StatSquad
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Characterizing Profit-Generating Customers

Introduction

Edmund's makes approximately 35% of its revenue from leads, 50% from advertising, and 15% from other sources. Leads and advertising are thus major profit-generating venues and we investigate the factors associated with the number of leads a visitor submits and how susceptible they are to ads.

Additionally, because the mobile browsing experience is so different from desktop browsing, we conducted separate analyses for each platform to determine if factors affect leads and ad efficiency differently on the two.

Model Selection Process

Because there were so many possible predictors in *visitor* dataset we could potentially use, we simulated browsing through edmunds.com and making a lead, and hypothesized about a handful of variables that we thought would impact the number of leads of a visitor and advertising effectiveness on that user.

In addition to variables that characterize users, we also included variables describing the macro world at the time of a lead using gas price data from the Energy Information Administration (EIA) and the Consumer Confidence Index (CCI).

Using these variables we tested a couple linear regression models, and discarded variables that contributed to a high degree of multicollinearity to our model.

Final Models and Interpretation

Number of Leads Submitted					Ad Efficiency				
	Mobile		Desktop			Mobile		Desktop	
	Estimate	p-value	Estimate	p-Value		Estimate	p-value	Estimate	p-value
Intercept	0.4503	<0.001	0.4470	<0.001	Intercept	0.0067	<0.001	0.0071	<0.001
Used	-0.0790	<0.001	-0.0720	<0.001	Used	-0.0007	<0.001	-0.0008	<0.001
LAssist	0.0105	<0.001	0.0067	<0.001	LAssist	0.00001	0.7234	-0.00001	0.4869
LConsid	0.1931	<0.001	0.1916	<0.001	LConsid	-0.0009	<0.001	-0.0009	<0.001
AdEffic	0.7030	<0.001	0.3050	<0.001	GasPrice	-0.0006	<0.001	-0.0007	<0.001
GasPrice	-0.0740	<0.001	-0.0730	<0.001	LModels	0.0007	<0.001	0.0007	<0.001
LModels	-0.0351	<0.001	-0.0295	<0.001					

Used: Indicator for whether a used car was viewed, LAssist: Log(number of page views of articles and tools), LConsid: Log(number of page views of features, pictures, and reviews), AdEffic: Proportion of ads clicked on, GasPrice: Gas price during time of browsing, LModels: Log(number of models viewed)

Number of Leads:

- Both mobile and computer platform indicates a lower number of leads submitted when gas becomes more expensive
- Ad success (AdClicks/AdViews) is more effective on mobile than on computer platform
- People who viewed Used Car page actually submitted less leads

Ad Efficiency:

- The models for the mobile and computer platforms are very similar
- High gas prices are associated with less receptive people
- People who look at more models are more receptive to ads
- People who do more research are less receptive to ads