INVESTMENT CASE STUDY

SUBMISSION

1. Debraj Ray

Identify the best sector, countries and investment type for Sparks Fund's investment strategy

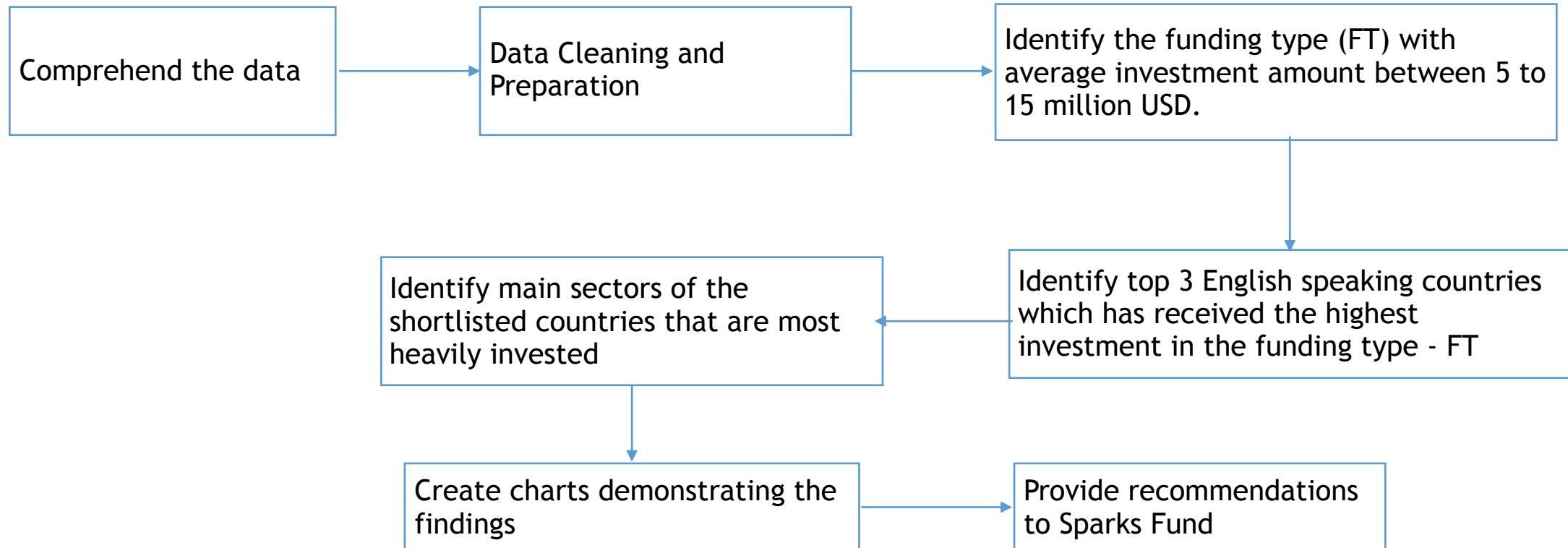The requirements specified by Spark's Fund are mentioned below.

Primary Requirements

- The investment capital should be between **5 to 15 million USD**

- Investment should only be in countries whose **official language is English.**

Secondary Requirements

- Identify sector, countries and investment type that are most popular among other investors, i.e. Sparks Fund wants to invest where others are investing.

Problem solving methodology

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┌──────────────────┐      ┌──────────────────┐      ┌──────────────────────────┐
│                  │      │ Data Cleaning and│      │ Identify the funding type│
│ Comprehend the   │ ───► │ Preparation      │ ───► │ (FT) with average        │
│ data             │      │                  │      │ investment amount between│
│                  │      │                  │      │ 5 to 15 million USD.     │
└──────────────────┘      └──────────────────┘      └──────────────────────────┘
                                                                │
                                                                ▼
┌──────────────────────────┐                        ┌──────────────────────────┐
│ Identify main sectors of │                        │ Identify top 3 English    │
│ the shortlisted countries│ ◄───────────────────── │ speaking countries which  │
│ that are most heavily     │                        │ has received the highest  │
│ invested                  │                        │ investment in the funding │
└──────────────────────────┘                        │ type - FT                 │
         │                                           └──────────────────────────┘
         ▼
┌──────────────────────────┐      ┌──────────────────────────┐
│ Create charts            │ ───► │ Provide recommendations  │
│ demonstrating the        │      │ to Sparks Fund           │
│ findings                 │      │                          │
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Best Fund Type - Venture

|	Mean	Lower Quantile	Median	Upper Quantile
seed	7.192209E+05	55000	277877.5	1000000
angel	9.574461E+05	150000	400000	1000000
venture	1.171726E+07	1600000	5000000	12000000
private_equity	7.341846E+07	5000000	20000000	75000000

