INVESTMENT ASSIGNMENT

SUBMISSION

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Spark Funds Investment Case Study

Spark Funds, an asset management company. 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:

- It wants to invest between **5 to 15 million USD** per round of investment
- It wants to invest only in **English-speaking countries** because of the ease of communication with the companies it would invest in.

Strategy:

Spark Funds wants to invest where most **other investors are investing**.

Business Objective:

- Identify the best sectors, countries, and a suitable investment type for making investments.
- The overall strategy is to invest where most others investors are investing.

Goals:

- **Investment Type Analysis**: Select the best suited investment type by comparing the investment amounts in the venture, seed, angel, private equity etc.

- **Country analysis**: Identifying the countries which have been the most heavily invested in the past.

- **Sector analysis**: Identify best sectors to invest by understanding the distribution of investments across the eight main sectors.

Data:

We have 3 data files in csv format.

companies: A file with basic details of companies.

rounds2: A file having companies investments rounds history.

mapping: A file having details of sector and category mapping.

WikiPage: Have the list of countries where English is an official language.

Problem Solving Flow Chart

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UpGrad

Load the data files into dataframe with proper encoding →

merge the data frames →

Drop the unnecessary columns and handle the null/na values →

Funding Type Analysis: Compute the average between selected types and identify funding best funding type.

↓

Sector Analysis1: Create separate dataframe for each country. Find total number of investments for each main sector for each country

←

Filter the data containing the observations of funding type and sparkfunds funding range 5-15 million USD.

←

Country Analysis: Filter the data based on the best funding type. Identify best top 3 English speaking countries based on highest total funding.

←

Load the mapping file into a dataframe and merge it with main dataframe. Handle the null/na values.

↓

Sector Analysis2: Find the total amount invested in each main sector for each country. Based on these select best sector and best companied to invest.

→

Conclude the solution: Suggest the Spark Funds CEO with best Funding Type, Best Country and Best Sector to invest based on the analysis

Analysis

- Load the rounds2 and company csv files into the separate data frame with proper encoding.

- Merge the both data frames into single master_frame by using common column permalink and company_permalink.

- Remove unnecessary columns in the data frame, we have very less data as null values drop those null/na rows.

Funding Type Analysis:

- Filter the data frame by four funding types venture, angel, seed, and private equity mentioned as potential investment types.

- Plot the chart on average investment amount and total investments across the globe for these four fund types.

- Observer which funding type average and all funding's lies in the Spark Funds investment range between 5 to 15 million USD.

- Venture funding type average lies between the range of 5 to 15 million USD.

- Private equity average higher than spark funds investment range and seed, angel averages are lower then the given investment range

Analysis

Country Analysis:

- Filter the data frame by Venture funding type.

- Add all the investment amount by country wise, find the top 9 countries having highest investment amount.

- We got USA,CHN,GBR,IND,CAN,FRA,ISR,DEU,JPN countries in top 9 countries.

