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MOBILE PHONES MARKET SHARE IN INDIA

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COURSE: PROBABILITY AND STATISTICS

COURSE CODE: BMAT202P

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SEMESTER: WINTER SEMESTER 2022-2023

ABSTRACT

This analysis aims to investigate the market share and customer satisfaction levels of different mobile phone brands in India. The study will focus on the top-selling brands in India and will use a mixed-methods approach that includes both quantitative and qualitative data collection methods. The analysis will use data from Kaggle , to provide a comprehensive overview of the mobile phone market in India. The findings of this analysis will provide valuable insights into the factors that influence customers' purchasing decisions and their overall satisfaction levels with different mobile phone brands in India. These insights can help mobile phone companies in India to identify areas for improvement and make informed decisions to better meet the needs and preferences of Indian consumers.

To provide a comprehensive overview of the mobile phone market in India, this analysis will use data from various sources, including market research reports, online customer reviews, and social media sentiment analysis. The analysis will examine factors such as brand awareness, brand loyalty, product features, price, and customer service to understand the factors that influence customers' purchasing decisions and their overall satisfaction levels with different mobile phone brands in India

INTRODUCTION

Mobile phones have become an integral part of everyday life in India. With a population of over 1.3 billion people, India is one of the largest mobile phone markets in the world. In recent years, the demand for mobile phones has been growing rapidly, fueled by the availability of affordable smartphones and low-cost data plans. As a result, the mobile phone market in India has become highly competitive, with numerous local and international brands vying for a share of the market.

The mobile phone market in India is highly diverse, with a range of brands offering different features and price points to cater to different segments of the population. Some of the top-selling brands in India include Samsung, Xiaomi, Vivo, Oppo, Realme, and Apple. Each brand has its unique strengths and weaknesses, and the preferences of Indian consumers vary widely depending on factors such as age, income, location, and lifestyle.

OBJECTIVE

This analysis aims to investigate the market share and customer satisfaction levels of different mobile phone brands in India. The study will focus on the top-selling brands in India, including both local and international brands, and will use a mixed-methods approach that includes both quantitative and qualitative data collection methods.

The findings of this analysis will provide valuable insights into the mobile phone market in India and the factors that shape consumer behavior. By understanding the preferences and needs of Indian consumers, mobile phone companies can make informed decisions to improve their products and services, enhance customer satisfaction, and gain a competitive advantage in this highly dynamic market. Overall, this analysis will contribute to a deeper understanding of the mobile phone market in India and its significance for the global mobile phone industry.

TABLE OF CONTENTS

SOURCE CODE

INDIAN MOBLIE PHONE BRANDS ANALYSIS

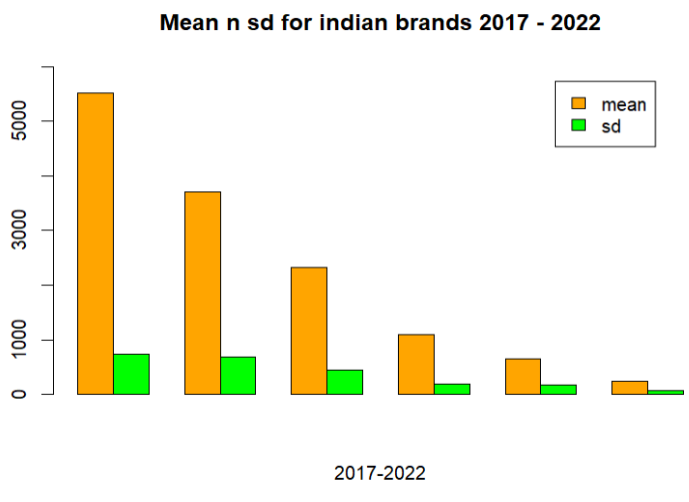
IMPORTING AND READING DATASET

```
library(readxl)

values<-read_excel("D:\\Dhanush Folder\\VIT\\VIT courses\\SEM4 Courses - WINTER SEM 22-23\\PROBABILITY N STATISTICS\\LAB PROJECT\\datasets\\pbmsi_values.xlsx")

head(values)
```

MEAN AND STANDARD DEVIATION

```
indian_mean = c(round(mean(total_indian[1:12])),
                round(mean(total_indian[13:24])),
                round(mean(total_indian[25:36])),
                round(mean(total_indian[37:48])),
                round(mean(total_indian[49:60])),
                round(mean(total_indian[61:72])))


indian_sd = c(round(sd(total_indian[1:12])),
              round(sd(total_indian[13:24])),
              round(sd(total_indian[25:36])),
              round(sd(total_indian[37:48])),
              round(sd(total_indian[49:60])),
              round(sd(total_indian[61:72])))


mean_sd_indian = rbind(indian_mean , indian_sd )

mean_sd_indian

barplot(mean_sd_indian , main="meand n sd for indian brands 2017 - 2022",
        col = c("orange","green"),beside = TRUE,xlab ="2017-2022")

legend("topright",c("mean","sd"),fill = c("orange","green"))
```

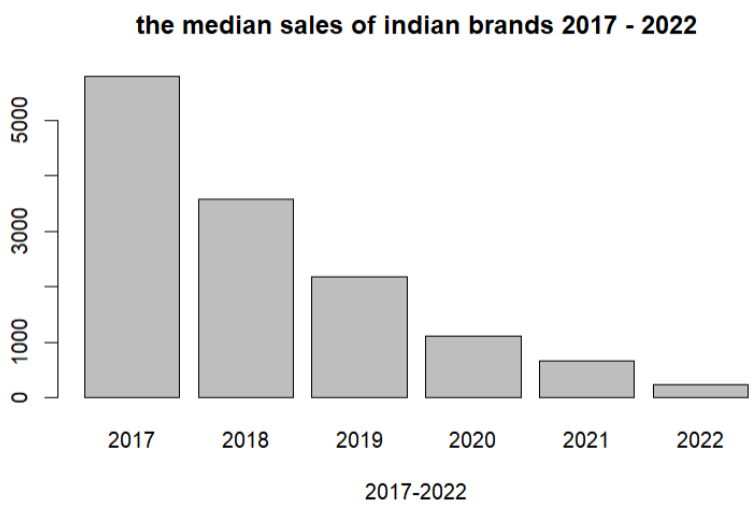
OP:



MEDIAN

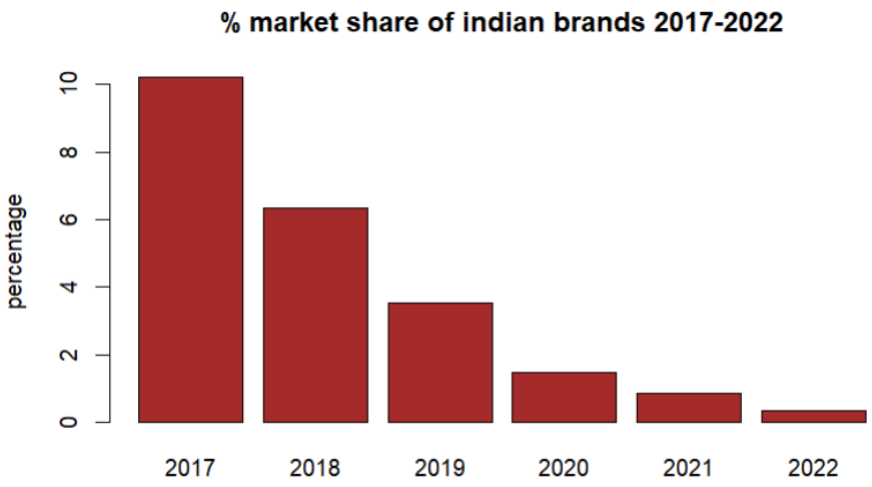
```
indian_median = c(round(median(total_indian[1:12])),
                  round(median(total_indian[13:24])),
                  round(median(total_indian[25:36])),
                  round(median(total_indian[37:48])),
                  round(median(total_indian[49:60])),
                  round(median(total_indian[61:72])))
indian_median
barplot(indian_median , main= " the median sales of indian brands 2017 - 2022 ",xlab="2017-2022",
        names.arg =c(2017,2018,2019,2020,2021,2022) )
```

OP:



PERCENTAGE MARKET SHARE IN INDIA

```
indian_percentage_2017 = (sum(total_indian[1:12]) / sum(values$`total num`[1:17]))*100
indian_percentage_2017

indian_percentage = c((sum(total_indian[1:12]) / sum(values$`total num`[1:12]))*100,
(sum(total_indian[13:24]) / sum(values$`total num`[13:24]))*100,
(sum(total_indian[25:36]) / sum(values$`total num`[25:36]))*100,
(sum(total_indian[37:48]) / sum(values$`total num`[37:48]))*100,
(sum(total_indian[49:60]) / sum(values$`total num`[49:60]))*100,
sum(total_indian[61:72]) / sum(values$`total num`[61:72]))*100)
```

