```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
```

```
df = pd.read_csv("dataset_Facebook.csv", sep=";")
```

```
print("Shape : ", df.shape)
```

```
Shape :  (500, 19)
```

```
df.head()
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users
0	139441	Photo	2	12	4	3	0.0	2752	5091	178
1	139441	Status	2	12	3	10	0.0	10460	19057	1457
2	139441	Photo	3	12	3	3	0.0	2413	4373	177
3	139441	Photo	2	12	2	10	1.0	50128	87991	2211
4	139441	Photo	2	12	2	3	0.0	7244	13594	671

```
print("Total Number of rows: ", df.shape[0])
print("Total numbe rof columsn : ", df.shape[1])
```

```
Total Number of rows:  500
Total numbe rof columsn :  19
```

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 500 entries, 0 to 499
Data columns (total 19 columns):
 #   Column                                                  Non-Null Count
---  ------                                                  --------------
 0   Page total likes                                        500 non-null
 1   Type                                                    500 non-null
```

```
 2   Category                                                        500 non-null
 3   Post Month                                                      500 non-null
 4   Post Weekday                                                    500 non-null
 5   Post Hour                                                       500 non-null
 6   Paid                                                            499 non-null
 7   Lifetime Post Total Reach                                       500 non-null
 8   Lifetime Post Total Impressions                                 500 non-null
 9   Lifetime Engaged Users                                          500 non-null
 10  Lifetime Post Consumers                                         500 non-null
 11  Lifetime Post Consumptions                                      500 non-null
 12  Lifetime Post Impressions by people who have liked your Page    500 non-null
 13  Lifetime Post reach by people who like your Page                500 non-null
 14  Lifetime People who have liked your Page and engaged with your post  500 non-null
 15  comment                                                         500 non-null
 16  like                                                            499 non-null
 17  share                                                           496 non-null
 18  Total Interactions                                              500 non-null
dtypes: float64(3), int64(15), object(1)
memory usage: 74.3+ KB
```

```
print("Columns : ")
for i in list(df.columns):
  print(i)
```

```
Columns :
Page total likes
Type
Category
Post Month
Post Weekday
Post Hour
Paid
Lifetime Post Total Reach
Lifetime Post Total Impressions
Lifetime Engaged Users
Lifetime Post Consumers
Lifetime Post Consumptions
Lifetime Post Impressions by people who have liked your Page
Lifetime Post reach by people who like your Page
Lifetime People who have liked your Page and engaged with your post
comment
like
share
Total Interactions
```

```
for i in df.columns:
  print(i , " : " ,(df[i].isnull().sum() / df.shape[0])*100)
```

```
Page total likes  :  0.0
Type  :  0.0
Category  :  0.0
Post Month  :  0.0
Post Weekday  :  0.0
```

```
Post Hour  :  0.0
Paid  :  0.2
Lifetime Post Total Reach  :  0.0
Lifetime Post Total Impressions  :  0.0
Lifetime Engaged Users  :  0.0
Lifetime Post Consumers  :  0.0
Lifetime Post Consumptions  :  0.0
Lifetime Post Impressions by people who have liked your Page  :  0.0
Lifetime Post reach by people who like your Page  :  0.0
Lifetime People who have liked your Page and engaged with your post  :  0.0
comment  :  0.0
like  :  0.2
share  :  0.8
Total Interactions  :  0.0
```

```
df.isnull().sum()
```

```
Page total likes                                                0
Type                                                            0
Category                                                        0
Post Month                                                      0
Post Weekday                                                    0
Post Hour                                                       0
Paid                                                            1
Lifetime Post Total Reach                                       0
Lifetime Post Total Impressions                                 0
Lifetime Engaged Users                                          0
Lifetime Post Consumers                                         0
Lifetime Post Consumptions                                      0
Lifetime Post Impressions by people who have liked your Page    0
Lifetime Post reach by people who like your Page                0
Lifetime People who have liked your Page and engaged with your post    0
comment                                                         0
like                                                            1
share                                                           4
Total Interactions                                              0
dtype: int64
```

```
df.describe(include=['O']).T
```

	count	unique	top	freq
Type	500	4	Photo	426

```
df['Type'].value_counts()
```

```
Photo     426
Status     45
Link       22
Video       7
Name: Type, dtype: int64
```

Dropping the null value rows

```
data = df.dropna()
data.shape
```

```
(495, 19)
```

```
data.shape
```

```
(495, 19)
```

Segregating the data as per "Type"

Photo

```
df_photo = data[data['Type']=="Photo"]
df_photo.shape
```

```
(421, 19)
```

```
df_photo.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 421 entries, 0 to 498
Data columns (total 19 columns):
 #   Column                                                    Non-Null Count
---  ------                                                    --------------
 0   Page total likes                                          421 non-null
 1   Type                                                      421 non-null
 2   Category                                                  421 non-null
 3   Post Month                                                421 non-null
 4   Post Weekday                                              421 non-null
 5   Post Hour                                                 421 non-null
 6   Paid                                                      421 non-null
 7   Lifetime Post Total Reach                                 421 non-null
 8   Lifetime Post Total Impressions                           421 non-null
 9   Lifetime Engaged Users                                    421 non-null
 10  Lifetime Post Consumers                                   421 non-null
 11  Lifetime Post Consumptions                                421 non-null
 12  Lifetime Post Impressions by people who have liked your Page  421 non-null
 13  Lifetime Post reach by people who like your Page          421 non-null
 14  Lifetime People who have liked your Page and engaged with your post  421 non-null
 15  comment                                                   421 non-null
 16  like                                                      421 non-null
 17  share                                                     421 non-null
 18  Total Interactions                                        421 non-null
```

```
dtypes: float64(3), int64(15), object(1)
memory usage: 65.8+ KB
```

```
df_photo.describe().T
```

