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ORGANIZATIONS' KNOWLEDGE OF THE WATER SCARCITY PROBLEM

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Abstract: Water is an essential resource for both society and companies, since many of the activities that determine their subsistence and development depend on it. Due to the importance of this resource for companies, it is of interest for organizations to design strategies for the adequate use, management and care of water; however, for the design, it is necessary to start with a diagnosis of the level of knowledge that companies have about the problem of scarcity, causes and consequences and the current frequency with which they are aware of the global problem faced by this natural resource, which leads to the convenience of this research, whose purpose is to determine the level of knowledge of companies about the problem of water scarcity and the existence of a relationship with the frequency with which they are aware of this problem. The research has a descriptive method and combines qualitative and quantitative elements since it studies a phenomenon susceptible to quantification; it is correlational, because it examines the relationship between variables, and transversal since it is carried out in a determined period of time and in a specific population; The interview technique was used for the study, for which a questionnaire was designed as a measuring instrument directed to a sample of members of the companies in the area within the state of Veracruz, Mexico, from which data were collected and analyzed to achieve the established objectives, answer the research question and evaluate the hypothesis.

Keywords: Awareness, non-renewable resource, water care.

INTRODUCTION

Water is a vital non-renewable natural resource not only for business, but also for humanity, on which we depend for our very survival. Therefore, water scarcity is a worldwide problem for both business and society itself. (Swain, 1998)

Therefore, it is necessary to take up and work on scarcity, in which reference is made to social processes, conceiving it as a social construction, as a situation in which water is insufficient for the realization of social activities, resulting from the fit or correspondence between various actions, (Padilla, 2012) for the management, use and care of water.

It is essential to revalue and readjust water management in order to make better use of water. It is also necessary to strengthen proactive activities at all levels: population, planners, government and non-governmental organizations to coordinate good use and thus avoid the abuse of water, which faces a severe shortage problem, caused largely by poor management. It is the responsibility of governmental institutions to promote dialogue with other social actors so that, jointly, they can complement their potential to define lines of action aimed at making the right to water a reality in Mexico, as in other parts of the world, and not just a wish (Jabardo y Padilla, 2026).

Due to the importance of water scarcity problems, not only for society, but also for the organizations, in the specific case of the organizations in the central zone of the state of Veracruz, which have presented problems of management and scarcity of this natural resource that have limited their development and that of the region, the convenience of this study derives.

The objectives of this research are “To determine the level of knowledge that companies in the central zone of the state of Veracruz have about the problem of water scarcity”, “To identify the frequency with which companies in the central zone of the state of Veracruz are aware of the problem of water scarcity”, to “Determine if there is a relationship between the level of knowledge that companies have about the problem of water scarcity and the frequency with which they raise awareness about this problem” deriving as a research question “Do companies in the central zone of the state of Veracruz frequently raise awareness about water scarcity?” and hypothesis “The companies in the central zone of the state of Veracruz frequently raise awareness about water scarcity”. The research limits the study to companies in the municipalities of Actopan, La Antigua, Puente Nacional, Ursulo Galvan, Veracruz and Boca del Rio, located in the central zone of the state of Veracruz.

Finally, with the results obtained, identify the level of knowledge of the companies about the problem of water scarcity and if there is a relationship with the level of awareness of the companies on this issue, which allows the generation of recommendations that contribute to a better use and care of this natural resource, which is vital and non-renewable in the region.

BODY

This research, derived from the project “Evaluation of water use and management in organizations and society”, has a descriptive method, since it seeks to identify and describe the use and management of water in organizations in the central coastal zone of the state of Veracruz.

This research combines qualitative and quantitative elements, since it is aimed at identifying, as well as determining the frequency of implementation of water use

and management strategies in organizations and households of the society of the central coastal zone of the state of Veracruz.

Likewise, it has a quantitative method because it studies phenomena susceptible to quantification and uses statistical tests for data analysis.