The measures of central tendency of 66,370 companies are recorded in the table shown above. This data will help us determine the most suitable fund type based on the primary requirements of Sparks Fund. According to the data, Venture is the best fund type, and the reasons for this are given below.

- The mean of investments in Venture is 11.7 million USD which satisfies the requirement of Sparks Fund that it wants to invest between 5 to 15 million USD.

- The median of venture is 5 million which again corroborates the fact that Venture is most suitable fund type of Sparks Fund.

- Besides, the lower quartile and upper quartile of Venture are 1.6 million and 12 million which means that the majority of investments in Venture are in the bracket of 5 to 15 million which suits Sparks Fund. Compare this with, say, angel where majority of investments are between 0.15 to 1 million and for private equity where the majority of investments are between 5 to 75 million (mean 73 million). Clearly, Venture suits the need of Sparks Fund, the best.

- **Assumption**: As part of cleaning the data we have made an assumptions. If the raised_amount_usd or the category list of an entry is unknown, we have dropped the data from consideration. These two columns provide key insight about the top fund type, top countries and the top sectors for investment. Thus without having data of the two main columns, the entry is not much useful.

Identify the top three countries for investment

Top English-speaking country	United States of America (USA)
Second English-speaking country	England (GBR)
Third English-speaking country	India (IND)

- Top 9 countries that has received the largest investment are shown in the chart to the right.

- The top 3 countries among the top 9 whose official language is English are provided in the chart above. These countries are USA, England and India.

- USA has received over 400 billion USD in funding. England has received a little over 20 billion and India, in the third place, has received about 14.4 billion USD in investments.
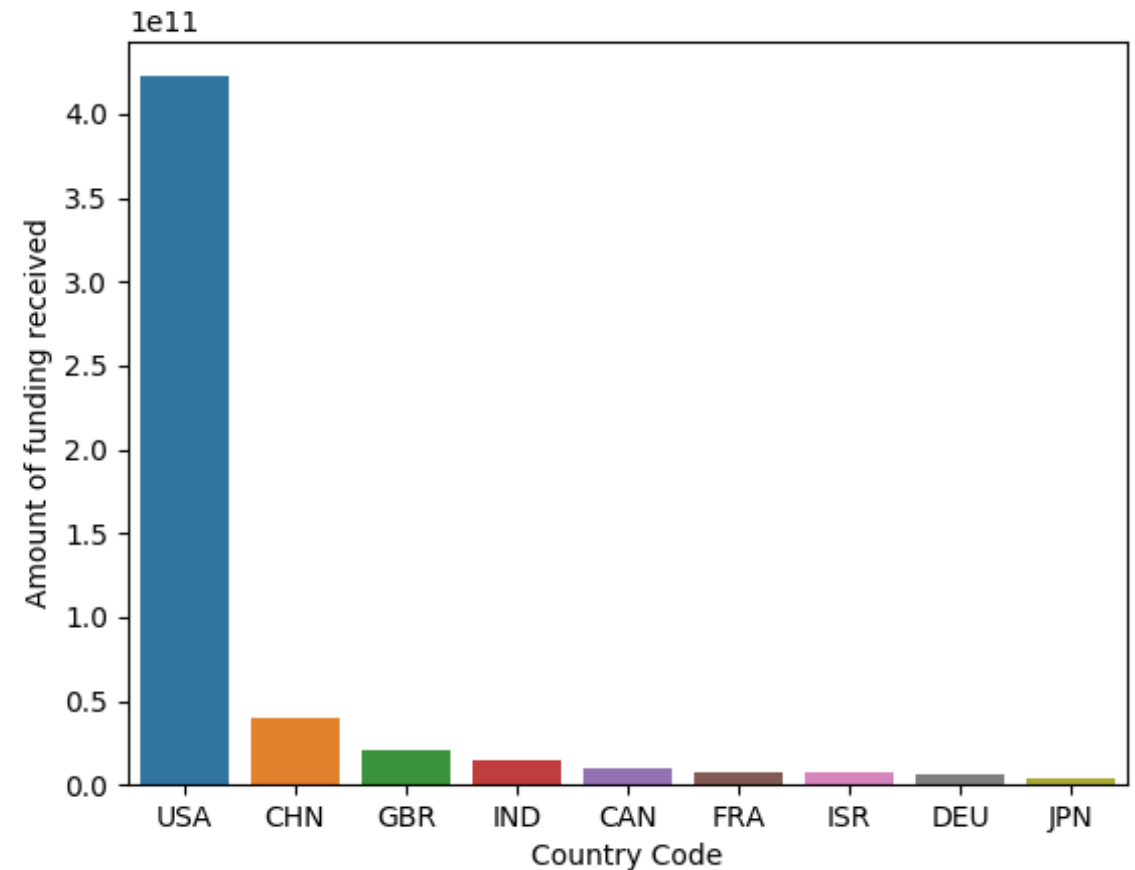
Identify the best sector in the top three countries for investment

