MGMT 590: Web Data Analytics

Homework #6

Total Points: 60

Ground rules about study groups: You may form a study group with other fellow students. As a study group, you may discuss the assignment, exchange ideas, and clarify questions for each other. However, any form of plagiarism, e.g., copying each other’s answers, is strictly prohibited and will be prosecuted based on the academic integrity policies and procedures. If you participate in a study group, you must include the name of the group members in your submission.

You are free to consult any external resources for reference.

Study group members (if any):

**Mobile Apps**

Consider yourself working for a global retailer that over the years has added a web-based channel to their physical store locations. Now, after learning more about mobile-led changes in retailing, they are excited about what the mobile ecosystem offers. They are seeking your help as they embark on using mobile as a channel. They want to commission a crack app development team to deploy a presence on iOS and Android. However, several questions arise about the deployment of the app so that it gets found and downloaded. Your job is to provide data driven insights to help them navigate this complex landscape.

Specifically, you are tasked with:

1. Developing a model to estimate demand for mobile apps. For this you have access to a large volume of app level data (in a file called GlobalMobileAppsExercise.csv), including information about the ‘rank’ of the app on the app store. Assume rank = 1/sales.
2. Your model should be able to speak in terms of elasticities of various factors that can influence sales (inverse of rank). For instance, how sensitive are sales to price of the app? By elasticity you want to speak to your management in percentage terms – what is the % change in rank for a % increase in price? (Tip: we do this using log-log-regression models.)
3. They are interested in understanding the impact of in-app purchase option and in-app advertising option on the elasticity of demand. (Tip: don’t forget to control for other relevant factors (e.g., price, file size, etc.) in estimating the impact of these two features. Also, use the interpretation help resources available at: <https://www.princeton.edu/~otorres/Stata/inference.htm>

<https://stats.idre.ucla.edu/other/mult-pkg/faq/general/faqhow-do-i-interpret-a-regression-model-when-some-variables-are-log-transformed/>.)

1. Your management also wants insights into platform specific, device specific, and geographic differences in the demand function. In other words, they want you to do sub-sample or also known as heterogeneity analyses separately for:
   1. US vs China
   2. tablets vs smart phones
   3. apple vs google
   4. free vs paid apps

# Please provide a concluding paragraph summarizing all the intuitions obtained from the exercise above.