

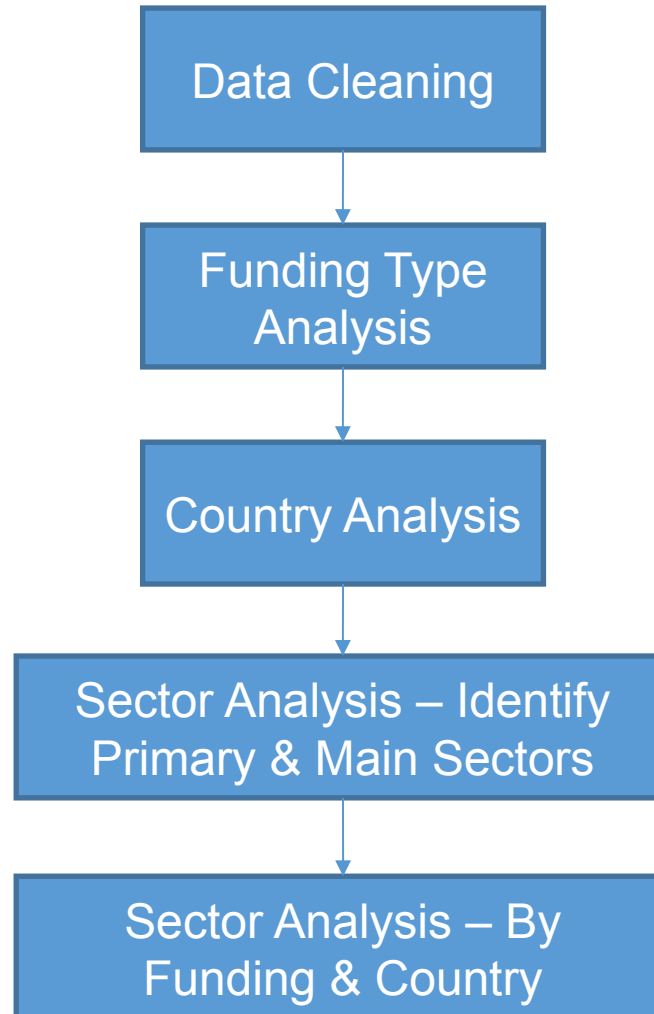
INVESTMENT ASSIGNMENT SUBMISSION

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Problem Description

- The CEO of Spark Funds, an asset management company, wants to understand the global trends in investments so that she can take the investment decisions effectively.
- 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'.
- Spark Funds has two minor constraints for investments:
 - ~ 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.

Methodology



Funding Type Analysis

- Merge companies and rounds2 data based on `company_permalink_lower == permalink_lower`.
- Filter data to one of these funding types: 'venture', 'angel', 'seed', 'private_equity'.
- Get median value for `raised_amount_usd` for each of these funding types.
- 'venture' is the only funding type whose representative value falls within Spark Fund's limit of 5M-15M USD.

```
funding_round_type
angel                400000.0
private_equity      20000000.0
seed                 275000.0
venture              5000000.0
Name: raised_amount_usd, dtype: float64
```

Country Analysis

- Filter data to 'venture' funding type.
- Calculate sum of raised_amount_usd grouped by country_code and get the top 9 countries from that list.
- Use Wikipedia to filter for only the English-speaking countries in the list and identify the top 3.

	country_code	raised_amount_usd
0	USA	4.225108e+11
1	CHN	3.983542e+10
2	MISSING	2.550611e+10
3	GBR	2.024563e+10
4	IND	1.439186e+10
5	CAN	9.583332e+09
6	FRA	7.259537e+09
7	ISR	6.907515e+09
8	DEU	6.346960e+09

```
[ 'USA', 'GBR', 'IND' ]
```