	USA	GBR	IND
1. Total number of investments (count)	11287	582	315
2. Total amount of investment (USD)	101 billion	5 billion	2.82 billion
3. Top sector (based on count of investments)	Others	Others	Others
4. Second-best sector (based on count of investments)	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising
5. Third-best sector (based on count of investments)	Cleantech / Semiconductors	Cleantech / Semiconductors	News, Search and Messaging
6. Number of investments in the top sector (refer to point 3)	2758	140	103
7. Number of investments in the second-best sector (refer to point 4)	2590	128	59
8. Number of investments in the third-best sector (refer to point 5)	2192	116	49
9. For the top sector count-wise (point 3), which company received the highest investment?	1stdibs	Azure Solutions	CaratLane
10. For the second-best sector count-wise (point 4), which company received the highest investment?	Admeld	myThings	ApnaPaisa

Analysis of the table from the previous slide

The data of the top three countries for Venture fund type was analysed and the results were compiled in the table provided in the previous slide.

- The best investment sectors of USA are 'Others', 'Social, Finance, Analytics, Advertising', and 'Cleantech / Semiconductors'.The best investment sectors of GBR are also the same

- The best investment main sectors of IND are Others, Social, Finance, Analytics, Advertising, and News, Search and Messaging.

- The top sectors are selected on the basis of the total number of investments they have received.

- The count of investments in the top sectors in USA are far greater than GBR and IND. This proves that USA is the best country for investment in Venture funds.

- While computing the data for the given table, we made a few **assumptions**. Firstly, there are some categories which are not mapped to any of the 8 main sectors. For example, 'Self Development' and 'Cause Marketing'. In the computation, we have treated these categories as independent separate sectors. This is logical because, if any such independent category is heavily invested, we would find it in our analysis.

- A **second assumption** that we have made is, companies that are currently closed would not portray the present investment market accurately which is of utmost importance to Spark Funds. For this reason, we have dropped entries of investment for closed companies