The study began with a documentary research, in which written information on a given topic was analyzed in order to establish relationships, differences, stages, positions or current state of knowledge on the topic under study (Bernal, 2010). This documentary review allowed the generation of the theoretical framework and to know the state of the art of the subject of study.

The research is cross-sectional in that it is proposed to be carried out in a specific time and in a specific population. The organizations of the central coastal zone of the state of Veracruz are considered as the object of study, and the members of the organizations of this zone are considered as the subject of study.

The field study was carried out in companies in the municipalities of Actopan, La Antigua, Puente Nacional, Ursulo Galvan, Veracruz and Boca del Rio, located in the central zone of the state of Veracruz, using the interview technique for which a structured questionnaire was designed as a measurement instrument. This questionnaire was validated in April 2024 by means of a pilot test on a small sample, in which no doubts arose about the questions included in the questionnaire and no observations for improvement were made, and the respondent understood and answered the questionnaire correctly, so it was considered validated.

The final survey was conducted during the period from May to July 2024 from 10:00 am to 8:00 pm:00 hours, in which the instrument validated in the pilot test was applied to a random sample of companies located in the municipalities mentioned above, obtained

from a finite population identified in the Mexican Business Information System (SIEM) page; the sample size was determined using a formula for the calculation of sample size for finite populations, with a confidence level of 95% and margin of error 10%, defining a sample of 1164 respondents belonging to the organizations under study.

Finally, during the months of August to October 2024, data capture, classification, graphical representation and analysis were carried out using a spreadsheet (Excel) and Statistica software, from which information was obtained to achieve the established objectives, answer the research question and evaluate the research hypothesis, from which conclusions were reached that allowed the generation of recommendations.

The survey revealed the following results that allowed us to determine the level of knowledge that companies in the central zone of the state of Veracruz have about the problem of water scarcity and their level of awareness of the issue:

The municipalities to which the companies evaluated belong are Ursulo Galvan, with 33%, followed by the municipality of La Antigua with 29%, Actopan with 20% and Veracruz, Puente Nacional and Boca del Rio with less presence, as shown in Figure 1.

Regarding the level of knowledge that the companies have about the problem of water scarcity, 77% of the organizations stated that they have a very high level of knowledge, followed by 38% of the companies with a medium level, 33% with a high level, and to a lesser extent those with a low, regular and null level, as shown in Figure 2.

Regarding the frequency with which companies raise awareness of the problem of water scarcity, 30% of the organizations Frequently raise awareness, followed by 27% Very frequently, 26% Occasionally raise awareness and, to a lesser extent, those that

Cas never or Never raise awareness of the problem, as shown in Figure 3.

Finally, with respect to the relationship between the level of knowledge that the companies have about the problem of water scarcity and the frequency with which they raise awareness among their members and in the development of their activities, the scatter diagram shown in Figure 4 showed a linear relationship between the level of knowledge that the companies have and the frequency with which they raise awareness. The diagram shows a positive covariance, since the higher the level of knowledge of the companies (X), the higher the frequency with which the organizations raise awareness (Y), and vice versa.

The diagram also shows a simple linear correlation coefficient of 0.2909, which indicates that there is a very low positive correlation between the variables represented in the graph, meaning that there is a relationship between the level of knowledge and the frequency with which companies are made aware of the problem of water scarcity.

CONCLUSIONS

According to the results obtained, it is concluded that the majority of the companies (77%) have a very high level of knowledge about the problem of water scarcity, as shown in Figure 2, which achieves the first research objective *“To determine the level of knowledge that companies in the central zone of the state of Veracruz have about the problem of water scarcity”*, which, shows an impact on the frequency with which the companies are aware of this problem, since 83% (the majority) of the companies are very frequently, frequently and occasionally aware of this problem, as shown in Figure 3, which demonstrates the achievement of the objective *“To identify the frequency with which the companies in the central zone of the state of Veracruz are aware of the problem of water scarcity”*.

