistic view that cannot be fully captured by conventional evaluation methodologies. The incorporation of this vision into the decision-making process has the potential to enhance water governance, augment institutional legitimacy, and facilitate the implementation of improvement processes that genuinely align with the needs of the population.

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