

INVESTMENT ANALYSIS FOR SPARK FUNDS

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Overview

Spark Funds wants to make investments in a few companies. The CEO of Spark Funds wants to understand the global trends in investments so that she can take the investment decisions effectively.

Constraints:

- **Invest** between **5 to 15 million USD** per round of investment
- **Invest** only in **English-speaking countries**

Goals:

Investment type analysis: Compare the amount invested via various funding types such as venture, seed, angel, private equity etc. and present an informed choice for the firm to invest.

Country analysis: Identifying the countries which have been the most heavily invested in the past. These will be Spark Funds' favorites as well.

Sector analysis: Understanding the distribution of investments across the eight main sectors.

Problem solving methodology

Import

- Import data from source
 - Companies.txt
 - rounds2.csv
 - Mapping.csv
 - Wiki page for country language

Cleaning

- Organize the data
- Remove blank lines
- Remove duplicates
- Remove spell error

Transformation

- Merge dataset to create master data set
- Filter and rename columns to create subsets

Analysis

- Analyze the transformed data as per the investment.xlsx
- Investment type analysis
- Country analysis
- Sector analysis

Visualisation

- Using Seaborn and Matplotlib plot the transformed data to visualize

Analysis – Understanding the Data

This is the primary step where the analysis will form the base for cleaning, transformation and filtering of data

- Analyze the data to understand the constituents
- Number of records
- Uniquely identifiable attributes
- Duplicates

| Understand the Data Set | | |
|-------------------------|---|-----------|
| Sl. No | Questions | Answer |
| 1 | How many unique companies are present in rounds2? | 90247 |
| 2 | How many unique companies are present in the companies file? | 66368 |
| 3 | In the companies data frame, which column can be used as the unique key for each company? Write the name of the column . | permalink |
| 4 | Are there any companies in the rounds2 file which are not present in companies ? Answer Y/N. | N |
| 5 | companies frame are added to the rounds2 data frame. Name the merged frame master_frame . How many observations are present in master_frame ? | 114949 |

Analysis- Funding Type

Analyse the data to get the amount of investments by the top funding method. This is inline with the required goal to identify the most viable funding type which falls in between \$5MM and \$15MM

| Average Values of Investments for Each of these Funding Types | | |
|---|--|----------|
| Sl.No | Questions | Answer |
| 1 | Average funding amount of venture type | 1.17E+07 |
| 2 | Average funding amount of angel type | 9.59E+05 |
| 3 | Average funding amount of seed type | 7.20E+05 |
| 4 | Average funding amount of private equity type | 7.33E+07 |
| 5 | Considering that Spark Funds wants to invest between 5 to 15 million USD per investment round, which investment type is the most suitable for them? | Venture |

Analysis –Country Type and Sector -Wise

Data revealed that among the countries having official language as English, the most funding were happening in USA,GBR, and IND

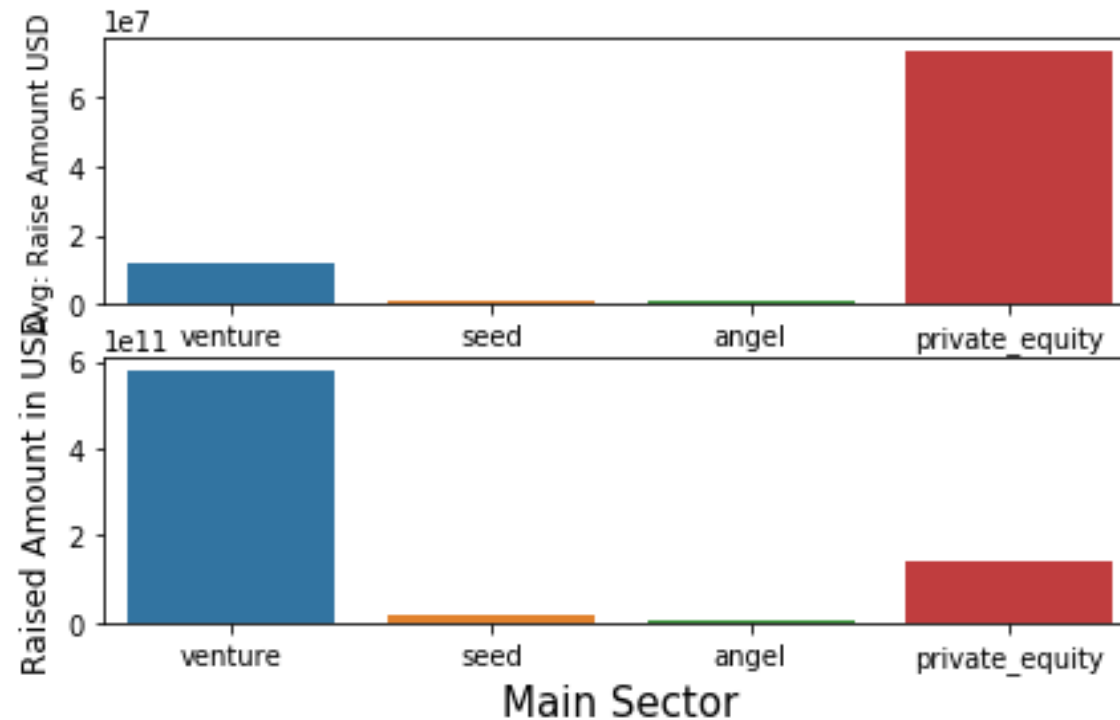
| Analysing the Top 3 English-Speaking Countries | | |
|--|---------------------------------|---------|
| Sl.No | Questions | Answers |
| 1 | Top English speaking country | USA |
| 2 | Second English speaking country | GBR |
| 3 | Third English speaking country | IND |

