

Comcast-Telecom-Consumer-Complaints.R

labsuser

2022-09-17

```
rm(list = ls(all = TRUE))

telcom <- read.csv('Comcast Telecom Complaints data.csv')

head(telcom)

## Ticket..
Customer.Complaint
## 1 250635 Comcast Cable Internet
Speeds
## 2 223441 Payment disappear - service got
disconnected
## 3 242732 Speed and
Service
## 4 277946 Comcast Imposed a New Usage Cap of 300GB that punishes
streaming.
## 5 307175 Comcast not working and no service to
boot
## 6 338519 ISP Charging for arbitrary data limits with overage
fees
## Date Time Received.Via City State Zip.code
Status
## 1 22-04-2015 3:53:50 PM Customer Care Call Abingdon Maryland 21009
Closed
## 2 4/8/2015 10:22:56 AM Internet Acworth Georgia 30102
Closed
## 3 18-04-2015 9:55:47 AM Internet Acworth Georgia 30101
Closed
## 4 5/7/2015 11:59:35 AM Internet Acworth Georgia 30101
Open
## 5 26-05-2015 1:25:26 PM Internet Acworth Georgia 30101
Solved
## 6 6/12/2015 9:59:40 PM Internet Acworth Georgia 30101
Solved
## Filing.on.Behalf.of.Someone
## 1 No
## 2 No
## 3 Yes
## 4 Yes
## 5 No
## 6 No
```

```
summary(telcom)
```

```
##      Ticket..      Customer.Complaint      Date      Time
## 211255 :    1 Comcast      : 83 24-06-2015: 218 1:07:49 PM :
2
## 211472 :    1 Comcast Internet : 18 23-06-2015: 190 1:12:13 PM :
2
## 211478 :    1 Comcast Data Cap : 17 25-06-2015: 98 1:26:23 PM :
2
## 211677 :    1 comcast      : 13 26-06-2015: 55 1:29:58 PM :
2
## 211775 :    1 Comcast Billing : 11 30-06-2015: 53 1:30:10 PM :
2
## 211784 :    1 Comcast Data Caps: 11 29-06-2015: 51 10:02:10 AM:
2
## (Other):2218 (Other)      :2071 (Other) :1559 (Other)
:2212
##      Received.Via      City      State
## Customer Care Call:1119 Atlanta : 63 Georgia : 288
## Internet :1105 Chicago : 47 Florida : 240
## Knoxville : 36 California : 220
## Houston : 33 Illinois : 164
## Jacksonville: 31 Tennessee : 143
## Philadelphia: 25 Pennsylvania: 130
## (Other) :1989 (Other) :1039
##      Zip.code      Status      Filing.on.Behalf.of.Someone
## Min. : 1075 Closed :734 No :2021
## 1st Qu.:30056 Open :363 Yes: 203
## Median :37211 Pending:154
## Mean :47994 Solved :973
## 3rd Qu.:77059
## Max. :99223
##
```

```
str(telcom)
```

```
## 'data.frame': 2224 obs. of 10 variables:
## $ Ticket.. : Factor w/ 2224 levels
"211255","211472",...: 371 124 307 611 849 1214 1763 1590 967 2110 ...
## $ Customer.Complaint : Factor w/ 1841 levels "(Comcast is not my
complaint!) Cyber Tele-marketing is my complaint!",...: 307 1519 1660 498 646
1353 1715 711 446 695 ...
## $ Date : Factor w/ 91 levels "13-04-2015","13-05-
2015",...: 28 66 16 77 41 83 36 33 80 48 ...
## $ Time : Factor w/ 2190 levels "1:00:18
AM","1:00:32 PM",...: 1198 291 2165 652 89 2189 252 1666 594 1648 ...
## $ Received.Via : Factor w/ 2 levels "Customer Care
Call",...: 1 2 2 2 2 2 1 2 1 1 ...
## $ City : Factor w/ 928 levels
"Abingdon","Acworth",...: 1 2 2 2 2 2 2 3 4 4 ...
```

```
## $ State : Factor w/ 43 levels
"Alabama","Arizona",...: 19 11 11 11 11 11 11 21 4 4 ...
## $ Zip.code : int 21009 30102 30101 30101 30101 30101
30101 49221 94502 94501 ...
## $ Status : Factor w/ 4 levels "Closed","Open",...: 1 1
1 2 4 4 3 4 1 2 ...
## $ Filing.on.Behalf.of.Someone: Factor w/ 2 levels "No","Yes": 1 1 2 2 1 1
1 1 1 2 ...
```

```
telcom$Date <- as.Date(telcom$Date,format="%d-%m-%Y")
```

```
head(telcom)
```

```
## Ticket..
Customer.Complaint
## 1 250635 Comcast Cable Internet
Speeds
## 2 223441 Payment disappear - service got
disconnected
## 3 242732 Speed and
Service
## 4 277946 Comcast Imposed a New Usage Cap of 300GB that punishes
streaming.
## 5 307175 Comcast not working and no service to
boot
## 6 338519 ISP Charging for arbitrary data limits with overage
fees
```

