

A Finite Mixture Logit Model to Segment and Predict Electronic Payments System Adoption

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Despite much hype about electronic payments systems (EPSs), a 2004 survey establishes that close to 80% of between-business payments are still made using paper-based formats. We present a finite mixture logit model to predict likelihood of EPS adoption in business-to-business (B2B) settings. Our model simultaneously classifies firms into homogeneous segments based on firm-specific characteristics and estimates the model's coefficients relating predictor variables to EPS adoption decisions for each respective segment. While such models are increasingly making their presence felt in the marketing literature, we demonstrate their applicability to traditional information systems (IS) problems such as technology adoption. Using the finite mixture approach, we predict the likelihood of EPS adoption using a unique data set from a Fortune 100 company. We compare the finite mixture model with a variety of traditional approaches. We find that the finite mixture model fits the data better, controlling for the number of parameters estimated; that our explicit model-based segmentation leads to a better delineation of segments; and that it significantly improves the predictive accuracy in holdout samples. Practically, the proposed methodology can help business managers develop actionable segment-specific strategies for increasing EPS adoption by their business partners. We discuss how the methodology is potentially applicable to a wide variety of IS research.

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