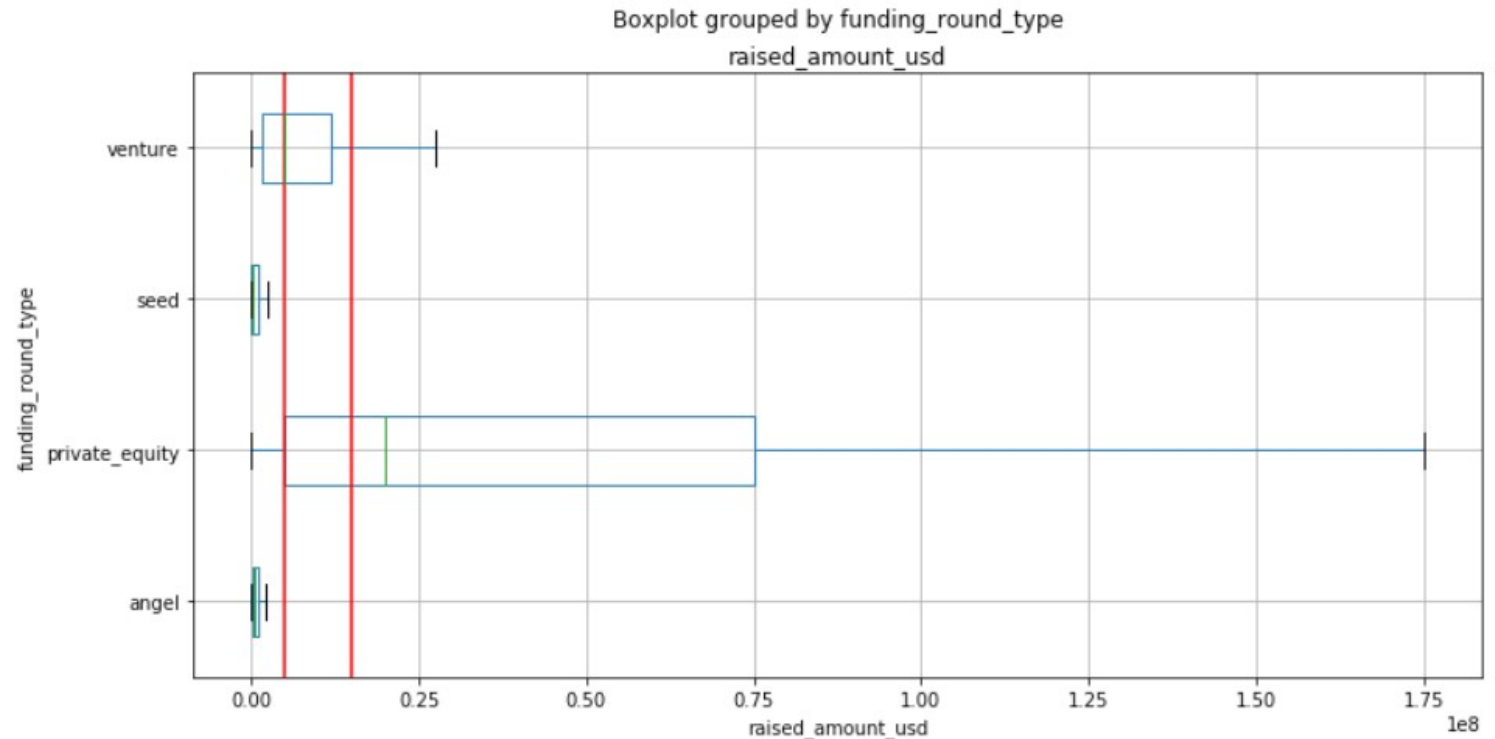
Sector Analysis

- Filter data to country_code == ['USA', 'GBR', 'IND']
- Extract primary_sector from category_list.
- Use primary_sector and mapping file to get the main_sector.
- Filter data to funding range 5M-15M USD.
- Split data into 3 dataframes by country.
- Calculate the following for each main sector in each of the three countries:
 - total number of investments (row count)
 - total amount of investments (sum of raised_amount_usd)
- Identify the top 3 sectors for each of the 3 countries by number of investments.

country_code	main_sector	funding_round_permalink	raised_amount_usd
USA	Automotive & Sports	167	1.454104e+09
	Blanks	86	7.647633e+08
	Cleantech / Semiconductors	2297	2.118100e+10
	Entertainment	580	5.000213e+09
	Health	908	8.200859e+09
	Manufacturing	799	7.258553e+09
	News, Search and Messaging	1563	1.379682e+10
	Others	2923	2.608928e+10
	Social, Finance, Analytics, Advertising	1912	1.668070e+10