	Date	Time	Received.Via	City	State	Zip.code
##						
Status						
## 1	2015-04-22	3:53:50 PM	Customer Care Call	Abingdon	Maryland	21009
Closed						
## 2	<NA>	10:22:56 AM	Internet	Acworth	Georgia	30102
Closed						
## 3	2015-04-18	9:55:47 AM	Internet	Acworth	Georgia	30101
Closed						
## 4	<NA>	11:59:35 AM	Internet	Acworth	Georgia	30101
Open						
## 5	2015-05-26	1:25:26 PM	Internet	Acworth	Georgia	30101
Solved						
## 6	<NA>	9:59:40 PM	Internet	Acworth	Georgia	30101
Solved						
## Filing.on.Behalf.of.Someone						
## 1			No			
## 2			No			
## 3			Yes			
## 4			Yes			
## 5			No			
## 6			No			

```
str(telcom)
```

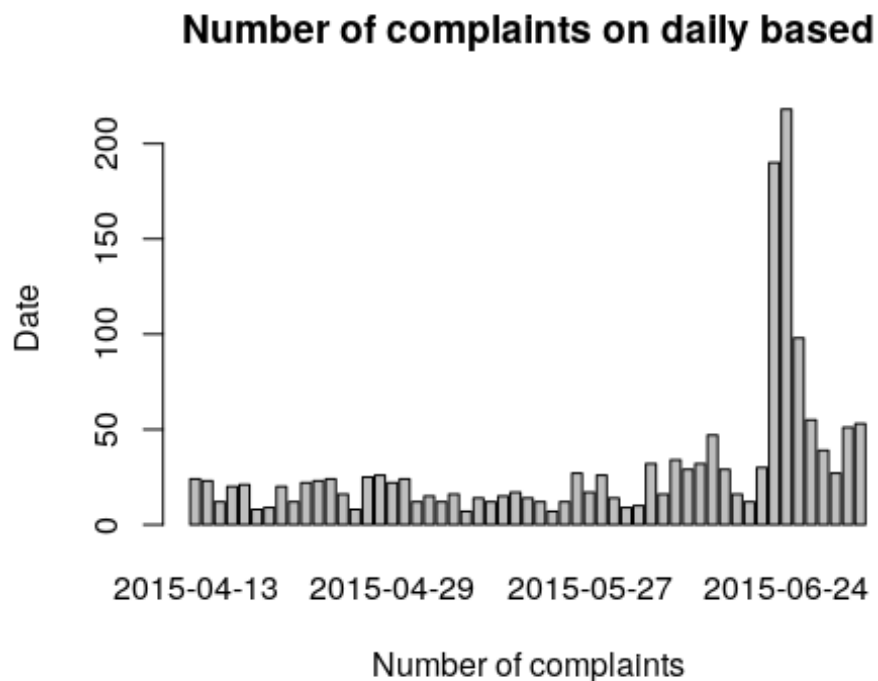
```
## 'data.frame':    2224 obs. of  10 variables:
## $ Ticket..      : Factor w/ 2224 levels
"211255","211472",...: 371 124 307 611 849 1214 1763 1590 967 2110 ...
## $ Customer.Complaint : Factor w/ 1841 levels "(Comcast is not my
complaint!) Cyber Tele-marketing is my complaint!",...: 307 1519 1660 498 646
1353 1715 711 446 695 ...
## $ Date          : Date, format: "2015-04-22" NA ...
## $ Time          : Factor w/ 2190 levels "1:00:18
AM","1:00:32 PM",...: 1198 291 2165 652 89 2189 252 1666 594 1648 ...
## $ Received.Via  : Factor w/ 2 levels "Customer Care
Call",...: 1 2 2 2 2 2 1 2 1 1 ...
## $ City          : Factor w/ 928 levels
"Abingdon","Acworth",...: 1 2 2 2 2 2 2 3 4 4 ...
## $ State         : Factor w/ 43 levels
"Alabama","Arizona",...: 19 11 11 11 11 11 11 21 4 4 ...
## $ Zip.code      : int  21009 30102 30101 30101 30101 30101
30101 49221 94502 94501 ...
## $ Status        : Factor w/ 4 levels "Closed","Open",...: 1 1
1 2 4 4 3 4 1 2 ...
## $ Filing.on.Behalf.of.Someone: Factor w/ 2 levels "No","Yes": 1 1 2 2 1 1
1 1 1 2 ...
```

```
daily <- table(telcom$Date)
daily
```

```
##
## 2015-04-13 2015-04-14 2015-04-15 2015-04-16 2015-04-17 2015-04-18 2015-04-
19
##          24          23          12          20          21          8
9
## 2015-04-20 2015-04-21 2015-04-22 2015-04-23 2015-04-24 2015-04-25 2015-04-
26
##          20          12          22          23          24          16
8
## 2015-04-27 2015-04-28 2015-04-29 2015-04-30 2015-05-13 2015-05-14 2015-05-
15
##          25          26          22          24          12          15
12
