Assignment_1

Krishna Kumar Tavva - 811283461

1/29/2023

Downloaded the Pharmaceuticals dataset from Canvas and stored to this PC.

Imported the Pharmaceuticals into R

```
#install.packages("tinytex")
#tinytex::install_tinytex()
```

```
#install.packages("readr")
pharmaceuticals=read.csv("E:\\Fundamentals of Machine Learning\\Datasets\\Pharmaceuticals.csv")
```

Print out descriptive statistics for a selection of quantitative and categorical variables

```
summary(pharmaceuticals)
```

```
##     Symbol              Name             Market_Cap          Beta
##  Length:21          Length:21          Min.   :  0.41   Min.   :0.1800
##  Class :character   Class :character   1st Qu.:  6.30   1st Qu.:0.3500
##  Mode  :character   Mode  :character   Median : 48.19   Median :0.4600
##                                        Mean   : 57.65   Mean   :0.5257
##                                        3rd Qu.: 73.84   3rd Qu.:0.6500
##                                        Max.   :199.47   Max.   :1.1100
##     PE_Ratio          ROE             ROA        Asset_Turnover    Leverage
##  Min.   : 3.60   Min.   : 3.9   Min.   : 1.40   Min.   :0.3    Min.   :0.0000
##  1st Qu.:18.90   1st Qu.:14.9   1st Qu.: 5.70   1st Qu.:0.6    1st Qu.:0.1600
##  Median :21.50   Median :22.6   Median :11.20   Median :0.6    Median :0.3400
##  Mean   :25.46   Mean   :25.8   Mean   :10.51   Mean   :0.7    Mean   :0.5857
##  3rd Qu.:27.90   3rd Qu.:31.0   3rd Qu.:15.00   3rd Qu.:0.9    3rd Qu.:0.6000
##  Max.   :82.50   Max.   :62.9   Max.   :20.30   Max.   :1.1    Max.   :3.5100
##    Rev_Growth    Net_Profit_Margin Median_Recommendation   Location
##  Min.   :-3.17   Min.   : 2.6      Length:21              Length:21
##  1st Qu.: 6.38   1st Qu.:11.2      Class :character       Class :character
##  Median : 9.37   Median :16.1      Mode  :character       Mode  :character
```

```
##  Mean   :13.37   Mean   :15.7
##  3rd Qu.:21.87   3rd Qu.:21.1
##  Max.   :34.21   Max.   :25.5
##    Exchange
##  Length:21
##  Class :character
##  Mode  :character
##
##
##
```

Transform at least one variable

```
#install.packages("tidyverse")

library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v ggplot2 3.4.0      v purrr   1.0.1
## v tibble  3.1.8      v dplyr   1.0.10
## v tidyr   1.3.0      v stringr 1.5.0
## v readr   2.1.3      v forcats 1.0.0
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

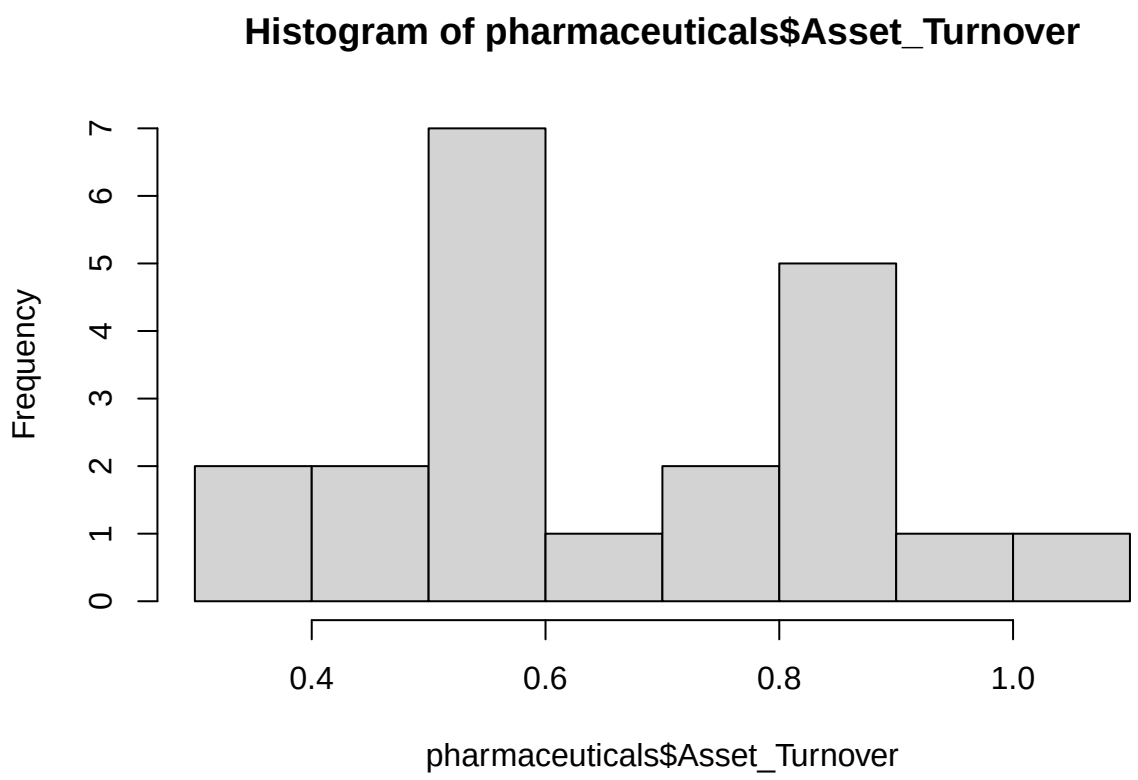
Logarithmic Transformation of PE_Ratio

