

# A Study of Establishing a Decision Support System for Customer Satisfaction Analysis

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## ABSTRACT

In recent years, the concept of customer relationship management has gradually been noticed in most enterprise organizations. Also, customer satisfaction has always played an important role in customer relation management. Customers would decide their level of satisfaction according to their preference and subjective consciousness toward enterprises. Therefore, the success or failure of an enterprise is directly proportional to the level of customer satisfaction. However, at present, there is lack of an effective decision support tool that integrate product sale and the quality management to analyze customer satisfaction, thus, it is difficult to analyze the customers' authentic satisfaction and their willingness for re-buying. The propose of thesis is to establish complete customer satisfaction analysis system. Our theoretic basis is based on making use of multi-criteria satisfaction analysis (MUSA) to observe customer satisfaction from the whole customers and linguistic additive majority aggregation (LAMA) to observe Customer Satisfaction for the individual customer. In this way, we establish a decision support system for customer satisfaction analysis.

Keywords : decision support system, customer satisfaction analysis , multi-criteria satisfaction analysis , linguistic additive majority aggregation

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## REFERENCES

[1] Oliver Richaard L. (1980), " A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions, " Journal of Marketing

Research, Vol.17, No.11, pp.460-469.

- [2] Reichheld, F.E. and W.E. Sasser Jr. (1990), " Zero-Defections Quality comes to services, " Harvard Business Review, Sep-tember-October, pp. 105-111.
- [3] Bolton, R. N. and J. H. Drew (1991), " A Multistage Model of Customers ' Assessments of Service Quality and Value, " Journal of Consumer Research, pp.375-384.
- [4] ohnson, M.D.and Fornell, C. (1991), " A Framework for Com-paring Customer Satisfaction Across Individuals and Product Categories, " Journal of Economic Psychology, Vol.12, No.3, pp.267-286.
- [5] Kotler, p. (1991), Marketing Management-Analysis, Planning, Implementation and Control , 7th edition, NJ:Prentice-Hall.
- [6] Brown, T.J., G.A. Chruchill and J.P. Peter (1991), " Improving the Measurement of Service, " Journal of Retailing, Vol.69-1, pp.127-139.
- [7] Fornell, C. (1992), " A National Customer Satisfaction Barome-ter:The Swedish Experience, " Journal of Marketing, Vol.56, No.1, pp.6-21.
- [8] Engel, James f., Roger d. Blackwell, and pull W. Miniard (1993),Consumer Behavior, 7th ed., New York, NY: The Dryden, p.559.
- [9] Kotler, P., Leong, S. M., Ang, S. H. and Tan, C. T. (1996), Mar-keting Management: An Asian Perspective, pp.617-620.
- [10] Day, Ralph L. (1997), " Extending the Concept of Consumer Satisfaction, " Atlanta: Association for Consumer Research, Vol.4, pp.149-154.
- [11] Czepiel, John A. (1974) , Perspective on Consumer Satisfaction, AMA Conference Proceedings, pp.119-123.
- [12] Grigoroudis E. and Siskos Y. (2002), Preference disaggregation for measuring and analysing customer satisfaction: The MUSA method, European Journal of Operational Research, 143, pp148-170.
- [13] A.Parasurama, Valarie A. Zeithaml, and Leonard L. Berry (1996), " Reassessment of Expectation as a Comparison Stan-dard in Measuring Service Quality: Implications for Future Re-search, " Journal of Marketing, Vol.58, pp.111-124.
- [14] Erevelles, S. & Leavitt (1992), " A Comparison of Current Mod-els of Consumer Satisfaction/Dissatisfaction. " Journal of Con-sumer Satisfaction, Dissatisfaction and Complaining Behavior, Vol. 5, pp. 194-114.
- [15] Holbrook, M.B., (1983). " Using a structural model of halo ef-fect to assess perceptual distortion due to affective overtones, " Journal of Consumer Research, Vol. 10, pp. 247-252.
- [16] Fornell, C. (1992), A National Customer Satisfaction Barometer: The Swedish Experience. Journal of Marketing, Vol.55, pp1-21.
- [17] Fornell, C., M. D. Johnson (1996), et al. The American Cus-tomer Satisfaction Index: Nature, Purpose and Findings. Journal of Marketing, Vol.60(4), pp 7-18.
- [18] ECSI technical committee. (1998). European customer satisfac-tion index: foundation and structure for harmonized national pi-lot projects, report prepared for the ECSI steering committee, October.
- [19] Pelaez J. I. and Dona J. M., (2003), " LAMA: A Linguistic Ag-gregation of Majority Additive Operator, " International Journal in Artificial Intelligence. Vol. 18, 7, pp. 809-820.
- [20] Wei-Shing Chen and Wei-Shung Chang (2004), Customer Seg-mentation Using Satisfaction Demanding Analysis , Interna-tional Journal of Electronic Business Management, Vol. 2, No. 4, pp. 219-227.