Also , Analysis was done to find the top performing sector in each country, top set of companies in each country, top sectors and overall investment amounts

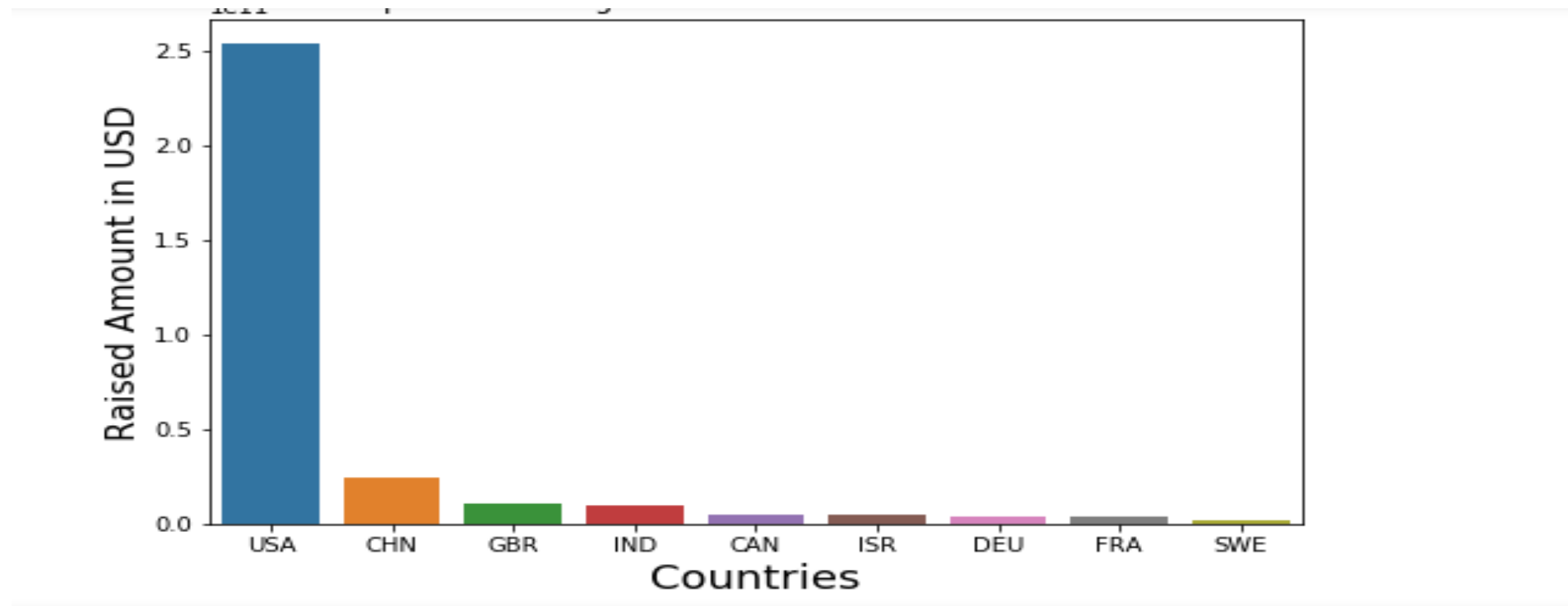
| Sector-wise Investment Analysis | | | |
|---|---|---|---|
| Questions | C1 | C2 | C3 |
| Total number of Investments (count) | 12012 | 619 | 328 |
| Total amount of investment (USD) | 1.07318E+11 | 5365228000 | 2949544000 |
| Top Sector name (no. of investment-wise) | Others | Others | Others |
| Second Sector name (no. of investment-wise) | Social, Finance, Analytics, Advertising | Social, Finance, Analytics, Advertising | Social, Finance, Analytics, Advertising |
| Third Sector name (no. of investment-wise) | Cleantech / Semiconductors | Cleantech / Semiconductors | News, Search and Messaging |
| Number of investments in top sector (3) | 2950 | 147 | 110 |
| Number of investments in second sector (4) | 2714 | 133 | 60 |
| Number of investments in third sector (5) | 2300 | 128 | 52 |
| For point 3 (top sector count-wise), which company received the highest investment? | Facebook | SilverRail Technologies | Pepperfry.com |
| For point 4 (second best sector count-wise), which company received the highest investment? | MediaVast | SimilarWeb | Mobile2Win |

