

# INVESTMENT ASSIGNMENT SUBMISSION

Name: Lakshmi. E

## Abstract

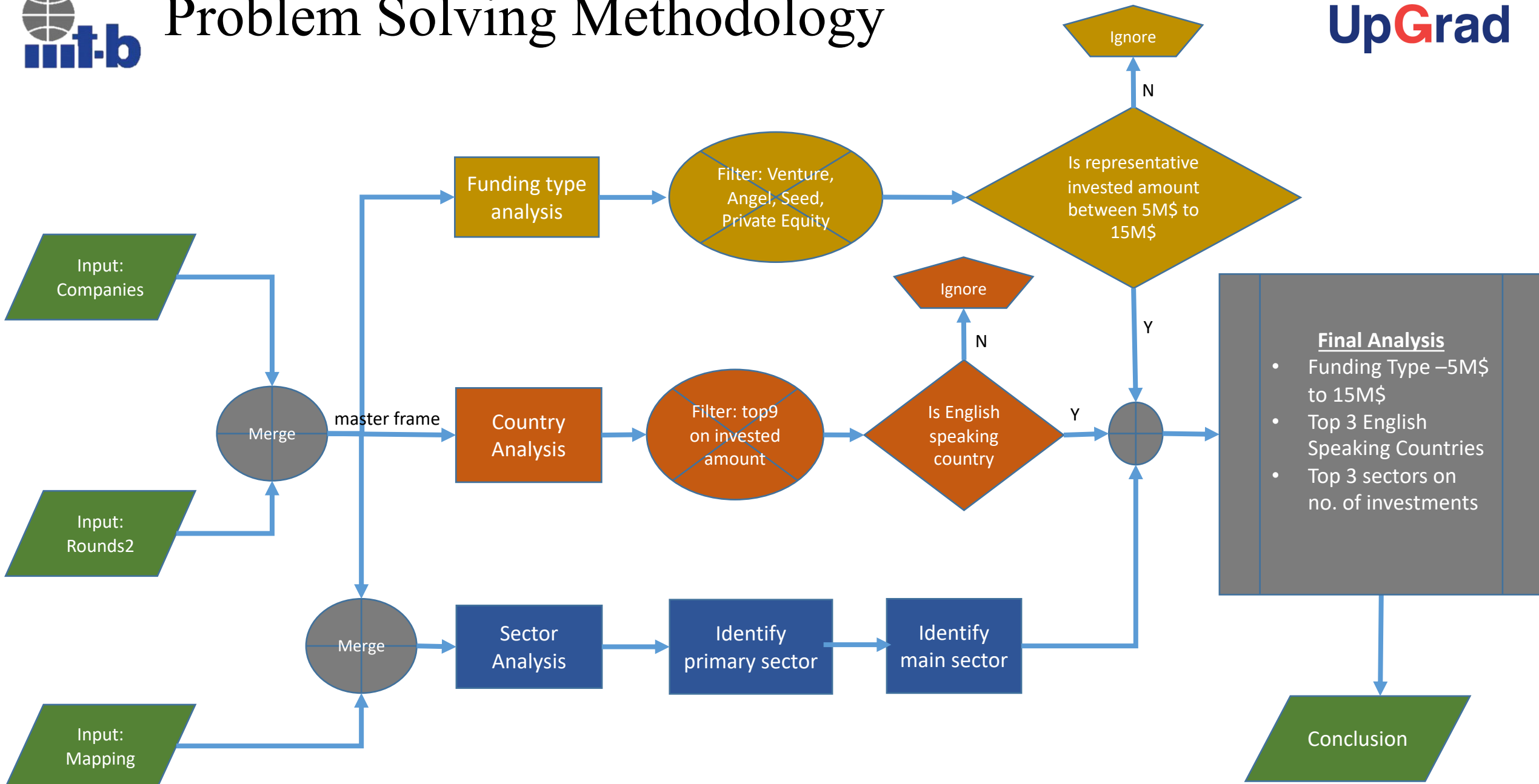
Spark Funds wants to make investments in a few companies.