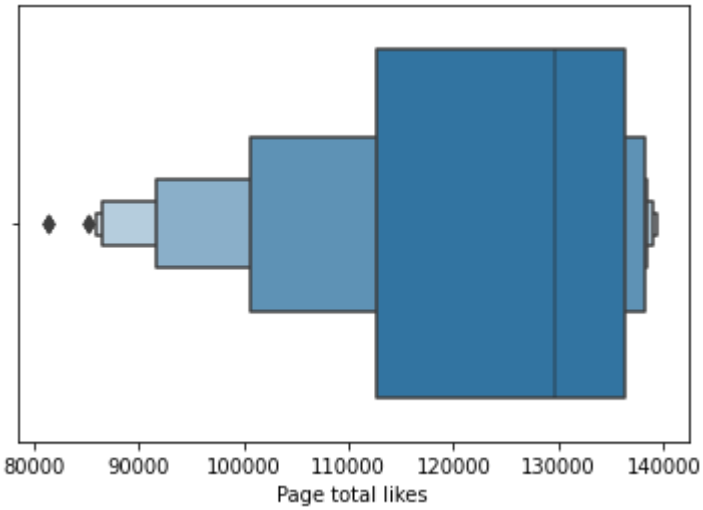
	count	mean	std	min	25%	50%	
Page total likes	421.0	122319.612827	16242.669134	81370.0	109670.0	128032.0	1360
Category	421.0	1.926366	0.884681	1.0	1.0	2.0	
Post Month	421.0	6.790974	3.228447	1.0	4.0	7.0	
Post Weekday	421.0	4.087886	2.056203	1.0	2.0	4.0	
Post Hour	421.0	8.004751	4.432561	1.0	3.0	9.0	
Paid	421.0	0.282660	0.450828	0.0	0.0	0.0	
Lifetime Post Total Reach	421.0	13275.389549	22977.950816	238.0	3110.0	4708.0	108
Lifetime Post Total Impressions	421.0	29306.147268	81387.055518	570.0	5439.0	8198.0	174
Lifetime Engaged Users	421.0	825.368171	871.390487	9.0	421.0	612.0	9
Lifetime Post Consumers	421.0	695.475059	734.384315	9.0	337.0	539.0	8
Lifetime Post Consumptions	421.0	1310.334917	1974.750382	9.0	521.0	834.0	13
Lifetime Post Impressions by people who have liked your Page	421.0	16594.650831	64864.680971	567.0	3779.0	5648.0	109
Lifetime Post reach by people who like your Page	421.0	6118.539192	7845.941764	236.0	2110.0	3136.0	56

```
plt.figure(figsize=(15,15))

sns.heatmap(df_photo.corr(), annot=True, linewidths=1.1)
plt.show()
```

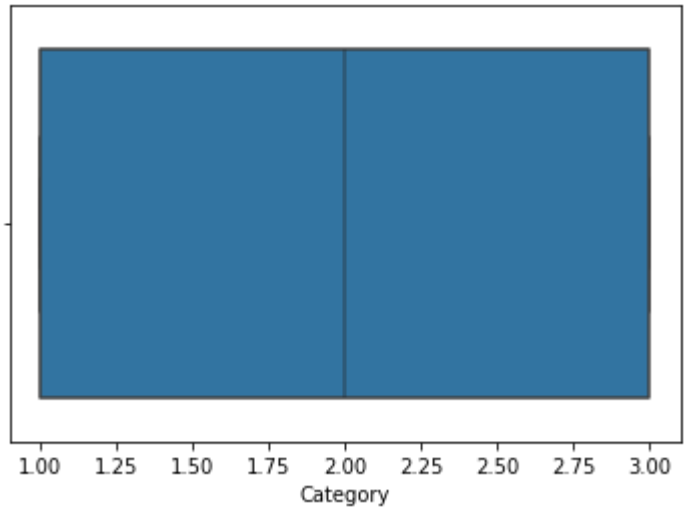

Page total likes
Category
Post Month
Post Weekday
Post Hour
Paid
Lifetime Post Total Reach
Lifetime Post Total Impressions
Lifetime Engaged Users
Lifetime Post Consumers
Lifetime Post Consumptions
Lifetime Post Impressions by people who have liked your Page
Lifetime Post reach by people who like your Page
Lifetime People who have liked your Page and engaged with your post
comment
like
share
Total Interactions

```
# df_photo.columns

cols = ['Page total likes', 'Category', 'Post Month', 'Post Weekday',
       'Post Hour', 'Paid', 'Lifetime Post Total Reach',
       'Lifetime Post Total Impressions', 'Lifetime Engaged Users',
       'Lifetime Post Consumers', 'Lifetime Post Consumptions',
       'Lifetime Post Impressions by people who have liked your Page',
       'Lifetime Post reach by people who like your Page',
       'Lifetime People who have liked your Page and engaged with your post',
       'comment', 'like', 'share', 'Total Interactions']

import warnings
warnings.filterwarnings("ignore")


for i in cols:
  print("\n\n",i," : ")
  sns.boxenplot(df[i])
  plt.show()
```

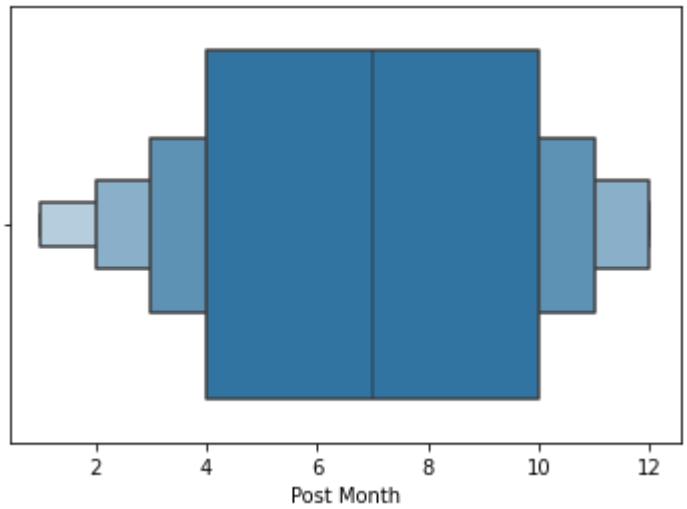
Page total likes :



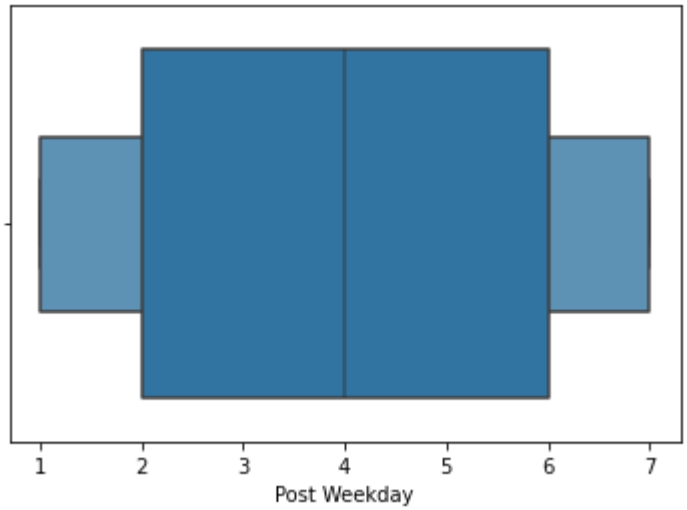
Category :



