Stanisław Godlewski

11/14/22

The distribution of cereal brands by nutrition quality:

In this regression analysis, I will be investigating the distribution of cereal brands by their nutritional quality. Within this regression analysis; the protein, potassium, calories, sodium, fiber, carbohydrates, sugars, vitamins, shelf, weight, and cups will be analyzed to determine which cereal brands are of high quality.

Not only will a multi-linear regression be conducted to understand the quantitative relationship between the score and the nutritional values, but a univariable logistic regression will be conducted to investigate the relationship between the cereals that scored above 50 and the cereals that scored below a 50. In doing so, one can understand the causation of each cereals score by the nutritional values that determine its quality.

In statistics, nominal data is a type of data scale that is used to label variables without providing any quantitative value. It is the simplest form of a scale of measure. Unlike ordinal data, nominal data cannot be ordered and cannot be measured.

Nominal data can be analyzed using the grouping method. The variables can be grouped together into categories, and for each category, the frequency or percentage can be calculated.

Although nominal data cannot be treated using mathematical operators, they still can be analyzed using advanced statistical methods. For example, one way to analyze the data is through frequency procedures.That being said, the binary nominal method through a univariable logistic regression will be utilized for this analysis to see how these tested variables impact the rankings of cereal.

For the Univariable Logistic Regression, a random number assignment in data step. Random, uniform distribution between 0 and 1. Split at .5 to get ~50/50 split. As such, cereal rated above 50 = Y. Cereal rated below 50 = N.The occurrence of an event is a binary variable. This means there are two possibilities: the event occurs or it does not occur. The cereals either end up being below 50 or above 50 in terms of its ranking.

This categorization will separate high quality cereals from low quality cereals based on its nutritional content. The nutritional variables analyzed within each cereal brand will be utilized to determine the appropriate rating of the particular cereal. In addtion, the nutritional values of the variables will be formulated to differentiate the cereals that rated above or below 50.

The table below displays the distribution of cereal rankings.

The SAS System

The UNIVARIATE Procedure
Variable: rating

Moments

N	77	**Sum Weights**	77
Mean	42.665705	**Sum Observations**	3285.25928

Moments

Std Deviation	14.0472887	**Variance**	197.326321
Skewness	0.91024031	**Kurtosis**	1.31874692
Uncorrected SS	155164.704	**Corrected SS**	14996.8004
Coeff Variation	32.9240751	**Std Error Mean**	1.60083712

Basic Statistical Measures

Location		**Variability**	
Mean	42.66570	**Std Deviation**	14.04729
Median	40.40021	**Variance**	197.32632
Mode	.	**Range**	75.66206
		Interquartile Range	17.65430

Tests for Location: Mu0=0

Test		**Statistic**		**p Value**
Student's t	**t**	26.65212	**Pr > |t|**	<.0001
Sign	**M**	38.5	**Pr >= |M|**	<.0001
Signed Rank	**S**	1501.5	**Pr >= |S|**	<.0001

Quantiles (Definition 5)

Level	**Quantile**
100% Max	93.7049
99%	93.7049
95%	68.4030
90%	60.7561
75% Q3	50.8284
50% Median	40.4002

Quantiles (Definition 5)