- 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

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

## Business 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'.



## Missing Values in Data

Variable	Missing %
company_permalink	0.0%
funding_round_permalink	0.0%
funding_round_type	0.0%
funding_round_code	72.9%
funded_at	0.0%
raised_amount_usd	17.4%
permalink	0.0%
name	0.0%
homepage_url	5.3%
category_list	3.0%
status	0.0%
country_code	7.5%
state_code	9.5%
region	8.8%
city	8.8%
founded_at	17.9%

## Invested Amount:

raised_amount_usd	Value
count	94959
mean	10426869.33
std	114821248
min	0
25%	322500
50%	1680511
75%	7000000
max	21271935000

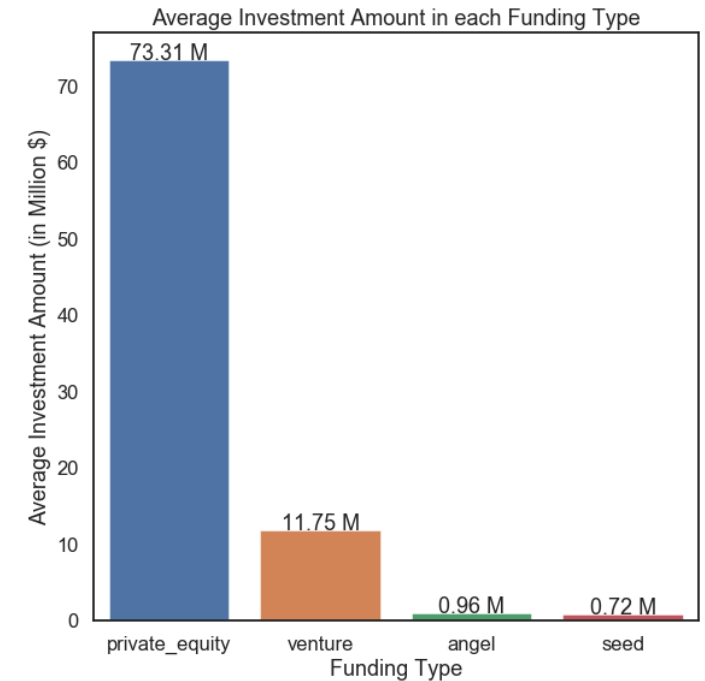
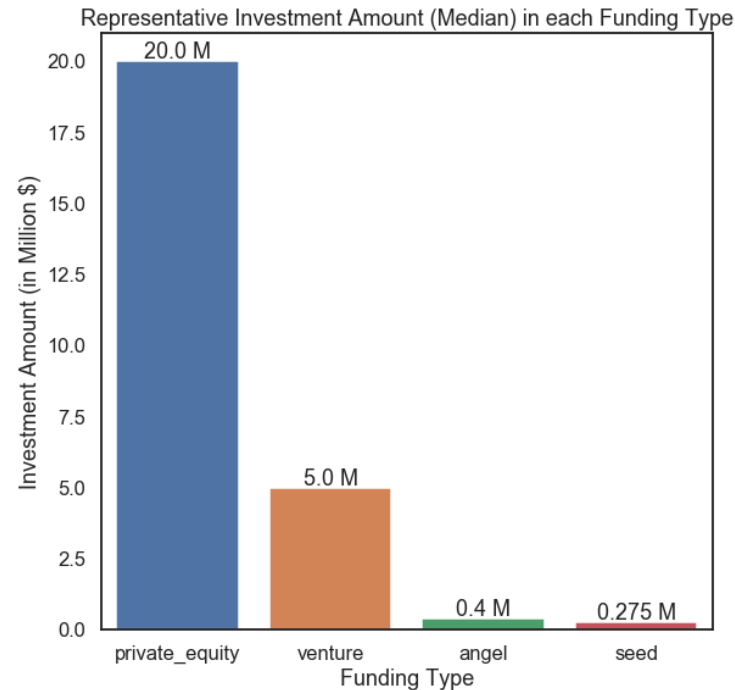
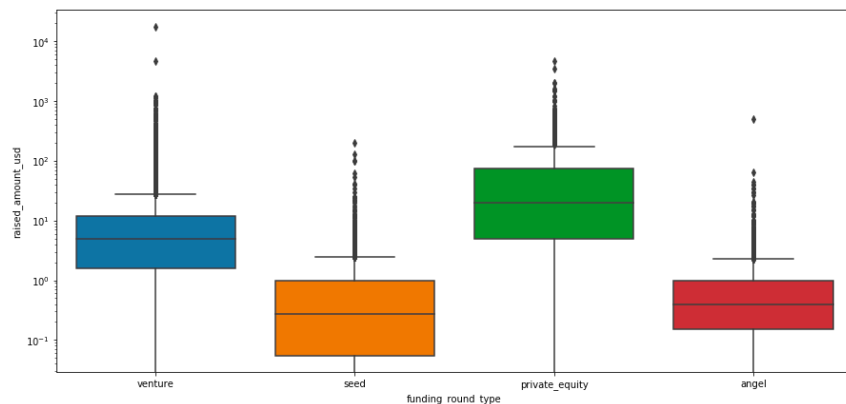
## Inference

