

Case Study on Social Media Presence increasing Revenue for Brands (Nike & Adidas)

Course: MSBA 324 - Web and Social Analytics [Golden Gate University]

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Brand: Nike and Adidas

Introduction:

This case study on Nike and Adidas will analyze how Revenue for Nike is going up with their increased social media presence by growing their followers and customer support on twitter. It will also look at the Revenue and followers for Adidas and can conclude how Adidas can improve using Nike's social media strategy.

Problem Statement:

Objective of the project: Increase Revenue for Adidas by looking at the social media presence strategy adopted by Nike.

Metric to track objective: The dependent variable "Revenue" affected due to the other independent variables like followers and tweets for Nike and Adidas.

Success criteria: We can show how the increase of Revenue is possible by increasing the followers and engaging in social media presence for Adidas by adopting the strategy used by Nike.

Model Selection:

$$Y = \beta_1 + \beta_2 X$$

y = Revenue

β_1 = Intercept

β_2 = Co-efficient

X = Twitter followers

We are analyzing Nike and Adidas datasets with regression analysis model to help us predict the increase of dependent variable “Revenue” and establish a linear relationship between the response variable and independent variables. Reason for selecting this model: We want to find how significant is the independent variables in determining the increase in Revenue for Adidas.

Solution Process:

Read the files for all the data collected to determine which variables can be used for regression analysis and fit the linear model.

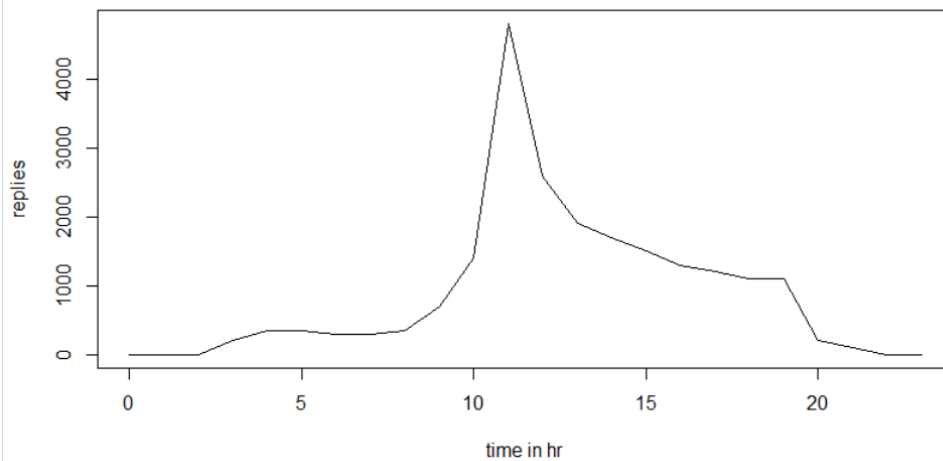
Example: Reading the below file. I have read all the data files in a similar manner.

```
<
> nikel <- read_xls("Nike1.xls", skip = 6)
> attach(nikel)
```

```
> names(nikel)
[1] "Time"      "Replies"
> nikel
# A tibble: 24 x 2
   Time Replies
<dbl> <dbl>
1     0         0
2     1         0
3     2         0
4     3       200
5     4       350
6     5       350
7     6       300
8     7       300
9     8       350
10    9       700
# ... with 14 more rows
> summary(nikel)
      Time      Replies 
Min.   : 0.00   Min.   : 0.0 
1st Qu.: 5.75   1st Qu.: 175.0 
Median :11.50   Median : 350.0 
Mean   :11.50   Mean   : 893.8 
3rd Qu.:17.25   3rd Qu.:1325.0 
Max.   :23.00   Max.   :4800.0
```

