

INVESTMENT ASSIGNMENT SUBMISSION

Name: Amrita Bais

Investment case study for the Sparks Funds

Sparks Funds is the asset management company and seeking to invest in few companies. The CEO of Spark Funds wants to understand the global trends in investments so that she can take the investment decisions effectively.



Sparks funds has two major constraints:

- They are looking forward to invest between 5million to 15 million USD per round of investment.
- They are very keen to invest in 'English Speaking' countries so as to remove the language barrier and avoid any sort of communication gap.

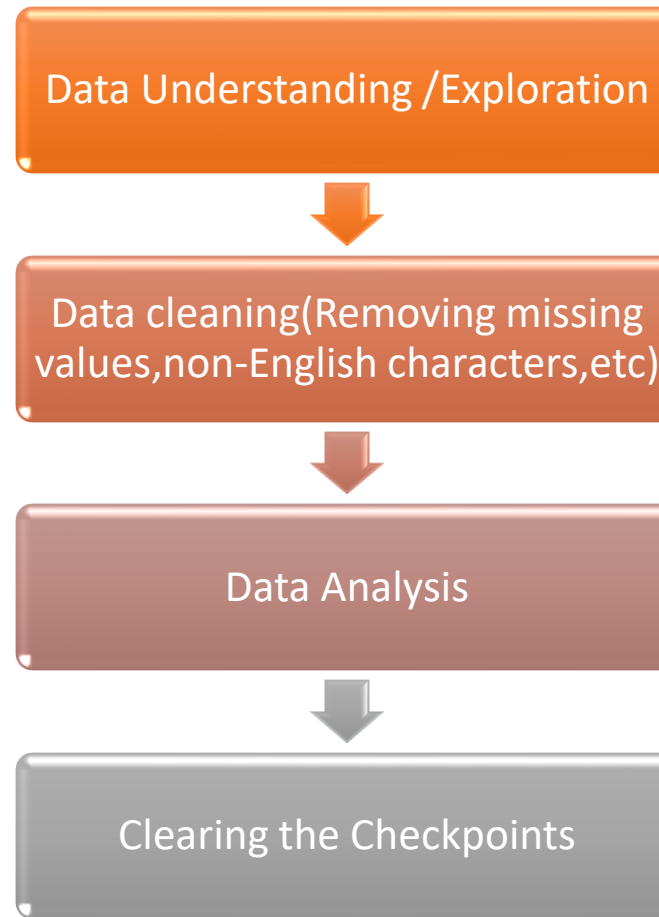


Strategy: The Basic strategy of sparks funds is to invest where most other investors are investing. This pattern is often observed among early stage startup investors.