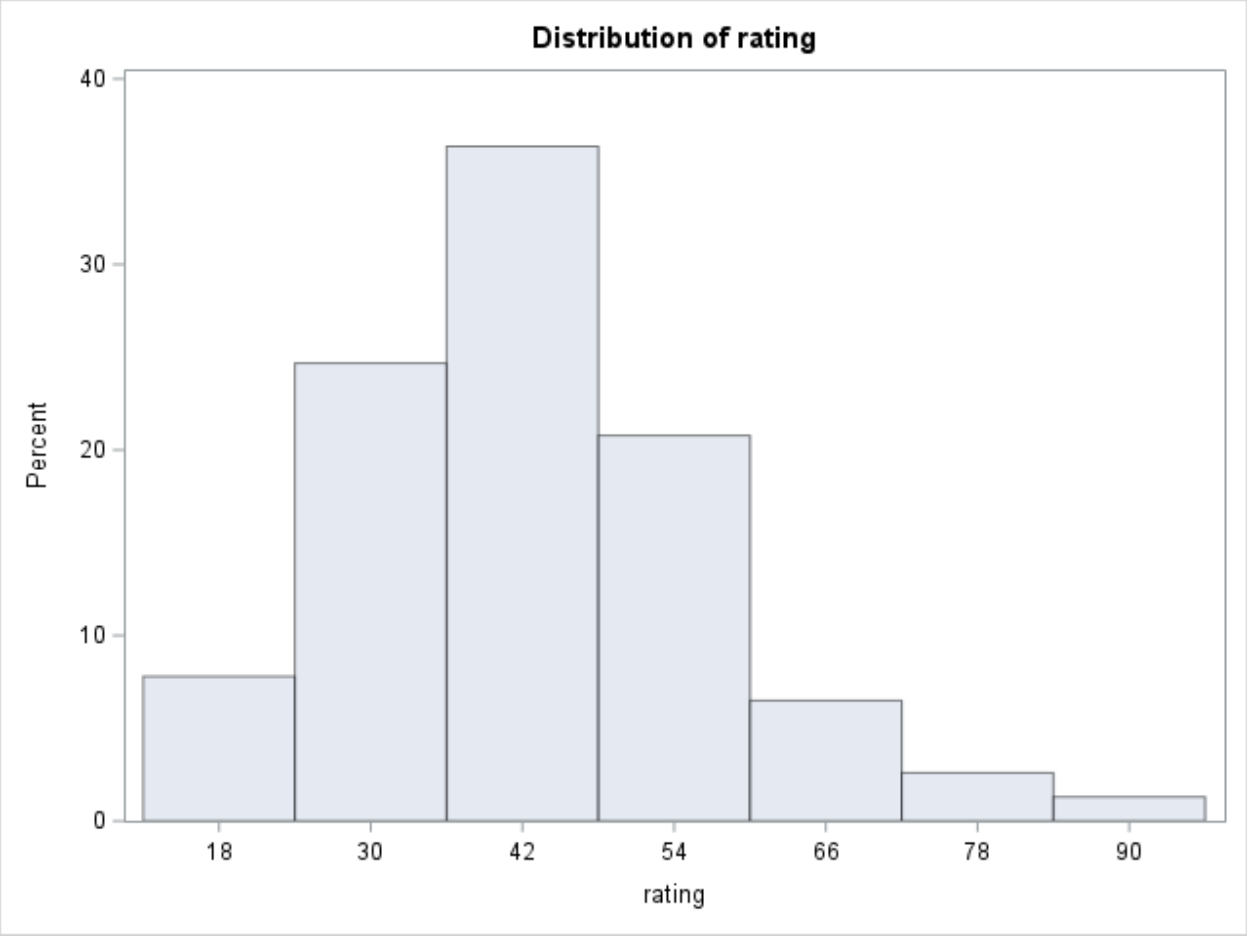
Level	Quantile
25% Q1	33.1741
10%	27.7533
5%	22.3965
1%	18.0429
0% Min	18.0429

These were the ranges rated cereals in the regression.

Extreme Observations

Lowest		Highest	
Value	**Obs**	**Value**	**Obs**
18.0429	11	68.2359	64
19.8236	13	68.4030	1
21.8713	36	72.8018	66
22.3965	19	74.4729	65
22.7364	15	93.7049	4

These observations above were the top five highest and lowest rated cereals in the regression.



This is a unimodal distribution with the majority of cereals having scored between 24 to 48 out of 100. Cereals that scored within the states range made up approximately 60% of the observations in the dataset.

Given that the skewness score was a .91024031, the histogram is skewed to the light. Hence, it is asymmetrical. If the skewness is between -0.5 and 0.5, the data is fairly symmetrical. If the skewness is between -1 and – 0.5 or between 0.5 and 1, the data is moderately skewed. If the skewness is less than -1 or greater than 1, the data is highly skewed.

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: rating

Number of Observations Read	77
Number of Observations Used	77

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	12	14997	1249.73337	Infty	<.0001
Error	64	0	0		
Corrected Total	76	14997			

Root MSE	0	**R-Square**	1.0000
Dependent Mean	42.66570	**Adj R-Sq**	1.0000
Coeff Var	0		