```
log10(pharmaceuticals$PE_Ratio)
```

```
##  [1] 1.3926970 1.9164539 1.3159703 1.3324385 1.3031961 1.4456042 1.1430148
##  [8] 1.4149733 0.5563025 1.4456042 1.2552725 1.2988531 1.4533183 1.4563660
## [15] 1.2764618 1.3344538 1.3729120 1.7520484 1.2764618 1.2648178 1.1172713
```

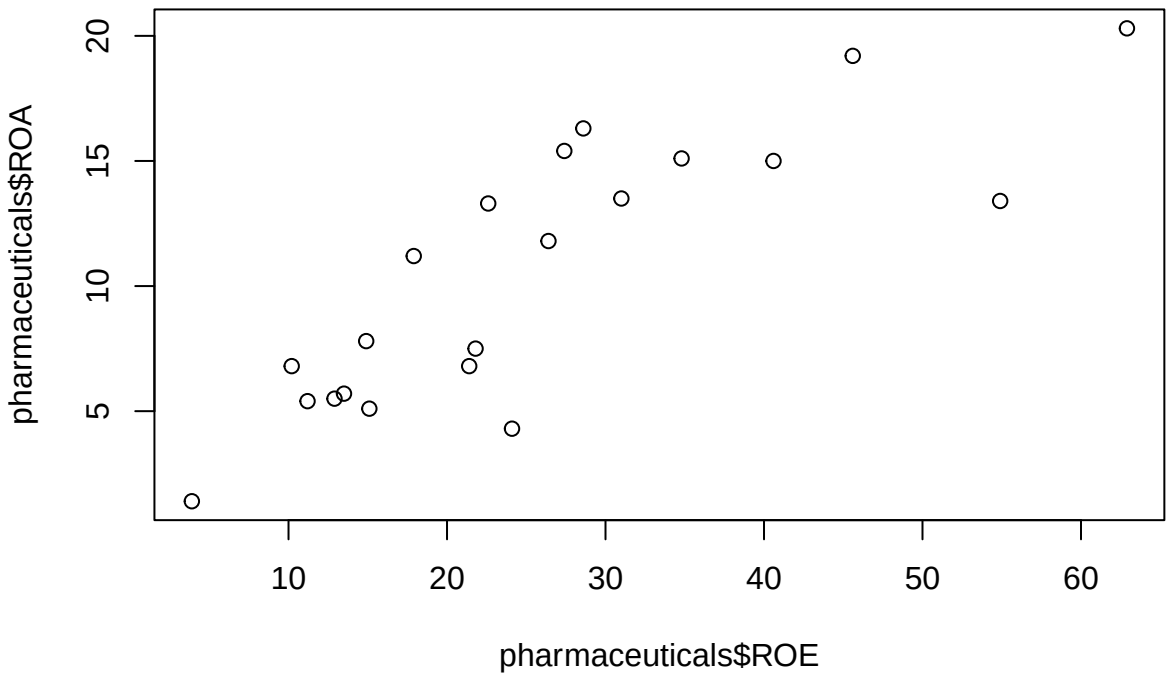
Histogram Plot of Asset_Turnover

