Customer Analytics

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**Exercise 3 – Short- and Long-run Paid Search Advertising Response**

You are working as a marketing consultant for an online retailer. The retailer uses different marketing strategies to drive traffic to its online shop. You have been asked to give a recommendation on the performance of the retailer’s search marketing strategy, more specific on the paid search campaign. You have been given a dataset from Google Adwords that includes total daily visitors to the shop[[1]](#footnote-1) and daily spend ($) on paid search. The dataset spans 66 days from May 1st 2019. Use the models discussed in class to prepare a **BRIEF** report on the performance of the paid search campaign.

1. ***Short-run Response****.* Analyze the short-run response of clicks (i.e., visitors) to advertising (i.e., paid search spending).
2. Fit the following three models of advertising-click response (at this stage we will not add other information to the model; keep things simple and stick to advertising), report your results and comment, briefly.

i. Simple linear

ii. Concave logarithmic

1. Concave quadratic
2. Compute the advertising elasticity implied by each model (use July’s monthly clicks and advertising spent to scale the elasticities).
3. Which model is best? Which, if any, would you reject?
4. ***Long-run Response****.* Analyze the long-run response of clicks to advertising using the same data.
5. Fit the same three models of advertising response but incorporate an exponentially decaying lag effect for advertising. Report your results and briefly comment.
6. Compute the long-run advertising elasticity implied by each model (again use July’s monthly figures for scaling).
7. Which model is best? Which, if any, would you reject?
8. ***Saturation****.* Drawing on the models that you fitted above, compute the saturation level for advertising spending. Report results in terms of daily advertising spending.

1. Consumer can come to the shop by various routes: typing in the shop’s web address, using a bookmark, clicking on a banner ad or clicking on **a paid search ad**. [↑](#footnote-ref-1)