Voting Turnout by Demographics

Access the dataset called “Voter\_Turnout\_Small”. This is data from the US Census that tabulates voting results across the past ten election cycles. Your task is to assess the demographic characteristics that affect voting in presidential and non-presidential election years.

1. Build a map that shows Voting Percentage in Presidential and Non-Presidential years by state in a single map (with 2 panels).
2. Determine the demographic descriptive statistics (percentages) for gender, race, age and education for Illinois in both presidential election and non-election years.
3. Use regression to model (Fit Model command) the impact of all demographic variables in both presidential and non-presidential election years. Describe which factors have the greatest impact and the nature of the relationship.
4. Using Profiler, determine your likelihood to vote in the current midterm election (assuming you are a resident of Illinois if you are not a US citizen) based on your demographic profile.

**Starbucks Survey**

Background Information:

Although Starbucks has been hugely successful, its penetration in grocery retail has been slower. Lacking expertise in grocery retail, Starbucks had contracted with Kraft foods in 1998 to sell bagged Starbucks coffee in grocery stores. However, unhappy with penetration in grocery shelves, Starbucks prematurely scrapped a contract with Kraft for which it [was fined $ 2.8 billion](http://www.wsj.com/articles/SB10001424052702303914304579194331955592154).

Recently management decided to conduct a large scale study of the ground caffeinated coffee market. The study involved understanding consumer purchase patterns using scanner panel data collected by IRI. In addition, the company conducted a consumer survey with a subset of IRI panelists with several objectives in mind, including the identification of benefits that consumers seek and the comparison of consumer beliefs regarding benefits of several brands offered in the market. A questionnaire was designed to accomplish these objectives. This questionnaire was mailed to 1400 individuals previously identified as consumers of ground caffeinated coffee (personally drinking at least one cup per day).

This Exercise:

In the file “coffee.jmp” you are provided responses from a representative sample of 300 customers. Please see the data file called “Coffee.jmp”. Var1 to Var20 refer to consumer ratings for various attributes of coffee on a scale of 1 to 10 where 1 refers to “NOT IMPORTANT” and 10 refers to “EXTREMELY IMPORTANT”. Specifically, consumers were asked to indicate how important it is to them that a ground coffee has each of the following characteristics:



[](http://images.google.com/imgres?imgurl=http://www.csr-asia.com/upload/starbucks.jpg&imgrefurl=http://www.csr-asia.com/index.php?id=7959&usg=__Mr-oDAP0HEqmvMnLPhTaTcjIoXM=&h=304&w=300&sz=131&hl=en&start=2&um=1&tbnid=uD-kQONq9xwJCM:&tbnh=116&tbnw=114&prev=/images?q=starbucks&hl=en&rlz=1T4GGLD_enUS311US311&sa=N&um=1)

|  |  |
| --- | --- |
| Var1 | Rich Taste |
| Var2 | Always Fresh |
| Var3 | Gets Day Off to Good Start |
| Var4 | Full-Bodied Taste |
| Var5 | Rich Aroma in the Cup |
| Var6 | Good Value for the Money |
| Var7 | Best Coffee in the Morning |
| Var8 | Rich Aroma in the Can/Bag |
| Var9 | Smooth Taste |
| Var10 | Highest Quality Coffee |
| Var11 | Premium Brand |
| Var12 | Not Bitter |
| Var13 | Coffee That Brightens Day Most |
| Var14 | Costs More Than Other Brands |
| Var15 | Not Too Strong in Taste |
| Var16 | Economical Brand |
| Var17 | Rich Aroma While Brewing |
| Var18 | Best Ground Coffee Available |
| Var19 | Enjoy Drinking With Meal |
| Var20 | Costs Less Than Other Brands |
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|  |  |

In addition, consumers were asked a few demographic questions of which information on Income and Age is provided in the data. Finally, each consumer provided a rating on a scale of 1 to 10 ( 1 being Dislike and 10 being Like) for 5 brands of coffee: ***Folgers, Hill Brs., Maxwell House, Starbucks, and Peete’s*** (these are in columns 22 to 26 in the data).

Your objective is to analyze this survey data and generate consumer segments to get a better understanding of the coffee market. Recommended steps are as follows:

1. Conduct a PCA/Factor analysis of the 21 attribute preference data. How many factors should you retain? Based on what criterion?
2. Name the factors that you generated.
3. Now conduct a Hierarchical cluster analysis to segment the population based on the saved factor scores in (a). In addition, include the two demographics and the ratings of the 5 coffee brands as additional means of segmentation. For this let’s use 5 Segment solution. Save the cluster membership for each household.
4. Which segment has highest preference for Starbucks? What is average income of this segment?
5. Do a correlation of 5 measures of brand preference. Which brand has the same appeal as Starbucks based on correlations?
6. Which brand is most popular among elderly consumers?
7. Which brand is most popular among the wealthiest consumers?

COVID-19

1. Download the Covid statelevel database from the NYTimes Github
2. Create 3 unique graphs using this data. Make sure the graphs look as professional as possible with labels of all relevant points. Write a brief 1-2 sentence description of what the graph shows.