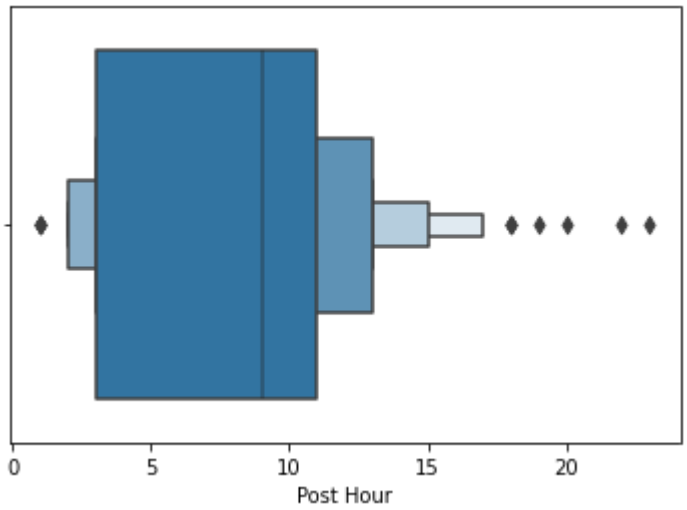
Post Month :



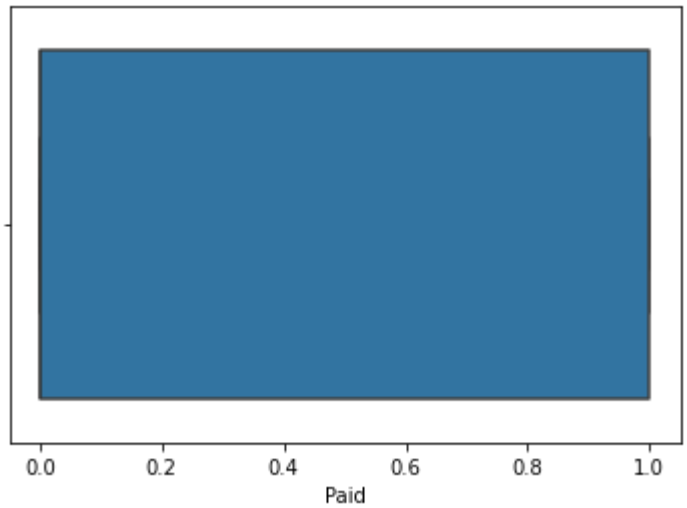
Post Weekday :



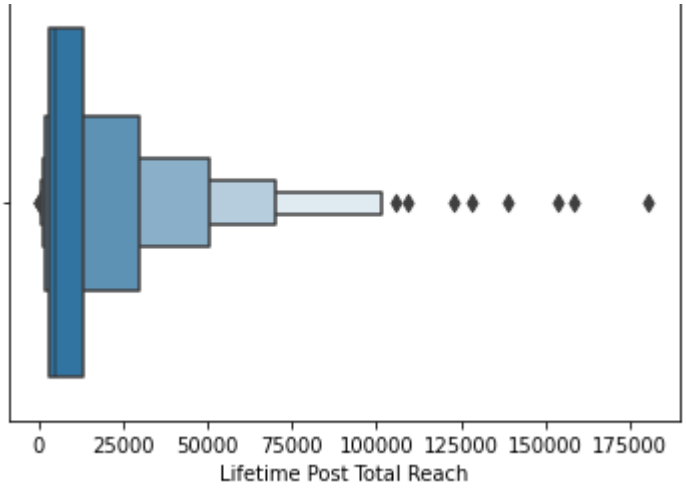
Post Hour :



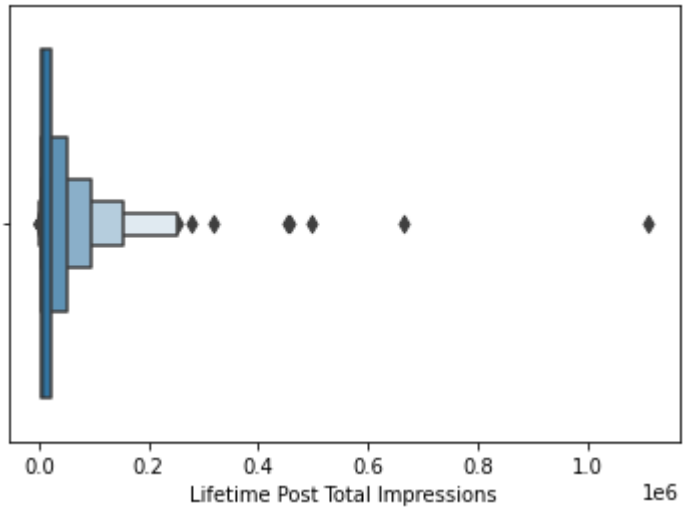
Paid :



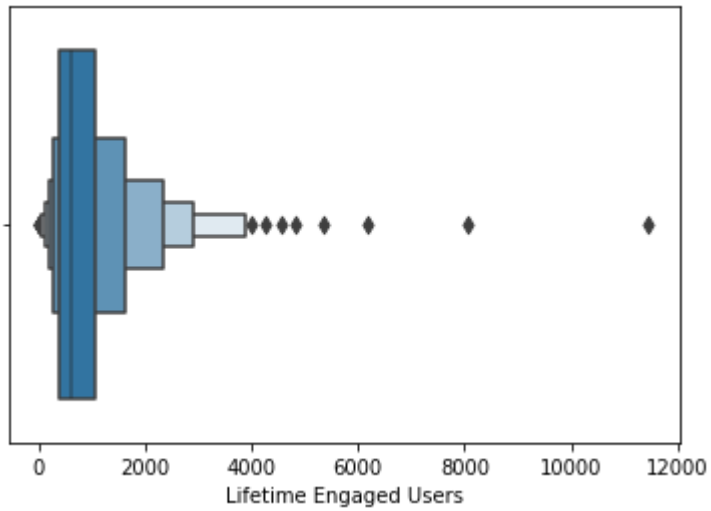
Lifetime Post Total Reach :



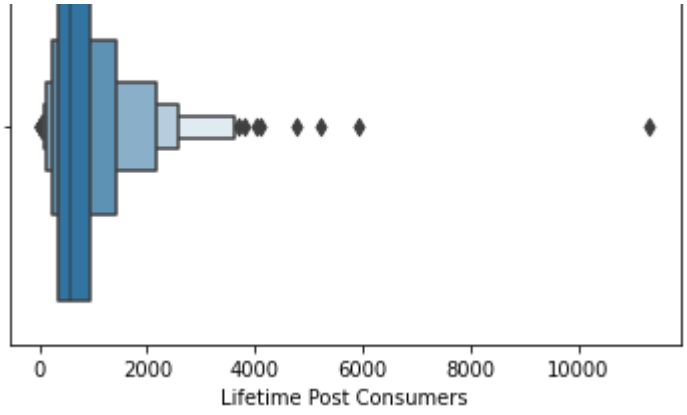
Lifetime Post Total Impressions :