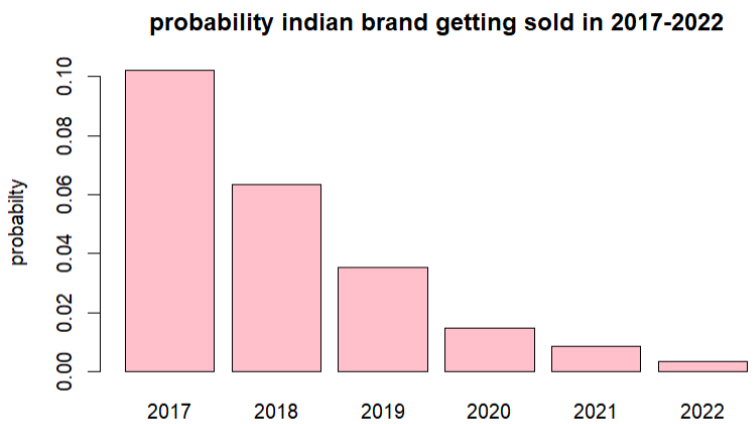


PROBABILITY OF INDIAN BRANDS SELLING

indian_probability = c(indian_percentage/100)

barplot(indian_probability , main="probability indian brand getting sold in 2017-2022",ylab='probabilty',

names.arg =c(2017,2018,2019,2020,2021,2022),col = "pink")



COEFFICIENT OF CORRELATION BETWEEN INDIAN AND FOREIGN MOBILE PHONE BRANDS

foreign_v = values$`total num` - indian_v

cor.test(indian_v,foreign_v, method = "pearson")

```
        Pearson's product-moment correlation

data:  indian_v and foreign_v
t = -12.68, df = 72, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.8904840 -0.7438524
sample estimates:
       cor
-0.8310911
```

SALES ANALYSIS DURING COVID 19 PHASE

TOTAL SALES DURNING COVID 19 PHASE

indian_v = values$Micromax + values$`Reliance Digital` + values$Karbonn + values$Xolo + values$Lava + values$Lyf

indian_c19 = sum(indian_v[39:53])

indian_c19

```
+ values$Lyf
> indian_c19 = sum(inc
> indian_c19
[1] 14442
>
```

PROBABILITY OF SELLING DURING COVID 19 PHASE

indian_p_c19 = sum(indian_v[39:53]) / sum(values$`total num`[39:53])

indian_p_c19

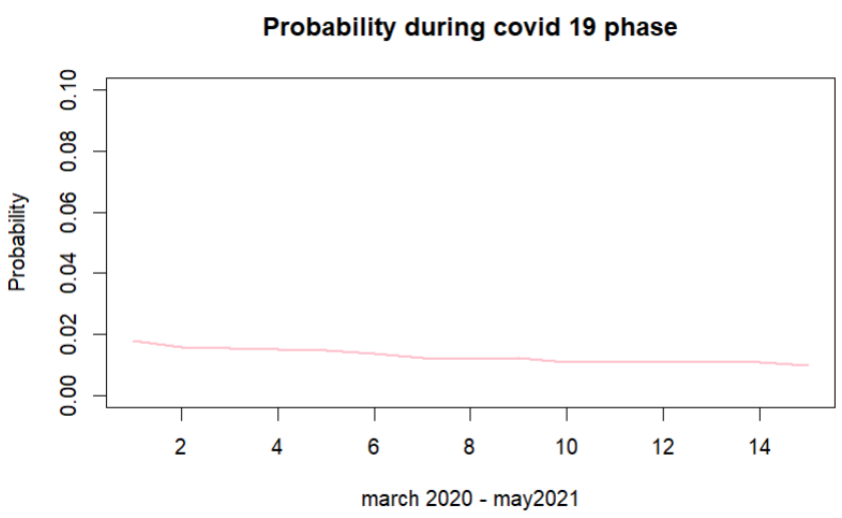
```
[1] 14442
> indian_p_c19 = sum(indian_v[39:53]) / sum(values$`total num`[39:53])
> indian_p_c19
[1] 0.01280728
>
```

PROBABILITY OF SELLING DURING COVID 19 PHASE (CURVE)

indian_p_c19 = indian_v[39:53] / values$`total num`[39 :53]

indian_p_c19

plot(indian_p_c19 , main = "Probability during covid 19 phase" ,ylim = c(0,0.1) ,xlab = "march 2020 - may2021",ylab = 'percentage',col = "pink",type = 'l',lwd = 2.0)

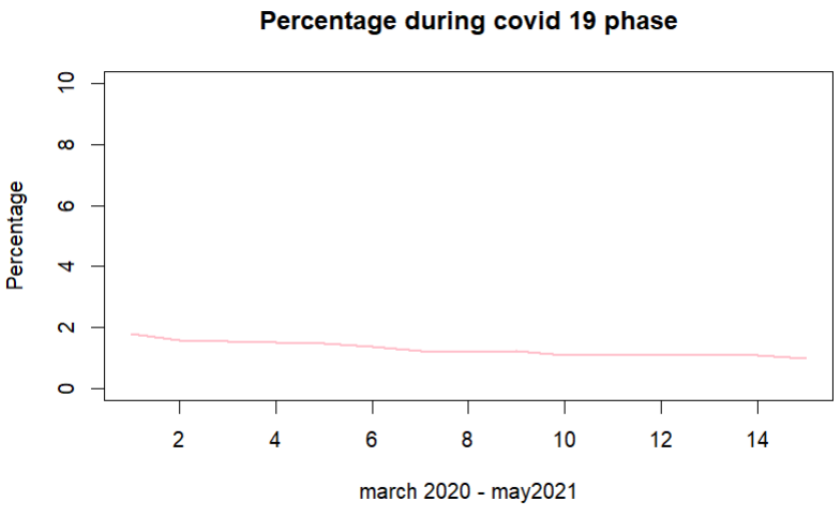


PERCENTAGE SALES DURING COVID 19 PHASE

indian_p_c19 = (indian_v[39:53] / values$`total num`[39 :53]) * 100

indian_p_c19

plot(indian_p_c19 , main = "Percentage during covid 19 phase" ,ylim = c(0,10) ,xlab = "march 2020 - may2021",ylab = 'Percentage',col = "pink",type = 'l',lwd = 2.0)



COEFFICIENT OF CORRELATION DURING COVID 19 PHASE

cor.test(indian_v[39:53],foreign_v[39:53], method = "pearson")

```
        Pearson's product-moment correlation

data:  indian_v[39:53] and foreign_v[39:53]
t = -0.8156, df = 13, p-value = 0.4294
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.658474  0.328790
sample estimates:
       cor
-0.2206334
```

PIE CHART

INDIAN BRANDS VS FOREIGN BRANDS

pie(foreign_vs_indian , vec_name ,col=c('blue','green'),main="Foreign brands vs indian brands")

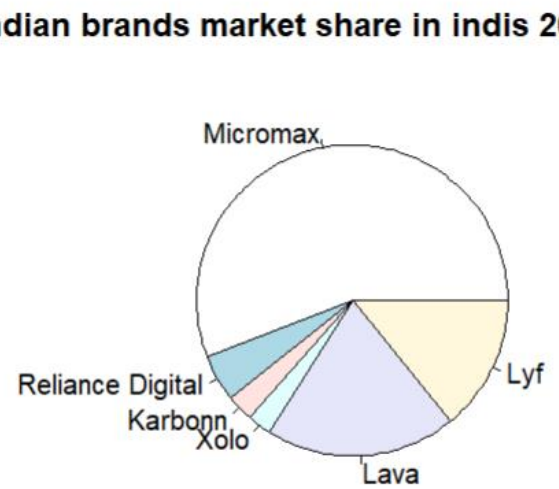
PERCENTAGE MARKET SHARE AMONG INDIAN BRANDS

vs_indian = c(sum(values$Micromax),

sum(values$`Reliance Digital`),

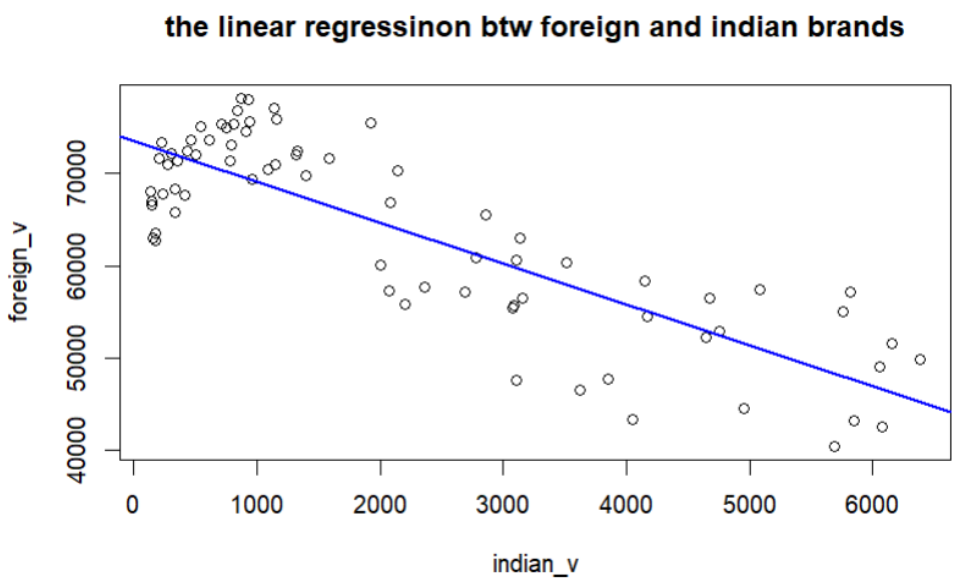
sum(values$Karbonn),

```
        sum(values$Xolo),
        sum(values$Lava),
        sum(values$Lyf))

vs_indian_names = c('Micromax','Reliance Digital','Karbonn','Xolo','Lava','Lyf')

pie(vs_indian,vs_indian_names,main="indian brands market share in indis 2017 to 2022")
```



