

Abstract: This paper investigates the nonlinear relationship between customer satisfaction and loyalty by using homogenous and heterogeneous functional forms. We extend the relationship proposed by the customer satisfaction index (CSI). We examine different functional forms on how satisfaction affects loyalty and propose models that reflect intrinsic characteristics of nonlinear effects, such as saturation-attainable limit of effectiveness, non-constant marginal return, and asymmetric response between satisfied and dissatisfied customers, and consumption tolerance, in a parsimonious way. Two research methods are included in the analysis. The first one is estimated via a hierarchical Bayes nonlinear model to accommodate structural homogeneity across companies. The empirical analysis by using survey data shows that under the homogeneity assumption,

- (1) hierarchical Bayes models estimated by borrowing other companies' data are better than the independent model,
- (2) nonlinear models perform better than linear models,
- (3) nonlinear model with asymmetric marginal returns and attainable limits is found to be the best model.

The second one is estimated via finite mixture model to accommodate structural heterogeneity across companies. The analysis shows that under the heterogeneity assumption, (1) the finite mixture model performs best, (2) companies have various structural forms, (3) about half companies tend to threshold linear model, in which the consumption tolerance interval can be measured.

The key contributions of the paper include a nonlinear structural equation model that includes nonlinear term of endogenous latent variable, the combination between finite mixture and structural equation model, and an efficient algorithm of MCMC in terms of multi-move sampler by using Gibbs sampling.