Exploring the use of machine learning and explainability in Marketing Mix Modeling

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Abstract

Marketing Mix Modeling (MMM) employs statistical techniques, typically linear regressions, to assess the impact of advertising expenditure on sales. Despite advancements in statistics and machine learning, the field of MMM has remained relatively unchanging due to a few reasons: (1) its primary focus on practical business applications, (2) the proprietary nature of MMM solutions by specialized companies, and (3) the difficulty in interpreting complex models beyond linear regressions for business purposes.

Recently, there has been increased emphasis on the interpretability of complex machine learning models. To address this, model explainers such as SHAP have been introduced, enabling the application of non-linear machine learning algorithms in the realm of MMM. This provides a solution to the various issues associated with traditional MMM methods, including variable interactions, non-linear relationships, and interpretability.

This presentation outlines a method for incorporating machine learning algorithms with explainability techniques in the context of MMM in the retail industry

Keywords: *MMM; Marketing Mix Modelling; Machine Learning; MMM Explainability; SHAP.*