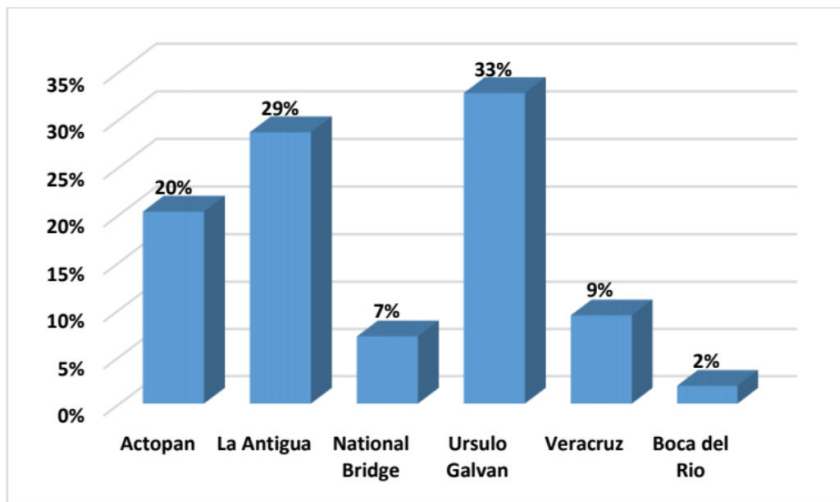


Figure 1. Municipality in which the companies are located.

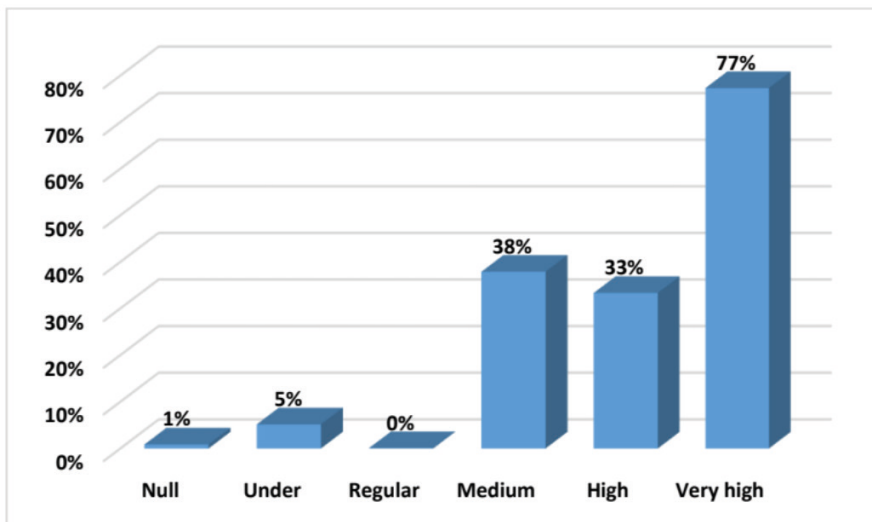


Figure 2. Companies' level of awareness of the water scarcity problem.