REGRESSION BETWEEN INDIAN AND FOREIGN MOBILE PHONE BRANDS

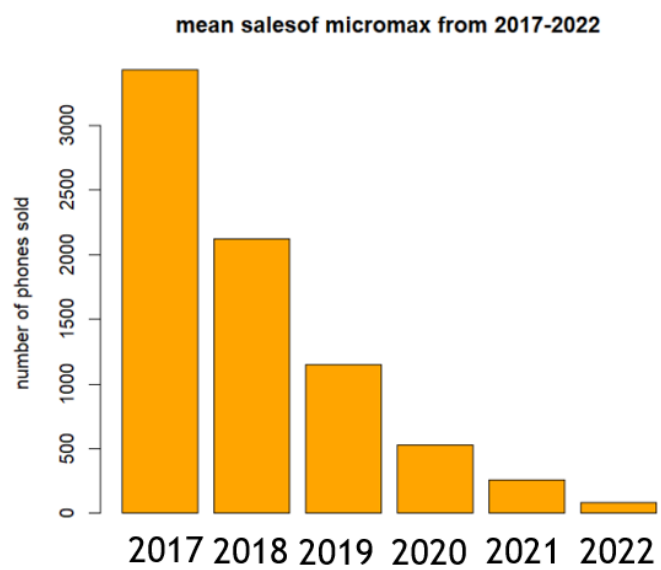
```
reg = lm(foreign_v ~ indian_v)
plot(indian_v , foreign_v , main="the linear regressinon btw foreign and indian brands")
abline(reg , col='blue',lwd = 2.0)
```



ANALYSIS OF LEADING INDIAN MOBILE PHONE BRAND, MICROMAX

MEAN AND STANDARD DEVIATION FROM 2017-2022

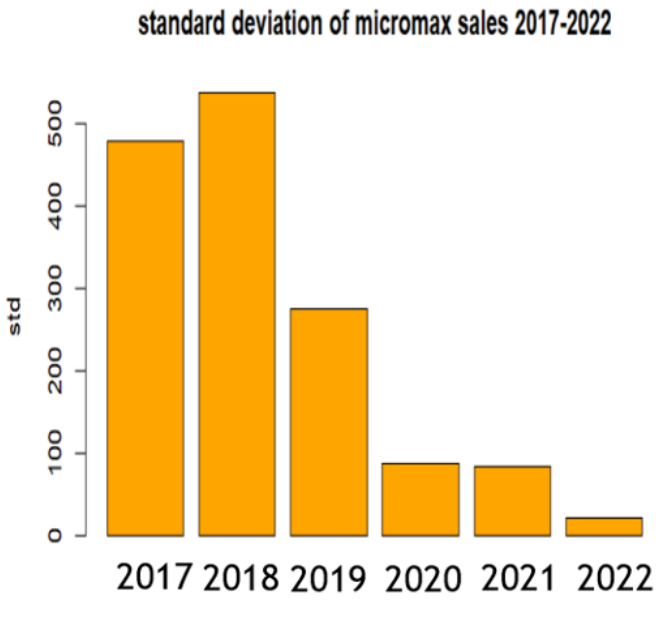
```
tot_17 = sum(values$`total num`[1:12]) # 648200 ,num of phones sold in the year 2017

mean_mm_17 = round(mean(values$Micromax[1:12])) # mean sales of micromax in 2017 is 3431

mean_mm_18 = round(mean(values$Micromax[13:24])) # mean sales of micromax in 2018 is 2124

mean_mm_19 = round(mean(values$Micromax[25:36])) # mean sales of micromax in 2019 is 1150

mean_mm_20 = round(mean(values$Micromax[37:48])) # mean sales of micromax in 2020 is 526

mean_mm_21 = round(mean(values$Micromax[49:60])) # mean sales of micromax in 2021 is 261

mean_mm_22 = round(mean(values$Micromax[61:72])) # mean sales of micrmax in 2022 is 85

mean_mm = c(mean_mm_17 , mean_mm_18 , mean_mm_19 , mean_mm_20 , mean_mm_21 , mean_mm_22)

barplot(mean_mm , col='orange',xlab = '2017-2022',ylab='number of phones sold',main="mean sales of micromax from 2017-2022")
```




```
sd_mm_17 = sd(values$Micromax[1:12])

sd_mm_18 = sd(values$Micromax[13:24])

sd_mm_19 = sd(values$Micromax[25:36])

sd_mm_20 = sd(values$Micromax[37 : 48])

sd_mm_21 = sd(values$Micromax[49:60])

sd_mm_22 = sd(values$Micromax[61:72])
```

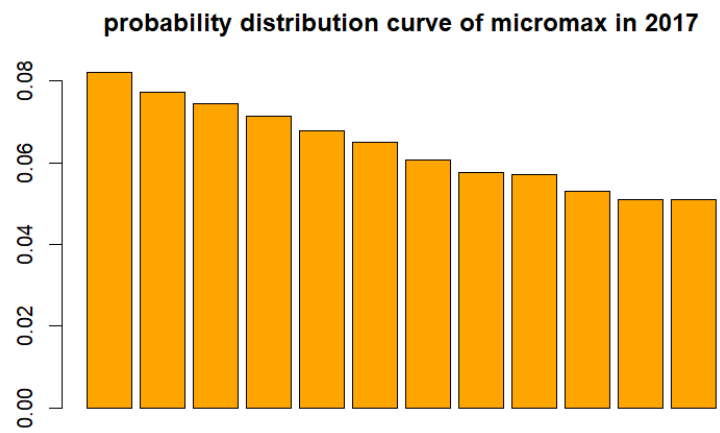
sd_mm = c(sd_mm_17 , sd_mm_18 , sd_mm_19 , sd_mm_20 , sd_mm_21 , sd_mm_22)

barplot(sd_mm , col='orange',xlab = '2017-2022',ylab='std',main="standard deviation of micromax sales 2017-2022")

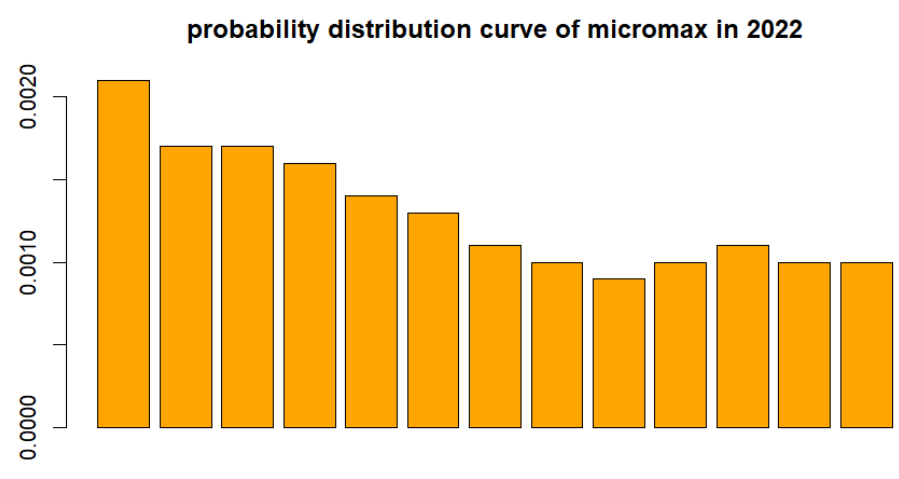


PROBABILITY DISTRIBUTION CURVE FOR SALES IN SPECIFIC YEARS

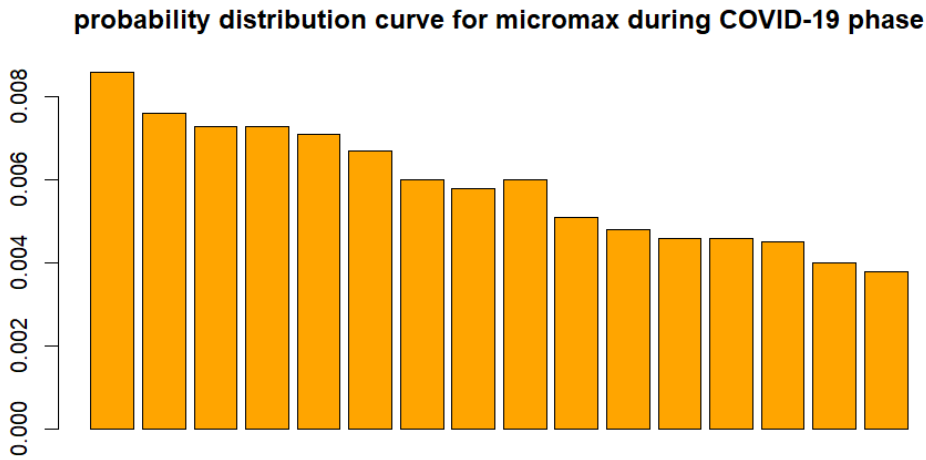
barplot(pdc,main="probability distribution curve of micromax in 2017",col="orange")