- **Data standardization:** organization permalink has mixed variables in both the datasets - converted to lower case
- **Investment Amount:** 17.4% data is missing for raised\_amount\_usd. It is not evenly distributed with varying mean & median. It is better to remove the rows with missing values in this column as it is one of the main criteria in reaching the final results.
- **Country Code:** 7.5% of country code is missing in the data. These entries can be kept to use for the other criteria like funding type, investment etc. Here we replace the null values with a new category (UNK\_CTR).
- **Category list:** 3% of category list is missing. This can be either removed or kept to use for the other variable information. In this case, we will replace the null values with a new category UNK\_CAT

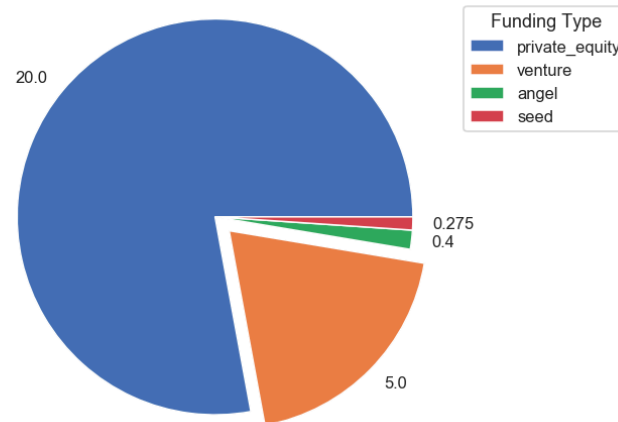
## FUNDING TYPE: Criteria for Spark Funds

1. Four funding types to be considered - venture, angel, seed, and private equity
2. Most representative value of the investment amount to be in the range of 5M\$ to 15M\$

Funding Type	Invested Amount - Median (in Million \$)	Invested Amount - Average (in Million \$)
private_equity	20	73.30859
venture	5	11.74895
angel	0.4	0.95869
seed	0.275	0.71982



Representative Investment Amount (in million \$) per Funding Type



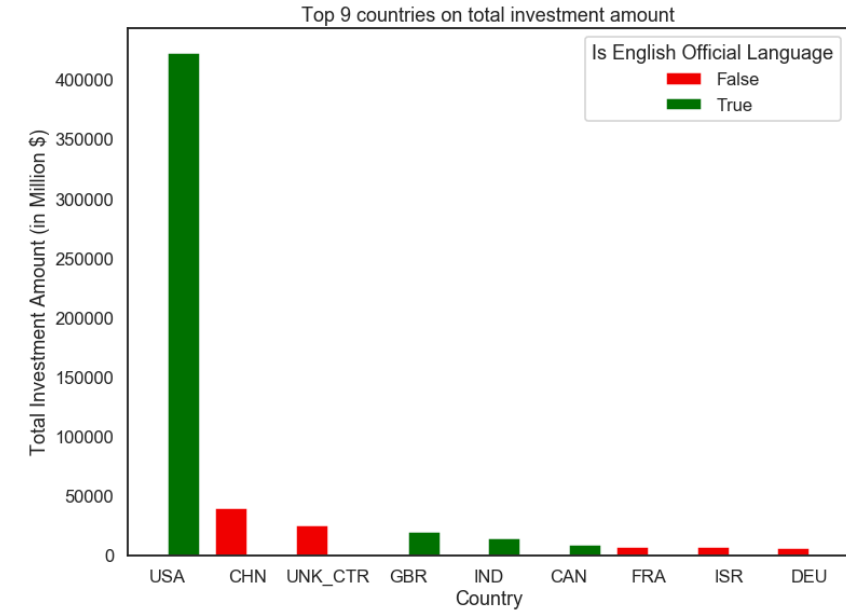
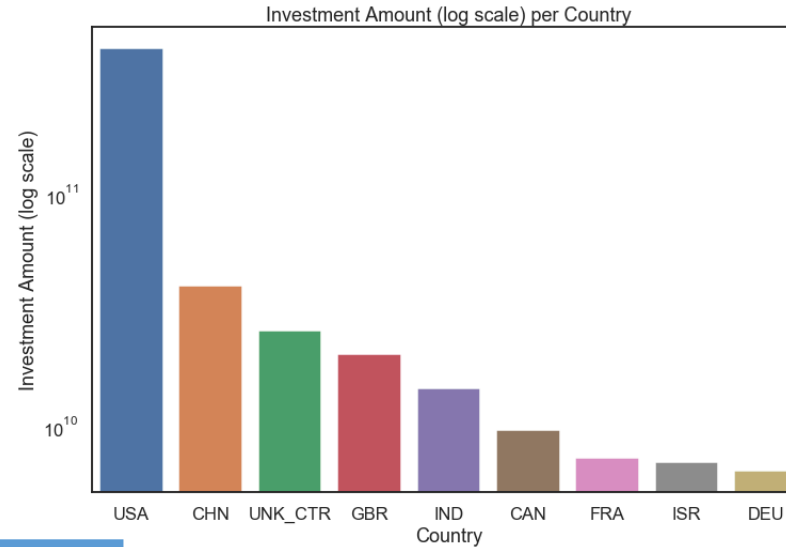
## Conclusion