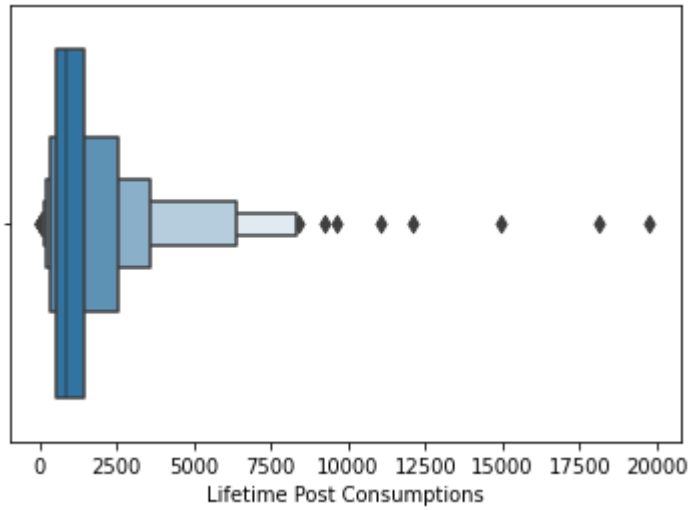
Lifetime Engaged Users :



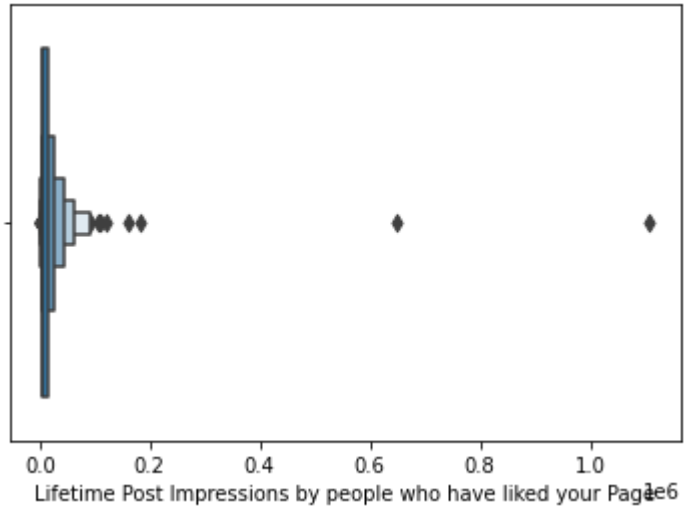
Lifetime Post Consumers :



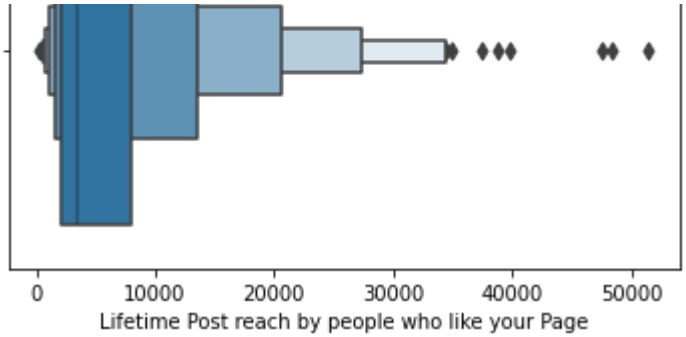
Lifetime Post Consumptions :



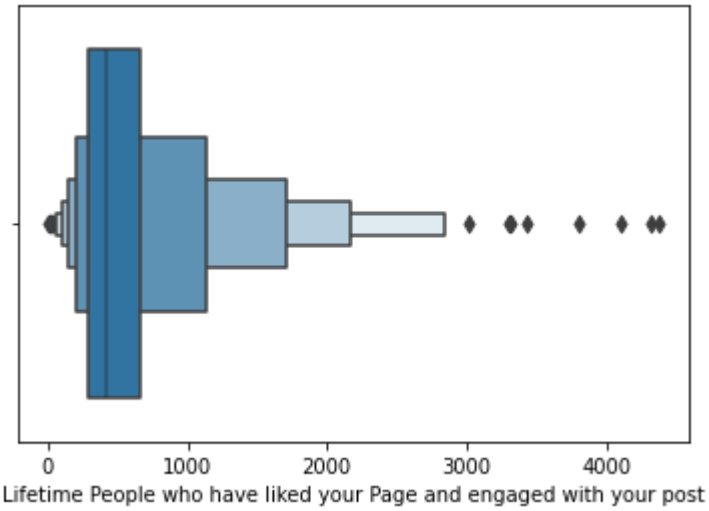
Lifetime Post Impressions by people who have liked your Page :



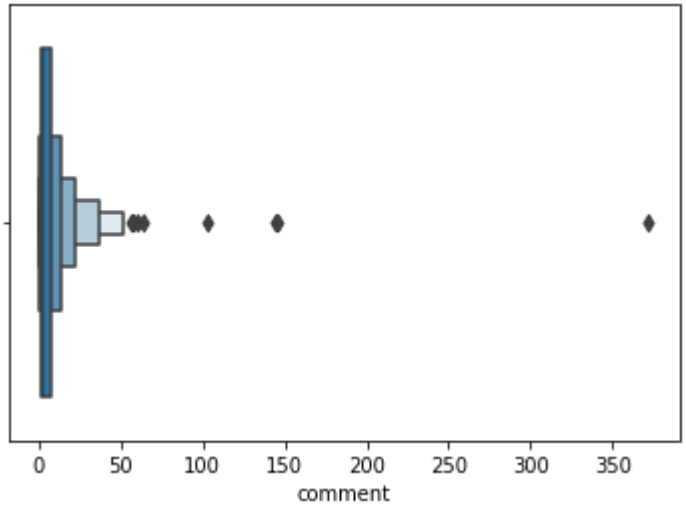
Lifetime Post reach by people who like your Page :



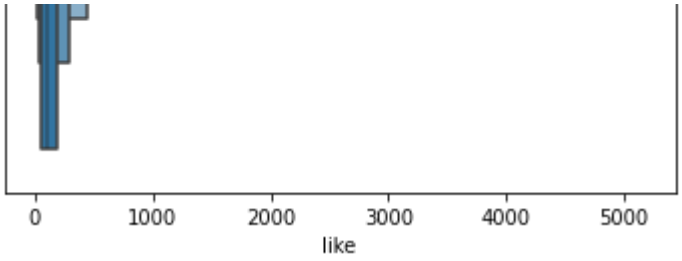
Lifetime People who have liked your Page and engaged with your post :



comment :