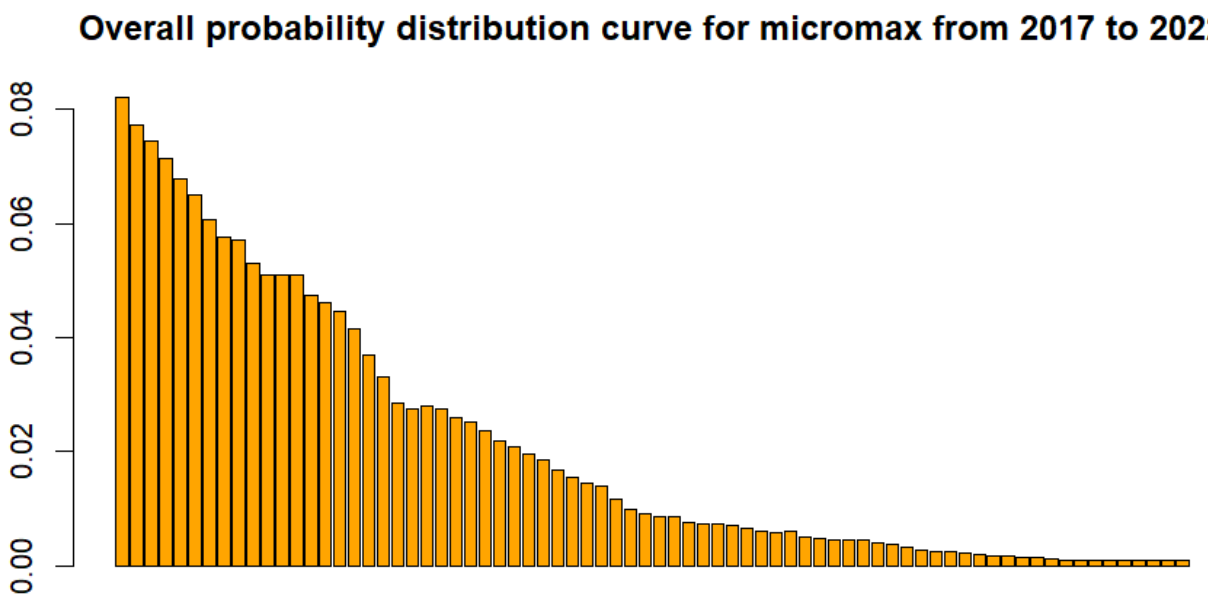
barplot(msdf$Micromax[60:72]/100,main="probability distribution curve of micromax in 2022",col="orange")



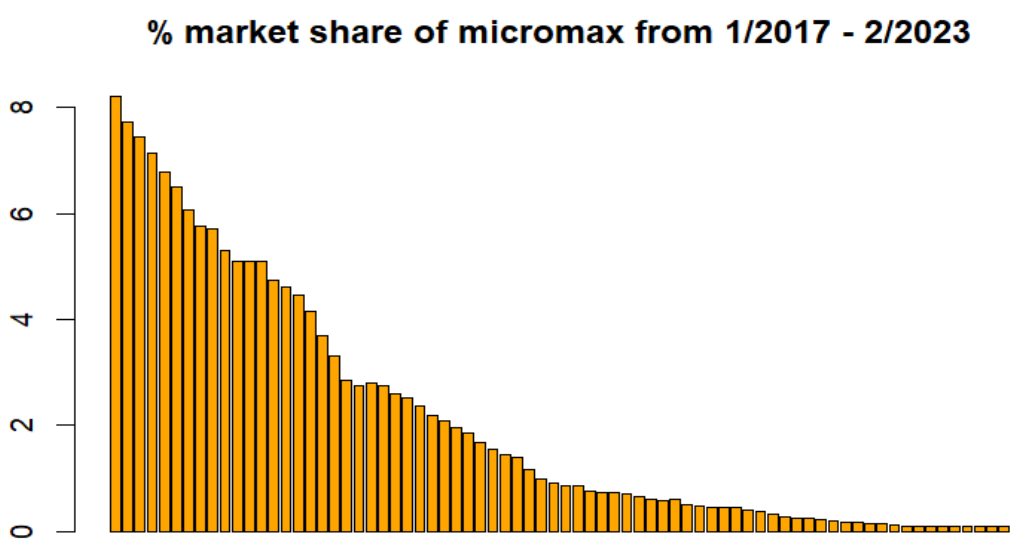
barplot(msdf$Micromax[39:54]/100,main="probability distribution curve for micromax during COVID-19 phase",col="orange")



barplot(msdf$Micromax/100,main="Overall probability distribution curve for micromax from 2017 to 2022",col='orange')



barplot(msdf$Micromax,main="% market share of micromax from 1/2017 - 2/2023",col = "orange")



OVERALL MARKET SHARE OF MICROMAX

total_mm = 91044

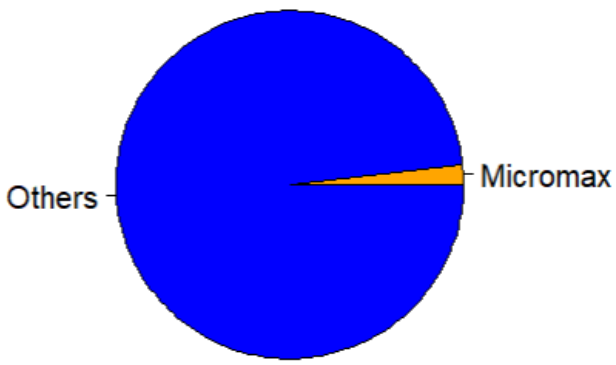
ts_b=c(1033890, 101074, 1088018 ,91044, 471939 ,132675, 153131, 224202, 116048, 85438, 102827, 7467, 7707, 4685, 3920, 32351, 22991, 1193274)

Overall_n_mm = sum(ts_b) - total_mm

vec = c(total_mm , Overall_n_mm)

mm_vs_overall = c('Micromax' , 'Others')

pie(vec,mm_vs_overall,col=c('orange','blue'),main="Overall market share of micromax from 2017-2022")



COEFFICENT OF CORRELATION WITH OTHERS

Ovr_n_mm = values$`total num` - values$Micromax

cor.test(values$Micromax , Ovr_n_mm,method = 'pearson')

```
        Pearson's product-moment correlation

data:  values$Micromax and Ovr_n_mm
t = -11.93, df = 72, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.8796157 -0.7205831
sample estimates:
       cor
-0.8149057
```

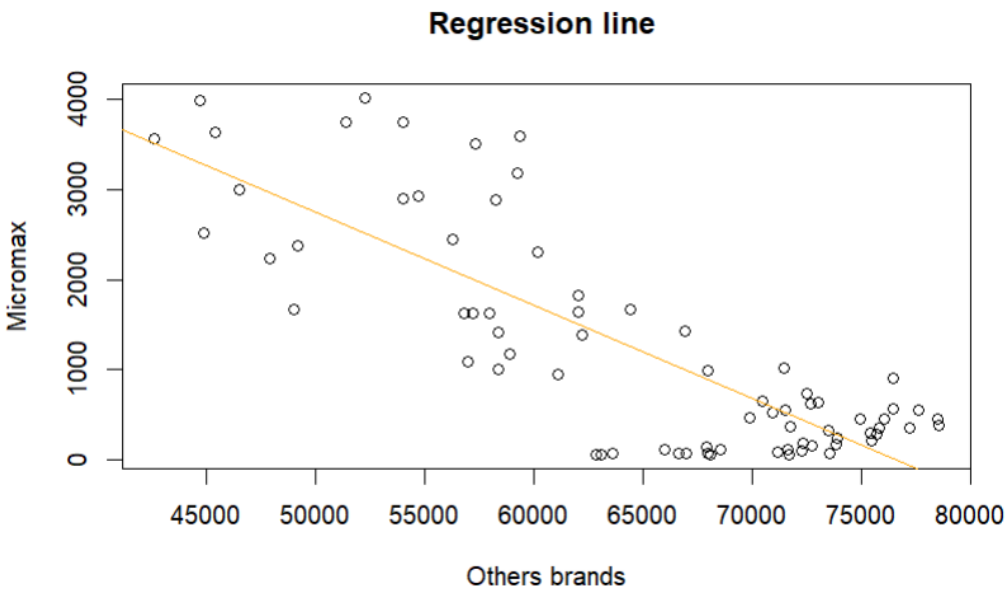
REGRESSION OF MICROMAX ~ OTHER BRANDS

#regression

plot(Ovr_n_mm , values$Micromax,xlab='Others brands',ylab='Micromax',)

reg1 = lm(values$Micromax ~ Ovr_n_mm)

abline(reg1,col='orange')



HYPOTHESIS TESTING – 1

If in total micromax production from 2017 to 2022 14% had some defect or problem .

