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Consumers' satisfaction with a product analysed through the lens of fuzzy theory

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Consumer satisfaction, among other feelings, towards products or services are usually captured, both in industry and academia, by means of ordinal scales, such as Likert-type scales. This kind of scales generates information intrinsically affected by uncertainty, imprecision and vagueness for two reasons: 1) the items of a Likert scale are subjectively interpreted by respondents based on their culture, personal background, experience, understanding of the question and of the phenomenon under investigation; 2) respondents are asked to convert their thinking into a linguistic expression, usually coded into a natural number, and this double conversion may cause loss of information or the generation of incorrect information.

In the last decades, there has been an increasing interest of the scientific community in developing statistical techniques suitable to analyse this kind of data. Fuzzy theory established itself as one of the most powerful tools to analyse ordinal scales.

This research aims to present a real case study in which consumers have been clustered based on their satisfaction against some product's KPI using a fuzzy approach.

In particular, Likert-type data (i.e. KPI satisfaction) have been recoded into trapezoidal fuzzy numbers. The fuzzy C-medoid clustering algorithm for fuzzy data has then been applied to identify homogeneous groups of consumers with respect to their product satisfaction.

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