Parameter Estimates

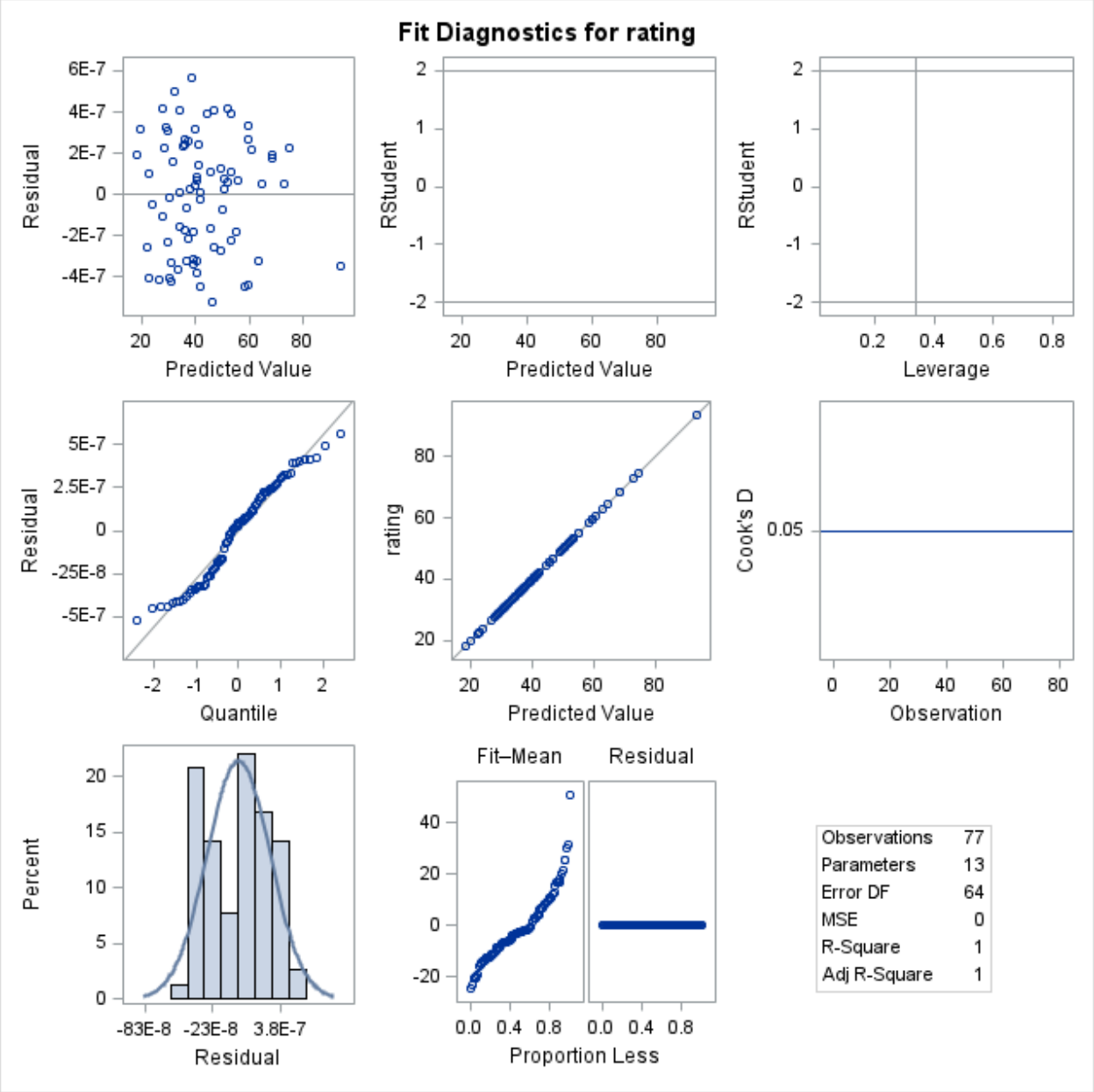
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	**1**	54.92718	0	Infty	<.0001
calories	**1**	-0.22272	0	-Infty	<.0001
protein	**1**	3.27317	0	Infty	<.0001
fat	**1**	-1.69141	0	-Infty	<.0001
sodium	**1**	-0.05449	0	-Infty	<.0001
fiber	**1**	3.44348	0	Infty	<.0001
carbo	**1**	1.09245	0	Infty	<.0001
sugars	**1**	-0.72490	0	-Infty	<.0001
potass	**1**	-0.03399	0	-Infty	<.0001
vitamins	**1**	-0.05121	0	-Infty	<.0001
shelf	**1**	-3.72068E-8	0	-Infty	<.0001
weight	**1**	-4.29824E-7	0	-Infty	<.0001
cups	**1**	1.378849E-7	0	Infty	<.0001

Multi linear regression formula for the table above:

y = -.2272(calories) + 3.27317(protein) - 1.69141(fat) - .05449(sodium) + 3.44348(fiber) + 1.09245(carbohydrates) -.72490(sugars) - .03399(potassium) -.05121(vitamins) - 3.72068E-8(shelf) - 4.29824E-7(weight) + 1.378849E-7(cups) + 54.92718. *When the rating increased by one unit, sugar decreases by -.7249 units*