in other indian brands from 2017 to 2022 22% had some defects or problems

is the differnce between the proportion significant of 5%LOS

CODE :

#hypotheses testing of micromax with other indian brands

Ovr_ib_n_mm = sum(values$`Reliance Digital`+values$Karbonn +values$Xolo +values$Lava+values$Lyf)

mean(values$Micromax)

percentage_others_defect = 0.22 # 22%

percentage_mm_defect = 0.13 #13%

P = (sum(values$Micromax)*percentage_mm_defect+
Ovr_ib_n_mm*percentage_others_defect)/(sum(values$Micromax + Ovr_ib_n_mm))

Q= 1-P

zcal = (percentage_mm_defect -
percentage_others_defect)/(P*Q*(1/sum(values$Micromax)+1/Ovr_ib_n_mm))^1/2

zcrit = qnorm(1-0.05/2)

if(abs(zcal)<abs(zcrit)){print("H0 is accpeted") }else{print("H0 is rejected")}

```
> Ovr_ib_n_mm = sum(values$`Reliance Digital`+values$Karbonn +values$Xolo +values$Lava+values$Lyf)
>
> mean(values$Micromax)
[1] 1230.324
>
> percentage_others_defect = 0.22 # 22%
> percentage_mm_defect = 0.13 #13%
>
> P = (sum(values$Micromax)*percentage_mm_defect+ Ovr_ib_n_mm*percentage_others_defect)/(sum(values$Mic
romax + Ovr_ib_n_mm))
> Q= 1-P
>
> zcal = (percentage_mm_defect - percentage_others_defect)/(P*Q*(1/sum(values$Micromax)+1/Ovr_ib_n_mm))
^1/2
> zcrit = qnorm(1-0.05/2)
> if(abs(zcal)<abs(zcrit)){print("H0 is accpeted") }else{print("H0 is rejected")}
[1] "H0 is rejected"
>
```

HYPOTHESIS TESTING – 2

#hypotheses testing , ----------

if the mean sales of micromax for the year 2022 is somevalue

in a sample{january , feburary} the mean sales of micromax for the year 2023 is somevalue

At 0.05 significance level , can we reject the null hypotheses that the mean sales of micromax

#will not differ from last year

#mean_mm_22

#sd_mm_22

mean_mm_23 = 64

z = (mean_mm_23 - mean_mm_22)/(sd_mm_22 / sqrt(128))

alpha = 0.05

zhalfalpha = qnorm(1-(alpha/2))

if(z<abs(zhalfalpha)){print("H0 is accpeted")}else{print("H0 is rejected")}

```
> if(z<abs(zhalfalpha)){print("H0 is accpeted")}else{print("H0 is rejected")}
[1] "H0 is accpeted"
>
```

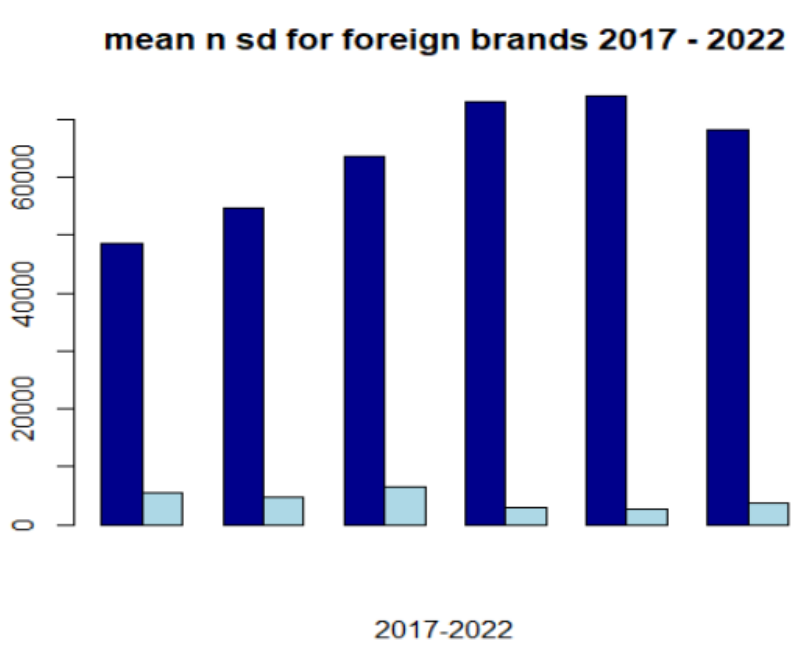
FOREIGN MOBLIE PHONE BRANDS ANALYSIS

IMPORTING DATASET

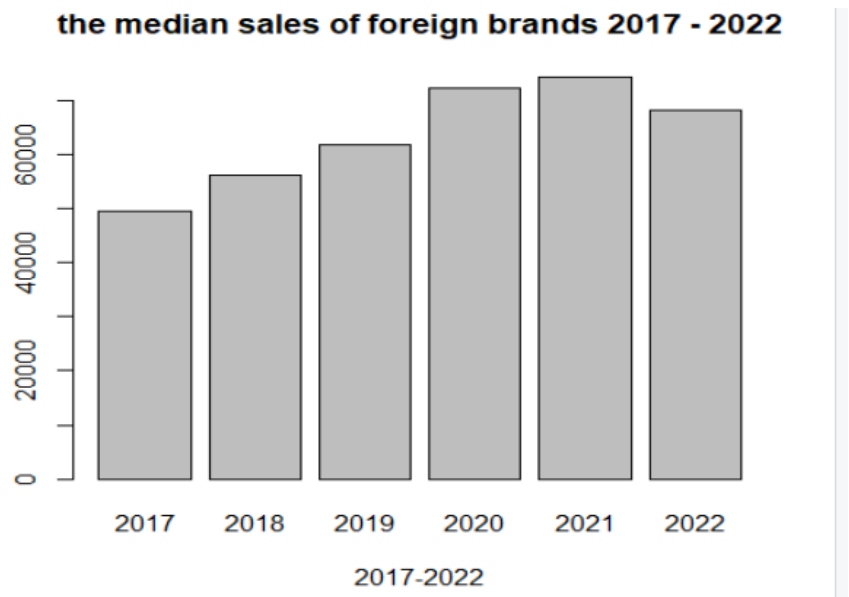
```
library(readxl)
values <- read_excel("C:\\arun\\Probability\\pbmsi_values.xlsx")
head(values)
```

MEAN,MEDIAN,STANDARD DEVIATION

```
foreign_mean = c(round(mean(foreign[1:12])),
                 round(mean(foreign[13:24])),
                 round(mean(foreign[25:36])),
                 round(mean(foreign[37:48])),
                 round(mean(foreign[49:60])),
                 round(mean(foreign[61:72])))
foreign_sd = c(round(sd(foreign[1:12])),
               round(sd(foreign[13:24])),
               round(sd(foreign[25:36])),
               round(sd(foreign[37:48])),
               round(sd(foreign[49:60])),
               round(sd(foreign[61:72])))
mean_sd_foreign = rbind(foreign_mean , foreign_sd )
mean_sd_foreign
barplot(mean_sd_foreign , main="mean n sd for foreign brands 2017 - 2022",
        col = c("darkblue","lightblue"),beside = TRUE,xlab ="2017-
2022",names.args=c(2017,2018,2019,2020,2021,2022))
```

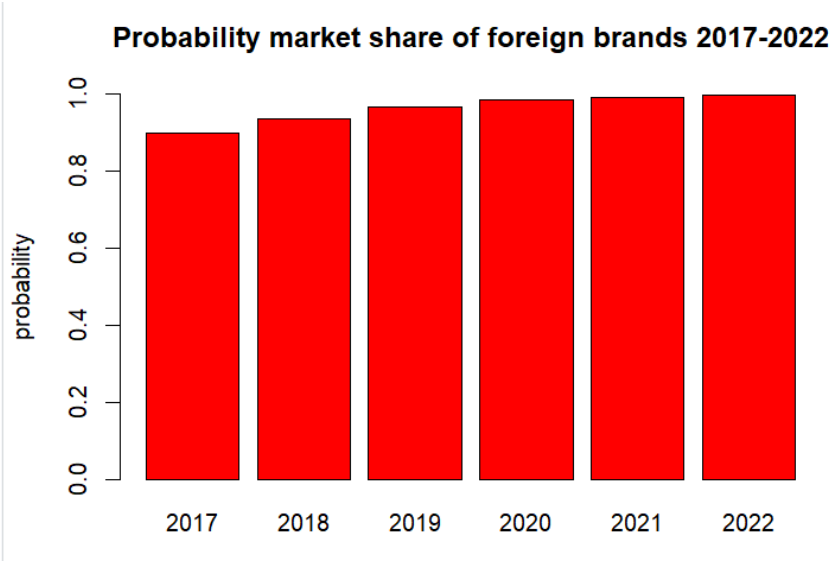


```
foreign_median = c(round(median(foreign[1:12])),
                   round(median(foreign[13:24])),
                   round(median(foreign[25:36])),
                   round(median(foreign[37:48])),
                   round(median(foreign[49:60])),
                   round(median(foreign[61:72])))
barplot(foreign_median , main= " the median sales of foreign brands 2017 - 2022 ",xlab="2017-2022",
        names.arg =c(2017,2018,2019,2020,2021,2022) )
```



