

# Dissertation Abstract: Essays in Industrial Organization and Applied Econometrics

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## **Chapter 1. When Consumers Are Fascinated by Brand-New Models: A Case of US Golf Drivers Market (*Job Market Paper*)**

This study sets up a dynamic model of demand to identify consumers' preferences for "newness" of products in a new durable goods market, namely golf drivers market. Forward-looking heterogeneous consumers with preferences for newness of products decide when and what to purchase. The model also accounts for the fact that the market is highly subject to seasonal fluctuations. Using the aggregated data from the US golf drivers market the model succeeds at identifying consumers' preference for newness of products when the seasonality and quality difference are controlled for. Experiments with different assumptions are performed to confirm the robustness of the model. Finally, a counterfactual analysis of a merger scenario is carried out to see the effect of consumers' preferences for newness on the volume of sales.

## **Chapter 2. Grouped Mixed Proportional Hazard Model with Social Interactions: Analysis of Motorcycle Helmet-Use Law (with *Yoonseok Lee*)**

This study finds that the state legislation decision on the mandatory motorcycle-helmet-use law is affected by the neighboring states' choices. It turns out that such a social interaction is one of the key factors in this decision making, whereas the fatality rate from motorcycle- accidents is not so. Using the U.S. state level panel data, the analysis is conducted by developing a mixed proportional hazard model with grouped data, which allows for possible cross sectional duration dependence. Though this analysis does not give an answer to a long-debated issue whether to introduce the mandatory motorcycle-helmet-use law, it explains a behavioral aspect of the legislative decision making procedure (i.e., social interactions) and empirically shows how the proximity between agents affects the decision making.

## **Chapter 3. Estimation of Latent Dependent Variables in Dynamic Panel Data Models with Lagged Ranking as a Regressor**

This study deals with a dynamic panel data model where the dependent variable is latent while only its ranking among individuals is observable at each time period. It sets up a dynamic panel data model where the latent dependent variable is characterized by its ranking in the previous period and current exogenous variables along with individual heterogeneity. In order to overcome a small sample problem when the number of individuals is large and the number of time periods is small, it uses the explosion property of logit models with ranked data. As an application, this study applies the econometric model to the panel ranking data of the best states for business announced by Forbes magazine. It finds a significant relation between lagged ranking, along with selective covariates, and current business environment.