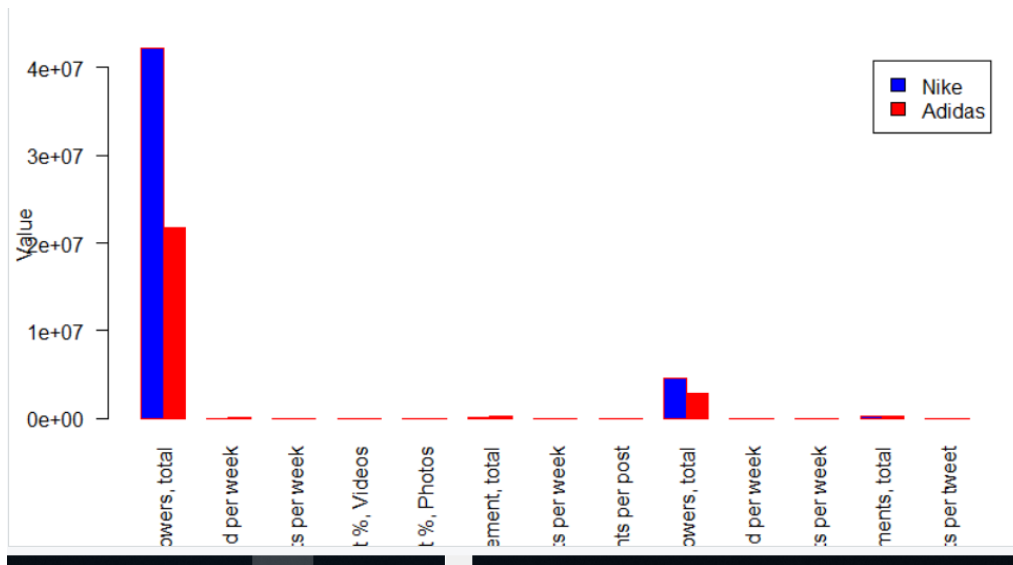
1. Plotting line chart for the above data.

```
> plot(nikel$Time, nikel$Replies, xlab = "time in hr", ylab = "replies", type = "l")
```



- Plotting the bar chart for Nike and Adidas metrics including their followers, % videos, photos per week etc.

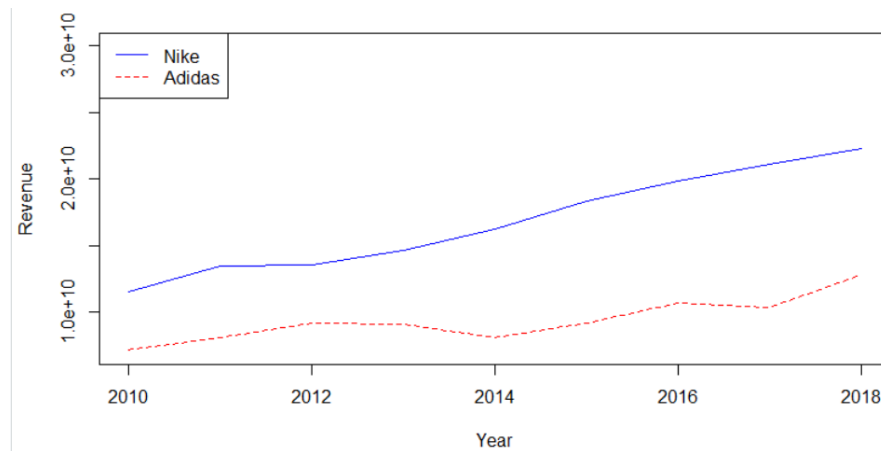
```
barplot(rbind(nike3$Nike,nike3$Adidas),names.arg=nike3$Metric,
        legend = c("Nike","Adidas"),ylab="value",col=c("blue","red"),
        border="red",las=2, beside = T)
```



3. Plotting line chart for Nike and Adidas:

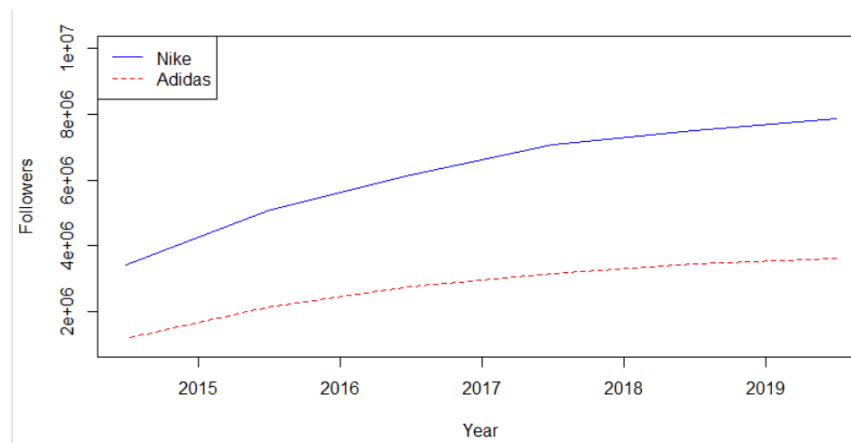
Revenue over time

```
>
> plot(nike4$Year, nike4$Nike, type = "l",
+      col="blue", ylab="Revenue", ylim = c(7e09,3e10), xlab = "Year", lty=1)
> lines(nike4$Year, nike4$Adidas, col="red", lty=2)
>
> legend(x="topleft", legend = c("Nike", "Adidas"), col =c("blue", "red"),
+       lty = c(1,2))
>
>
```



