

Customers' satisfaction assessment in water laboratories

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ABSTRACT

In the literature, several definitions of quality can be found in the context of organizations. However, all of them are related to customer satisfaction with the products or services offered by companies. Thus, organizations are increasingly committed to meet customers' requests, aiming to promote high levels of satisfaction. This study aims to evaluate the levels of satisfaction of water laboratory customers and to establish a predictive model for customers' satisfaction assessment. To achieve this goal, artificial intelligence methods have been used. A questionnaire was used to collect data and applied to a cohort including 253 customers. The results showed most of the customers rating the global performance of the laboratory as positive. However, this study revealed that clarity of answers to customers' questions, reliability of the results, and presentation of analytical results contributed most to customers' dissatisfaction. The model presented in this study, based on artificial neural networks, exhibited good performance in the prediction of the customers' satisfaction and contributed to establish improvement measures to promote their satisfaction.

Key words: artificial intelligence, artificial neural networks, customers' satisfaction, ISO/IEC 17025 standard, quality management, water laboratories

HIGHLIGHTS

- Satisfaction of customers of water laboratories was evaluated based on the ISO/IEC 17025 standard.
- Questionnaire was prepared and applied to a cohort of 253 customers to access their satisfaction levels.
- A formal method for customer satisfaction assessment based on artificial neural networks was used.
- The study identified issues that most contributed to customers' satisfaction.