**Abstract**

The snack food company Frito-Lay relies on Route Sales Representatives (RSRs) to stock and maintain shelves of snack foods in every store. Frito-Lay currently does not have a system which can accurately predict cannibalization, or the effects of a store opening or closing on other stores of the same chain in the area. The goal is to sort through 1900 stores in a given metropolitan area to see the effects of cannibalization. In order to tackle the problem, a Microsoft Access program was created to filter stores based on location or whether the store was open for the full three-year duration or not.

The analysis of an opening or closing store is divided between the long-term and short-term effects. An examination of the long-term effects begins by focusing on eliminating seasonal and yearly trends. Seasonal trends are deemed to be insignificant due to the lack of a dominant oscillation within the year. Next, yearly trends are eliminated by performing an individual regression analysis between the introduced store and a nearby store and tracking the sales changes on control charts. A scatterplot is created using the distance between the neighboring store and the introduced store versus the sales changes. A trend line is fitted to the data, but little correlation can be seen. The long-term effects are inconclusive because the model does not incorporate different factors that could affect sales numbers.

The short-term effects were analyzed using a combination of control charts, percentage changes, and sales averages before and after the store’s introduction. The most statistically significant interactions were same-store cannibalization for mass merchandisers and supermarkets. This supports the already-standing practices by Frito-Lay.