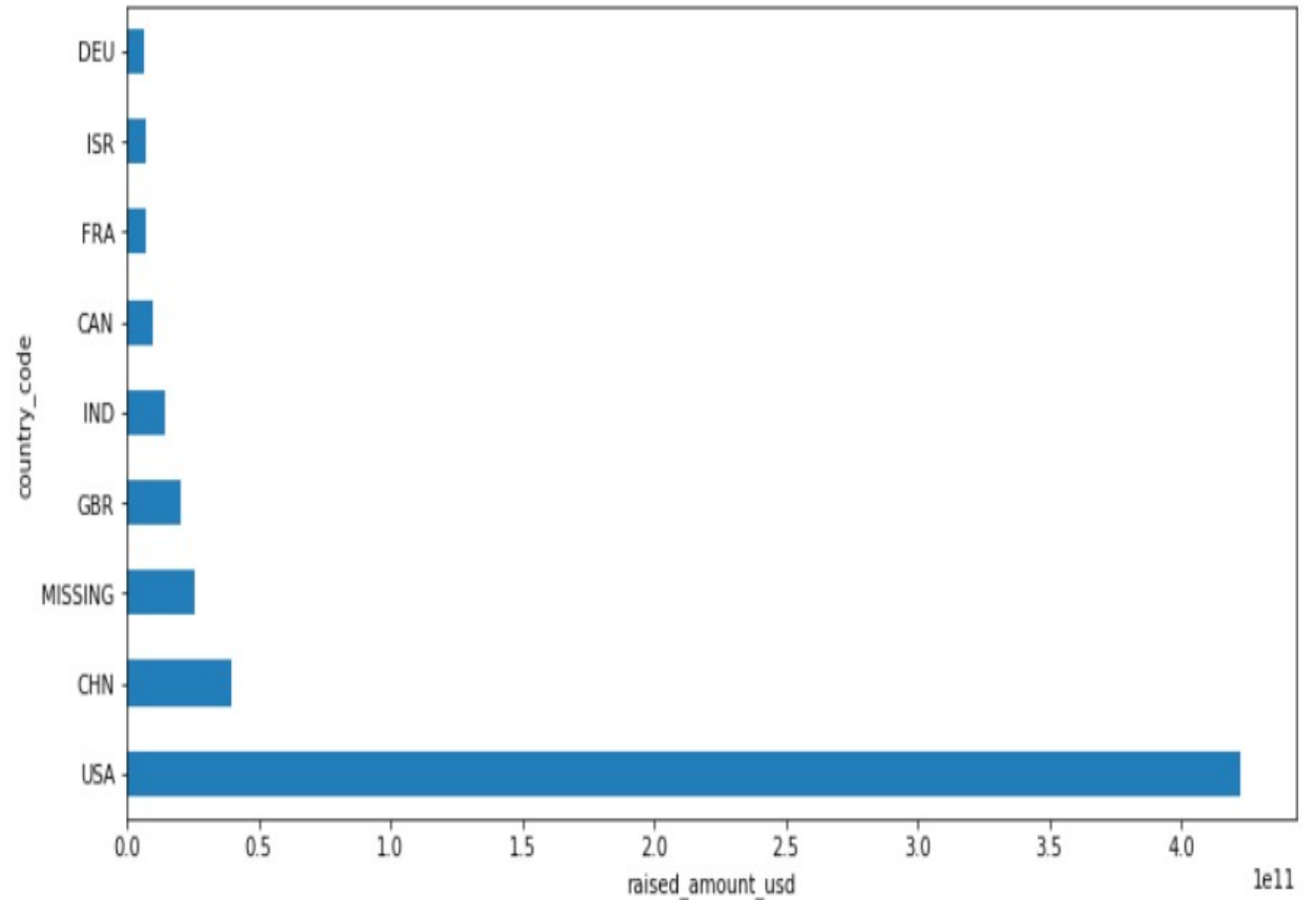
Representative Investment Amount for each Funding Type

- The two red lines represent the upper and lower limit for the Investment range for Spark Funds – 5M-15M USD.
- For venture funding type both the median and 75 percentile value fall within this range.
- On the other hand, for private_equity even the median is beyond this range.
- Seed and Angel types are too small for Spark Funds investment.