Venture has 59.5% share of investment, globally, and a mean of 11.7 million USD. This makes it the most suited for Spark Funds
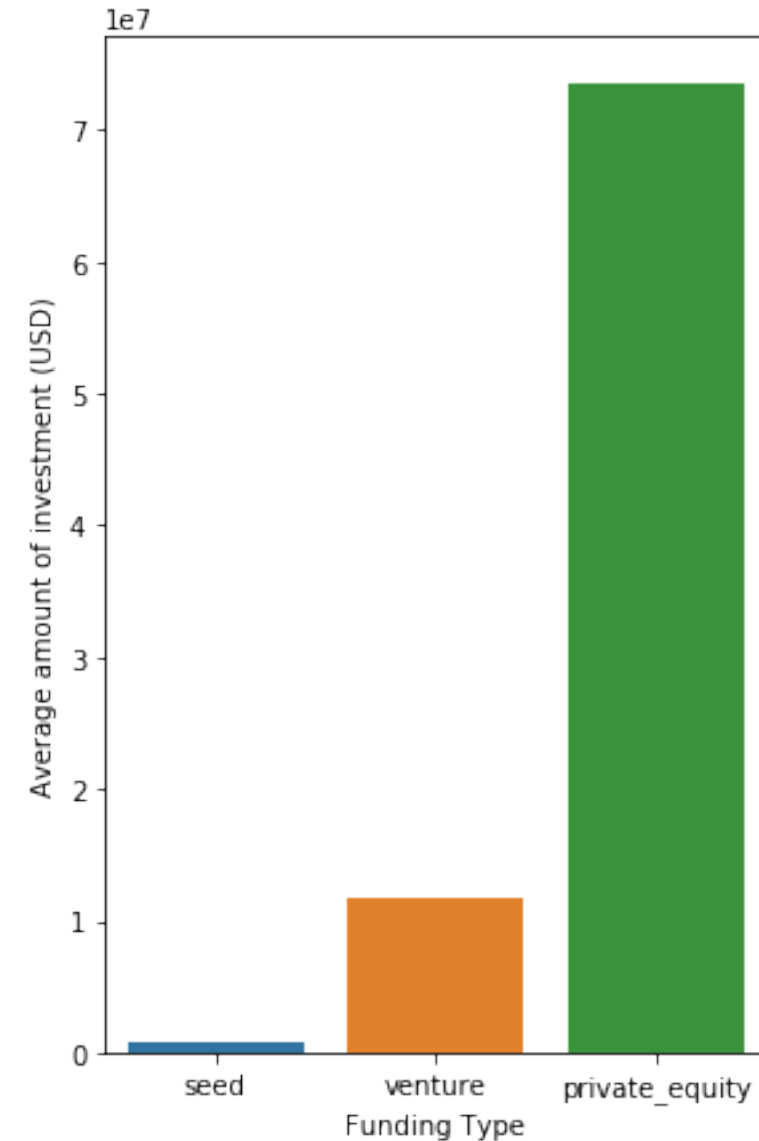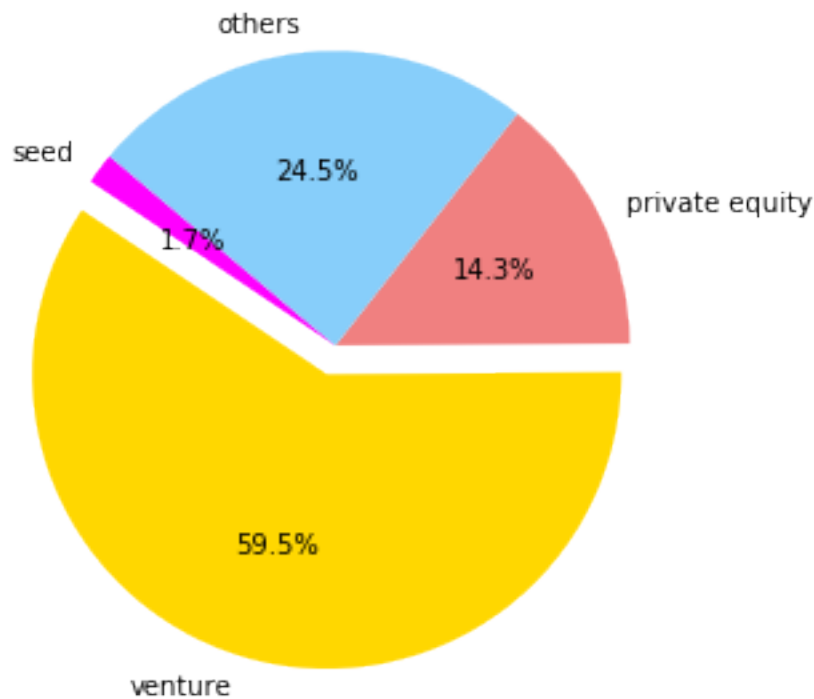
# Top 9 countries based on total investment

