TEAM ASSIGNMENT 2
(20% of the final Mark)

Important Due Dates

Team composition: Monday, February 20th at 20:00 (8PM) via email
Drop-in session for questions: Monday, March 13th (class time)
Presentation, final report, and auxiliary files: Tuesday, March 21st at 13:00 (1PM) via HUB

Project Selection

I will randomly assign a research question to each team in class on **Tuesday, Feb 21st**. You and your team will need to address the research question assigned to you. All research questions will require the analysis of the same dataset of restaurant transactions for an Italian restaurant chain. It is possible that more than one team will address the same research question.

Deliverables

The deliverable of the project is a final report and a presentation, due on **March 21st at 13:00 (1PM)**. Also due are: (1) the final dataset you used (e.g., prepared for use in R) and, (2) the final scripts used (only the clean ones used to obtain your final models and analyses). You should upload all these materials together with the report and presentation (ppt).

The **final report** is a short written brief. The brief should be no longer than **2,000 words** (minimum font 11pt) with up to **four pages of appendices** if necessary. The report should provide a brief explanation of the approach adopted and the findings (that is, it should provide a clear answer or at least an attempt to answer the research question). The **"audience"** of the report is your **instructor** (you can use technical jargon).

The **presentation** should take about **10 minutes** although, depending on the number of groups formed, we could think of giving each group 15 minutes including Q&A but (we will need to consider the time constraints of the last session). The **"audience"** of the presentation are **brand managers** and these might not be familiar with all the technical jargon. You need to find a way of communicating to this audience effectively. Visualization of data and of results play a significant role in the assessment of the presentation.

During the presentation, it is possible that a representative of the Media Company who provided the data is part of the audience to hear about your approaches and findings (not yet confirmed).

Some Advice:

1. **Know your data**

   Read in the data using the software of your choice and provide initial summary statistics. The idea here is to be curious. Do not limit yourself to simple means and standard deviations. Try different alternative plots and alternative forms of visualizing the data. Find out how many stores there are, what different types of communications were used, whether there are specific trends or seasonality, whether stores opened or closed. Try group means and cross tabs, and think of what other kind of data might be useful to answer your research question.

2. **Think of how to answer the research question**

   Before starting the analysis think about the problem, the market and the factors that need to be taken into consideration. Do you know which models to use and the type of analysis that can answer your research question? Can papers in the literature help you? Have others in the past proposed a model or an analysis that you can use? Think before you act!

3. **Analysis and report building**

   You will perform several analyses, try different approaches and likely run many models. Be systematic (do not lose track of what you have done and keep a record of what you found). This is a delicate stage, in which you can get lost in the many analyses tried. Remember, the datasets are "fresh", new, created for this course and hence, just like in real life, you might not get the results you expected and you might not be able to find a clear answer. The process is however important, and you need to try to get the results needed and build a presentation that communicates your findings to the client.

<u>Criteria for Assessment</u>

1. Quality of the approach taken and results (60%)
   (answer the research question)
2. Clarity of expression and effectiveness of communicating results (20%)
   (think about a client who might not know of all the technical jargon)
3. Depth of analysis (20%)
   (both in the initial analysis of summarizing the data and in the analysis of providing an answer to the problem)

If you so wish you could create an interactive dashboard that would communicate your results and your findings… a dashboard that would be updated with new data every week and that would present the new analyses.

TOPICS THAT WILL BE DRAWN AND ASSIGNED TO THE TEAMS

Topic A: What is the effectiveness of different media in attracting traffic and increasing sales? You have information of TV and Radio GRPS. You also have information on online and offline campaigns. What would be your recommendation for the retail chain?

Topic B: Within the same media, different formats are used. For example, for TV advertising we see different lengths for ads. Analyse some of these formats and determine whether there are differences in effectiveness and/or diminishing marginal returns. What would be your recommendation for the retail chain?

Topic C: Are there interactions between online versus offline media? Do these media have a different impact on the KPIs of the retail chain (traffic, sales, sales per receipt)? What would be your recommendation for the retail chain?

Topic D: What is the impact of new store openings? Has the company benefited or not from store openings? What about store closures? What would be your recommendation for the retail chain?

Topic E: Are the Google Trends indexes for the brand impacted by the communication? What type of communication has the greatest impact on Google trends? What could Google Trends be measuring? What would be your recommendation for the retail chain?

Tips: **For Team Assignment 1, you can aggregate the performance data to the country-level and you can consider wither daily or weekly level analyses (at the store level the analyses is more complex). You can consider three different aggregations, and each one of these aggregations will give a different view of the business:**

1. Consider only the stores that were operating during the entire period of the data (this way you keep constant the number of stores and you are measuring "same-store" sales for the chain). This is a very important metric for most retail businesses and you should focus mostly on this metric.
2. Consider all the stores irrespective of whether they started or stopped operations during the period under analysis (these performance metrics will be "contaminated" by the effect of openings and closures); when using this aggregation you might what to consider computing per store metrics to account for openings.
3. Consider only the new openings (these performance metrics will give you the incremental sales and traffic to the store openings)

Remember to count the number of stores that operate each day and to create a variable that accounts for the number of stores operating whenever these are changing. Consider trends and seasonality. You can even collect information on average temperatures or average levels of rain for the country as these tend to influence how often people will go out to a store. You can consider any other variable to help account for economic factors or any other factor you might think could have an impact on the decision of consumers going to eat at a fast food chain.