### Recommended: Venture Funding Type

**Venture** funding type is the only funding type that has the investment amount, both representative value and average value between 5 Million \$ to 15 Million \$

## COUNTRY: Criteria for Spark Funds

1. Invest only in English speaking countries
2. Invest in countries with the highest amount of funding



TOP9	Country Code	Funding Type	Total Invested Amount	Is English official language?
1	USA	venture	422510842796	TRUE
2	CHN	venture	39835418773	FALSE
3	UNK_CTR	venture	25506108414	FALSE
4	GBR	venture	20245627416	TRUE
5	IND	venture	14391858718	TRUE
6	CAN	venture	9583332317	TRUE
7	FRA	venture	7259536732	FALSE
8	ISR	venture	6907514579	FALSE
9	DEU	venture	6346959822	FALSE

## Conclusion

Recommended countries to invest:

1. United States of America (USA)
2. United Kingdoms (GBR)
3. India (IND)

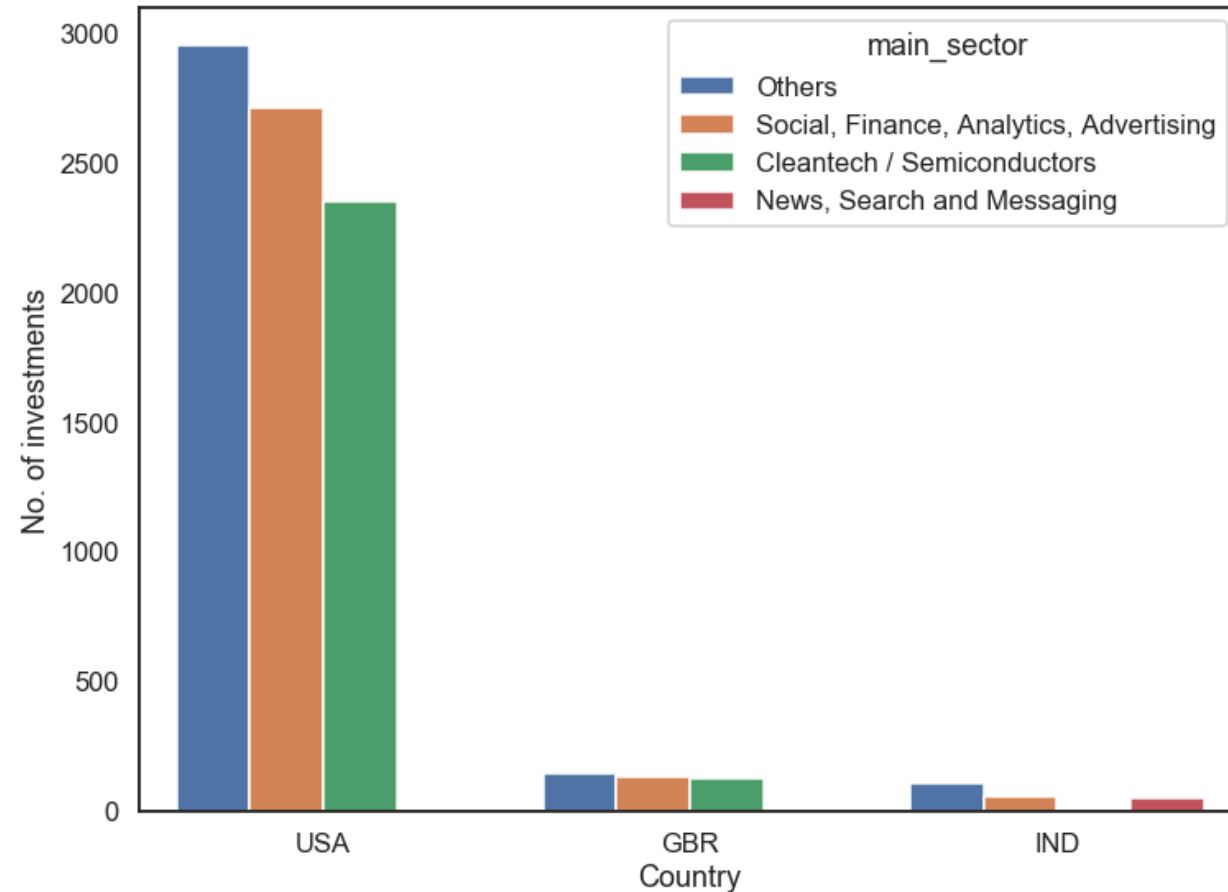
Based on the given criteria, the top 3 English speaking countries with the highest investment are USA, GBR and IND.