- Now have to chose only top three English speaking countries from this data frame.
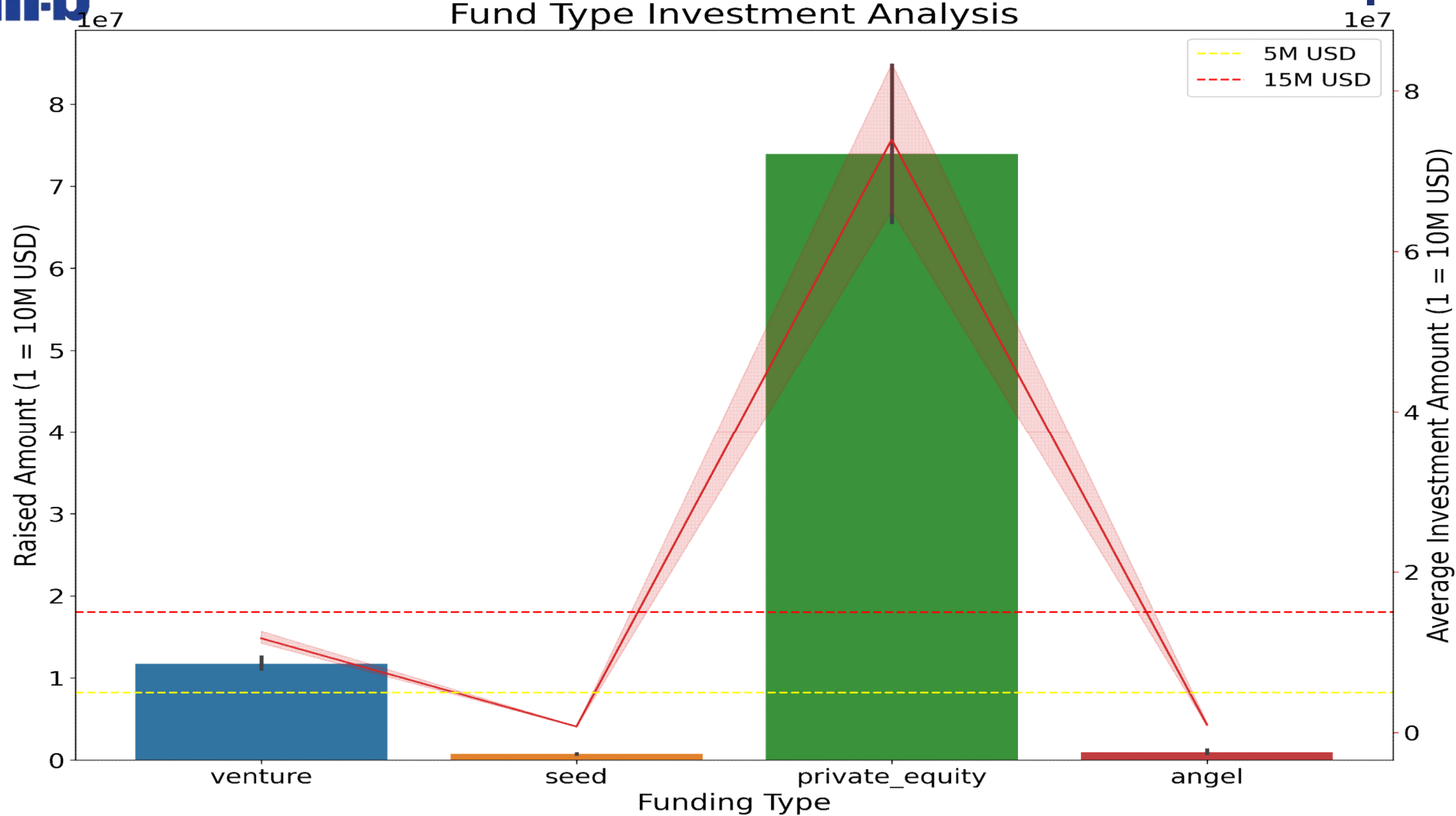
- Top 3 English speaking countries USA,GBR,IND.

Before doing further analysis we have to load the mapping file into the data frame, it is having eight main sectors. We need to get the primary sector from the category_list column. After this we need to merge this data frame with top9 data frame based on the main sector.

Sector Analysis:

- Filter the data frame by preferred funding range **5 to 15 million USD.**

- Create three separate data frames D1, D2 and D3 for each of the three countries containing the observations of funding type.

- These data frames should contain primary sector, main sector, total number (or count) of investments for each main sector, total amount invested in each main sector columns