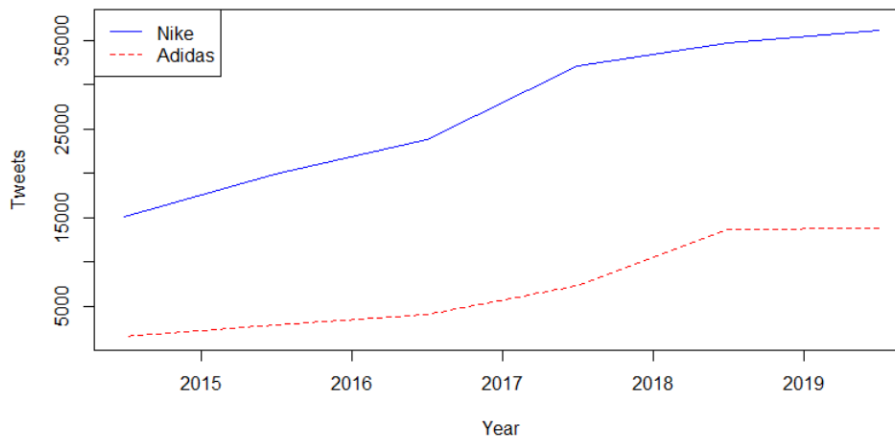
Followers over time:

```
plot(nikedata$Date,nikedata$Followers, type = "l",col="blue",
      ylab="Followers", xlab = "Year", lty=1, ylim = c(1e6,10e6))
lines(adidata$Date, adidata$Followers, col="red", lty=2,
      ylab="Followers", xlab = "Year")
legend(x="topleft",y=1e7,legend = c("Nike", "Adidas"), col =c("blue", "red"),
      lty = c(1,2))
```



Tweets over time:

```
plot(nikedata$Date,nikedata$Tweets, type = "l",col="blue",  
     ylab="Tweets", xlab = "Year", lty=1, ylim = c(1500,37000))  
lines(adidata$Date, adidata$Tweets, col="red", lty=2,  
      ylab="Tweets", xlab = "Year")  
legend(x="topleft",y=35000,legend = c("Nike", "Adidas"), col =c("blue", "red"),  
       lty = c(1,2))
```



Overall these charts give the information that Nike has ever-growing Revenue, followers, and Tweets over time than Adidas. We will check how Nike is able to grow its revenue for all these years and it is not looking back. We can recommend adopting a similar strategy for Adidas as well.

Applying Linear regression model and predict that increasing the followers will increase the Revenue.

4. Even though we have Revenue data from 2010-2018, we only have data from 2014-2018 for Tweets and Followers. Hence we will include only those years for Revenue as well for applying the model. Below creating a data frame to include only Revenue, Followers and Tweets of Nike for regression.

```

> year_range<-nike4$Year[5:9]
> Revenuenike_range <- nike4$Nike[5:9]
> followersnike <- nikedata$Followers[6:2]
>
> regtable <- data.frame(cbind(year_range,Revenuenike_range,followersnike))
> regtable
  year_range Revenuenike_range followersnike
1      2014      1.621e+10      3430434
2      2015      1.832e+10      5077138
3      2016      1.987e+10      6146587
4      2017      2.108e+10      7062667
5      2018      2.227e+10      7493784
>

```

Call the linear model:

```

>
> linearMod <- lm(Revenuenike_range ~ followersnike, data=regtable)
> summary(linearMod)

Call:
lm(formula = Revenuenike_range ~ followersnike, data = regtable)

Residuals:
    1         2         3         4         5
139197508 -126403504 -119233379 -230807004  337246379

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.112e+10  4.944e+08   22.49  0.000192 ***
followersnike  1.443e+03   8.209e+01   17.57  0.000402 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 268700000 on 3 degrees of freedom
Multiple R-squared:  0.9904,    Adjusted R-squared:  0.9872
F-statistic: 308.8 on 1 and 3 DF,  p-value: 0.0004017

