

# Predicting Volume Market Shares of Consumer Brands using Bayesian Dirichlet Regression

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Volume market share of a consumer durable brand at any time  $t$  is defined as the ratio of the volume sales of the brand at  $t$  and the total volume of the category at  $t$ . This is a key metric to understand its relative standing amidst competition. The value of a market share is between 0 and 1 and the aggregated market shares of all brands within a category is 1 at any given time  $t$ . Hence, market share data is compositional in nature. Modelling and applying compositional data have been discussed extensively in the literature during the past 40 years and there are vector-based methods such as VARMA and dynamic time varying methods. A more recent entrant for modelling market shares is using Dirichlet regression. In our talk, we apply Bayesian Dirichlet regression for predicting market share of brands in a condiment category and discuss extensions to a dynamic setting.

**Keywords:** CPG, Dirichlet Regression, Market Share Model, Compositional Data, Time Series.