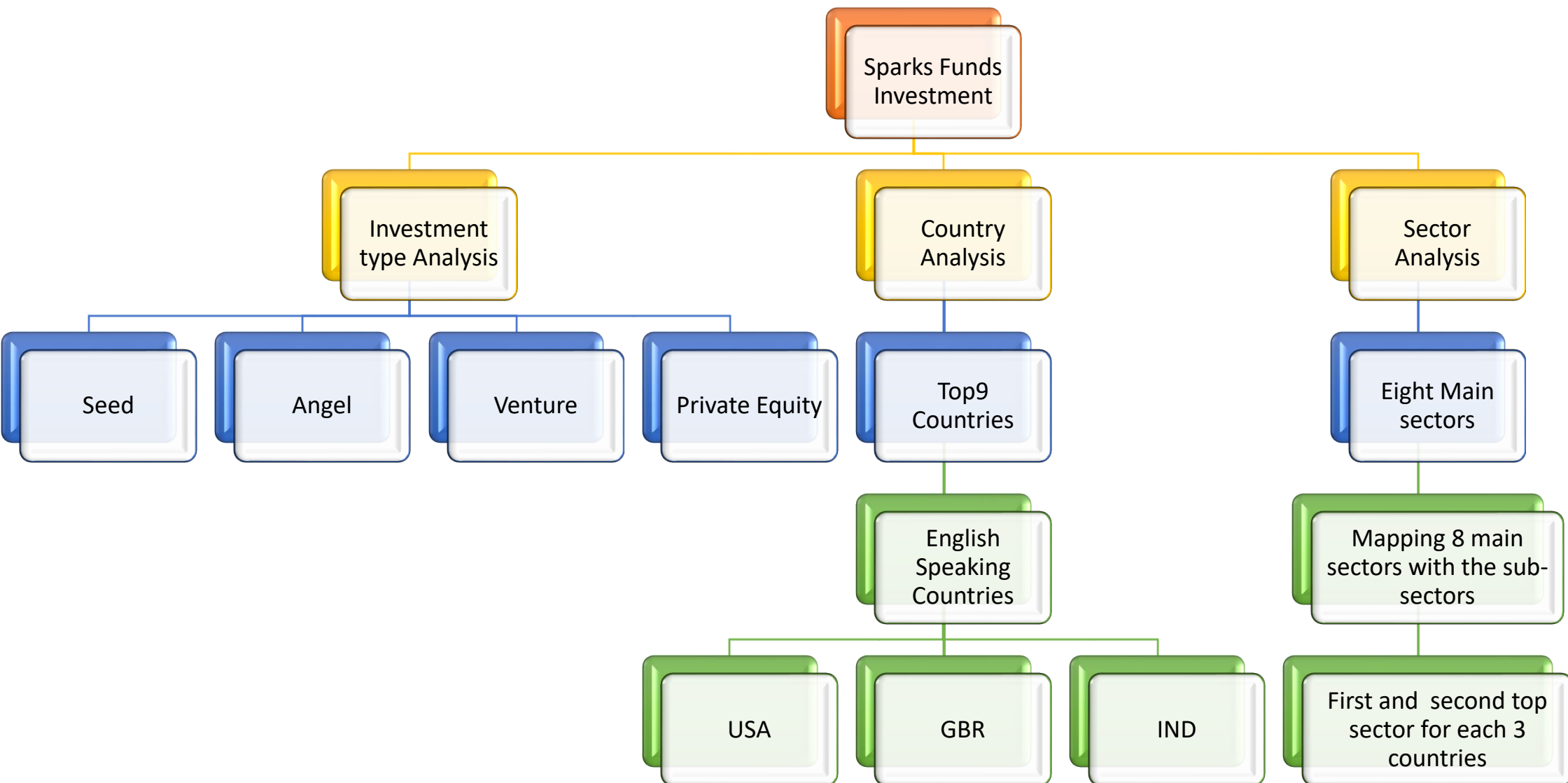


Objective : The objective is to identify the best sectors, countries, and a suitable investment type for making investments. The overall strategy is to invest where others are investing, implying that the 'best' sectors and countries are the ones 'where most investors are investing'.

Problem Solving approach



Case Study Analysis



Analysis

The Investment case study is divided into the 3 analysis , as shown in the previous slide:

1. Investment Type Analysis : Comparing the typical investment amounts in the venture, seed, angel, private equity etc. so that Spark Funds can choose the type that is best suited for their strategy.
2. Countries Analysis : Identifying the countries which have been the most heavily invested in the past. These will be Spark Funds favourites as well.
3. Sector Analysis : Understanding the distribution of investments across the eight main sectors. The file company has numerous sub-sector names and the mapping file has the main sectors, so we need to map each sub-sector to its main sector.

Now checking each analysis as per the problems solving approach.

➤ Data Exploration/understanding:

1. Here first we need to read the files companies and rounds2.
2. Checking the encoding type of the files and the loading files with the appropriate encoding format. Here we have used ISO-8859-1 encoding format.
3. Using the functions like head(),info() ,shape to explore the data more.

➤ Data Cleaning:

1. Cleaning the data columns having special characters
2. Checking the missing values and null values.
3. Checking the redundant columns and dropping the columns which not useful for the analysis.
4. Checking the distribution to impute median, mean or mode.
5. Check for data consistency to avoid running into issues while merging especially conversion to correct format for strings. Example: convert to lowercase

6. Checkpoint 1: Finding the unique Companies in both dataframes, Finding column as unique key, merging the two dataframe as master_frame

