II: Cleaning

January 31, 2022

0.0.1 Data Description

Research question

We are studying projects on the platform gofundme and the diverse factors that lead a project to be found. In our data set, we have extract the name, the date of the project, the description, the category, the pourcentage raised, the number of donors etc…

Here are the questions we want to answer : - Does the category have an influence on the founding ? - Does the pourcentage raised intuitively increase with time ? - Do Keywords in the description make a project more attractive ? - Does the donation per user influence the foundation ?

0.0.2 Useful imports

[240]:
```
import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import matplotlib as mpl

pd.options.display.max_columns = 500
```

1 CLEANING THE DATAFRAME SCRAPED

[241]:
```
df=pd.read_csv('DataFinalfromWebScraping2.csv')
```

1.0.1 II.1/We transform Creation Date to a datetime

For this we will tokenize the str sentence Creation Date, create a dictionary for month and transform Created 2 days ago in 2022-01-14 for example with the function Convertdate.

Then, we transform it in a proper DateTime

[242]:
```
from datetime import date

#We use nltk to tokenize the str of Creation Date
import nltk
nltk.download('punkt')
```

```
from nltk.tokenize import word_tokenize
```

```
[nltk_data] Downloading package punkt to
[nltk_data]     /Users/albandhauthuille/nltk_data…
[nltk_data]   Package punkt is already up-to-date!
```

[243]:
```
def monthToNum(shortMonth):
    return {
            'January': 1,
            'February': 2,
            'March': 3,
            'April': 4,
            'May': 5,
            'June': 6,
            'July': 7,
            'August': 8,
            'September': 9,
            'October': 10,
            'November': 11,
            'December': 12
    }[shortMonth]
```

[244]:
```
def Convertdate():

    new_Date=[]
    #print(new_Date)
    for i in range (df['Creation Date'].size):
        #print(i)
        Creation_date = word_tokenize(df['Creation Date'][i])
        #print(Creation_date)

        if 'now'in Creation_date or 'hours' in Creation_date:
            new_Date.append(str(str(2022)+'-'+'01'+'-'+str(24)))
        elif 'ago' not in Creation_date:
            #print('no')
            new_Date.
↪append(str(Creation_date[4])+'-'+str(monthToNum(Creation_date[1]))+'-'+str(Creation_date[2]



        elif 'ago' in Creation_date:
            new_Date.
↪append(str(str(2022)+'-'+'01'+'-'+str(24-int(Creation_date[1]))))
    return new_Date
```

[245]:
```
df['Creation Date']=Convertdate()
```

[246]:
```
pd.to_datetime(df['Creation Date'])
df['Creation Date']=pd.to_datetime(df['Creation Date'])
```

1.0.2 II.2/ Retiring the '%' of Pourcentage Raised to plot properly

[247]:
```
pd.options.mode.chained_assignment = None  # default='warn'
for i in range(len(df['Pourcentage Raised'])):
    df['Pourcentage Raised'][i]=df['Pourcentage Raised'][i][:-1]
```

[248]:
```
#For example:
df['Pourcentage Raised'][4]
```

[248]:
```
'48.9'
```

1.0.3 II.3/ Convert to proper type

[249]:
```
df=df.convert_dtypes()
```

[250]:
```
df['Pourcentage Raised']=df['Pourcentage Raised'].astype(float)
```

1.0.4 II.4/ Duration of a collect with 'Creation Date'

[251]:
```
Duration =[]
for i in range(len(df['Creation Date'])):
    Duration.append((pd.Timestamp.today()-df['Creation Date'][i]).days)
df["Duration in days"]=Duration
```

1.0.5 II.5/ We only study the keywords, we reduce the 'Description' to 'Short_description' with words of length >4

[252]:
```
Short_description=[]
for i in range(len(df['Description'])):
    list=[]
    a=word_tokenize(df['Description'][i])
    for word in a:
        if len(word)>4:
            list.append(word)
    Short_description.append(list)

df['Short_description']=Short_description
#df
```

1.0.6 II.6.1/ Creation of column 'Amount Collected'

[253]:
```
Amount_Collected=[]
#print(df)
for i in range(len(df['collect'])):
    #word=(df['collect'][i])[1:]
    word=word_tokenize(df['collect'][i][1:])
    #If the amount is about millions:

    if 'M' in word[0]:
        Amount_Collected.append(float(word[0].replace(',', '.')[:-1])*1000000)
    #print(word)
    else:
        if ',' in word[0]:
            Amount_Collected.append(float(word[0].replace(',', '.'))*1000)
        else:
            Amount_Collected.append(float(word[0].replace(',', '.')))

df['Amount collected ']=Amount_Collected
```

