

A model for the integration of e-financial services questionnaires with SERVQUAL scales under fuzzy linguistic modeling

Highlights

- We develop a model based on the fuzzy model based on semantic translation (FMST) under the perspective of the SERVQUAL instrument.
- The model proposed allows integrate heterogeneous information drawn from four web questionnaires containing various questions.
- The study has been applied to the case of SERVQUAL dimensions and satisfaction of customers of a savings bank.
- To identify the type of customer, we calculate a linguistic summary for each customer as proposed in Yager (1996).
- According to the FMST parameters, we represent responses by means of a maximum, minimum or zero semantic translation of the initial terms.

Abstract

Although it is habitual to measure human perceptions with quite accurate instruments, perceptions are characterized by uncertainty and fuzziness. Furthermore, variations in individual perceptions and personality mean that the same words can indicate very different perceptions. In this context, the fuzzy linguistic approach seems to be an appropriate framework for modeling information.

In this paper we explore the problem of integrating semantically heterogeneous data (natural language included) from various websites with opinions about e-financial services. We develop an extension of the fuzzy model based on semantic translation (FMST) under the perspective of the service quality (SERVQUAL) stream of research.

The model permits us to obtain a more precise representation of the opinions using each type of customers. By integrating all customers into different subsets, a financial entity can easily analyze the SERVQUAL characteristics over time or other dimensions owing to the easy linguistic interpretability and high precision of the results of the model.

Keywords

SERVQUAL scale, Data summarization, Fuzzy linguistic modeling, Opinion aggregation, Heterogeneous data integration, e-Financial services