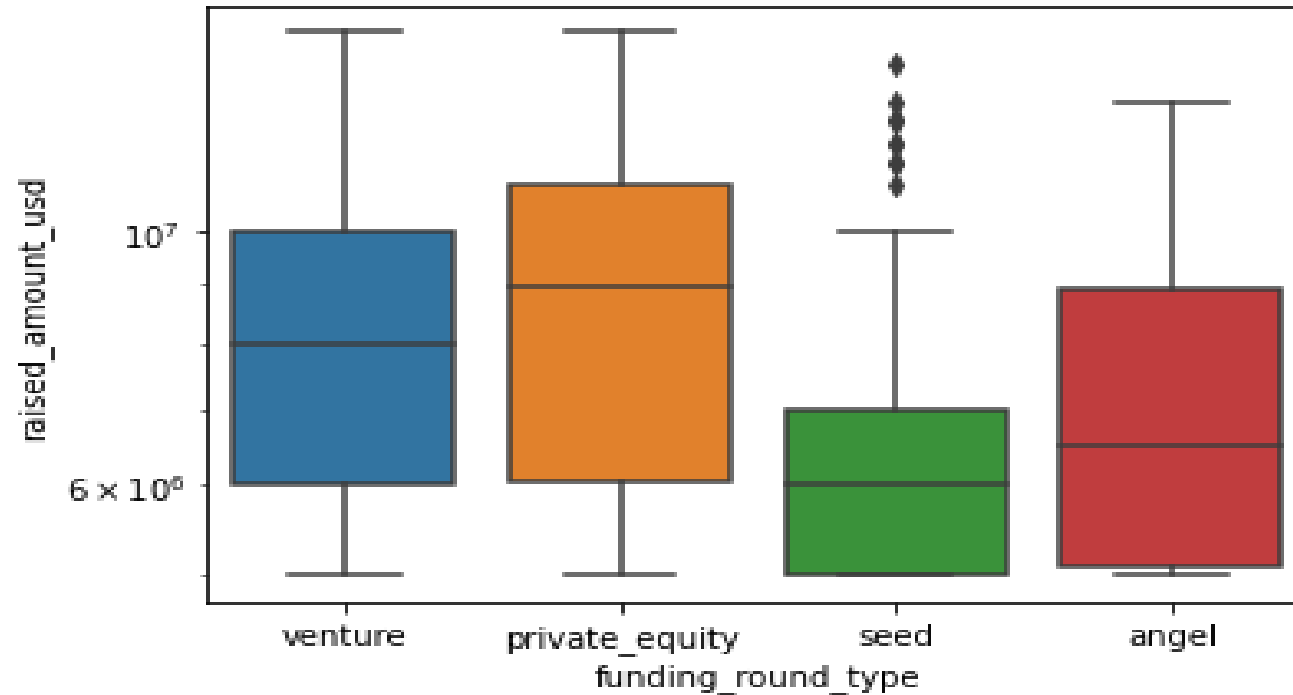
Analysis

➤ Data Analysis

1. **Checkpoint 2:** Finding the investment the funding type as per the Sparks funding constraints i.e, investment amount between 5 million to 15 million USD. Extracting the data in master_frame only for the 4 funding types : Seed, Angel, venture and Private equity.
2. Using describe() to check the mean and median of the 4 funding types and plotting the boxplot to compare the 4 funding types. Shortlisting Venture as per the requirement mentioned above.
3. **Checkpoint 3:** Finding the top9 countries which has been heavily investment. Shortlisting the countries with English Speaking countries and further shortlisted into Top3 countries which are heavily invested plus having English as the official speaking language.
4. **Checkpoint 4 :** For sector analysis, adding the column named primary_sector having the sectors from the category_list.
5. Reading the mapping file which is having the category_list mapping with 8 main sectors. Cleaning the category_list column in mapping file which is having special characters.
6. Using the melt() function to unpivot the table. Merging the mapping file with the master_frame on 'category_list'.
7. Creating D1,D2 and D3 dataframes for the countries USA,GBR and IND respectively.
8. Calculating the Total amount of investment and counts for each countries and top main sectors.
9. Creating the pivot table named company for each country as per the first top main sector and second top main sector.
10. Now we got all the points for checkpoint 4. Total count of investment in top 3 countries, Total amount of investment in top 3 countries, Number of investments in first, second and third top sectors country wise(top3), Companies for the 3 countries as per first and second top sectors.