## SECTOR: Criteria for Spark Funds

1. Consider only the first category from the category list as the primary sector
2. Every category mapped to one of the eight main sectors

## Mapping Strategy

- From the mapping file, it was noticed that “na” has been replaced with 0 in the data. This is fixed by replacing 0 back to “na”.
- Mapping file has one-hot encoded data. Reverse of one-hot encoding has to be done to get the main sector for each category
- Based on primary category in master frame, the main category is identified from the mapping file



## Conclusion

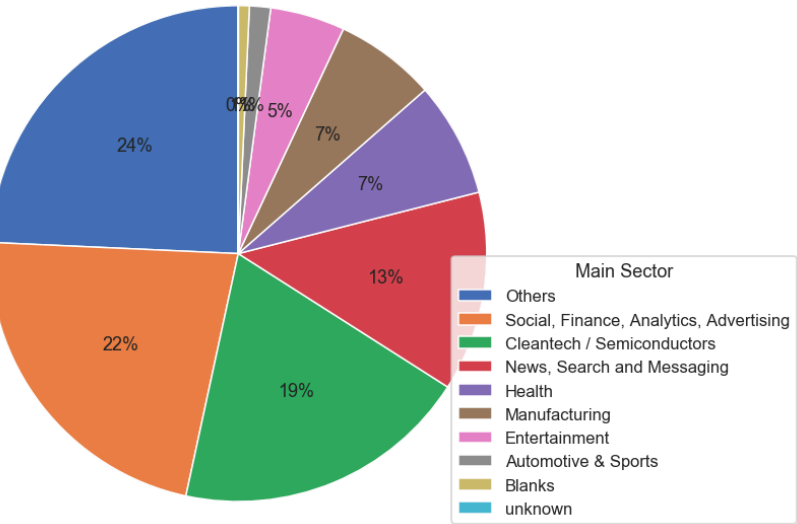
With the main categories mapped to each investment, the top 3 main sectors for each of the top3 countries can be analyzed for the funding type Venture