The SAS System

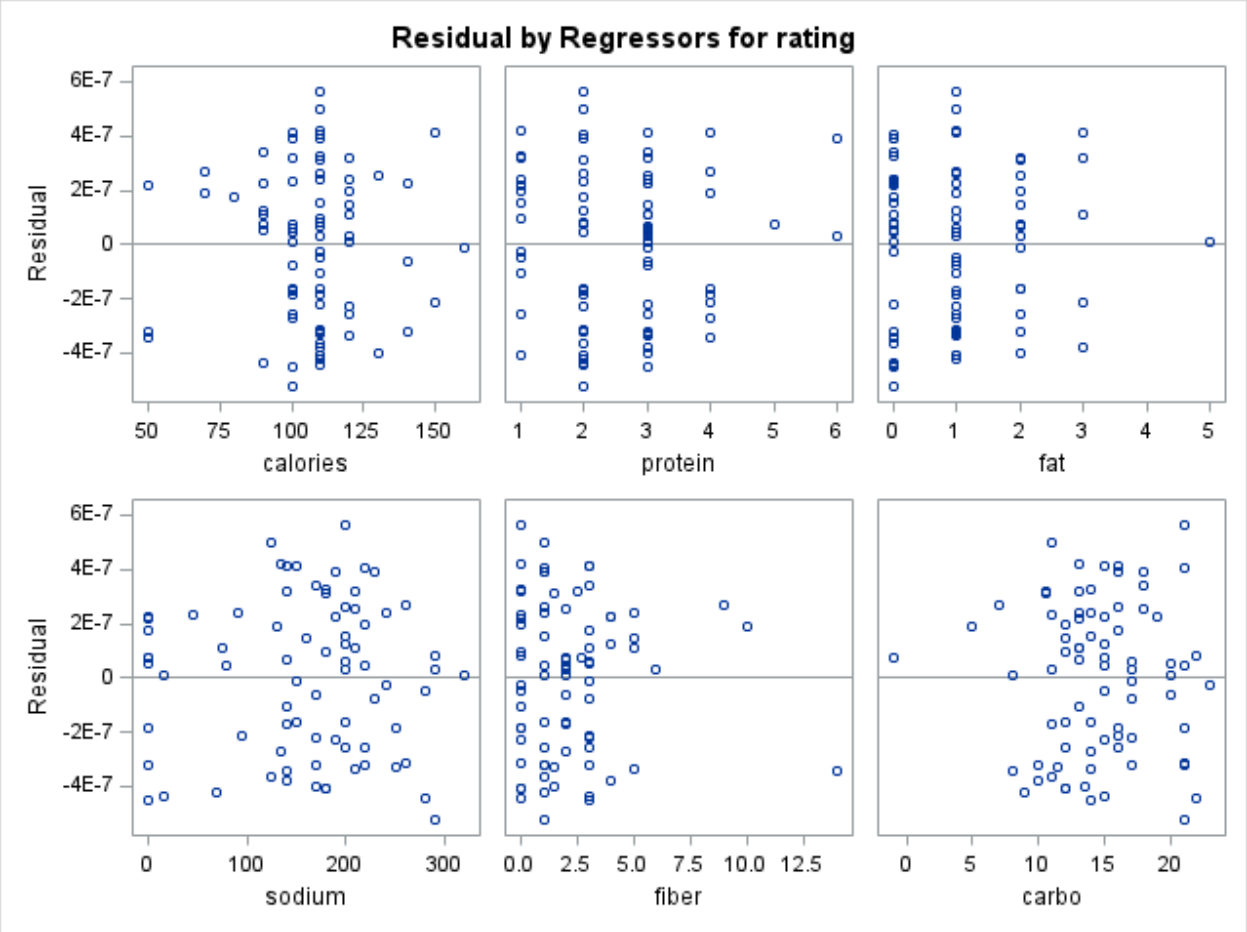
The REG Procedure
Model: MODEL1
Dependent Variable: rating



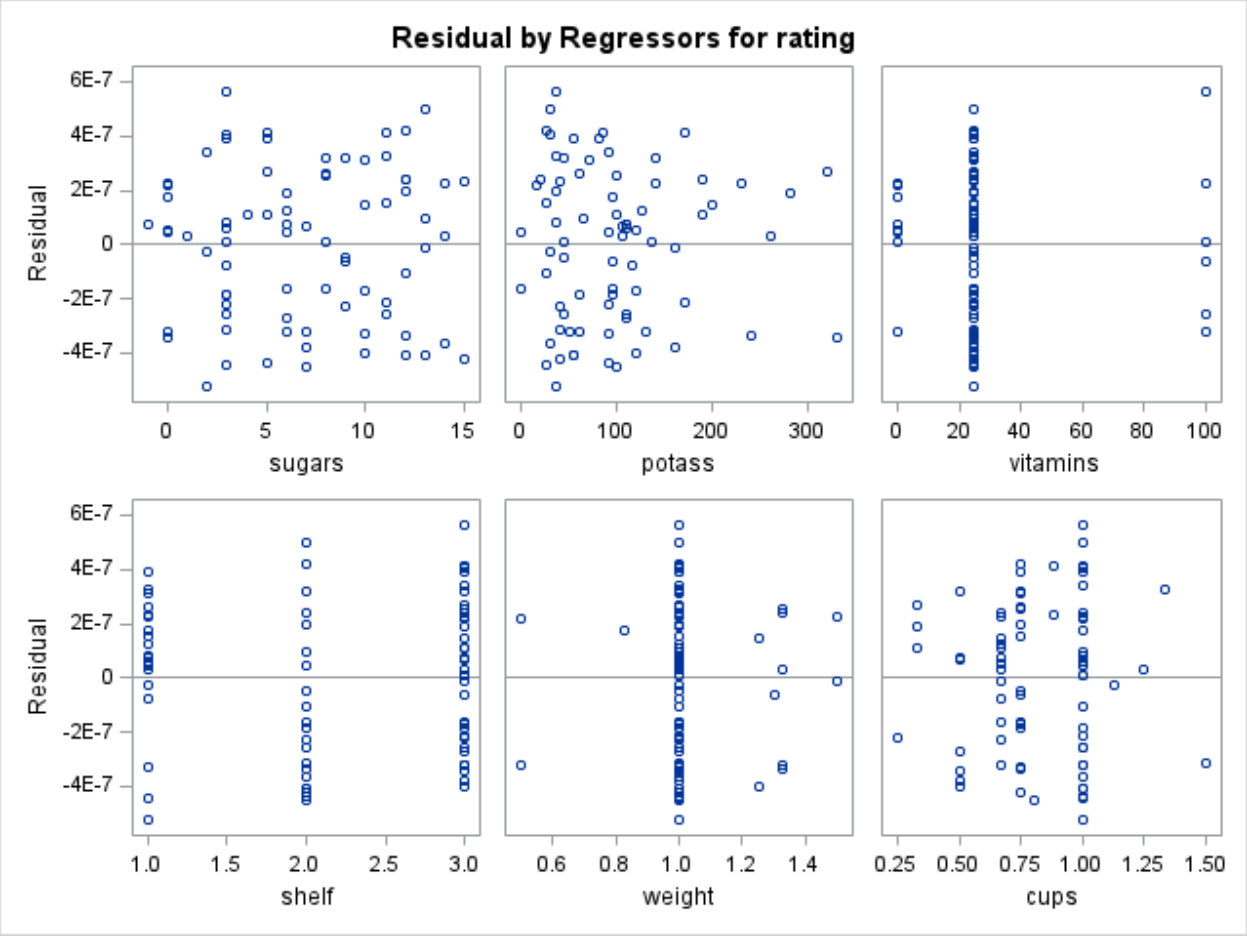
Given that there is decreasing variance in the residual plot as the values increase in units, this means that the data is heteroskedastic. However, since there is no distinct pattern, there is a lack of bias in this dataset. The blue dots are the predicted observations and the black line represents the actual observations. Nevertheless, the scatterplot regarding the rating versus predicted values scored a r squared of 1.0, meaning that it is extremely and positively correlated.

