

# FACTORS AFFECTING PERCEPTION OF BRAND A

```

setwd("C:\\Jig14303")
library(dplyr)
library(caret)

data<-read.csv("goodforu-class12.csv",sep=",")
summary(data)
str(data)

#let us select important columns to understand perception on Brand A
data%>%select(X23,X2,X9,X16,X30)->data1

plot(as.factor(data1$X30),data1$X23,col="red")

data2<-data.frame(X23=(data1$X23),X2=as.factor(data1$X2),X9=as.factor(data1$X9),
                  X16=as.factor(data1$X16),X30=data1$X30)

#let us covert X23 into target (binary) variable
data2$Target<-ifelse(data2$X23>4,1,0)
data2%>%select(-X23)->data2

#Let us split the data into training and test datasets
set.seed(400)
index<-sample(nrow(data2),0.70*nrow(data2),replace=F)
train<-data2[index,]
test<-data2[-index,]

#Dummy Variable X2(yes)-just for confirming the answer of Que8
train$X2_d<-ifelse(train$X2==1,1,0)
test$X2_d<-ifelse(test$X2==1,1,0)

#Let us build the initial model
model<-glm(Target~X2+X9+X16+X30,data=train,family="binomial")
summary(model)

#predicted probabilities
pred<-predict(model,type="response",newdata=test)
pred1<-ifelse(pred>=0.4957286,1,0)

pred1<-as.factor(pred1)
test$Target1<-as.factor(test$Target)
confusionMatrix(pred1,test$Target1,positive = "1")

```

Code

# Combinations Occurring for High Probabilities

```
#Let us see which combinations occur the most for good perception by predicted probabilities
test1<-test
test1$pred<-pred
test1<-arrange(test1,-pred)
test1%>%select(-Target,-Target1)->final
final$comb<-paste(as.character(final$X2),as.character(final$X9),as.character(final$X16),as.character(final$X30),sep='')
final%>%group_by(comb)%>%summarize(mean(pred))->final
```

Code

Farm Ingredients	Zero Trans Fat	Natural oils	Processed(Rating)	Average Predicted Probability(Good)
Yes	Yes	Yes	10	0.9578
No	Yes	Yes	10	0.9450
Yes	No	Yes	10	0.9398680
Yes	Yes	No	10	0.9382737
Yes	Yes	Yes	9	0.9349888
No	No	Yes	10	0.9220229
No	Yes	Yes	9	0.9158254
Yes	No	No	10	0.9127246
Yes	No	Yes	9	0.9082129
Yes	Yes	No	9	0.9058635

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## Relationship of Factors on Brand Perception





# RECOMMENDATIONS

- From the model, the presence of ingredients which contain (i) Zero Trans Fat (ii) Farm grown ingredients (iii) Natural Oils (iv) Minimally processed items impact the overall perception for Brand A
- It is recommended that the product (Chips) of Brand A is made with Zero Trans Fats, Natural Oils, Farm Grown ingredients like potato, corn or wheat. Also level of processing should be the minimum possible. This corroborates the trend that customers are becoming health conscious day by day and prefer products with natural ingredients and which are less processed.
- If the company wants to make a little trade-off between above factors and the cost incurred in satisfying all conditions, it can select one of the combinations mentioned in the above tables which have average probability for good perception above 90%.