



The University of Chicago
Department of Statistics

MASTER'S THESIS PRESENTATION

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**A Simulation-Based Approach for Eliminating
Aggregation Bias in Aggregated Marketing Data**

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ABSTRACT

Aggregation bias is a well documented effect that arises in many contexts and fields. Models estimated from data that has been aggregated across time, products, stores, or individuals will produce different parameter estimates than identically specified models estimated from the disaggregated data. In marketing, market-level data is frequently all that is available to analyze effects which are best studied at a household or store level. Much research has been done on how to recover consumer or store-level parameters from market-level scanner data. We will review the scope of the aggregation bias problem with respect to scanner data, review proposed methodologies, and propose a new methodology that treats the disaggregated data as missing and uses the EM algorithm to estimate the disaggregated parameters.