Quicktake 1

Please read the two articles assigned for Week 3, and answer the following questions:

1. Under what circumstances would you prefer to use a logistic regression over a linear regression?

Answer :- Linear Regression is used when the target variable is continuous whereas logistic regression is used when the target variable is categorical. Linear regression assume a bell-curve distribution of outcomes (what is known as a normal distribution) from negative infinity to infinity. However is some cases, there is no curve across a range of outcomes. The outcome can only be 1 or 0. If linear regression is used instead of logistic regression, nonsensical predictions might happen like getting a prediction probability of more than 100%. In real life, a s-shaped curve is how people make decisions and in these kind of situations, a logistic regression curve should be preferred to a linear regression.

1. In the Logistic Regression article the coefficient of the variable Customer Review Average is estimated to be 0.399. What is the most intuitive interpretation of this number, in terms of how customer reviews affect product purchase?

Answer :- According to this, if the value of the Customer Review variable increases by a unit amount, the odds that the product purchase will be equal to 1 will increase by a factor of e to the power of 0.399 = 1.49.

1. In the article Dynamics of Crowdfunding, why was a logistic regression approach employed? What do we learn from this article about what project/founder characteristics are most associated with project success? Failure?

Answer :- A logistic regression approach was used in the Dynamics of Crowdfunding article because the target variable i.e. if the crowdfunding project was a failure or success is a binary classification variable.

Among crowdfunded projects, failures happen by large amounts, successes by small amounts. Contributions to crowdfunding projects, even in markets where crowdfunding is driven by altruism, appear to be attracted to **quality projects** ([Burtch et al., 2011](https://www.sciencedirect.com/science/article/pii/S088390261300058X" \l "bb0045)), funders respond to signals about the quality of the project, regardless of their expectations for financial return.

Researchers have found that the **social network of individuals** seeking funding influences the success of entrepreneurial financing efforts, as it provides connections to funders as well as endorsements of project quality.

**Increasing goal size** is negatively associated with success. **Being featured** is strongly associated with success. Surprisingly, **duration** decreases the chances of success, possibly because longer durations are a sign of lack of confidence.

**Signals of quality** also predict success. Signals such as **videos and frequent updates** are associated with greater success, and **spelling errors** reduce the chance of success. Economic geographers argue that the underlying success of creative endeavors is dependent on the **characteristics of the location** of the founders.

**Individual categories** are more concentrated than the overall population of crowdfunding projects, and that each category has its own particular pattern of concentration.

A variety of geographic effects on funding have been identified, including, most notably, **proximity to funders**, which is strongly linked to received venture capital funding.

**Project size** and **the increased expectations** around highly popular projects are related to delays. Projects that are funded at 10× their goal are half as likely to deliver at a given time, compared to projects funded at their goal.