**Module 1 Homework Report**

1. Given the provided data, what are three conclusions that we can draw about crowdfunding campaigns?

* The first conclusion we can draw about crowdfunding campaigns are that campaigns set at 50,000 or more are unlikely to be successful. 62% of the 305 campaigns either failed or were canceled. The next highest rate of failure and cancellation was the 10,000 - 14,999 fundraising goal at 56% but there were only 9 total projects that fell into that category. The next conclusion we can draw is that if we want our campaigns to be successful, we should set smaller goals for each campaign. The $1,000-$4,999 campaigns saw an 83% success rate amongst 231 projects. The final conclusion we can draw from the data is that the total number of backers is more important to success than average donation. The average backer count for successful campaigns was 851.15 and the average backer count for failed campaigns was 585.62. If we look at the Median for successful projects it was 201 backers vs 114.5 for failed projects. There were 42 successful campaigns where the average donation was less than 31 dollars, roughly 7% of all successful campaigns. On the other hand, 79 of the 364 failed campaigns had average donations of over 90 dollars. This means that 21.7%, over ⅕ campaigns got the average backer to donate a lot of money but did not get enough backers to meet their goal. Getting more people to support a cause was shown to be more effective than getting larger donations from fewer people.

1. What are some limitations of this dataset?

* One limitation of this dataset is that there was not much data on the middle ground of kickstarter projects. There were 597 projects set under 10,000 dollars and 305 projects set at 50,000 dollars or greater. For all amounts between 10,000 dollars and 49,999 dollars there were only 84 total projects. This left 3 monetary ranges, 15,000-19,999, 20,000-24,999, and 30,000-34,999 at 100% completion but only 24 projects between them. This makes it hard to conclude at what point kickstarter goals begin to fall off because there is so little data leading us to conclude that low cost kickstarters are more successful than massive kickstarter goals. Another limitation of the dataset is that there is no real conclusion you can draw from the category of kickstarter that is most effective. Plays were the most popular crowdfunding mechanism however for all sub categories there were around 50-60% success rate amongst all of them, or there were so few kickstarters in those subcategories that we cannot draw conclusions from them.

1. What are some other possible tables and/or graphs that we could create, and what additional value would they provide?

* Other tables we could add would be a box and whisker plot. This would allow us to see if there are any outliers related to the amount of backers are in a given campaign. It could also show us if there are any outliers related to the amount donated. Another table we could use would be a scatter plot. This could allow us to see trendlines in data in order to see if there are any correlations or how strong or a correlation there may be.

1. Use your data to determine whether the mean or the median better summarizes the data.

* The Median is a better measure of central tendency for summarizing the data because there are going to be massive outliers and some projects are going to have incredibly large amounts of backers causing the mean to get skewed. This is why the mean for successful projects was 851.15 and for failures it was 585.62 backers. The median for these datasets was 201 for success and 114 for failures. The mean for failures being more than double the median for successes shows the issues with using mean for this dataset.

1. Use your data to determine if there is more variability with successful or unsuccessful campaigns. Does this make sense? Why or why not?

* There is more variance in successful campaigns than unsuccessful campaigns with both variances being over 900,000. This makes sense because for successful campaigns there are going to be projects that receive a lot of backers and are very successful and projects that receive fewer backers but larger donations from those backers to be successful. With unsuccessful campaigns, there comes a point where if you get enough backers they will end up succeeding. There is no upper limit for backers for successful projects but with unsuccessful projects they are missing backers and missing funds thus there is less of a gap between the lowest and highest number of backers possible.