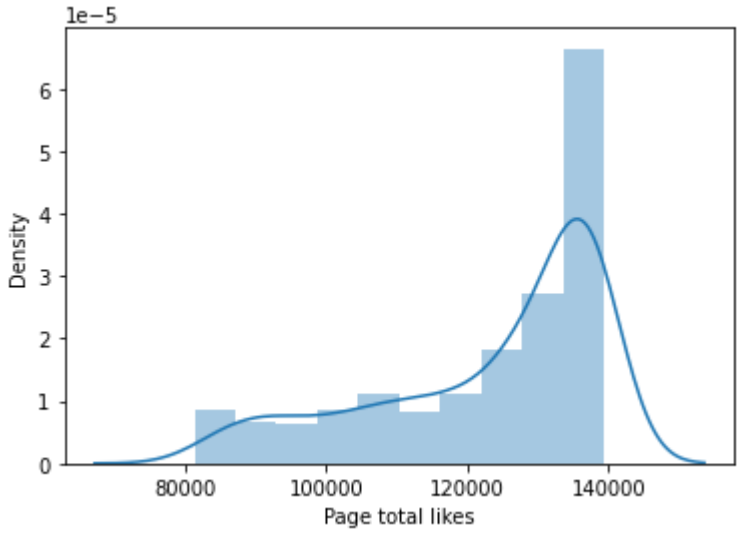
like :



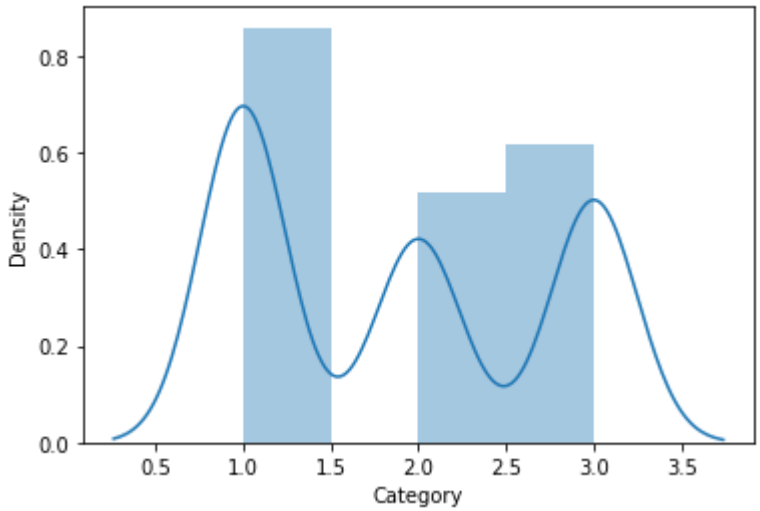
share :

```
for i in cols:
  print("\n\n",i," : ")
  sns.distplot(df[i])
  plt.show()
```

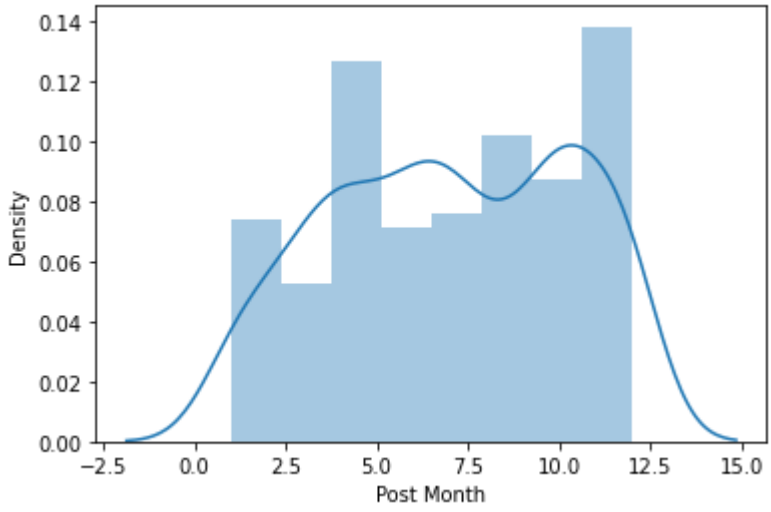
Page total likes :



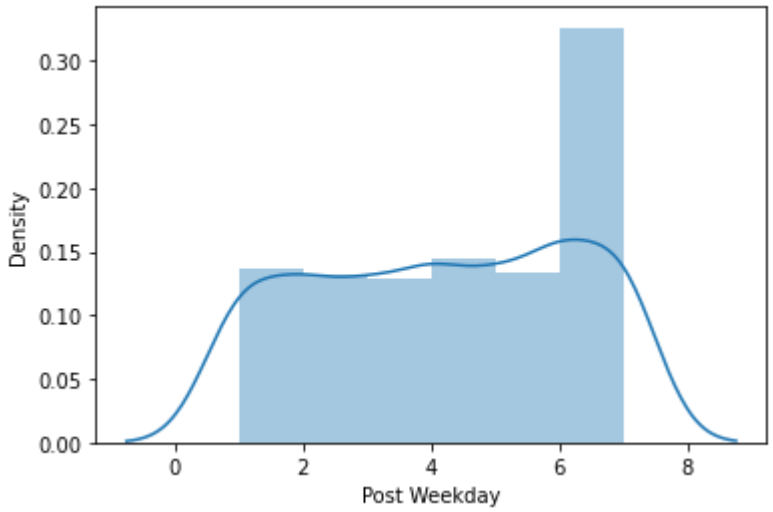
Category :



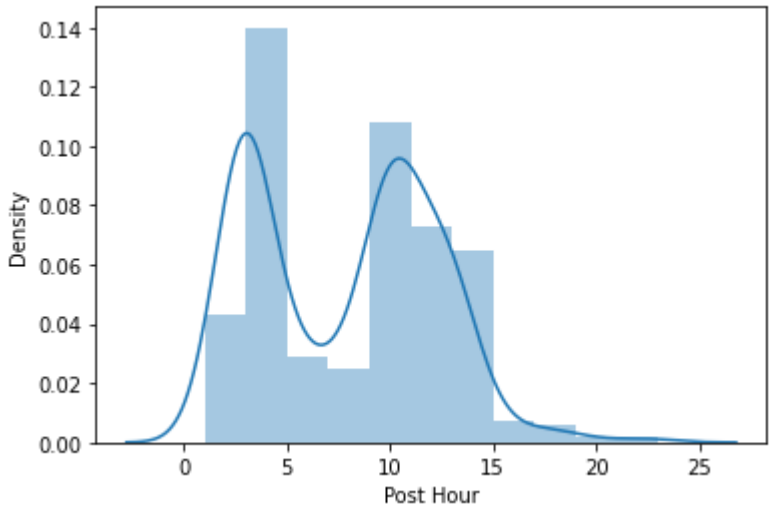
Post Month :