- Among the top 9 countries, the top 3 whose official language is English are: USA, England and India
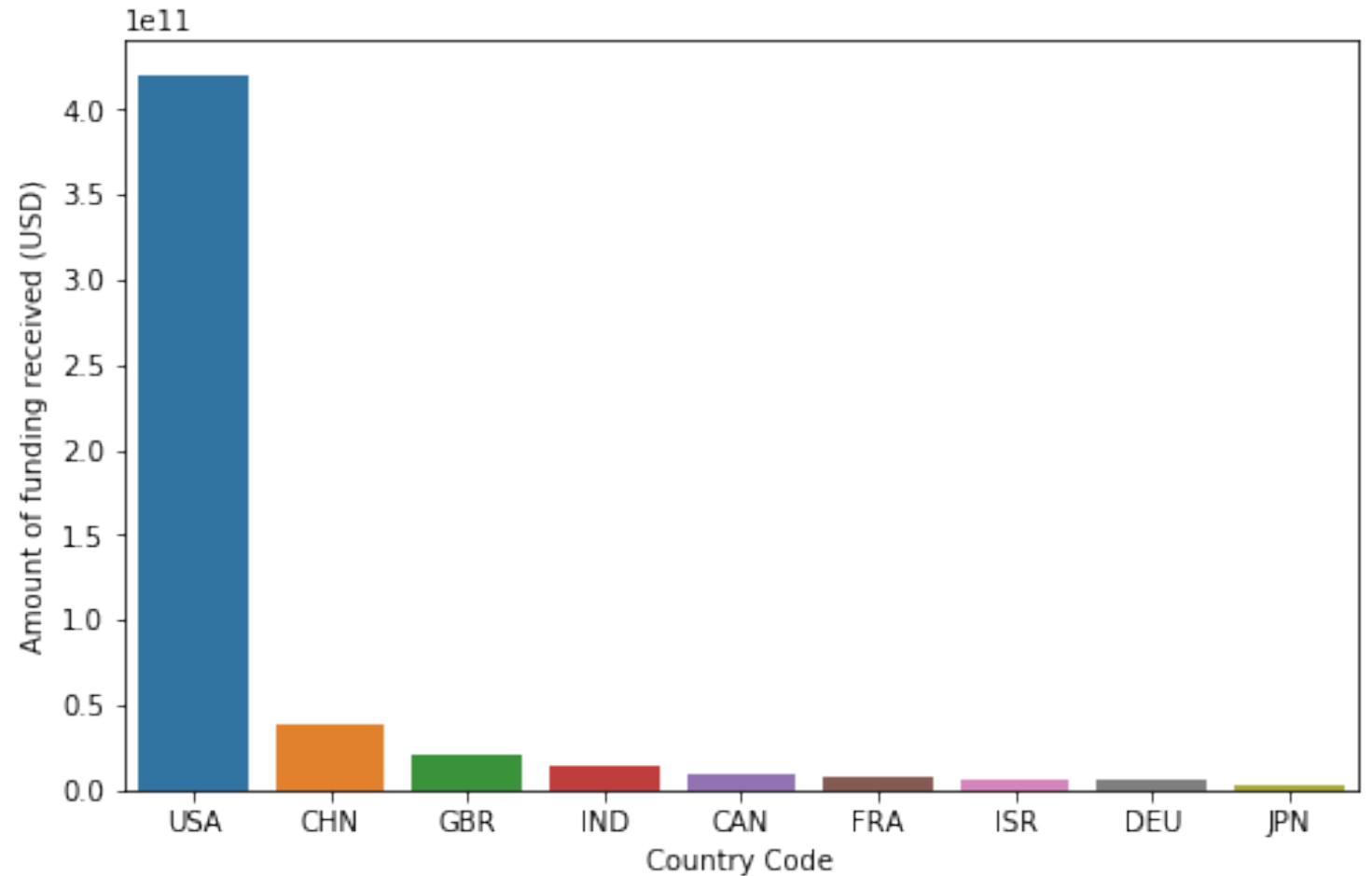
Investment in top 3 countries in top 3 sectors

The chart to the right shows the top 3 sectors of venture fund type of the top 3 countries. For this chart we have considered investments between 5 to 15 million USD only. From the plot, we can conclude the following:

- The number of investments in USA is much higher than in GBR and IND. However, the count of investments in GBR is not significantly more than IND

- In USA, the difference between the second and the third largest sector in terms of the number of investments they received is more than double the difference between the largest and the second largest sectors.

- In GBR, all the top three sectors have received similar number of investments and are almost equally favourable options for investment for Spark Funds.