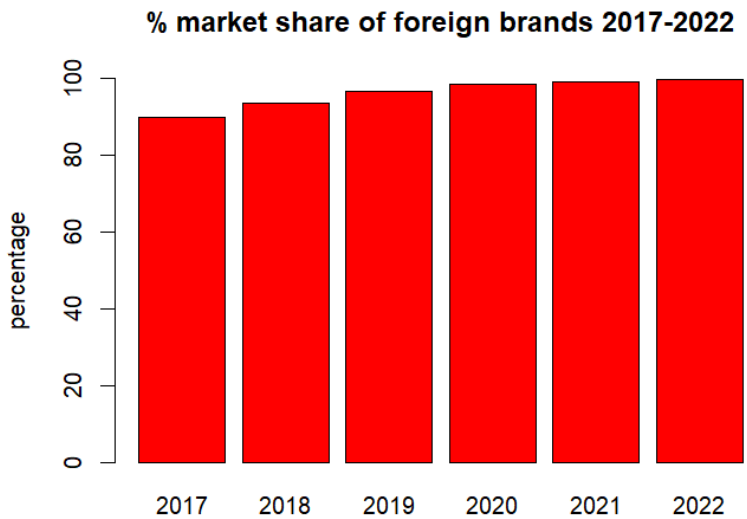
PROBABILITY MARKET SHARE

```
foreign_prob_17_22 = c((sum(foreign_v[1:12]) / sum(values$`total num`[1:12])),
                       (sum(foreign_v[13:24]) / sum(values$`total num`[13:24])),
                       (sum(foreign_v[25:36]) / sum(values$`total num`[25:36])),
                       (sum(foreign_v[37:48]) / sum(values$`total num`[37:48])),
                       (sum(foreign_v[49:60]) / sum(values$`total num`[49:60])),
                       (sum(foreign_v[61:72]) / sum(values$`total num`[61:72])))

barplot(foreign_prob_17_22, main="Probability market share of foreign brands 2017-
2022",ylab='probability',
        names.arg =c(2017,2018,2019,2020,2021,2022),col = "red",ylim=c(0,1))
```



PERCENTAGE MARKET SHARE

```
foreign_v = values$`total num` -  values$Micromax - values$`Reliance Digital`-values$Karbonn - values$Xolo - values$Lava - values$Lyf

foreign_p_17_22 = c((sum(foreign_v[1:12]) / sum(values$`total num`[1:12]))*100,
                    (sum(foreign_v[13:24]) / sum(values$`total num`[13:24]))*100,
                    (sum(foreign_v[25:36]) / sum(values$`total num`[25:36]))*100,
                    (sum(foreign_v[37:48]) / sum(values$`total num`[37:48]))*100,
                    (sum(foreign_v[49:60]) / sum(values$`total num`[49:60]))*100,
                    (sum(foreign_v[61:72]) / sum(values$`total num`[61:72]))*100)


barplot(foreign_p_17_22, main="% market share of foreign brands 2017-2022",ylab='percentage',
        names.arg =c(2017,2018,2019,2020,2021,2022),col = "red",ylim=c(0,100))
```



SALES DURING COVID 19

NO OF FOREIGN BRANDS PHONES SOLD

```
foreign_19= sum(foreign[39:53])

foreign_19
```

```
> foreign_19= sum(foreign[39:53])
> foreign_19
[1] 1113198
```

PROBABILITY SALES

foreign_p_c19 = sum(foreign_v[39:53]) / sum(values$`total num`[39:53]) *100

foreign_p_c19

```
> foreign_p_c19 =
> foreign_p_c19
[1] 98.71927
```

PROBABILITY SALES MONTHLY WISE CURVE

Covid 19 phase ranges from march 2020 to may 2021

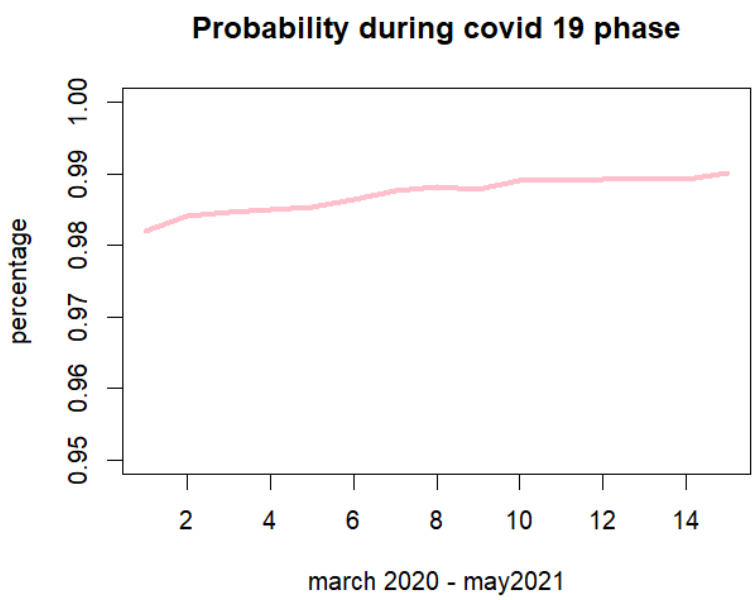
foreign_p_c19 = sum(foreign_v[39:53]) / sum(values$`total num`[39:53]) *100

foreign_p_c19 = foreign_v[39:53] / values$`total num`[39 :53]

foreign_p_c19

#c19_xaxis = c('mar2020','apr2020','may2020','jun2020','jul2020','aug2020','sep2020','oct2020','nov2020','dec2020','jan2021','feb2021','mar2021','apr2021','may2021')

plot(foreign_p_c19 , main = "Probability during covid 19 phase" ,ylim = c(0.95,1) ,xlab = "march 2020 - may2021",ylab = 'percentage',col = "pink",type = 'l',lwd = 3.5)



PERCENTAGE SALES

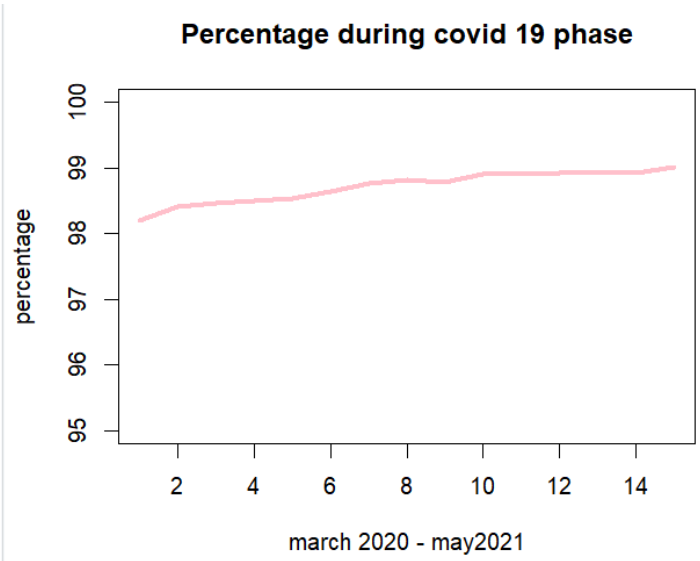
foreign_p_c19 = sum(foreign_v[39:53]) / sum(values$`total num`[39:53]) *100

foreign_p_c19 = (foreign_v[39:53] / values$`total num`[39 :53])*100

foreign_p_c19

#c19_xaxis = c('mar2020','apr2020','may2020','jun2020','jul2020','aug2020','sep2020','oct2020','nov2020','dec2020','jan2021','feb2021','mar2021','apr2021','may2021')

plot(foreign_p_c19 , main = "Present during covid 19 phase" ,ylim = c(0,100) ,xlab = "march 2020 - may2021",ylab = 'percentage',col = "pink", type = 'l' , lwd = 3.5)



COEFFICENT OF CORRELATION BETWEEN FOREIGN AND INDIAN MOBILE PHONE BRANDS

#coefficent of correlation

indian_v = values$`total num` - foreign_v

cor.test(foreign_v , indian_v,method = "pearson")

```
        Pearson's product-moment correlation

data:  foreign_v and indian_v
t = -12.68, df = 72, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.8904840 -0.7438524
sample estimates:
       cor
-0.8310911
```

PIE CHARTS

FOREIGN VS INDIAN

total_indian_v = sum(indian_v)

total_foreign_v = sum(foreign_v)