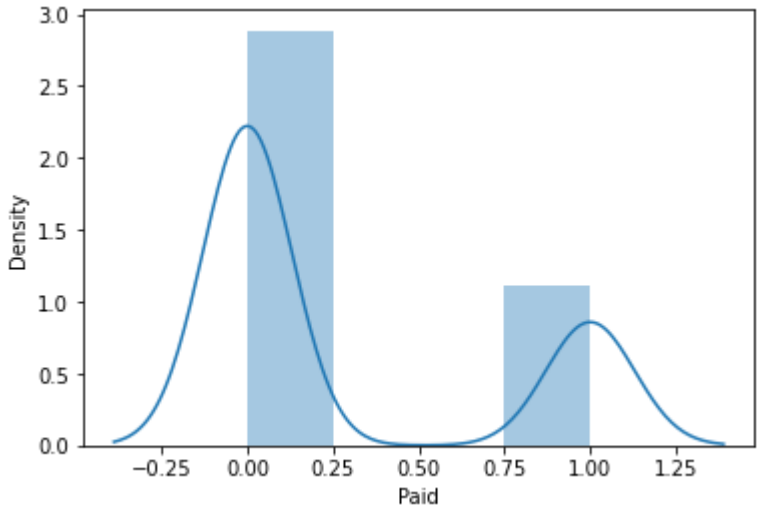
Post Weekday :



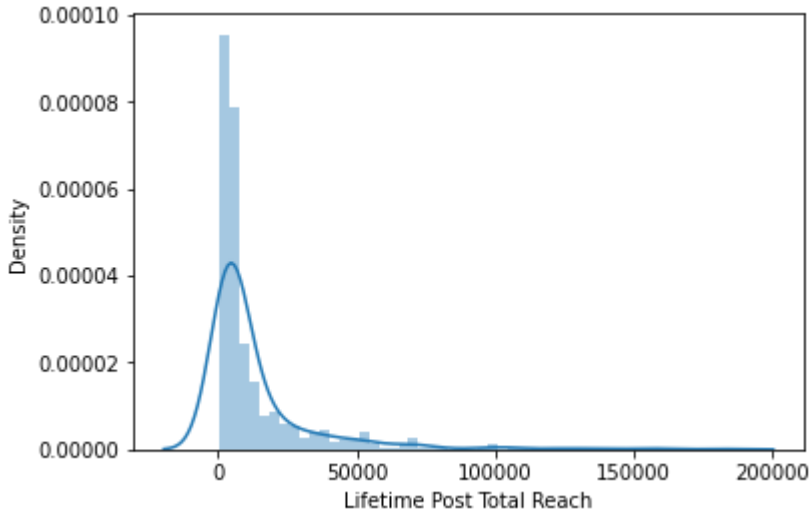
Post Hour :



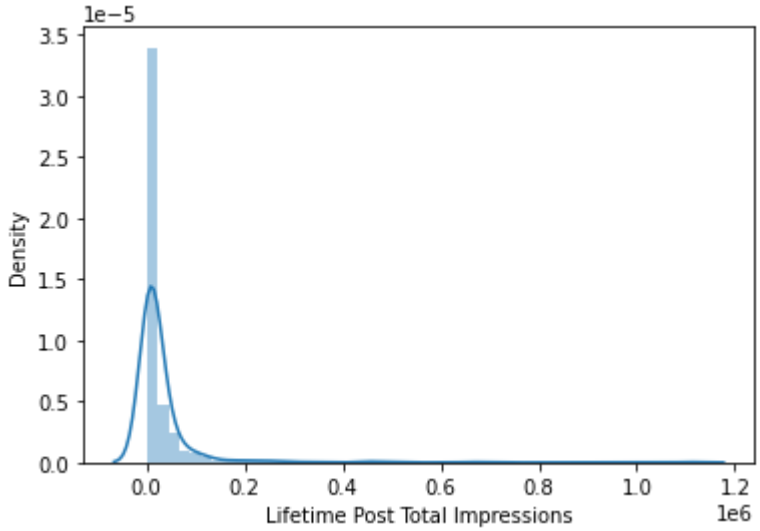
Paid :



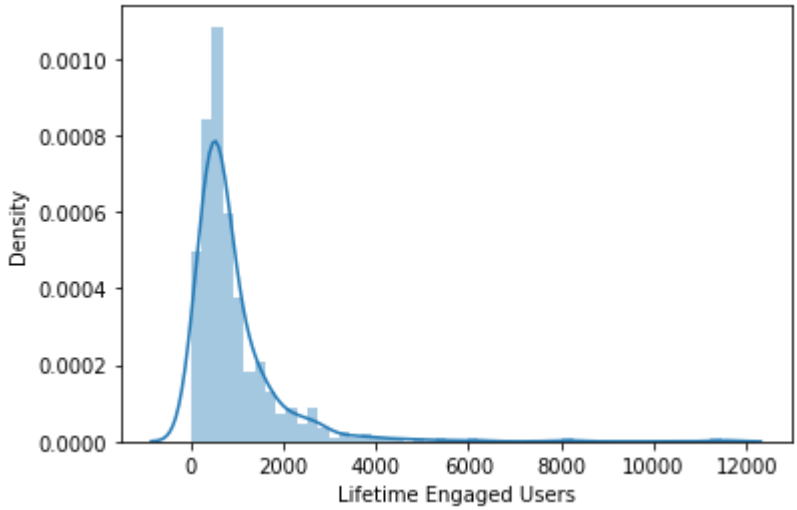
Lifetime Post Total Reach :



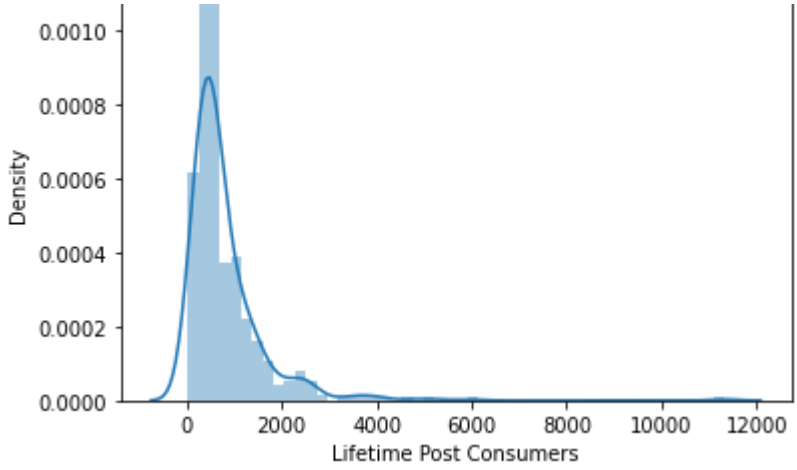
Lifetime Post Total Impressions :