- In IND, the second and the third largest sectors have received almost the same number of investments. However, the top sector in IND has received nearly 75% more investments than the second largest sector.
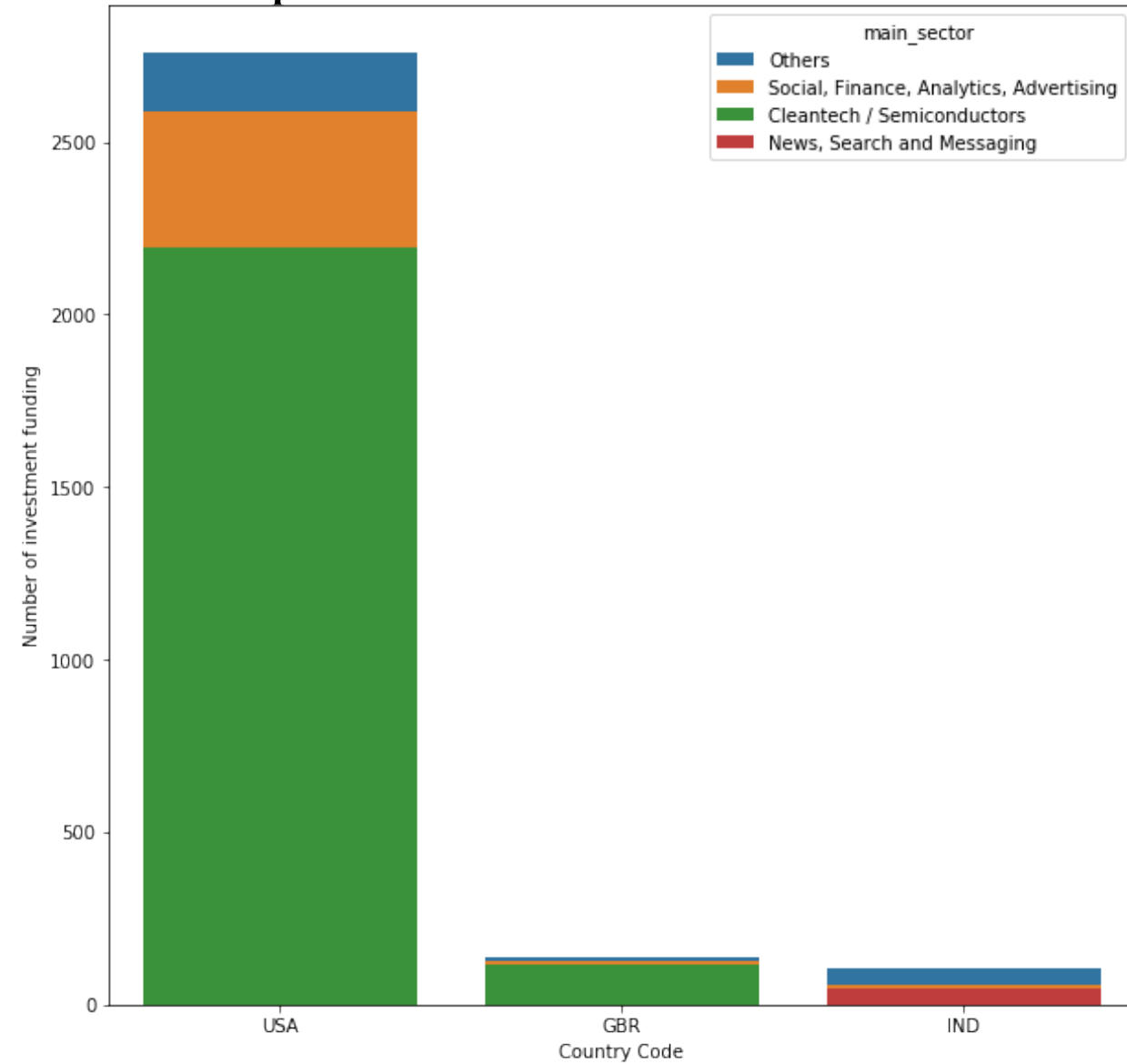
Conclusions

- The recommended type of investment is Venture

- The countries that are most suitable are : United States of America (USA), England (GBR), and India (IND)

- Recommended sectors for investment in USA and GBR are :

    - Others

    - Social, Finance, Analytics, Advertising

    - Cleantech / Semiconductors

- Recommended sectors for investment in IND are

    - Others

    - Social, Finance, Analytics, Advertising

    - News, Search and Messaging