## 2015-05-16 2015-05-17 2015-05-18 2015-05-19 2015-05-20 2015-05-21 2015-05-
22
##          16          7          14          12          15          17
14
## 2015-05-23 2015-05-24 2015-05-25 2015-05-26 2015-05-27 2015-05-28 2015-05-
29
##          12          7          12          27          17          26
14
## 2015-05-30 2015-05-31 2015-06-13 2015-06-14 2015-06-15 2015-06-16 2015-06-
17
##          9          10          32          16          34          29
32
```

```
## 2015-06-18 2015-06-19 2015-06-20 2015-06-21 2015-06-22 2015-06-23 2015-06-
24
##          47          29          16          12          30          190
218
## 2015-06-25 2015-06-26 2015-06-27 2015-06-28 2015-06-29 2015-06-30
##          98          55          39          27          51          53
```

```
barplot(daily, xlab = 'Number of complaints', ylab = 'Date', main = 'Number
of complaints on daily based')
```



```
telcom_monthly = transform(telcom, MonthOfComplaint =
as.numeric(format(Date, format = "%m")))
head(telcom_monthly)
```

```
## Ticket..
Customer.Complaint
## 1 250635 Comcast Cable Internet
Speeds
## 2 223441 Payment disappear - service got
disconnected
## 3 242732 Speed and
Service
## 4 277946 Comcast Imposed a New Usage Cap of 300GB that punishes
streaming.
## 5 307175 Comcast not working and no service to
boot
## 6 338519 ISP Charging for arbitrary data limits with overage
```

```

fees
##      Date      Time      Received.Via      City      State Zip.code
Status
## 1 2015-04-22  3:53:50 PM Customer Care Call Abingdon Maryland 21009
Closed
## 2      <NA> 10:22:56 AM      Internet  Acworth  Georgia  30102
Closed
## 3 2015-04-18  9:55:47 AM      Internet  Acworth  Georgia  30101
Closed
## 4      <NA> 11:59:35 AM      Internet  Acworth  Georgia  30101
Open
## 5 2015-05-26  1:25:26 PM      Internet  Acworth  Georgia  30101
Solved
## 6      <NA>  9:59:40 PM      Internet  Acworth  Georgia  30101
Solved
##      Filing.on.Behalf.of.Someone MonthOfComplaint
## 1                                No                4
## 2                                No                NA
## 3                                Yes                4
## 4                                Yes                NA
## 5                                No                5
## 6                                No                NA