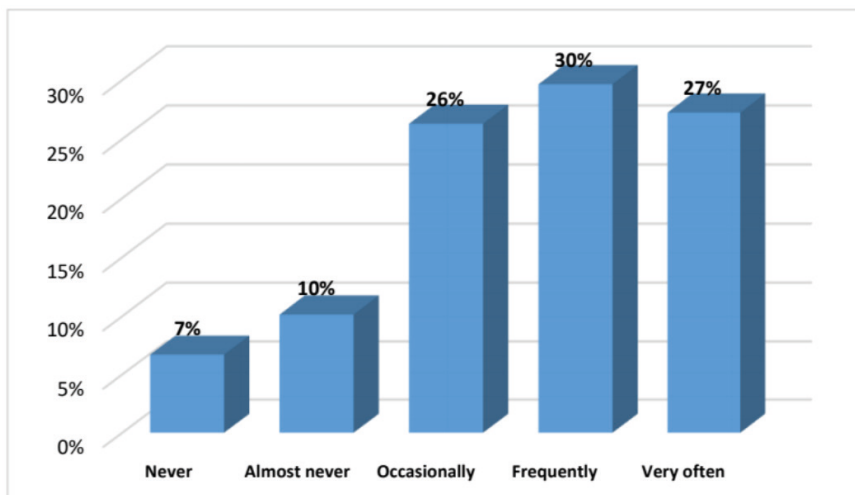


Figure 3. Frequency with which companies raise awareness about the problem of water scarcity.

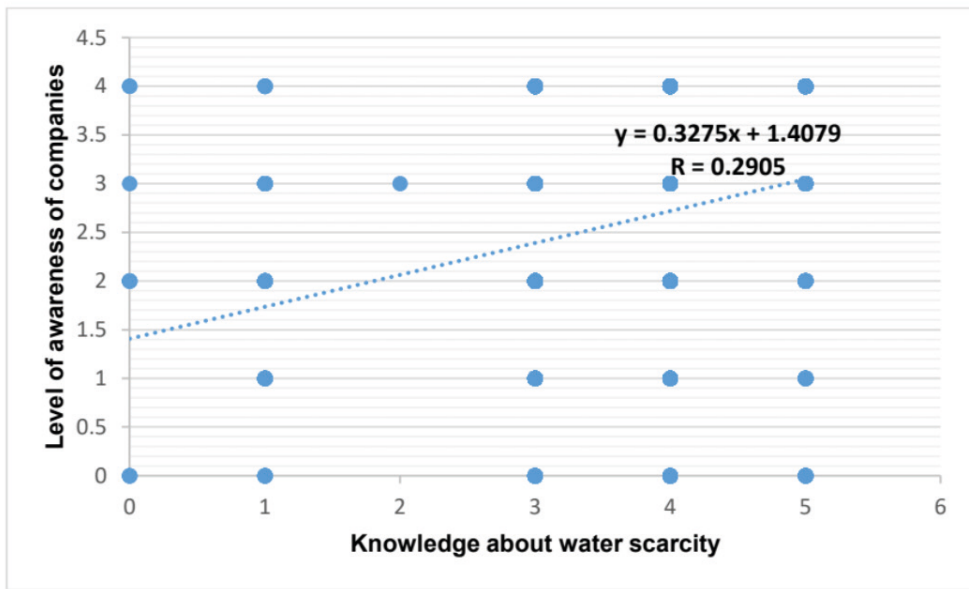


Figure 4. Relationship between the level of knowledge of the water scarcity problem and the level of awareness of the companies.

It was possible to “Determine if there is a relationship between the level of knowledge that companies have about the problem of water scarcity and the frequency with which they raise awareness about this problem”, which in the scatter diagram in Figure 4, shows a simple linear correlation coefficient of 0.2909, indicating the existence of a very low positive correlation between the variables represented in the graph.2909, indicating the existence of a very low positive correlation between the variables represented in the graph, meaning that there is a relationship between the level of knowledge and the frequency with which companies are made aware of the problem of water scarcity; however, the relationship is not statistically significant, so it does not justify performing a regression analysis.

Likewise, the evaluation provided an answer to the research question “Do companies in the central zone of the state of Veracruz frequently raise awareness about water scar-

city?” and, in turn, accepted the hypothesis “Companies in the central zone of the state of Veracruz frequently raise awareness about water scarcity” as shown in Figure 3, in which the majority of companies (57%) frequently to very frequently raise awareness about the problem of water scarcity.

Finally, with the above mentioned, it is suggested that the study companies, derived from the level of knowledge, become more aware of the problem of the scarcity of vital natural resource, as well as the design and implementation of strategies and awareness campaigns of such a serious problem, as well as the care of water, since it is not only vital for companies, but for the survival of humanity.

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