```
hist(pharmaceuticals$Asset_Turnover)
```



Scatter Plot between ROE & ROA

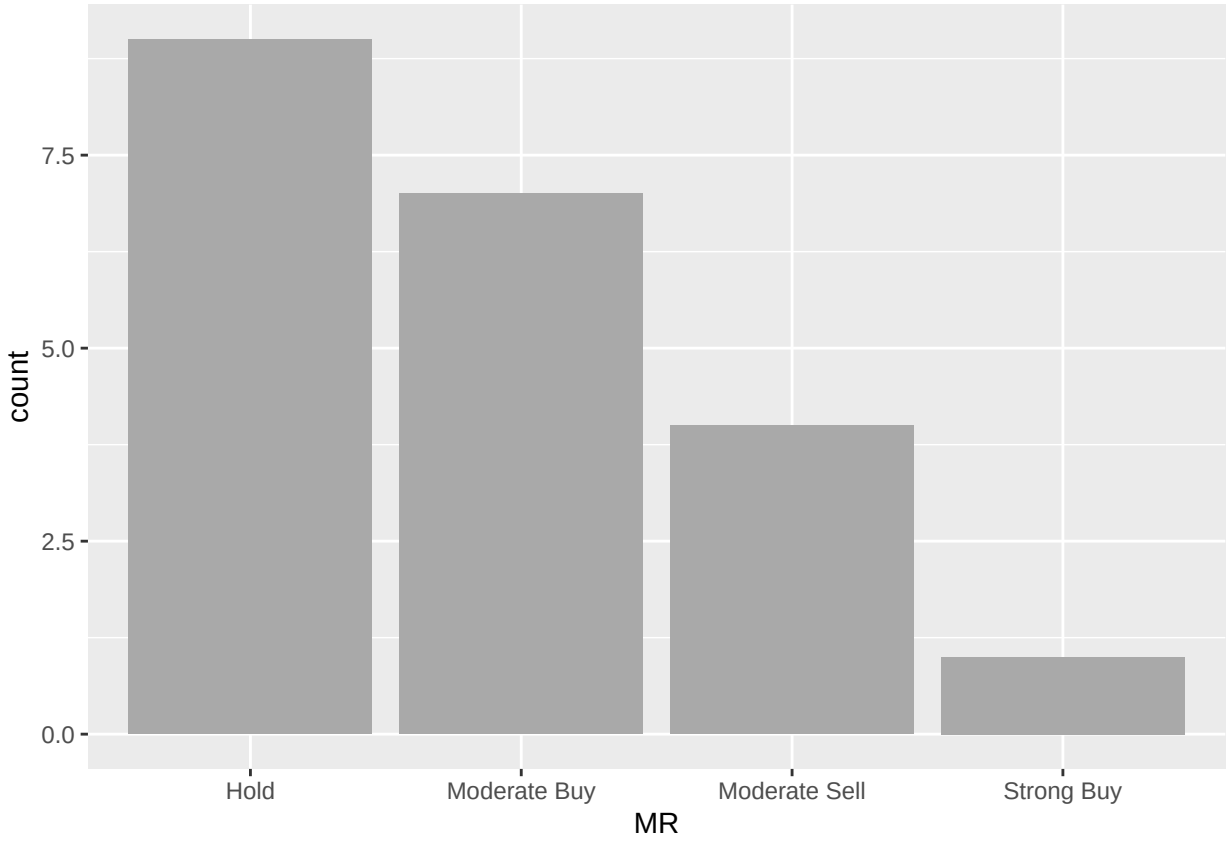
```
plot(pharmaceuticals$ROE, pharmaceuticals$ROA)
```



Catregorical Plot for Median Recommendation

```
#install.packages("ggplot2")
library(ggplot2)
ggplot(pharmaceuticals, aes(x=pharmaceuticals$Median_Recommendation)) +geom_bar(fill='dark grey') +  lab
```

```
## Warning: Use of ‘pharmaceuticals$Median_Recommendation‘ is discouraged.
## i Use ‘Median_Recommendation‘ instead.
```


7.5
5.0
2.5
0.0
count
Hold
Moderate Buy
Moderate Sell
Strong Buy
MR