The normal Q-Q plot shows that this linear regression for the analyzed dataset is skewed since the blue observations are roughly aligned with the black line but trail away from the black line at each end point.The normal Q-Q plot is a scatterplot that was created by plotting two sets of quantiles against each other. The residuals in the plot are not normally distributed because in order for that condition to be true, the points in the plot would lie in a straight diagonal line. The regression does seem to have a heavy-tail problem because there is data that lies at the extremities of the plot. The reason for a heavier upper tail is that the data has larger and smaller values than is expected by the model. This is further supported by the residual percent plot since the histogram is bimodal with a roughly symmetrical distribution. As such, the leverage plot shows that the x values are not asymmetrically influenced by outside variables since its leverage score was less than 1.

The residuals vs leverage plot allows us to identify individual observations in a regression model. The x-axis displays the leverage of each point, while the y-axis displays the standardized residual of each point. Meanwhile,Cook's distance is used to find influential outliers in a set of predictor variables. In other words, it's a way to identify points that negatively affect your regression model. Since the value of Cooks distance is 0.05, it is statistically significant that there are no outliers affecting the regression model.



These are the residuals for the predicted observations versus their actual respective values. The horizontal line represents the values from the dataset while the blue dots represent the predicted values from the predicted models. While sodium and calories seem to have homoscedasticity in their plots; fiber, carbohydrates, protein, and fat have heteroskedasticity since their variances decrease or increase as the values increase or decrease. There does not appear to be any bias in these residual plots.



These are the residuals for the predicted observations versus their actual respective values. The horizontal line represents the values from the dataset while the blue dots represent the predicted values from the predicted models. While all of these plots display homoscedasticity, there is bias in some of these regression plots. Shelf, vitamins, and weight all have bias in their plots due to the distinct patterns displayed.

The FREQ Procedure

r50p	Frequency	Percent	Cumulative Frequency	Cumulative Percent
N	56	72.73	56	72.73
Y	21	27.27	77	100.00

According to the calculations, 72.73 percent of the cereal brands in this dataset did not pass the rating threshold of 50.

Below is the logistic regression table:

The LOGISTIC Procedure

Model Information

Data Set	WORK.CEREALS2
Response Variable	r50p
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	77
Number of Observations Used	77

Response Profile

Ordered Value	r50p	Total Frequency
1	N	56
2	Y	21

Probability modeled is r50p='N'.

Model Convergence Status

Complete separation of data points detected.

Warning: The maximum likelihood estimate does not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	92.237	26.102
SC	94.581	56.571
-2 Log L	90.237	0.102

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	90.1349	12	<.0001
Score	56.5527	12	<.0001
Wald	1.4606	12	0.9999

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-3.8252	280.1	0.0002	0.9891
calories	1	-0.3677	1.6322	0.0507	0.8218
protein	1	-4.0679	23.2599	0.0306	0.8612
fat	1	10.1289	20.7739	0.2377	0.6258
sodium	1	0.1115	0.2942	0.1436	0.7048
fiber	1	-5.2359	21.6515	0.0585	0.8089

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
carbo	1	1.7903	15.8209	0.0128	0.9099
sugars	1	3.0342	11.5890	0.0685	0.7935
potass	1	0.0358	0.7959	0.0020	0.9642
vitamins	1	0.1440	0.6908	0.0435	0.8348
shelf	1	1.4994	14.7284	0.0104	0.9189
weight	1	2.4006	240.8	0.0001	0.9920
cups	1	-20.1682	52.1702	0.1494	0.6991

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
calories	0.692	0.028	16.969
protein	0.017	<0.001	>999.999
fat	>999.999	<0.001	>999.999
sodium	1.118	0.628	1.990
fiber	0.005	<0.001	>999.999
carbo	5.991	<0.001	>999.999
sugars	20.785	<0.001	>999.999
potass	1.036	0.218	4.932
vitamins	1.155	0.298	4.472
shelf	4.479	<0.001	>999.999
weight	11.030	<0.001	>999.999
cups	<0.001	<0.001	>999.999