```

Now predicting the Revenue based on followers using linear model.

```

>
> Revenuefitted <- predict(linearMod, list(regtable$followersnike))
> Revenuefitted
    1         2         3         4         5
16070802492 18446403504 19989233379 21310807004 21932753621
>

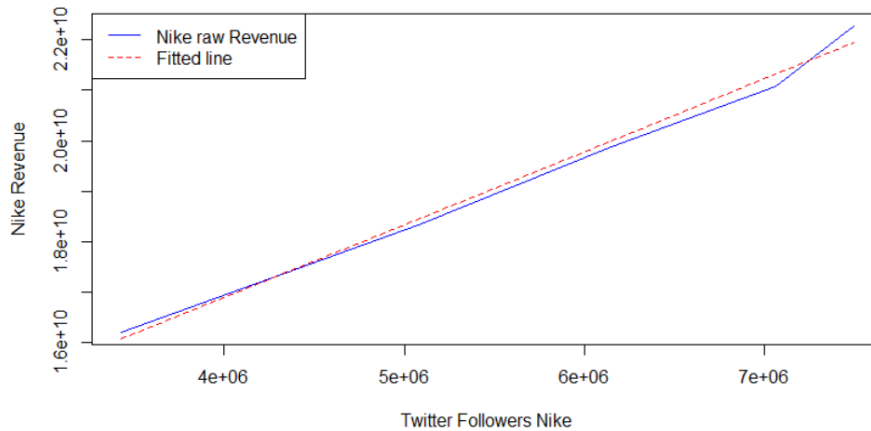
```

Now plotting the linear fit for Nike Revenue and Nike Twitter Followers.

```

> plot(regtable$followersnike,regtable$Revenuenike_range,
+      type = "l",col="blue",
+      ylab="Nike Revenue", xlab = "Twitter Followers Nike", lty=1)
>
> lines(regtable$followersnike, Revenuefitted, col="red", lty=2,
+      ylab="Tweets", xlab = "Followers")
>
> legend(x="topleft",y=2e10,legend = c("Nike raw Revenue", "Fitted line"),
+      col =c("blue", "red"),lty = c(1,2))
>

```



We can see there is a heavy correlation between Nike's Revenue and its increasing followers on Twitter.

We will do a similar linear regression model with Adidas data.

```
> year_range<-nike4$Year[5:9]
> Revenueadidas <- nike4$Adidas[5:9]
> followersadi <- adidata$Followers[6:2]
>
> regtable2 <- data.frame(cbind(year_range,Revenueadidas,followersadi))
> regtable2
  year_range Revenueadidas followersadi
1      2014      8.100e+09      1170931
2      2015      9.130e+09      2137184
3      2016      1.068e+10      2766221
4      2017      1.036e+10      3153304
5      2018      1.278e+10      3463750
>
```

Call the linear model:

```
>
> linearMod2 <- lm(Revenueadidas ~ followersadi,data=regtable2)
> summary(linearMod2)
```

```
Call:
lm(formula = Revenueadidas ~ followersadi, data = regtable2)

Residuals:
    1      2      3      4      5 
320361078 -367084225  64847690 -943164538  925039995 

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  5.698e+09  1.191e+09   4.784   0.0174 *
followersadi  1.777e+03  4.468e+02   3.978   0.0284 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

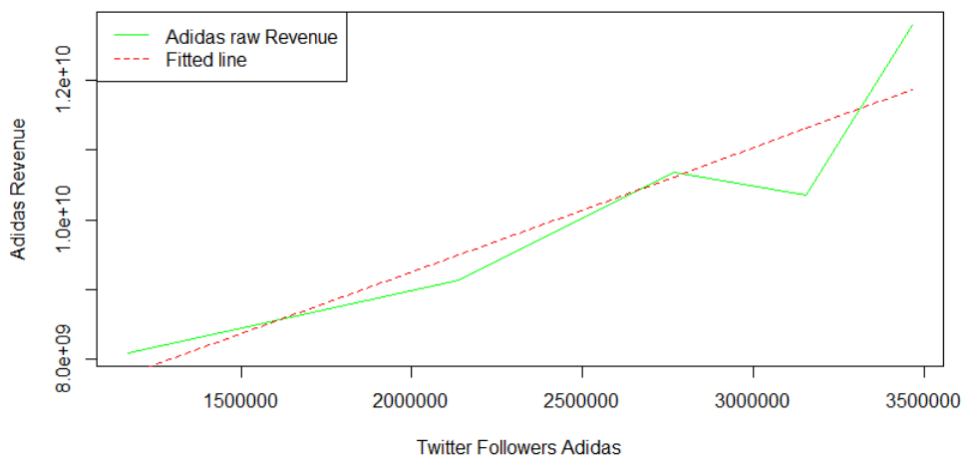
Residual standard error: 813800000 on 3 degrees of freedom
Multiple R-squared:  0.8406,    Adjusted R-squared:  0.7875 
F-statistic: 15.82 on 1 and 3 DF,  p-value: 0.02842
```