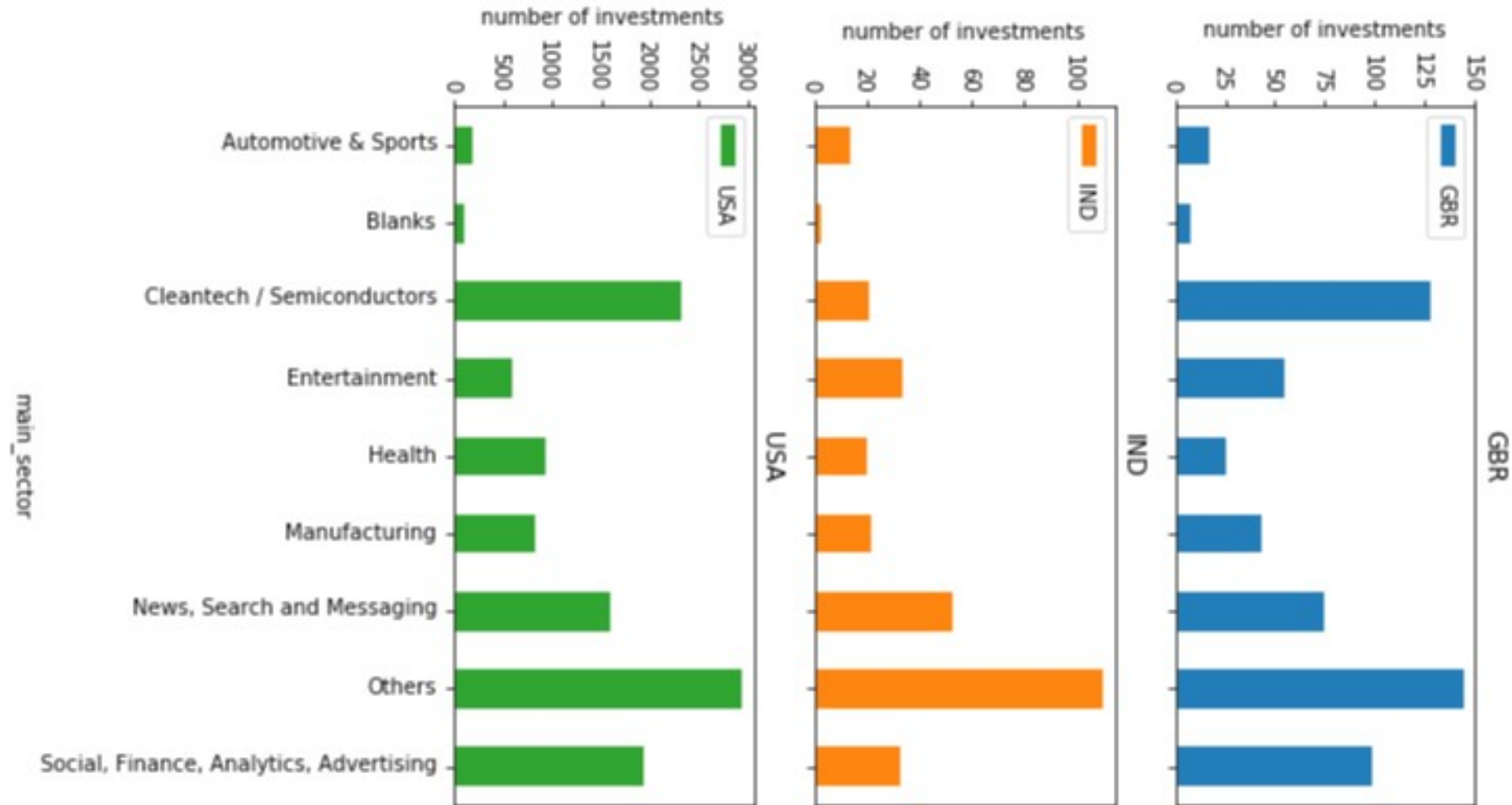


Top 9 countries based on total amount of investments within funding type venture

- We ignore the MISSING value.
- After filtering for English-speaking countries, the top three are USA, GBR & IND.



Number of investments in the top 3 sectors of the top 3 countries for venture investment type



Conclusions

Based on our analysis, Spark Funds should invest in the following sectors and countries and the venture funding type:

1. USA:
 1. Cleantech / Semiconductors
 2. Social, Finance, Analytics, Advertising
 3. News, Search and Messaging
2. GBR:
 1. Cleantech / Semiconductors
 2. Social, Finance, Analytics, Advertising
 3. News, Search and Messaging
3. IND:
 1. News, Search and Messaging
 2. Entertainment
 3. Social, Finance, Analytics, Advertising

* We have ignored the Others sector here.