1.0.7 II.6.2/ Creation of Column 'Amount targeted'

[254]:
```
Amount_Targeted=[]
for i in range(len(df['collect'])):
    word=word_tokenize(df['collect'][i])
    #print(word)
    #If the amount is about millions:
    if 'M' in word[-1]:
        Amount_Targeted.append(float(((word[-1].replace('M', '')).
 ↪replace('€','')).replace('£',''))*1000000)
    #print(word)
    elif 'B' in word[-1]:
        Amount_Targeted.append(float(((word[-1].replace('B', '')).
 ↪replace('€','')).replace('£',''))*1000000000)
    else:
        if ',' in word[-1]:
            Amount_Targeted.append(float(((word[-1].replace(',', '.')).
 ↪replace('€','')).replace('£',''))*1000)
        else:
            Amount_Targeted.append(float(((word[-1].replace(',', '.')).
 ↪replace('€','')).replace('£','')))

#len(Amount_Targeted)
df['Amount targeted']=Amount_Targeted
```

1.0.8 II.7/ MeanDonation

[255]:
```
MeanDonation =[]
for i in range(len(df['NumberDonors'])):
    if df['NumberDonors'][i]>0:
        MeanDonation.append((df['Amount collected '][i])/
 ↪(df['NumberDonors'][i]))
    else : MeanDonation.append(0)
df['MeanDonation']=MeanDonation
```

1.0.9 II.8/ USELESS, WE WILL USE PD.DUMMY LATER Categories and conversion to numeric to plot and corr properly

[256]:
```
catégorie = ["Medical, Illness & Healing", "Funerals & Memorials", "Accidents &␣
 ↪Emergencies","Non-Profits & Charities","Education & Learning", "Animals &␣
 ↪Pets", "Environment", "Business & Entrepreneurs","Community & Neighbors",␣
 ↪"Competitions & Pageants","Creative Arts, Music & Film", "Celebrations &␣
 ↪Events","Missions, Faith & Church", "Babies, Kids & Family", "Sports, Teams␣
 ↪& Clubs", "Travel & Adventure","Volunteer & Service", "Dreams, Hopes &␣
 ↪Wishes", "Other"]
#print(catégorie)
```

[257]:
```
df['categoryNumeric'] = pd.factorize(df['Categorie'])[0] + 1
df['townNumeric'] = pd.factorize(df['town'])[0] + 1
```

1.0.10 II.9/ Creation of a column 'Size', which is the amount targeted:

[258]:
```
df.describe()
```

[258]:

	Unnamed: 0	Pourcentage Raised	NumberDonors	Duration in days	\
count	1716.000000	1716.000000	1716.000000	1716.000000	
mean	857.500000	21.832692	67.204545	55.474359	
std	495.510848	32.015606	599.646314	66.171206	
min	0.000000	1.000000	0.000000	7.000000	
25%	428.750000	1.000000	0.000000	13.000000	
50%	857.500000	2.900000	3.000000	35.000000	
75%	1286.250000	30.425000	17.000000	66.000000	
max	1715.000000	100.000000	15155.000000	362.000000	

	Amount collected	Amount targeted	MeanDonation	categoryNumeric	\
count	1.716000e+03	1.716000e+03	1716.000000	1716.000000	
mean	5.585660e+03	4.186040e+06	37.041797	9.488345	
std	6.057841e+04	6.220077e+07	74.725592	5.208021	
min	0.000000e+00	1.000000e+00	0.000000	1.000000	
25%	0.000000e+00	1.000000e+03	0.000000	5.000000	
50%	9.000000e+01	3.000000e+03	20.000000	9.000000	
75%	7.100000e+02	1.000000e+04	46.570513	14.000000	

```
max          1.600000e+06      1.000000e+09    1677.666667          18.000000
```

