

Logistic Regression with R:

Accessing Data

This assignment is related to building a logistic regression model on sample survey data. A leading snacks manufacturer (A) wanted to understand the relationship between overall brand perceptions and the drivers of respondent's decision on a product to determine the most important factors impacting A's brands.

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File name needed for the assignment is **goodforu-class12.csv** which has 24,144 observations and 61 variables. The solution should address the following 4 questions that Manufacturer A considers to be essential for determining the overall brand perception in the customer's mind.

- Are my brands made with farm grown ingredients like potato, corn or wheat?
- Do my brands have zero grams trans-fat?
- Are my brands made with natural oils?
- Is there an impact due to Processing Level?

Also please consider the following pointers while drafting the required solution for this assignment.

1. Data preparation and exploration steps need to be performed before running the model equation on the data
2. Sampling needs to be done to split the entire data into training and test samples for model building purposes
3. Perform model diagnostics after deciding upon the final model i.e. classification table and gains chart
4. Final deliverables required for this assignment end solution are R scripts used to build the model, final model equation and model diagnostics plots along with insights and recommendations observed from the model output if any.

-----**End of Assignment Questions**-----



Data Dictionary - *goodforu-class12.csv* (column names in sequential order)

<i>Panel ID</i>	<i>Unique row identifier</i>
X1	<i>Snacks made by Snacks manufacturer: Are made with farm grown ingredients like potato, corn or wheat?</i>
X2	<i>Brand A chips: Are made with farm grown ingredients like potato, corn or wheat?</i>
X3	<i>Brand B chips: Are made with farm grown ingredients like potato, corn or wheat?</i>
X4	<i>Brand C chips: Are made with farm grown ingredients like potato, corn or wheat?</i>
X5	<i>Brand D puffs: Are made with farm grown ingredients like potato, corn or wheat?</i>
X6	<i>Brand E chips: Are made with farm grown ingredients like potato, corn or wheat?</i>
X7	<i>Brand F chips: Are made with farm grown ingredients like potato, corn or wheat?</i>
X8	<i>Snacks made by Snacks manufacturer: Have zero grams trans fat</i>
X9	<i>Brand A chips: Have zero grams trans fat</i>
X10	<i>Brand B chips: Have zero grams trans fat</i>
X11	<i>Brand C chips: Have zero grams trans fat</i>
X12	<i>Brand D puffs: Have zero grams trans fat</i>
X13	<i>Brand E chips: Have zero grams trans fat</i>
X14	<i>Brand F chips: Have zero grams trans fat</i>
X15	<i>Snacks made by Snacks manufacturer: Are made with natural oils</i>
X16	<i>Brand A chips: Are made with natural oils</i>
X17	<i>Brand B chips: Are made with natural oils</i>
X18	<i>Brand C chips: Are made with natural oils</i>
X19	<i>Brand D puffs: Are made with natural oils</i>
X20	<i>Brand E chips: Are made with natural oils</i>
X21	<i>Brand F chips: Are made with natural oils</i>
X22	<i>Snacks made by Snacks manufacturer : Rate the following 10=good for you, 1=bad for you</i>
X23	<i>Brand A chips : Rate the following 10=good for you, 1=bad for you</i>
X24	<i>Brand B chips : Rate the following 10=good for you, 1=bad for you</i>
X25	<i>Brand C chips : Rate the following 10=good for you, 1=bad for you</i>
X26	<i>Brand D puffs : Rate the following 10=good for you, 1=bad for you</i>
X27	<i>Brand E chips : Rate the following 10=good for you, 1=bad for you</i>
X28	<i>Brand F chips : Rate the following 10=good for you, 1=bad for you</i>
X29	<i>Snacks made by Snacks manufacturer : 10=minimallyProcessed / 1=Heavily processed on a 10 point scale</i>
X30	<i>Brand A chips : 10=minimallyProcessed / 1=Heavily processed on a 10 point scale</i>
X31	<i>Brand B chips : 10=minimallyProcessed / 1=Heavily processed on a 10 point scale</i>
X34	<i>Brand C chips : 10=minimallyProcessed / 1=Heavily processed on a 10 point scale</i>
X35	<i>Brand D puffs : 10=minimallyProcessed / 1=Heavily processed on a 10 point scale</i>
X36	<i>Brand E chips : 10=minimallyProcessed / 1=Heavily processed on a 10 point scale</i>
X37	<i>Brand F chips : 10=minimallyProcessed / 1=Heavily processed on a 10 point scale</i>
X38	<i>Manufacturer A: 10 = Extremely Environmentally responsible / 1=Not at all environmentally responsible</i>
X39	<i>Manufacturer B: 10 = Extremely Environmentally responsible / 1=Not at all environmentally responsible</i>
X40	<i>Manufacturer C: 10 = Extremely Environmentally responsible / 1=Not at all environmentally responsible</i>



- X41 *Brand : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X42 *Nutritional Consideration : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X43 *Calories : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X44 *Type : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X45 *Size : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X46 *Premium Quality : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X47 *Flavor : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X48 *Price : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X49 *tried and True : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X50 *Promotion : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X51 *Experiment : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X52 *Recommendation : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X53 *Health : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X54 *Taste : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X55 *Variety : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X56 *Preperation : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X57 *Packaging : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X58 *DispBrand B : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X59 *Bonus Offer : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X60 *Store Circular : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X61 *Saw/Heard a TV, Newspaper or Radio Ad : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*
- X62 *Saw a sign on the shelf advertising the item at reduced price : Factors in purchase decision / 5=Extremely Important and 1 = Not at all Important*