Result – Investment visualisation

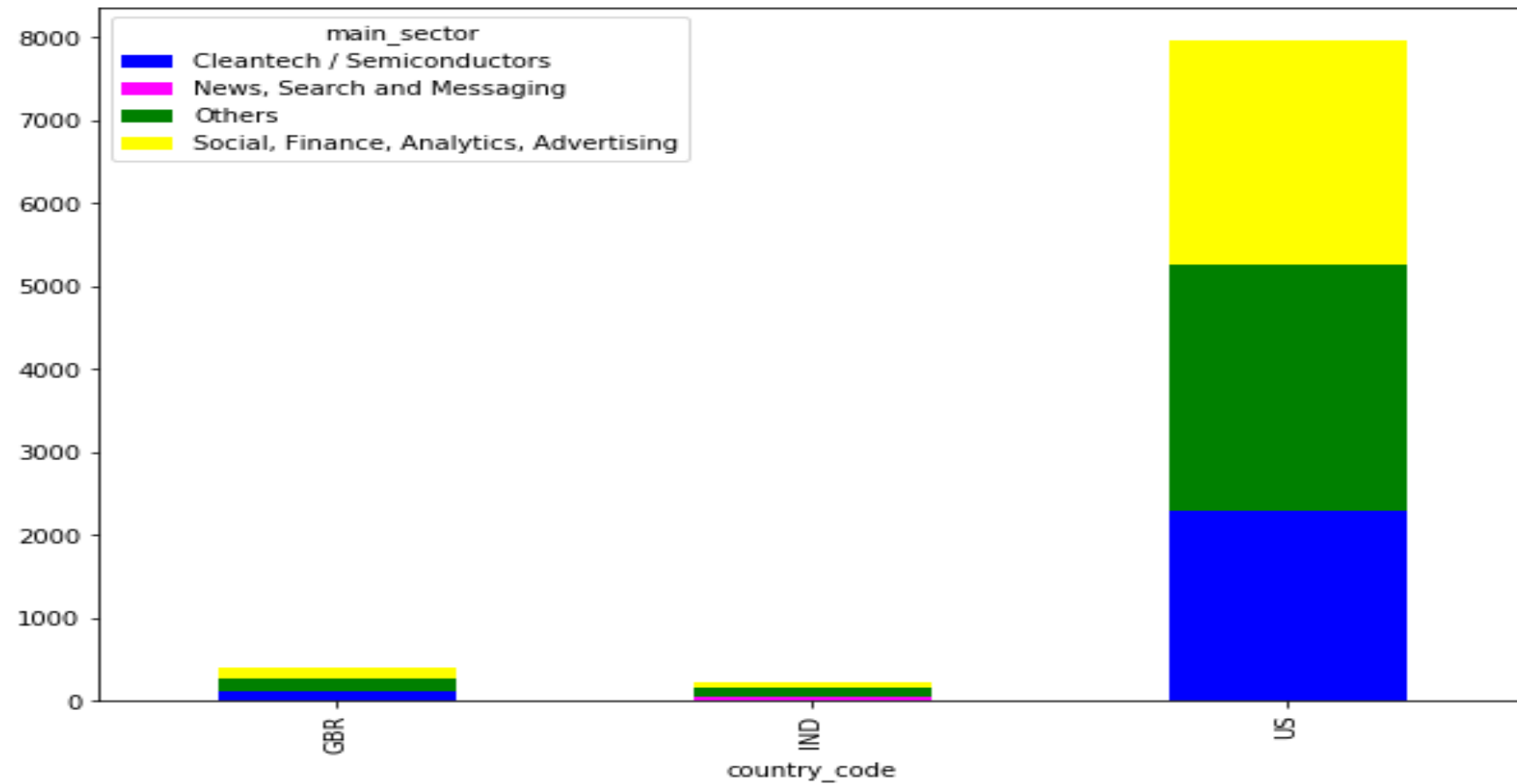
A plot showing the fraction of total investments (globally) in angel, venture, seed, and private equity, and the average amount of investment in each funding type.



Top 9 countries in terms of Investment Amount raised



Top Sector Investment for Top 3 Countries



Conclusions

On the basis of Analysis performed, my recommendation for investments by Spark Funds is as below:

1. The most suitable investment tool for Spark Funds will be through venture funding with avg funding amount ~\$11.7MM. Other succesful tools are provided below

| | Investment Tool | Avg Investment Amount(USD) |
|---|-----------------|----------------------------|
| 1 | Venture Funding | 11,748,950.00 |
| 2 | Private Equity | 73,308,590 |
| 3 | Angle Funding | 958,694.50 |
| 4 | Seed Funding | 719,818.00 |

2. Tope English speaking countries for Investments are:
 - USA -92.8%
 - GB - 4.6%
 - India -2.6%
3. Top Sector to Invests are(in the below given order)
 - Others (USA,GBR,IND)
 - Social, Finance, Analytics, Advertising (USA,GBR,IND)
 - Cleantech / Semiconductors (USA,GBR)
 - News, Search and Messaging (IND)