Predict Adidas Revenue by twitter followers of Adidas.

```
>
> Revenuefitted2 <- predict(linearMod2, list(regtable2$followersadi))
> Revenuefitted2
      1          2          3          4          5
7779638922 9497084225 10615152310 11303164538 11854960005
```

Plotting the linear fit similar to Nike.

```
> plot(regtable2$followersadi, regtable2$Revenueadidas,
+       type = "l", col = "green",
+       ylab = "Adidas Revenue", xlab = "Twitter Followers Adidas", lty = 1)
> lines(regtable2$followersadi, Revenuefitted2, col = "red", lty = 2,
+       ylab = "Tweets", xlab = "Followers")
> legend(x = "topleft", y = 1e10, legend = c("Adidas raw Revenue", "Fitted line"),
+       col = c("green", "red"), lty = c(1, 2))
>
```



Recommendation:

By now we can see the twitter followers for Nike is heavily correlated with their increased Revenue. The twitter followers and Revenue for Adidas as well shows it is correlated hence it should follow the strategy used by Nike to increase their social media presence. The linear fit plot predicts exactly that increasing the followers will help in increasing the Revenue. The data also shows that Nike has always been involved in social media by interacting with customers so

that they do not lose their attention. A digital media article by Heine, Christopher (2016) rightly points out that the swoosh responds to 96% of the customer service inquiries. Adidas is only up and running in 13000 tweets as of July 2019 and Nike is running at 35000 tweets as of July 2019. Currently, followers for Adidas is less than Nike, and it should focus more on increasing their followers by engaging more on Social media platforms and concentrating additionally on Twitter.

Research:

We have collected three the data files from the course e-learning which has Twitter replies for a 24 hour time period, Instagram posts over a year in weeks and Nike, Adidas metrics showing their social media presence. The other set of data are from Trackalytics and Statista for a number of followers, tweets in Twitter and Revenue for both Nike and Adidas. I have only taken the June data from Trackalytics for number of followers and tweets to the check the year over year increase. References for these data are tagged below.

Model Results:

P - Value for both the variables are below 0.05 hence it is significant enough. The linear fit plot and the below result conclude that there is a high correlation between Revenue and the Twitter followers of these Brands.

Variables	Co-efficient	P Value
Intercept	1112	-
Nike Followers	1443	0.000402

Variables	Co-efficient	P Value
Intercept	5698	-
Adidas Followers	1777	0.0284

Revenue = 1112 + 1443*(Nike Followers)

Revenue = 5698 + 1777*(Adidas Followers)

Situation Comparison:

As mentioned in the above recommendation, Adidas needs to increase their Revenue by adopting Nike's strategy of their presence in twitter and their active engagement with the consumers by replying to their tweets.

Reference

Heine, C. (2016, October 17). How Nike Is Beating Brands like Apple and Adidas at Twitter

Customer Care. Retrieved from <https://www.adweek.com/digital/how-nike-beating-brands-apple-and-adidas-twitter-customer-care-174101/>

O'Connell, L. (2019, March 21). Revenue from footwear segment of Nike, Adidas and Puma

from 2010 to 2018 (in billion U.S. dollars). Retrieved from <https://www.statista.com/statistics/278834/revenue-nike-adidas-puma-footwear-segment/>

Ravi. K. (2018, April 25). 6 ways Nike Built a Strong Brand on Social Media. Retrieved from

<https://blog.unmetric.com/nike-social-media>

Trackalytics. (n.d.) Social Media and Website Statistics. Retrieved from

<https://www.trackalytics.com/twitter/profile/adidas/>

Data sets:



Adidas data.xls



Nike4.xls



Nike3.xls



Nike2.xls



Nike1.xls



Nike data.xls