Research on Building New Service Quality Decision Making Model: Application of IPA and BPNN

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Abstract

Service quality has been considered as a critical driver to improve customer satisfaction and thereby increase a firm's competitiveness. And traditional importance-performance analysis (IPA) is a simple and useful technique which can help managers identify which attributes should be improved to increase service quality. Therefore, IPA is an effective decision-making technique and has been broadly applied to various fields, such as service marketing, medical service industry, travel and tourism, etc. The application of IPA focuses on clarifying attributes' improving priorities from customers' perception and expectation by depicting a two-dimensional matrix with four strategic quadrants. Furthermore, managers can give correspondence strategies to these attributes in different quadrants. However, previous scholars indicated that two implicit assumptions underlie IPA: (1) Attribute importance and performance are two independent variables, (2) The relationship between attribute performance and overall satisfaction is linear and symmetrical. However, based on the Kano's model, the relationship between attribute performance and overall satisfaction is not linear absolutely. Furthermore, numerous studies showed that the relationship between attribute performance and importance is causal. So, obtaining both attributes' performance and importance by using customers' self-stated evaluation is not a superior approach while improving customer satisfaction. To this end, Back Propagation Neural Network (BPNN) will be chosen to revise the IPA model in this

research due to its capability for dealing with
both linear and non-linear issues and shortening the distance of actual
and expected value. In brief, the purpose of this
research is to apply BPNN to build valuable functions for calculating both
attributes performance and importance to
substitute customers' self-stated evaluation. To verify the validity and
implementation of this modified model, a
Taiwanese HR service agency case was presented and the applicable strategy
for each service attribute was also
acquired.