```

```

Monthly = table(telcom_monthly$MonthOfComplaint)
Monthly

```

```

##
##      4      5      6
## 339 268 1008

```

```

barplot(Monthly, ylab="Months",xlab="Number of Complaints",main="Number of
complaints by Month")

```

```

noofcomp <- table(telcom$Customer.Complaint)
head(noofcomp)

```

```

##
##
(Comcast is not my complaint!) Cyber Tele-marketing is my complaint!
##
1
## 10 Days No Service - 12 Appointments Comcast Hasn't Shown Up - Comcast Has
Not Fixed Home Infinity X1 - In 10 Days- Cannot Make 911 Calls
##
1
##
2 months and Comcast has not fixed problem
##
1
##
2+ Day Degraded Services

```

```
##
1
##
300 gb cap
##
1
##
300 GB monthly allowance
##
1

library(dplyr)

##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##   filter, lag

## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union

noofcomp1 = arrange(as.data.frame(noofcomp),desc(Freq))
head(noofcomp1)

##           Var1 Freq
## 1          Comcast  83
## 2 Comcast Internet  18
## 3 Comcast Data Cap  17
## 4          comcast  13
## 5 Comcast Billing   11
## 6 Comcast Data Caps  11

complaint_status = transform(telcom,FinalStatus =
ifelse((Status=='Open'|Status=='Pending'),'Open',"Closed"))
head(telcom)

## Ticket..
Customer.Complaint
## 1 250635 Comcast Cable Internet
Speeds
## 2 223441 Payment disappear - service got
disconnected
## 3 242732 Speed and
Service
## 4 277946 Comcast Imposed a New Usage Cap of 300GB that punishes
streaming.
## 5 307175 Comcast not working and no service to
boot
## 6 338519 ISP Charging for arbitrary data limits with overage
```

```

fees
##      Date      Time      Received.Via      City      State Zip.code
Status
## 1 2015-04-22  3:53:50 PM Customer Care Call Abingdon Maryland 21009
Closed
## 2      <NA> 10:22:56 AM      Internet  Acworth  Georgia 30102
Closed
## 3 2015-04-18  9:55:47 AM      Internet  Acworth  Georgia 30101
Closed
## 4      <NA> 11:59:35 AM      Internet  Acworth  Georgia 30101
Open
## 5 2015-05-26  1:25:26 PM      Internet  Acworth  Georgia 30101
Solved
## 6      <NA>  9:59:40 PM      Internet  Acworth  Georgia 30101
Solved
##      Filing.on.Behalf.of.Someone
## 1                                     No
## 2                                     No
## 3                                     Yes
## 4                                     Yes
## 5                                     No
## 6                                     No

```

```
head(complaint_status)
```

```

##      Ticket..
Customer.Complaint
## 1 250635      Comcast Cable Internet
Speeds
## 2 223441      Payment disappear - service got
disconnected
## 3 242732      Speed and
Service
## 4 277946 Comcast Imposed a New Usage Cap of 300GB that punishes
streaming.
## 5 307175      Comcast not working and no service to
boot
## 6 338519      ISP Charging for arbitrary data limits with overage
fees
##      Date      Time      Received.Via      City      State Zip.code
Status
## 1 2015-04-22  3:53:50 PM Customer Care Call Abingdon Maryland 21009
Closed
## 2      <NA> 10:22:56 AM      Internet  Acworth  Georgia 30102
Closed
## 3 2015-04-18  9:55:47 AM      Internet  Acworth  Georgia 30101
Closed
## 4      <NA> 11:59:35 AM      Internet  Acworth  Georgia 30101
Open
## 5 2015-05-26  1:25:26 PM      Internet  Acworth  Georgia 30101