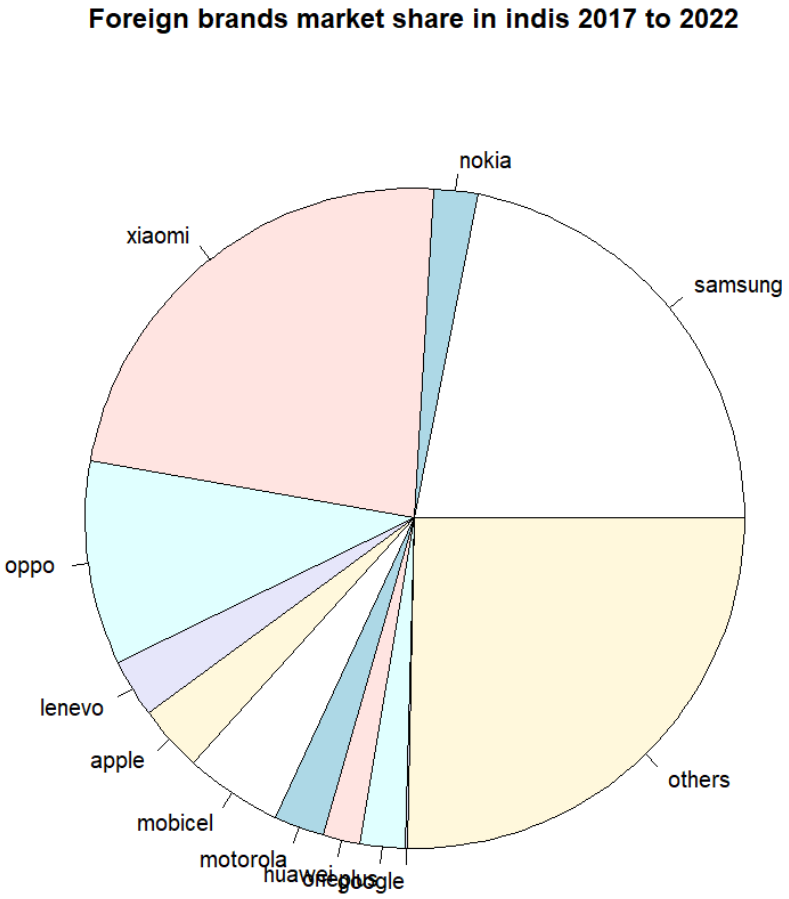
foreign_vs_indian = c(total_foreign_v, total_indian_v)

vec_name = c("Foreign","Indian")

pie(foreign_vs_indian , vec_name ,col=c('blue','green'),main="Foreign brands vs indian brands")

AMONG FOREIGN

```
vs_foreign = c(sum(values$samsung) ,
               sum(values$Nokia),
               sum(values$Xiaomi),
               sum(values$Oppo),
               sum(values$Lenovo),
               sum(values$Apple),
               sum(values$Mobicel),
               sum(values$Motorola),

               sum(values$Huawei),
               sum(values$OnePlus),
               sum(values$Google),
               sum(values$othersss))
vec_foreign_name =
c('samsung','nokia','xiaomi','oppo','lenevo','apple','mobicel','motorola','huawei','oneplus','googl
e','others')


pie(vs_foreign,vec_foreign_name,main="Foreign brands market share in indis 2017 to 2022",)
```

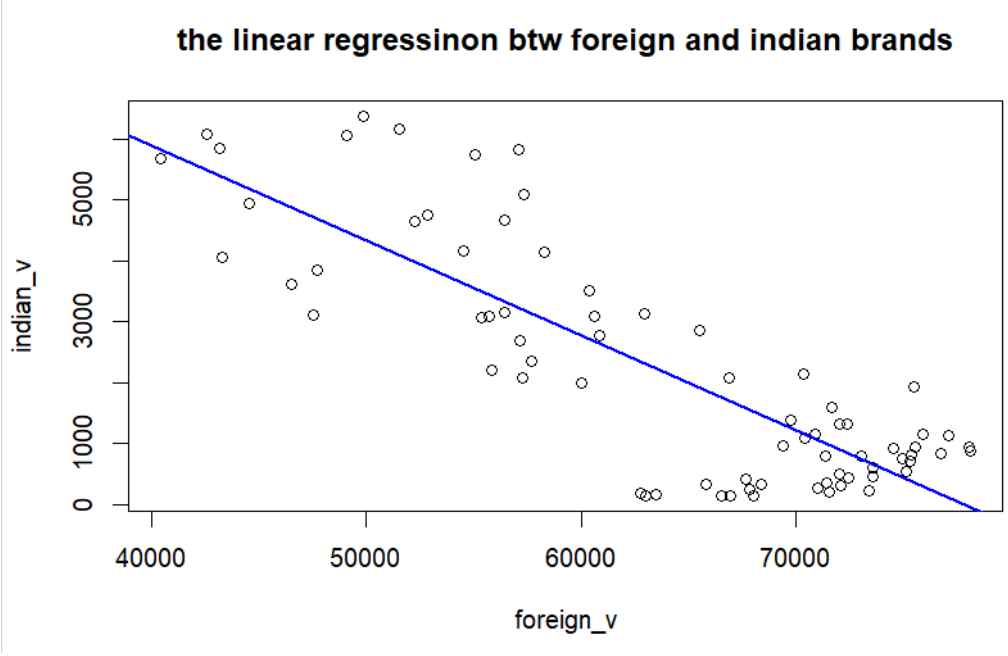


REGRESSION BETWEEN FOREIGN AND INDIAN BRANDS

reg = lm(indian_v ~ foreign_v)

plot(foreign_v , indian_v , main="the linear regressinon btw foreign and indian brands")

abline(reg , col='blue',lwd = 2.0)



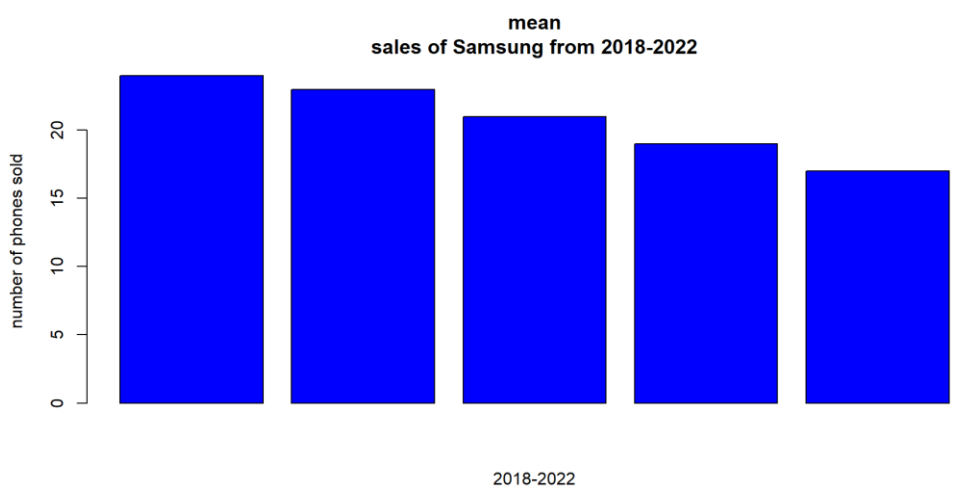
ANALYSIS OF SAMSUNG IN INDIAN MARKET

IMPORTING DATASET

```
getwd()
setwd("C:/Users/Karun/Desktop")
data=read.csv("percentage.csv",header=TRUE,sep=",")
data1=read.csv("values.csv",header=TRUE,sep=",")
print(data)
print(data1)
```

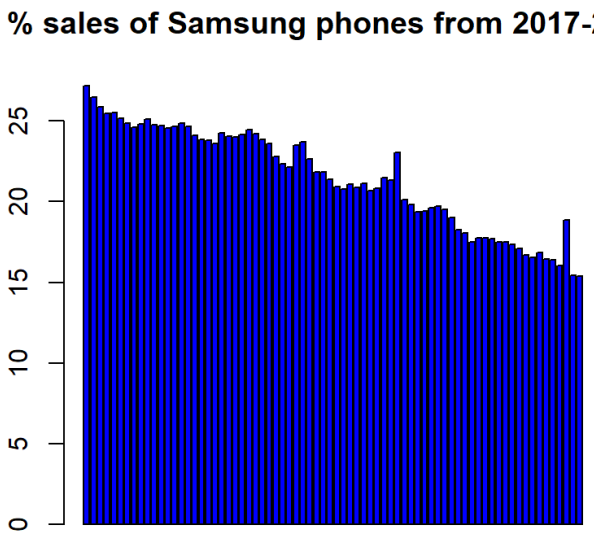
MEAN SALES OF SAMSUNG FROM 2017-2022

```
total = sum(data$`total num`[1:12])
mean_mm_18 = round(mean(data$Samsung [13:24]))
mean_mm_19 = round(mean(data$Samsung [25:36]))
mean_mm_20 = round(mean(data$Samsung [37:48]))
mean_mm_21 = round(mean(data$Samsung [49:60]))
mean_mm_22 = round(mean(data$Samsung [61:72]))
mean_mm = c(mean_mm_18 , mean_mm_19 , mean_mm_20 , mean_mm_21 ,
        mean_mm_22)
barplot(mean_mm , col='blue',xlab = "2018-2022",ylab="percentage ",main="Mean
sales of Samsung from 2018-2022")
```