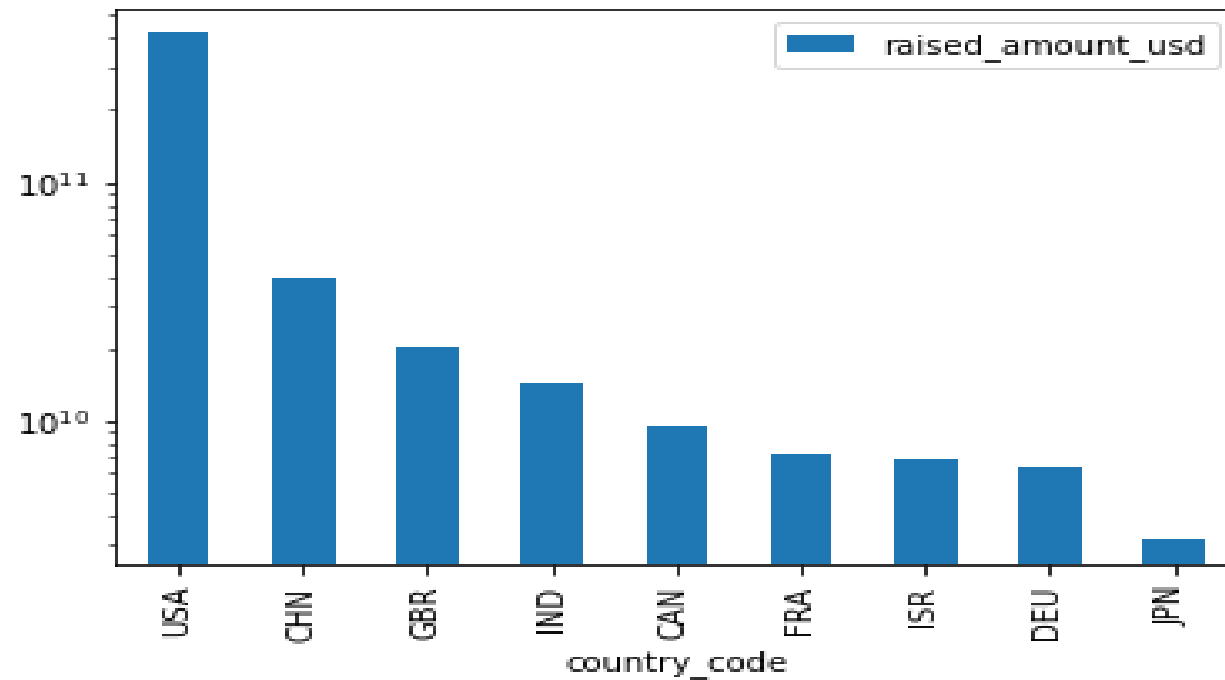
Investment Type Analysis Results

- ❑ A plot showing the representative amount of investment in each funding type .Venture funding type is suitable as per the requirements .



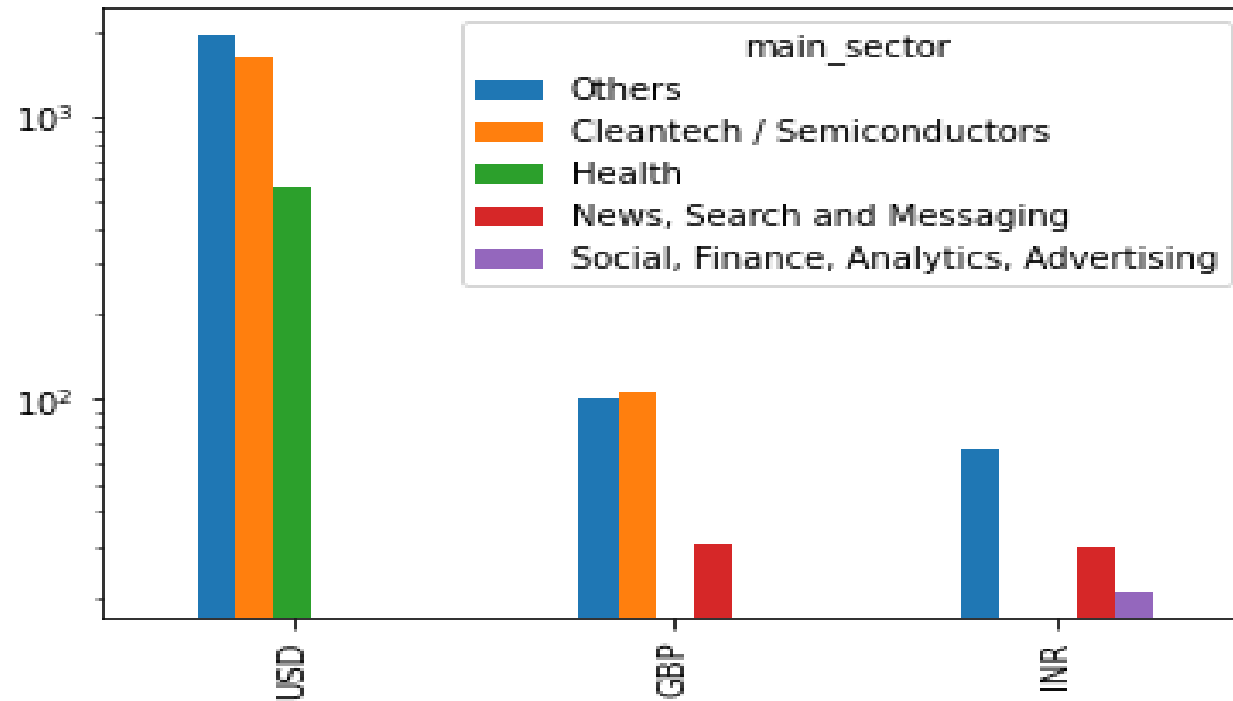
Country Analysis Results

□ A plot showing the top 9 countries against the total amount of investments of funding type FT.



Sector Analysis Results

- ❑ A plot showing the number of investments in the top 3 sectors of the top 3 countries on one chart (for the chosen investment type FT).



Conclusions

As per the data analysis , Spark fund should invest in:

- Funding type: Venture
- Countries: USA, Britain and India respectively.
- Top Sectors to invest in : Others and Cleantech/semiconductors