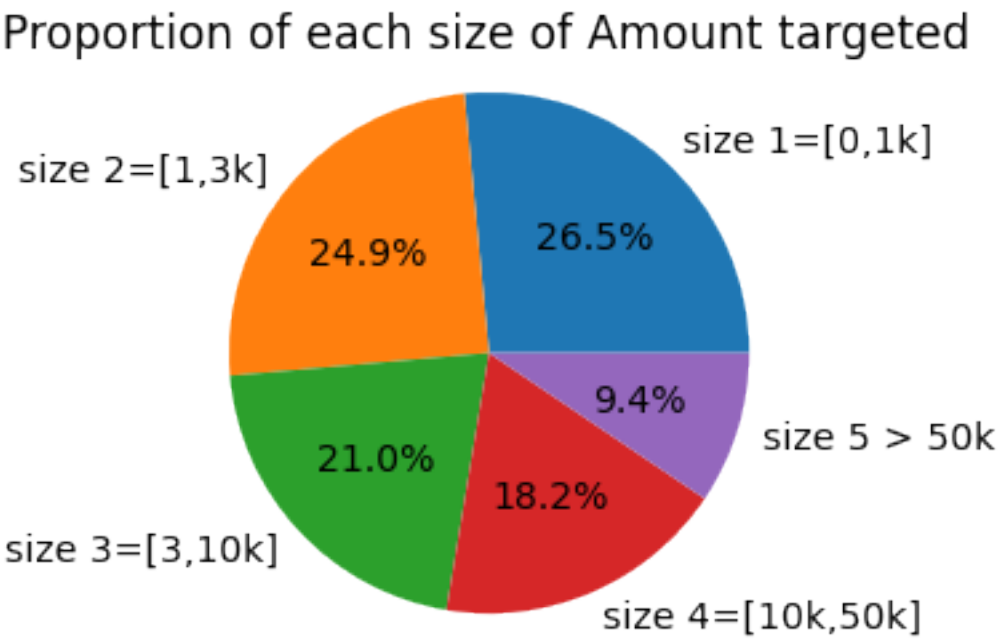
```
       townNumeric
count  1716.000000
mean    302.850233
std     274.721746
min       1.000000
25%      39.000000
50%     229.000000
75%     523.000000
max     896.000000
```

[259]:
```
size=[]
for collect in df['Amount targeted']:
    if collect < 1000:
        size.append(1)
    elif collect <3000:
        size.append(2)
    elif collect <10000:
        size.append(3)
    elif collect<50000:
        size.append(4)
    else:
        size.append(5)

df['size']=size
```

[260]:
```
fig1, ax1 = plt.subplots()
mpl.rcParams['font.size'] = 14.0
ax1.pie(df["size"].value_counts(),radius = 10, labels = ["size 1=[0,1k]", "size␣
↪2=[1,3k]", "size 3=[3,10k]" ,"size 4=[10k,50k]",'size 5 > 50k'], autopct='%1.
↪1f%%', textprops=dict(color="black"))
plt.title("Proportion of each size of Amount targeted", color="black")
ax1.axis('equal')
```

[260]:
```
(-11.20262517464513,
 11.009648817840244,
 -11.192278294352544,
 11.100470177477085)
```



1.0.11 II.10/ We drop useless columns

[261]:
```
df.drop(['Unnamed: 0', 'title', 'collect','Description'], axis=1, inplace=True)
df.describe()
```

[261]:

	Pourcentage Raised	NumberDonors	Duration in days	Amount collected	\
count	1716.000000	1716.000000	1716.000000	1.716000e+03	
mean	21.832692	67.204545	55.474359	5.585660e+03	
std	32.015606	599.646314	66.171206	6.057841e+04	
min	1.000000	0.000000	7.000000	0.000000e+00	
25%	1.000000	0.000000	13.000000	0.000000e+00	
50%	2.900000	3.000000	35.000000	9.000000e+01	
75%	30.425000	17.000000	66.000000	7.100000e+02	
max	100.000000	15155.000000	362.000000	1.600000e+06	

	Amount targeted	MeanDonation	categoryNumeric	townNumeric	\
count	1.716000e+03	1716.000000	1716.000000	1716.000000	
mean	4.186040e+06	37.041797	9.488345	302.850233	
std	6.220077e+07	74.725592	5.208021	274.721746	
min	1.000000e+00	0.000000	1.000000	1.000000	
25%	1.000000e+03	0.000000	5.000000	39.000000	
50%	3.000000e+03	20.000000	9.000000	229.000000	
75%	1.000000e+04	46.570513	14.000000	523.000000	
max	1.000000e+09	1677.666667	18.000000	896.000000	

```
              size
count  1716.000000
mean      2.685897
std       1.251401
min       1.000000
25%       2.000000
50%       3.000000
75%       4.000000
max       5.000000
```

1.0.12 II.11/ We drop the 5% highest values for each category which contains sometimes fake values

[262]:
```
df3=df.loc[df['Categorie']==catégorie[-1]]
df3=df3.loc[df3['Amount targeted']<df3['Amount targeted'].quantile(0.9)]

for i in range(len(catégorie)-1,-1,-1):
    df2=df.loc[df['Categorie']==catégorie[i]]

    #drop 4th quartile of highest values
    df2=df2.loc[df2['Amount targeted']<df2['Amount targeted'].quantile(0.9)]
    df3= pd.concat([df2,df3])
df=df3.reset_index(drop=True)
```