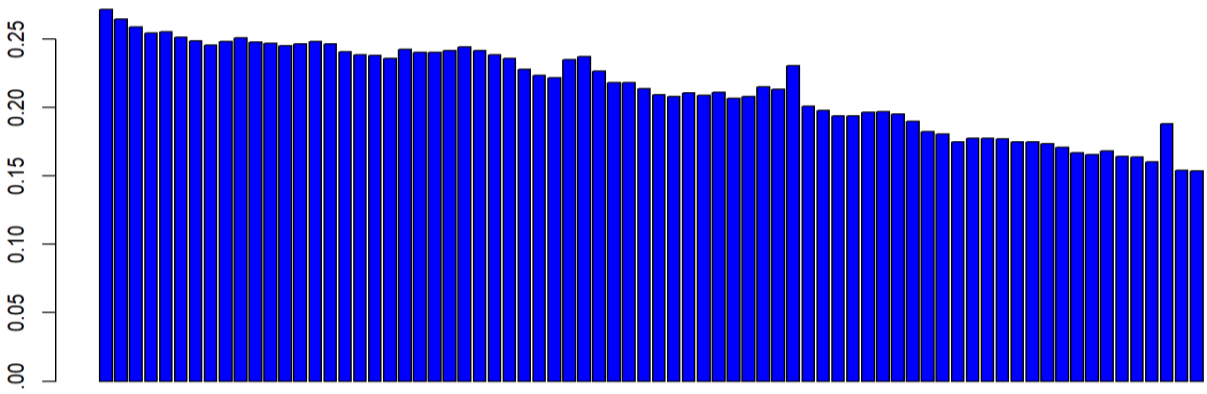
PERCENTAGE SALES OF SAMSUNG FROM 2017-2022

```
barplot(data$Samsung,main="% sales of Samsung phones from 2017-2023",col="  blue")
```



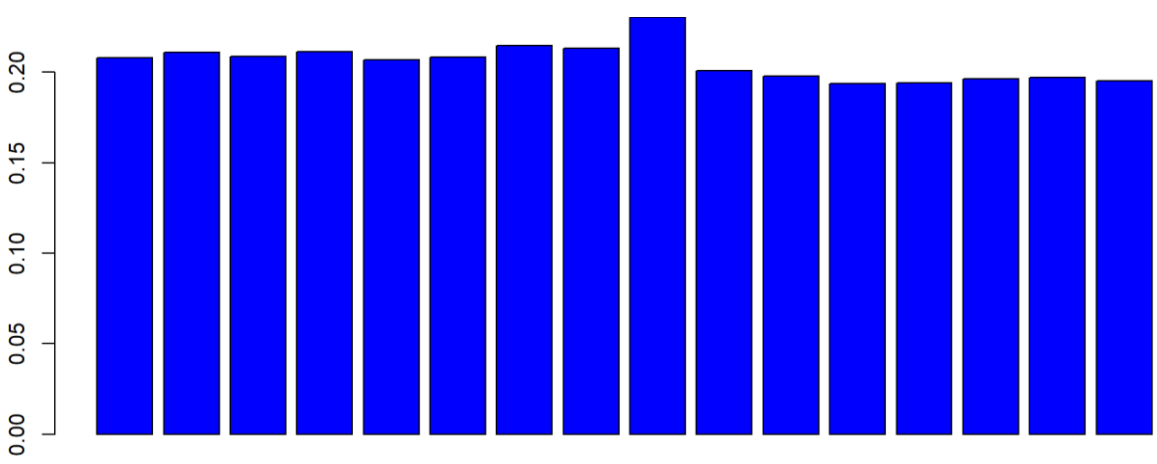
OVERALL PROBABILITY DISTRIBUTION OF SAMSUNG DURING

barplot(data$Samsung/100,main="overall probability distribution curve for Samsung ",col="blue")



PROBABILTY DISTRIBUTION OF SAMSUNG DURING COVID-19

barplot(data$Samsung[39:54]/100,main="probability distribution curve for Samsung during COVID-19 ",col="blue")



COEFFICIENT OF CORRELATION WITH OTHER BRANDS

others=data$total.num-data$Samsung

cor.test(data$Samsung,others,method="pearson")

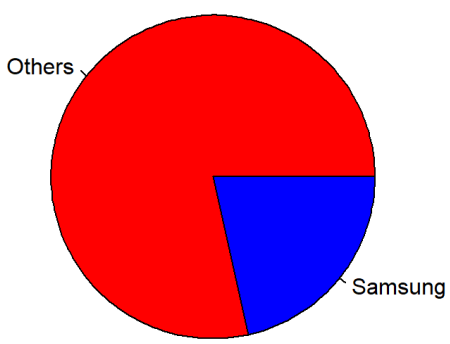
```
> others=data$total.num-data$Samsung
> cor.test(data$Samsung,others,method="pearson")

        Pearson's product-moment correlation

data:  data$Samsung and others
t = -7.0315, df = 72, p-value = 9.671e-10
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.7562956 -0.4794679
sample estimates:
      cor
-0.638062
```

OVERALL INDIAN MARKET SHARE OF SAMSUNG

slices=c(78.5,21.5)

countires=c("Others","Samsung")

pie(slices,labels=countires,col=c("red","blue"),main="Contribution of Samsung in the world market")



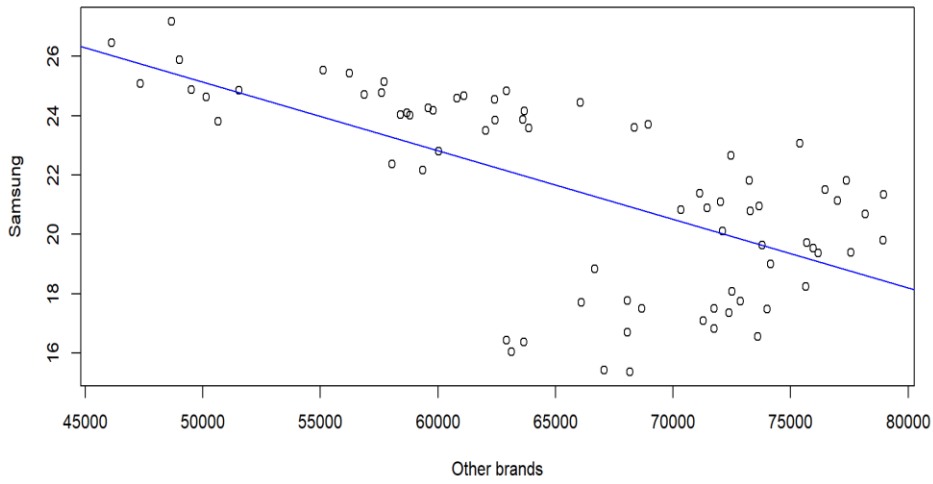
REGRESSIONS

LINEAR REGRESSION BETWEEN SAMSUNG AND OTHERS

plot(others,data$Samsung,xlab="Other brands",ylab="Samsung")

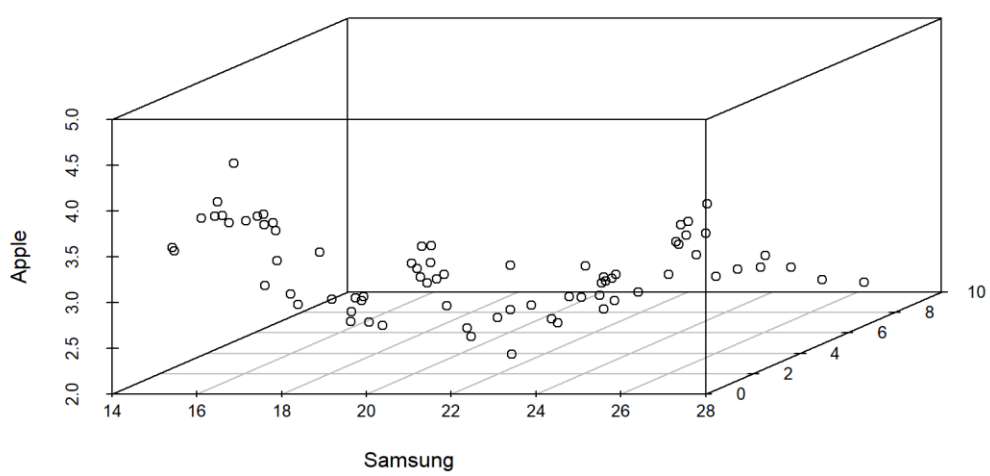
reg1=lm(data$Samsung~others)

abline(reg1,col="blue")



MULTIPLE REGESSION BETWEEN SAMSUNG , APPLE , MICROMAX

```
y=data$Samsung

x1=data$Micromax

x2=data$Apple

RegModel=lm(y~x1+x2)

print(RegModel)

summary(RegModel)

install.packages("scatterplot3d")

library(scatterplot3d)

graph=scatterplot3d(y,x1,x2,xlab="Samsung",ylab="Micromax",zlab="Apple")

graph$plane3d(RegModel)
```




```
Call:
lm(formula = y ~ x1 + x2)

Coefficients:
(Intercept)           x1           x2
    27.3698       0.8898      -2.5002
```

CONCLUSION

- Indian Mobile Phone market(IMPM) is important to the world
- There are more than 40 mobile phone brands trying to sell and manufacture their products in India
- Nokia failed to embrace cutting edge technologies => losing the IMPM in late period of the last decade
- Chinese brands like Xiaomi,realm,vivo,Oppo are gaining in the Indian market in the late period of the last decade due to their price-quality ratio
- Indian Brands like Micromax etc.. Need to produce something different and user-friendly and have a good price-quality ratio to become apex in the home turf. For this, it should raise more funds.

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