- Find the most invested sector in each country, find the most invested company in each sector.
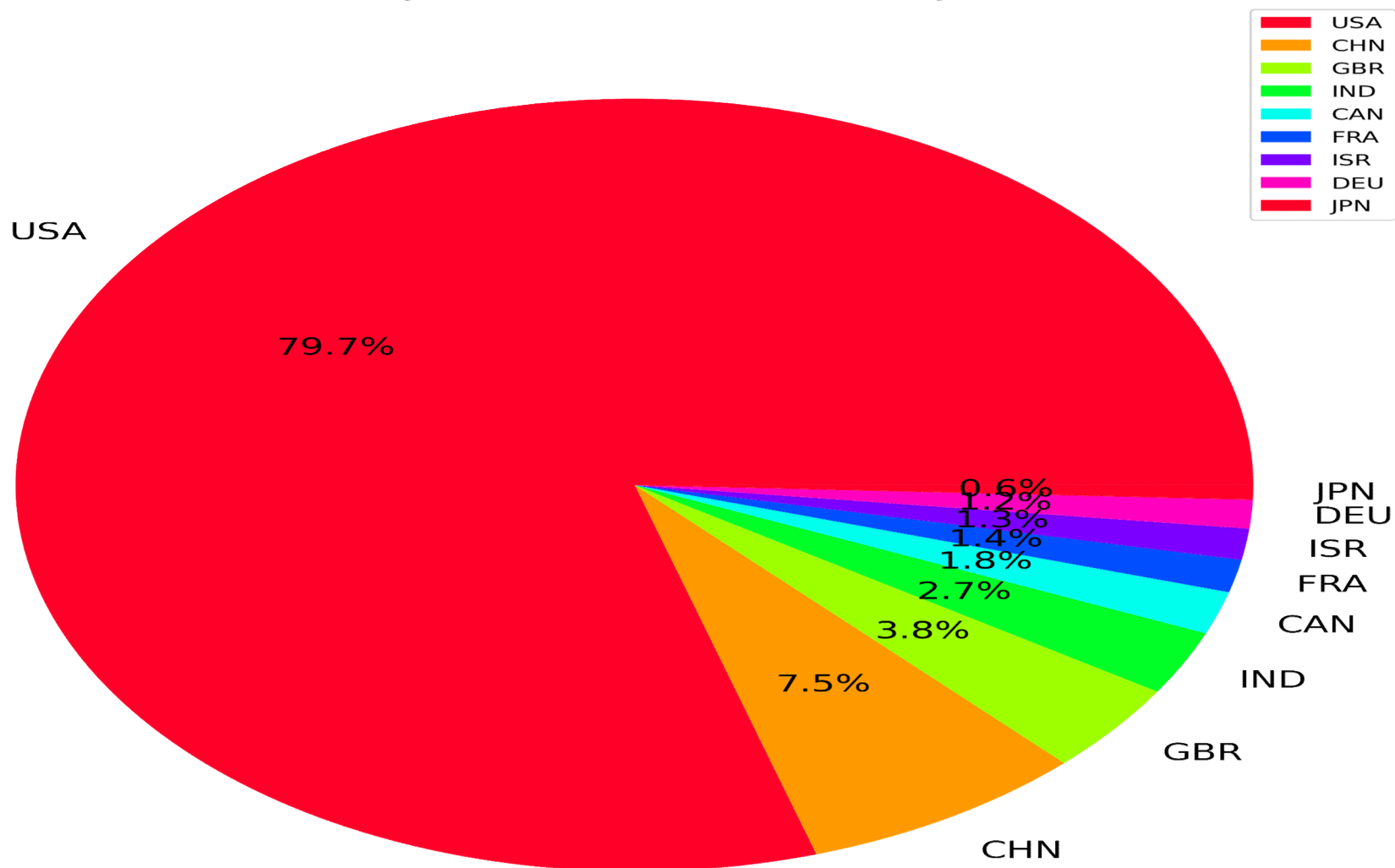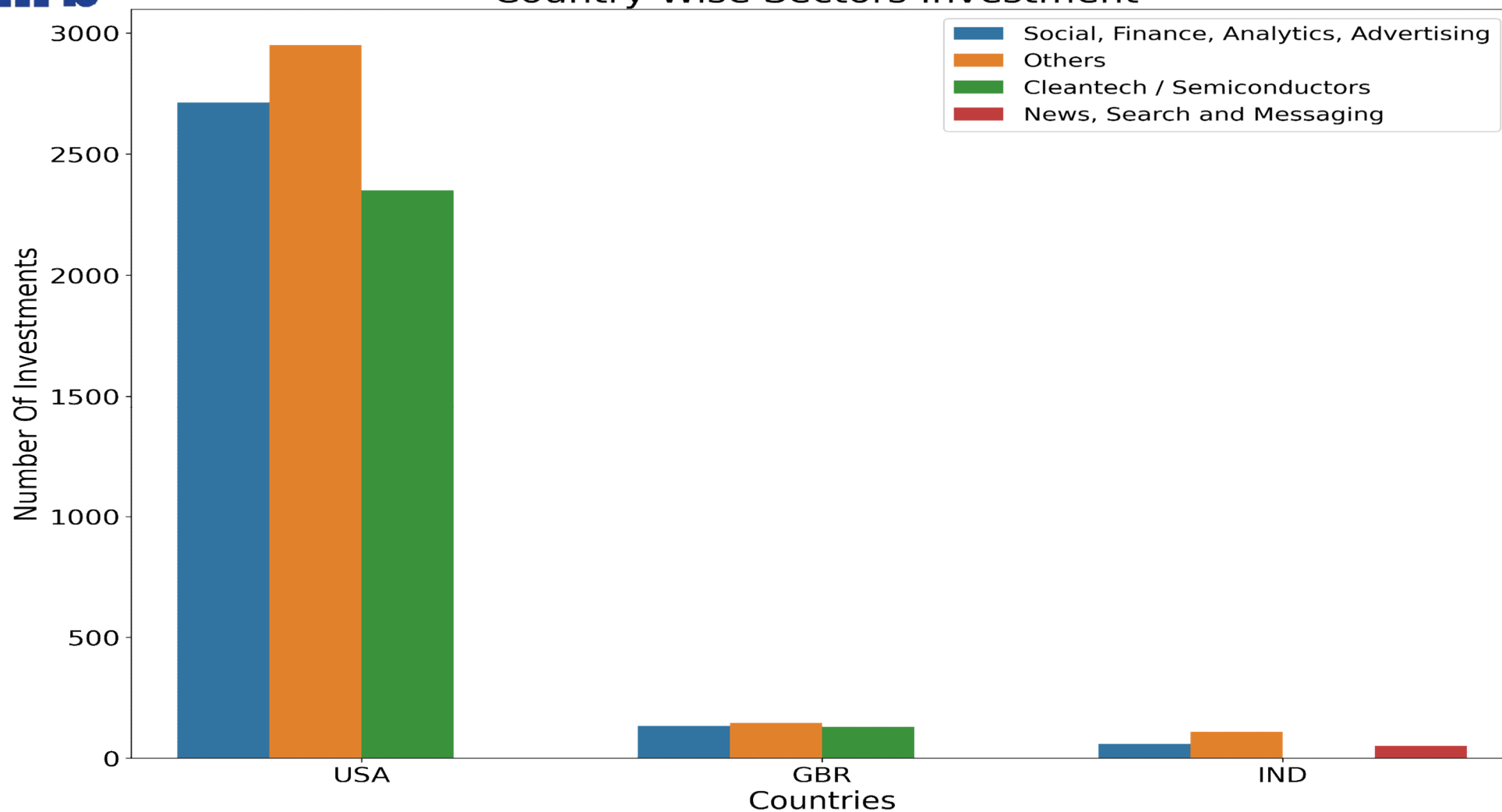
Plot 2

Country Wise Investment Analysis

Legend:
- USA
- CHN
- GBR
- IND
- CAN
- FRA
- ISR
- DEU
- JPN

USA — 79.7%

CHN — 7.5%

GBR — 3.8%

IND — 2.7%

CAN — 1.8%

FRA — 1.4%

ISR — 1.3%

DEU — 1.2%

JPN — 0.6%

Plot 3
Country Wise Sectors Investment

Conclusion

- After analysing the given data, we suggest Spark Funds CEO to invest in below countries and sectors.
- We identified **"Venture"** is the best funding type to invest.
- We identified USA,GBR and INR are the best top three English speaking countries to invest.
- In each country we identified three best sectors to invest.

	Sector 1	Sector 2	Sector 3
USA	Others	Social, Finance, Analytics, Advertising	Cleantech / Semiconductors
GBR	Others	Social, Finance, Analytics, Advertising	Cleantech / Semiconductors
IND	Others	Social, Finance, Analytics, Advertising	News, Search and Messaging