```



```

Solved
## 6      <NA> 9:59:40 PM      Internet  Acworth  Georgia    30101
Solved
##      Filing.on.Behalf.of.Someone FinalStatus
## 1              No      Closed
## 2              No      Closed
## 3             Yes      Closed
## 4             Yes       Open
## 5              No      Closed
## 6              No      Closed

summary(as.factor(complaint_status$FinalStatus))

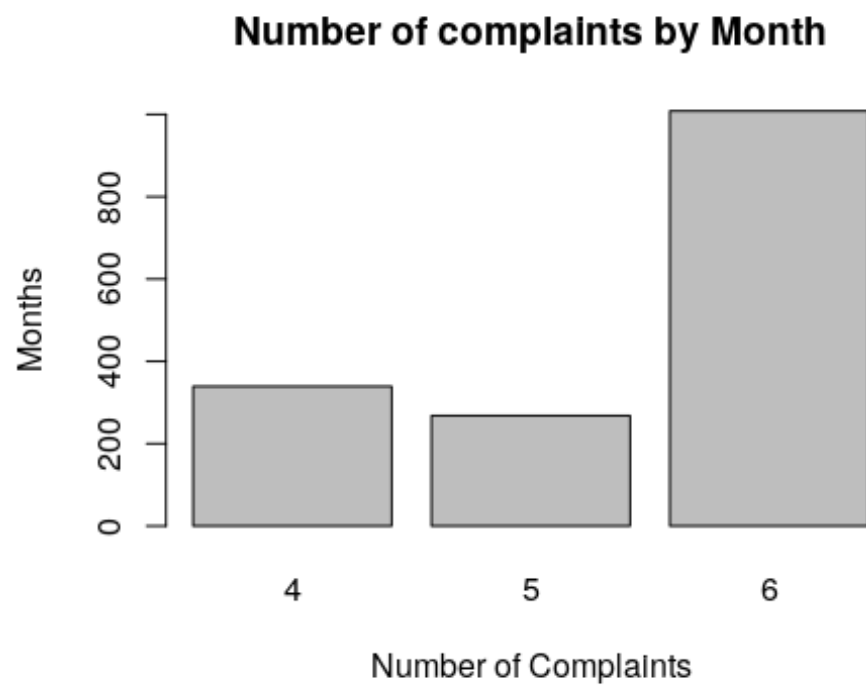
## Closed   Open
##  1707    517

statewisecomp = table(complaint_status$FinalStatus,complaint_status$State)
statewisecomp = as.data.frame(statewisecomp)
head(statewisecomp)

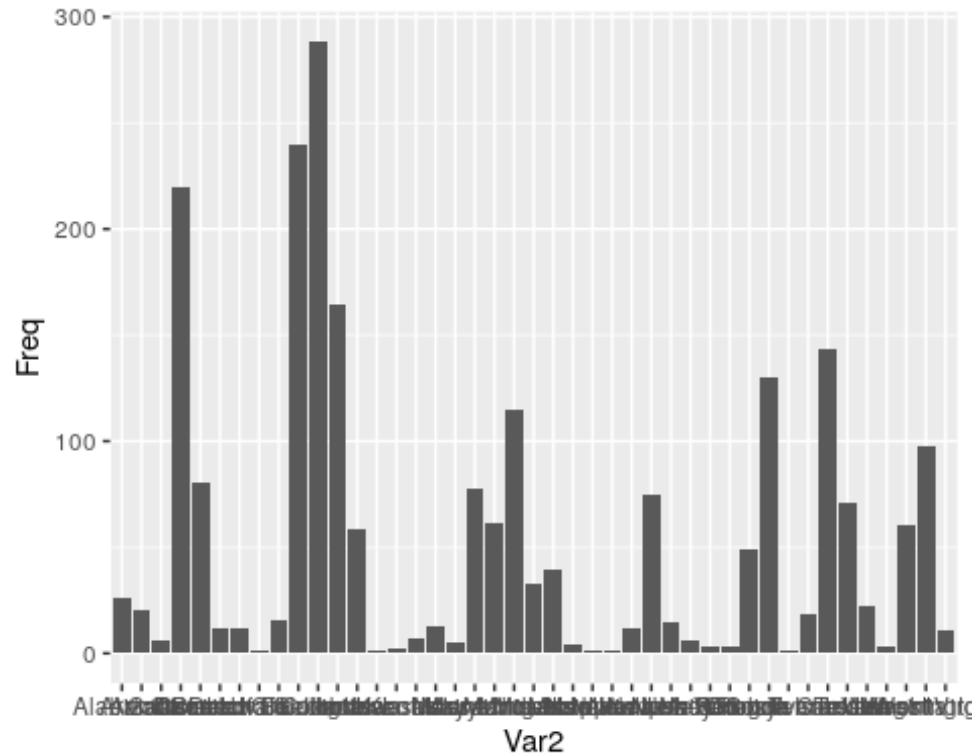
##      Var1      Var2 Freq
## 1 Closed  Alabama   17
## 2  Open   Alabama    9
## 3 Closed  Arizona   14
## 4  Open   Arizona    6
## 5 Closed Arkansas    6
## 6  Open   Arkansas    0

library(ggplot2)