With Maximum Likelihood Estimation, one can compute the maximum likelihood of observing Y given X under a logistic regression model. Here is the MLE formula for the logistic regression conducted:

MLE = -.3677(calories) - 4.0679(protein) + 10.1289(fat) + .1115(sodium) - 5.2359(fiber) + 1.7903(carbohydrates) + 3.0342(sugars) + .0358(potassium) + .1440(vitamins) + 1.4994(shelf) + 2.4006(weight) - 20.1682(cups) - 3.8252

The odd ratio estimate represents the variability of the cereals of those that scored below 50 to that of cereals that scored above 50. For example, cereals that scored below 50 are going to have 20.785 times more sugar than cereals that scored above 50. Here is the odd estimate ratio formula:

Beta = .692(calories) + .017(protein) + 999.999(fat) + 1.118(sodium) + .005(fiber) + 5.991(carbohydrates) + 20.785(sugars) + 1.036(potassium) + 1.155(vitamins) + 4.479(shelf) + 11.03(weights) + .001(cups)

Association of Predicted Probabilities and Observed Responses

Percent Concordant	100.0	**Somers' D**	1.000
Percent Discordant	0.0	**Gamma**	1.000
Percent Tied	0.0	**Tau-a**	0.402
Pairs	1176	**c**	1.000

The FREQ Procedure

Table of r50p by pred_50p

Frequency / Percent / Row Pct / Col Pct	pred_50p N	pred_50p Y	Total
r50p N			
	56	0	56
	72.73	0.00	72.73
	100.00	0.00	
	100.00	0.00	
r50p Y			
	0	21	21
	0.00	27.27	27.27
	0.00	100.00	
	0.00	100.00	
Total			
	56	21	77
	72.73	27.27	100.00

According to the calculations, 72.73 percent of the cereal brands in this dataset did not pass the rating of 50 out of 100.

In conclusion, there is now a numerical understanding of what proportions of nutrients influence each cereals rating score. As political debates regarding nutrition progress, it is essential for politicians to understand the societal impact on the health of its citizens through its essential products; in this case being food. To knowingly utilize this information to cereal industries and markets; regulators can appropriately enforce nutritional standards for the sake of human and societal health.

Below is the code for this project:

```
/* import data */

proc import file="\\msfs-03.grove.ad.uconn.edu\home\stg19003\Downloads\cereal.csv"

                        out=Work.cereals

                        dbms=csv replace;

run;

proc import file="\\msfs-03.grove.ad.uconn.edu\home\stg19003\Downloads\direct
marketing.xlsx"

                        out=Work.dmkt

                        dbms=xlsx replace;

                        sheet='RapidMiner Data';

run;


/*** CONTINUOUS PREDICTION ***/


/* Establish baseline */

proc univariate data=Work.cereals;

        var rating;


histogram;

run;
```

```
/* use proc reg to fit a model to your data. save the parameter estimates (aka model) */
proc reg data=Work.cereals outest=Work.reg_model1;
	model rating =
				calories
				protein
				fat
				sodium
				fiber
				carbo
				sugars
				potass
				vitamins
				shelf
				weight
				cups
				;
quit;

/* use proc score to apply model to the data and generate predictions */
proc score data=Work.cereals score=Work.reg_model1
			type=parms predict out=Work.m1_predictions;
	var calories
		protein
```

```
                fat
                sodium
                fiber
                carbo
                sugars
                potass
                vitamins
                shelf
                weight
                cups
                ;
run;




/*** NOMINAL PREDICTION ***/
data Work.cereals2;
        set Work.cereals;
        if rating >= 50 then r50p = 'Y';
        else r50p = 'N';
run;
```

```
/* baseline */
proc freq data=Work.cereals2;
        tables r50p;
run;

proc logistic data = Work.cereals2 outmodel=Work.cereal_50p;
  model r50p =
                        calories
                        protein
                        fat
                        sodium
                        fiber
                        carbo
                        sugars
                        potass
                        vitamins
                        shelf
                        weight
                        cups
                        ;
run;


proc logistic inmodel=Work.cereal_50p;
```

```
	score data=Work.cereals2 out=Work.cereals2_50p_score;
run;

data Work.cereals2_50p_score2;
	set Work.cereals2_50p_score;
	if P_Y > .75 the pred_50p = 'Y';
	else pred_50p = 'N';
run;

proc freq data=Work.cereals2_50p_score2;
	tables r50p * pred_50p;
run;



/*** Direct Marketing Example ***/
proc freq data=Work.dmkt;
	tables family_status lifestyle;
run;

data Work.dmkt;
	set Work.dmkt;
	FORMAT is_married 1. is_cozy is_active;
	if family_status = 'married' then is_married = 1;
	else is_married = 0;
```

```
        if lifestyle = 'cozily' then is_cozy = 1; else is_cozy = 0;
        if lifestyle = 'active' then is_active = 1; else is_active = 0;
run;

proc freq data=Work.dmkt;
        tables is_married is_cozy is_active;
run;

proc logistic data = Work.dmkt outmodel=Work.dmkt_m1;
  model outcome =
                        age
                        earnings
/*                      is_cozy*/
/*                      is_active*/
/*                      is_married*/
                        ;
run;

proc logistic inmodel=Work.dmkt_m1;
        score data=Work.dmkt out=Work.dmkt_score_m1;
run;

data Work.dmkt_score_m1_2;
```

```
	set Work.dmkt_score_m1;
	FORMAT pred_resp $11.;
	if P_response > .80 then pred_resp = 'response';
	else pred_resp = 'no response';
run;

proc freq data=Work.dmkt_score_m1_2;
	tables outcome * pred_resp;
run;

%macro optimize();
%do t=5 %to 95 %by 5;
data work.t_score;
	set Work.dmkt_score_m1;
	FORMAT pred_resp $11.;
	if P_response > (&t / 100) then pred_resp = 'response';
	else pred_resp = 'no response';
run;

proc sql;
create table work.__acc_&t as
	SELECT	"&t %" as threshold
		, count(*) as N
		, sum(case when outcome = 'response' then 1 else 0 end) / count(*) AS
baseline
```

```
                        , sum(case when outcome = 'response' and pred_resp = 'response' then 1
else 0 end) / sum(case when pred_resp = 'response' then 1 else 0 end) as model

                        , sum(case when outcome = 'response' and pred_resp = 'no response'
then 1 else 0 end) AS false_neg

                        , sum(case when outcome = 'no response' and pred_resp = 'response'
then 1 else 0 end) AS false_pos

        FROM work.t_score;

quit;

%end;



data Work.dmkt_thresholds;

        set __acc_: ;

run;



proc sql;

        DROP table work.t_score;

        %do t=5 %to 95 %by 5;

                DROP table work.__acc_&t;

        %end;

%mend;

%optimize();
```

