Appliance Marketing Project

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Model Results

The model includes 3 PCA loadings, MSRP, brand, and every product detail that had a count over 1000. The rest of the product detail was put into a "other" category. Not all of the revised product details were significant in the model. Overall, consumers are more likely to puchase washers than bottom freezers. The odds of consumer buying a bottom freezer are 75% higher than buying a gas cooktop. They are 22% more likely to buy an upright freezer than a bottom freezer. Cosumers are 9% more likely to purchase Premium Brand A than any average brand and are indifferent between average brands and Premium Brand B. There is essentially no movement in the rate of purchase with regard to MSRP.

I tried a couple of models. In the first one, only one refrigerator subcategory was significant, so I attempted a model where all the refrigerators were in one category to see if it would make a difference. In this model, the refrigerator category was not significant and I lost the sub category that was significant. I decided against using this model.

PCA

Using a scree plot, I narrowed the PCA loadings down to 3. The first loading was primarily concerned with family household types, household income, marital status, and age under 44. The first loading had a positive impact on the model. This PCA loading is 4% more likely to purchase. The second loading had a negative impact on the model and the third loading had a positive impact on the model. For every one unit increase in PC1, there is a .038 increase in log odds of purchase. For every one unit increase in PC2, there is a .016 decrease in log odds of purchase. And finally, for every one-unit increase in PC3, there is a .028 increase in log odds of purchase.