# No. of investments - top 3 sectors - top 3 countries

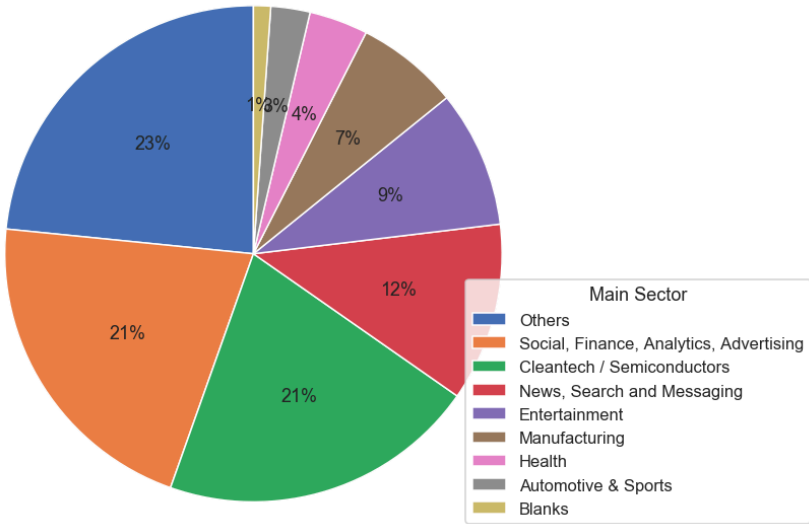


Investment amount distribution per sector (venture) - USA



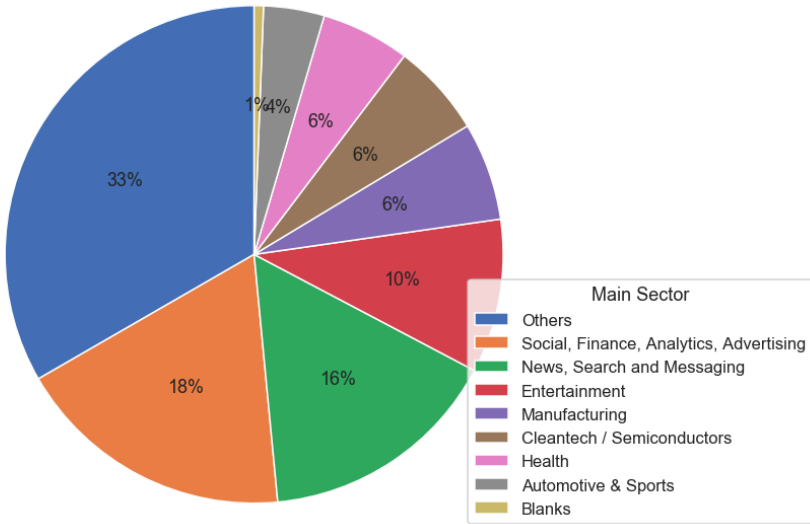
USA

Investment amount distribution per sector (venture) - GBR



GBR

Investment amount distribution per sector (venture) - IND



IND

Main Sector	Total Investment Amount (in \$)	No. of Investments	Investment %
Others	26321007002	2950	24.3%
Social, Finance, Analytics, Advertising	23807376964	2714	22.3%
Cleantech / Semiconductors	21633430822	2350	19.3%

Main Sector	Total Investment Amount (in \$)	No. of Investments	Investment %
Others	1283624289	147	23.4%
Social, Finance, Analytics, Advertising	1089404014	133	21.2%
Cleantech / Semiconductors	1163990056	130	20.7%

Main Sector	Total Investment Amount (in \$)	No. of Investments	Investment %
Others	1013409507	110	33.3%
Social, Finance, Analytics, Advertising	550549550	60	18.2%
News, Search and Messaging	433834545	52	15.8%



## CONCLUSION FROM THE ANALYSIS

- **“Venture”** Funding Type has the representative investment amount in the range of 5M\$ to 15M\$
- Top 3 English speaking countries where Spark Funds can invest: **USA, GBR and IND**
- Main Sectors where most of the investments occur:
  - **Others**
  - **Social, Finance, Analytics, Advertising**

## RECOMMENDATION TO SPARK FUNDS

- Mainly focus to invest in **“USA”** in the funding type **“venture”** with the main sector **“Others”**.
- Recommended company: **/organization/virtustream** with a total investment 64.3 Million \$, followed by **/organization/capella** (54.97 Million \$) and **/organization/airtight-networks** (54.2 Million \$)
- In case it wishes to invest in other sectors in USA, then it can also invest in **“Social, Finance, Analytics, Advertising”** sector
- In order to mitigate any risk involved in investing in only one country, Spark Funds can also consider investing in **“Great Britain”** and **“India”** in the funding type **“venture”** for the main sectors **“Others”** and **“Social, Finance, Analytics, Advertising”**