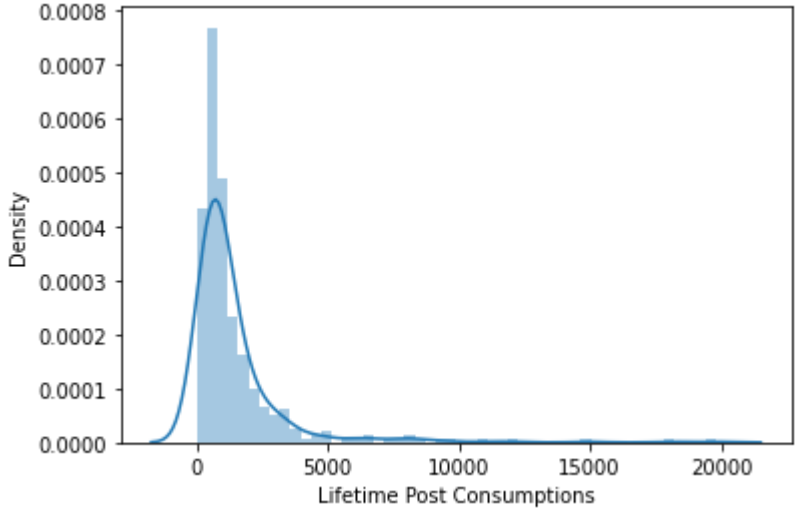
Lifetime Engaged Users :



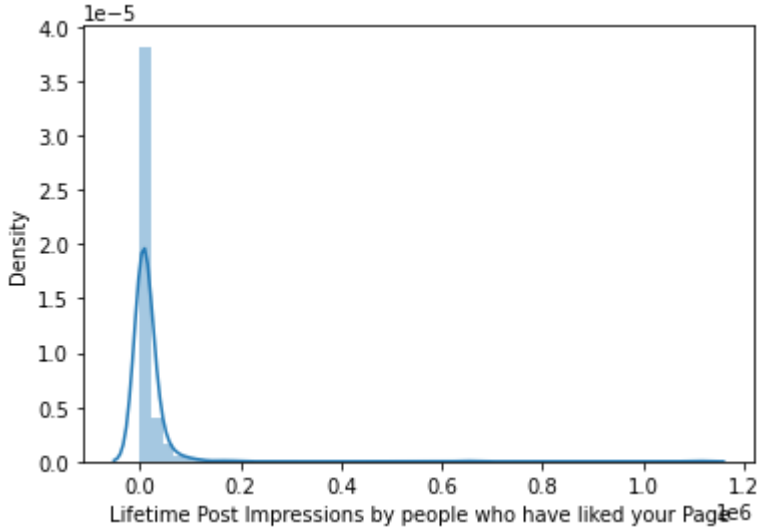
Lifetime Post Consumers :



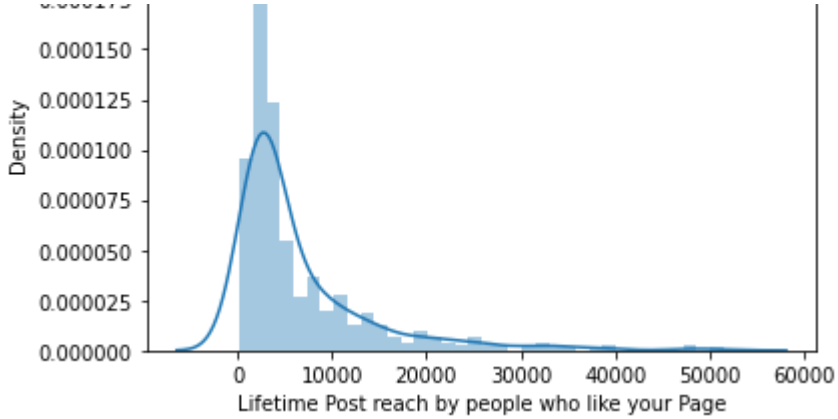
Lifetime Post Consumptions :



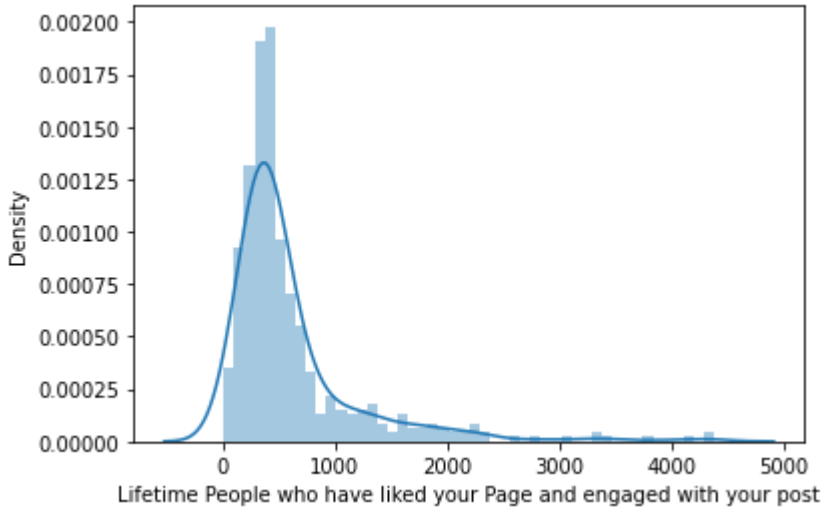
Lifetime Post Impressions by people who have liked your Page :



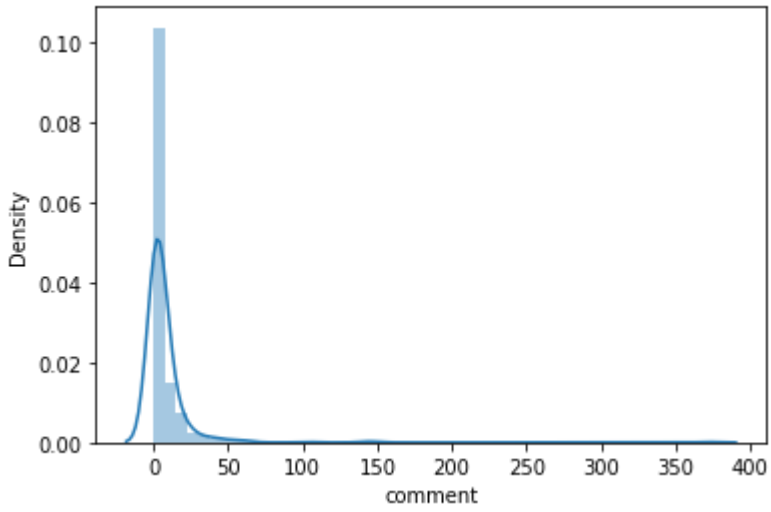
Lifetime Post reach by people who like your Page :