1.0.13 II.12/ Export cleaned DF for Analyse

[263]:
```
df.to_csv('datacleaned.csv')
df.describe()
```

[263]:
```
       Pourcentage Raised  NumberDonors  Duration in days  Amount collected   \
count         1526.000000   1526.000000       1526.000000        1526.000000
mean            23.035583     23.693316         56.087156        1592.236566
std             32.735071     91.683341         66.161984        7128.795581
min              1.000000      0.000000          7.000000           0.000000
25%              1.000000      0.000000         14.000000           0.000000
50%              4.100000      3.000000         36.000000          90.000000
75%             33.300000     15.750000         67.000000         655.000000
max            100.000000   1627.000000        362.000000      115666.000000

       Amount targeted  MeanDonation  categoryNumeric  townNumeric  \
count      1526.000000   1526.000000      1526.000000  1526.000000
mean       6682.376147     35.685074         9.450197   298.156619
std       14134.901900     73.968712         5.203512   274.453665
min           1.000000      0.000000         1.000000     1.000000
25%        1000.000000      0.000000         5.000000    39.000000
50%        2200.000000     20.000000         9.000000   222.500000
75%        6000.000000     45.624041        14.000000   512.000000
```

```
max      200000.000000   1677.666667        18.000000   896.000000
```

```
              size
count  1526.000000
mean      2.447575
std       1.098227
min       1.000000
25%       2.000000
50%       2.000000
75%       3.000000
max       5.000000
```

[264]:
```
df
```

[264]:
```
                       Categorie                 town  Pourcentage Raised  \
0     Medical, Illness & Healing             Vincennes                44.5
1     Medical, Illness & Healing                 Paris                 5.1
2     Medical, Illness & Healing                  Metz               100.0
3     Medical, Illness & Healing                 Évreux                48.9
4     Medical, Illness & Healing                                      100.0
…                            …                   …                  …
1521      Dreams, Hopes & Wishes                Sciecq                 1.0
1522      Dreams, Hopes & Wishes  La Chapelle-du-Noyer                 1.0
1523      Dreams, Hopes & Wishes     Gaillac-d'Aveyron                 1.0
1524      Dreams, Hopes & Wishes             Le Bignon                 1.0
1525      Dreams, Hopes & Wishes                Nantes                 1.0

     Creation Date  NumberDonors  Duration in days  \
0       2022-01-18           100                13
1       2022-01-23            29                 8
2       2022-01-11           139                20
3       2021-12-06           126                56
4       2021-12-16           126                46
…              …             …                 …
1521    2022-01-22             0                 9
1522    2022-01-22             0                 9
1523    2022-01-21             0                10
1524    2022-01-20             0                11
1525    2022-01-20             0                11

                                    Short_description  Amount collected   \
0     [connaissez, d'Instagram, cette, plateforme, d…            2225.0
1     [Hellohope, doing, greati, Hossam, morocco, ye…             506.0
2     [support, needed, years, coma.She, hospitalize…            6345.0
3     [Chers, actuellement, visite, semaine, dernièr…            4889.0
4     [Bonjour, Notre, Andreas, atteint, sclérose, l…           20150.0
…                                                  …               …
```

```
1521  [Bonjour, m'appelle, Clément, recherche, matér…                0.0
1522  [Rafale, zaaaaaaaaaaaahhhhhJe, c'est, prévu, v…                0.0
1523  [Bonjour, m'appelle, trottein, marine, souhait…                0.0
1524  [Bonjour, m'appelle, Margot, demande, assez, s…                0.0
1525  [necesita, iPhone, jelpHHHHHHHHHHHHHHHHHHHHHHR…               0.0
```

	Amount targeted	MeanDonation	categoryNumeric	townNumeric	size
0	5000.0	22.250000	1	1	3
1	10000.0	17.448276	1	2	4
2	1.0	45.647482	1	3	1
3	10000.0	38.801587	1	5	4
4	20000.0	159.920635	1	6	4
…	…	…	…	… …	
1521	100.0	0.000000	18	384	1
1522	990.0	0.000000	18	894	1
1523	3000.0	0.000000	18	895	3
1524	500.0	0.000000	18	896	1
1525	990.0	0.000000	18	37	1

```
[1526 rows x 13 columns]
```

```
[ ]:
```