This is the primary dataset used for this regression analysis.

name	mfr	type	calories	protein	fat	sodium	fiber	carbo	sugars	potass	vitamins	shelf	weight	cups	rating
100% Bran	N	C	70	4	1	130	10	5	6	280	25	3	1	0.33	68.403
100% Natural Bran	Q	C	120	3	5	15	2	8	8	135	0	3	1	1	33.984
All-Bran	K	C	70	4	1	260	9	7	5	320	25	3	1	0.33	59.426
All-Bran with Extra Fiber	K	C	50	4	0	140	14	8	0	330	25	3	1	0.5	93.705
Almond Delight	R	C	110	2	2	200	1	14	8	-1	25	3	1	0.75	34.385
Apple Cinnamon Cheerios	G	C	110	2	2	180	1.5	10.5	10	70	25	1	1	0.75	29.51
Apple Jacks	K	C	110	2	0	125	1	11	14	30	25	2	1	1	33.174
Basic 4	G	C	130	3	2	210	2	18	8	100	25	3	1.33	0.75	37.039
Bran Chex	R	C	90	2	1	200	4	15	6	125	25	1	1	0.67	49.12
Bran Flakes	P	C	90	3	0	210	5	13	5	190	25	3	1	0.67	53.314
Cap'n'Crunch	Q	C	120	1	2	220	0	12	12	35	25	2	1	0.75	18.043
Cheerios	G	C	110	6	2	290	2	17	1	105	25	1	1	1.25	50.765
Cinnamon Toast Crunch	G	C	120	1	3	210	0	13	9	45	25	2	1	0.75	19.824
Clusters	G	C	110	3	2	140	2	13	7	105	25	3	1	0.5	40.4
Cocoa Puffs	G	C	110	1	1	180	0	12	13	55	25	2	1	1	22.736
Corn Chex	R	C	110	2	0	280	0	22	3	25	25	1	1	1	41.445
Corn Flakes	K	C	100	2	0	290	1	21	2	35	25	1	1	1	45.863
Corn Pops	K	C	110	1	0	90	1	13	12	20	25	2	1	1	35.783
Count Chocula	G	C	110	1	1	180	0	12	13	65	25	2	1	1	22.397
Cracklin' Oat Bran	K	C	110	3	3	140	4	10	7	160	25	3	1	0.5	40.449
Cream of Wheat (Quick)	N	H	100	3	0	80	1	21	0	-1	0	2	1	1	64.534
Crispix	K	C	110	2	0	220	1	21	3	30	25	3	1	1	46.896
Crispy Wheat & Raisins	G	C	100	2	1	140	2	11	10	120	25	3	1	0.75	36.176
Double Chex	R	C	100	2	0	190	1	18	5	80	25	3	1	0.75	44.331
Froot Loops	K	C	110	2	1	125	1	11	13	30	25	2	1	1	32.208
Frosted Flakes	K	C	110	1	0	200	1	14	11	25	25	1	1	0.75	31.436
Frosted Mini-Wheats	K	C	100	3	0	0	3	14	7	100	25	2	1	0.8	58.345