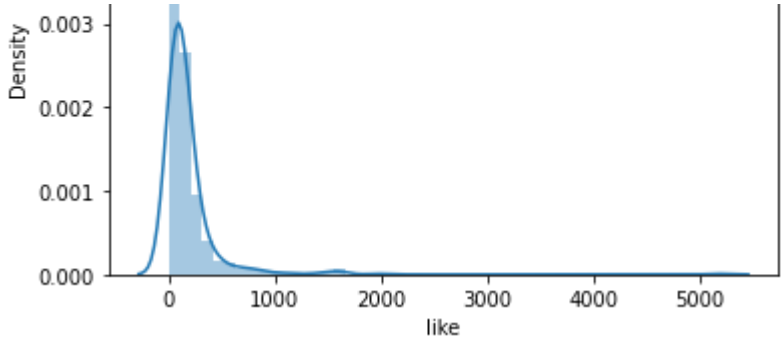
Lifetime People who have liked your Page and engaged with your post :



comment :



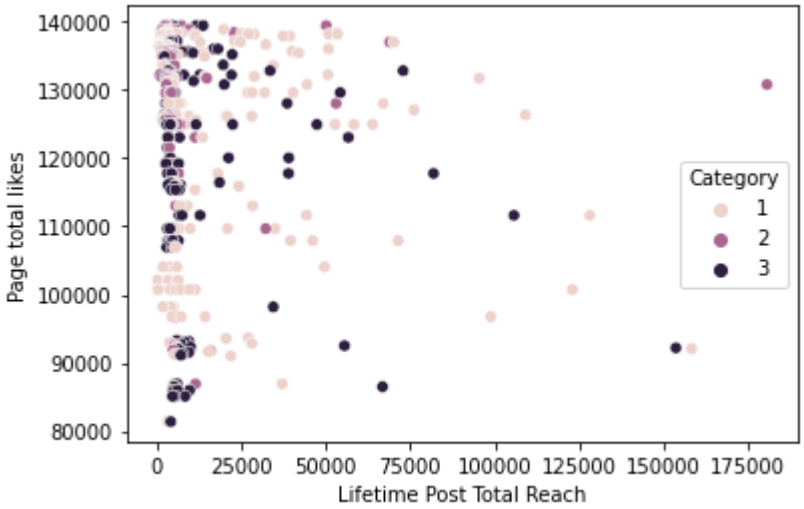
like :



share :

Bivariate analysis

```
# Lifetime Post Total Reach , Page total likes
# plt.figure(figsize=(15,15))

sns.scatterplot(df_photo['Lifetime Post Total Reach'], df['Page total likes'], hue=df['Catego
plt.show()
```

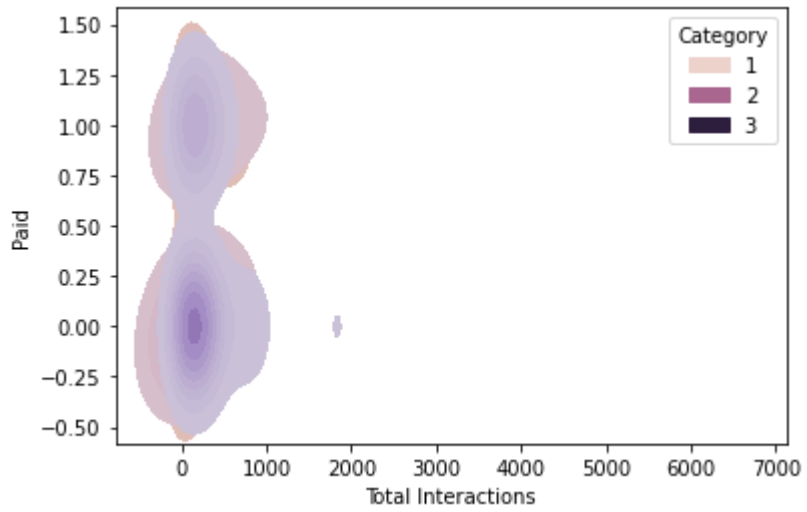



```
sns.kdeplot(df_photo['Lifetime Post Total Reach'], df['Page total likes'], hue=df["Category"]
plt.show()
```


```
data.columns
```

```
Index(['Page total likes', 'Type', 'Category', 'Post Month', 'Post Weekday',
       'Post Hour', 'Paid', 'Lifetime Post Total Reach',
       'Lifetime Post Total Impressions', 'Lifetime Engaged Users',
       'Lifetime Post Consumers', 'Lifetime Post Consumptions',
       'Lifetime Post Impressions by people who have liked your Page',
       'Lifetime Post reach by people who like your Page',
       'Lifetime People who have liked your Page and engaged with your post',
       'comment', 'like', 'share', 'Total Interactions'],
      dtype='object')
```

```
sns.kdeplot(data['Total Interactions'], data['Paid'], hue=df["Category"] ,fill=True)
plt.show()
```



Status

```
df_status = data[data['Type']=="Status"]
print("Status : ",df_status.shape)

df_link= data[data['Type']=="Link"]
print("Link : ",df_link.shape)

df_video = data[data['Type']=="Video"]
print("Video : ",df_video.shape)
```

```
Status :  (45, 19)
```

```
Link :  (22, 19)
Video :  (7, 19)
```

Merging any 2 subsets

```
status_link_dataframe = pd.concat([df_status, df_link])
status_link_dataframe.shape
```

```
(67, 19)
```

Transpose

```
data.transpose()
```

	0	1	2	3	4	5	6	7	8	
Page total likes	139441	139441	139441	139441	139441	139441	139441	139441	139441	1
Type	Photo	Status	Photo	Photo	Photo	Status	Photo	Photo	Status	
Category	2	2	3	2	2	2	3	3	2	

```
data.sort_values(['Page total likes','Lifetime Post Total Reach'], ascending=[1,0])
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetim Engage User
498	81370	Photo	3	1	4	11	0.0	4156	7564	62
497	81370	Photo	1	1	5	2	0.0	3778	7216	62
496	81370	Photo	2	1	5	8	0.0	3480	6229	53
493	85093	Photo	3	1	1	2	0.0	8412	13960	117
494	85093	Photo	3	1	7	10	0.0	5400	9218	81
...	...	...	...	...	...	...	...	...	...	.
11	139441	Photo	2	12	5	10	0.0	3112	5590	20
12	139441	Photo	2	12	5	10	0.0	2847	5133	19
0	139441	Photo	2	12	4	3	0.0	2752	5091	17
13	139441	Photo	2	12	5	3	0.0	2549	4896	24
2	139441	Photo	3	12	3	3	0.0	2413	4373	17

495 rows × 19 columns