

**UNIVERSITI TEKNOLOGI MARA**

**TECHNICAL REPORT**

**CUSTOMER SATISFACTION EVALUATION OF  
WATER QUALITY USING FUZZY CONJOINT AND  
GREY RELATIONAL ANALYSIS METHOD**

**(P15M19)**

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## **ABSTRACT**

Customer satisfaction is a metric used to quantify the degree to which a customer is happy with a product, service or experience. Literally, the justification of customer satisfaction is calculated by percentage and statistical mean. However, some of the results obtained from the analysis by using percentage are not really consistent. Furthermore, since there are five criteria that should be analysed, therefore the ranking of the most satisfied criteria of water quality need to be done in order to achieve the desired result of customers' satisfaction level. The aim of this study is to analyse the data of customer satisfaction of water quality by using Fuzzy Conjoint Analysis method for every criteria and also to determine the most preferable criteria according to customers' satisfaction by using Grey Relational Analysis (GRA) method. The data of customer satisfaction of water quality for domestic, commercial, institution and industry was evaluated by using Fuzzy Conjoint Analysis and the criteria was ranked by using GRA. The result shows that the analysis using Fuzzy Conjoint method produced only one decision compared with analysis using percentage. Furthermore, GRA method which is using equal weight and entropy weight also produced consistent result in ranking the level of customer satisfaction for every criteria. In conclusion, both Fuzzy Conjoint and GRA method are reliable to be applied in this study because it can be used to compare the decisions between criteria used to measure customer satisfaction, and hence is very useful in providing additional information for decision making.