Fruit & Fibre Dates; Waln	P	C	120	3	2	160	5	12	10	200	25	3	1.25	0.67	40.917
Fruitful Bran	K	C	120	3	0	240	5	14	12	190	25	3	1.33	0.67	41.015
Fruity Pebbles	P	C	110	1	1	135	0	13	12	25	25	2	1	0.75	28.026
Golden Crisp	P	C	100	2	0	45	0	11	15	40	25	1	1	0.88	35.252
Golden Grahams	G	C	110	1	1	280	0	15	9	45	25	2	1	0.75	23.804
Grape Nuts Flakes	P	C	100	3	1	140	3	15	5	85	25	3	1	0.88	52.077
Grape-Nuts	P	C	110	3	0	170	3	17	3	90	25	3	1	0.25	53.371
Great Grains Pecan	P	C	120	3	3	75	3	13	4	100	25	3	1	0.33	45.812
Honey Graham Ohs	Q	C	120	1	2	220	1	12	11	45	25	2	1	1	21.871
Honey Nut Cheerios	G	C	110	3	1	250	1.5	11.5	10	90	25	1	1	0.75	31.072
Honey-comb	P	C	110	1	0	180	0	14	11	35	25	1	1	1.33	28.742
Just Right Crunchy Nugge	K	C	110	2	1	170	1	17	6	60	100	3	1	1	36.524
Just Right Fruit & Nut	K	C	140	3	1	170	2	20	9	95	100	3	1.3	0.75	36.472
Kix	G	C	110	2	1	260	0	21	3	40	25	2	1	1.5	39.241
Life	Q	C	100	4	2	150	2	12	6	95	25	2	1	0.67	45.328
Lucky Charms	G	C	110	2	1	180	0	12	12	55	25	2	1	1	26.735
Maypo	A	H	100	4	1	0	0	16	3	95	25	2	1	1	54.851
Muesli Raisins; Dates; &	R	C	150	4	3	95	3	16	11	170	25	3	1	1	37.137
Muesli Raisins; Peaches;	R	C	150	4	3	150	3	16	11	170	25	3	1	1	34.14
Mueslix Crispy Blend	K	C	160	3	2	150	3	17	13	160	25	3	1.5	0.67	30.313
Multi-Grain Cheerios	G	C	100	2	1	220	2	15	6	90	25	1	1	1	40.106
Nut&Honey Crunch	K	C	120	2	1	190	0	15	9	40	25	2	1	0.67	29.924
Nutri-Grain Almond-Raisin	K	C	140	3	2	220	3	21	7	130	25	3	1.33	0.67	40.692
Nutri-grain Wheat	K	C	90	3	0	170	3	18	2	90	25	3	1	1	59.643
Oatmeal Raisin Crisp	G	C	130	3	2	170	1.5	13.5	10	120	25	3	1.25	0.5	30.451
Post Nat. Raisin Bran	P	C	120	3	1	200	6	11	14	260	25	3	1.33	0.67	37.841
Product 19	K	C	100	3	0	320	1	20	3	45	100	3	1	1	41.504
Puffed Rice	Q	C	50	1	0	0	0	13	0	15	0	3	0.5	1	60.756
Puffed Wheat	Q	C	50	2	0	0	1	10	0	50	0	3	0.5	1	63.006
Quaker Oat Squares	Q	C	100	4	1	135	2	14	6	110	25	3	1	0.5	49.512
Quaker Oatmeal	Q	H	100	5	2	0	2.7	-1	-1	110	0	1	1	0.67	50.828

Raisin Bran	K	C	120	3	1	210	5	14	12	240	25	2	1.33	0.75	39.259
Raisin Nut Bran	G	C	100	3	2	140	2.5	10.5	8	140	25	3	1	0.5	39.703
Raisin Squares	K	C	90	2	0	0	2	15	6	110	25	3	1	0.5	55.333
Rice Chex	R	C	110	1	0	240	0	23	2	30	25	1	1	1.13	41.999
Rice Krispies	K	C	110	2	0	290	0	22	3	35	25	1	1	1	40.56
Shredded Wheat	N	C	80	2	0	0	3	16	0	95	0	1	0.83	1	68.236
Shredded Wheat 'n'Bran	N	C	90	3	0	0	4	19	0	140	0	1	1	0.67	74.473
Shredded Wheat spoon size	N	C	90	3	0	0	3	20	0	120	0	1	1	0.67	72.802
Smacks	K	C	110	2	1	70	1	9	15	40	25	2	1	0.75	31.23
Special K	K	C	110	6	0	230	1	16	3	55	25	1	1	1	53.131
Strawberry Fruit Wheats	N	C	90	2	0	15	3	15	5	90	25	2	1	1	59.364
Total Corn Flakes	G	C	110	2	1	200	0	21	3	35	100	3	1	1	38.84
Total Raisin Bran	G	C	140	3	1	190	4	15	14	230	100	3	1.5	1	28.593
Total Whole Grain	G	C	100	3	1	200	3	16	3	110	100	3	1	1	46.659
Triples	G	C	110	2	1	250	0	21	3	60	25	3	1	0.75	39.106
Trix	G	C	110	1	1	140	0	13	12	25	25	2	1	1	27.753
Wheat Chex	R	C	100	3	1	230	3	17	3	115	25	1	1	0.67	49.787
Wheaties	G	C	100	3	1	200	3	17	3	110	25	1	1	1	51.592
Wheaties Honey Gold	G	C	110	2	1	200	1	16	8	60	25	1	1	0.75	36.188