```



```
ggplot(statewisecomp, aes(x=Var2, y=Freq)) + geom_bar(stat="identity")
```



```

Freq = table(complaint_status$State,complaint_status$FinalStatus)
Freq1 = as.data.frame(Freq)
Status_by_state = reshape(Freq1,idvar="Var1",timevar
='Var2',direction="wide")
Status_by_state_Final = transform(Status_by_state,Unresolved_Pct =
(Freq.Open/(Freq.Open+Freq.Closed)))

```

Status_by_state_Final

##	Var1	Freq.Closed	Freq.Open	Unresolved_Pct
## 1	Alabama	17	9	0.34615385
## 2	Arizona	14	6	0.30000000
## 3	Arkansas	6	0	0.00000000
## 4	California	159	61	0.27727273
## 5	Colorado	58	22	0.27500000
## 6	Connecticut	9	3	0.25000000
## 7	Delaware	8	4	0.33333333
## 8	District of Columbia	1	0	0.00000000
## 9	District Of Columbia	14	2	0.12500000
## 10	Florida	201	39	0.16250000
## 11	Georgia	208	80	0.27777778
## 12	Illinois	135	29	0.17682927
## 13	Indiana	50	9	0.15254237
## 14	Iowa	1	0	0.00000000
## 15	Kansas	1	1	0.50000000
## 16	Kentucky	4	3	0.42857143
## 17	Louisiana	12	1	0.07692308
## 18	Maine	3	2	0.40000000
## 19	Maryland	63	15	0.19230769
## 20	Massachusetts	50	11	0.18032787
## 21	Michigan	92	23	0.20000000
## 22	Minnesota	29	4	0.12121212
## 23	Mississippi	23	16	0.41025641
## 24	Missouri	3	1	0.25000000
## 25	Montana	1	0	0.00000000
## 26	Nevada	1	0	0.00000000
## 27	New Hampshire	8	4	0.33333333
## 28	New Jersey	56	19	0.25333333
## 29	New Mexico	11	4	0.26666667
## 30	New York	6	0	0.00000000
## 31	North Carolina	3	0	0.00000000
## 32	Ohio	3	0	0.00000000
## 33	Oregon	36	13	0.26530612
## 34	Pennsylvania	110	20	0.15384615
## 35	Rhode Island	1	0	0.00000000
## 36	South Carolina	15	3	0.16666667
## 37	Tennessee	96	47	0.32867133
## 38	Texas	49	22	0.30985915
## 39	Utah	16	6	0.27272727
## 40	Vermont	2	1	0.33333333

```
## 41          Virginia          49          11          0.18333333
## 42          Washington         75          23          0.23469388
## 43          West Virginia         8           3          0.27272727

max(Status_by_state_Final$Unresolved_Pct)

## [1] 0.5

which(Status_by_state_Final$Unresolved_Pct == "0.5")

## [1] 15

Freq4 = table(complaint_status$Received.Via,complaint_status$FinalStatus)

Freq4 = as.data.frame(Freq4)
Status_by_Channel = reshape(Freq4,idvar="Var1",timevar
='Var2',direction="wide")
Status_by_Channel_Final = transform(Status_by_Channel,Unresolved_Pct =
(Freq.Open/(Freq.Open+Freq.Closed)))
head(Status_by_Channel_Final)

##              Var1 Freq.Closed Freq.Open Unresolved_Pct
## 1 Customer Care Call          864         255      0.2278820
## 2          Internet          843         262      0.2371041
```