

## Summary Document

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### **Market Capitalization Statistics**

- The key performance metric, market capitalization, is the total market value of a company's outstanding shares of stock, indicating what investors collectively believe the company is worth at a given moment in time.
- The lowest market cap is R0,05 and the highest is R2 166 582,79.
  - 2334 of the clients (50%) have a market cap of between R0,05 and R196.
  - 1596 of them (35%) have a market cap between R195 and R5000.
  - The remaining 798 (15%) clients fall between R5 000 and R2 166 582,79.
  - Only 179 clients have a market cap of between R50 000 and R1 000 000 and only 3 clients have above R1 000 000.
  - The median market cap is R195.40 and the average is R9 528.60.
  - This table summarises the distribution of market cap:

Market Cap (X)	Number of Clients	Percentage (%)
$0 < x \leq 196$	2334	50.0
$196 < x \leq 2 000$	1242	26.6
$2 000 < x \leq 5 000$	354	7.6
$5 000 < x \leq 10 000$	221	4.7
$10 000 < x \leq 50 000$	335	7.2
$50 000 < x \leq 100 000$	84	1.8
$100 000 < x \leq 500 000$	88	1.9
$500 000 < x \leq 1 000 000$	7	0.14
$x > 1 000 000$	3	0.06

The three companies with market cap above R1 000 000 are HDFC Bank, TCS and Reliance Industries.

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### **Descriptive Statistics**

- Of the clients with market cap between R0.05 and R195.66 -lowest 50%- , most have low cash reserves, low net worth and average operations cash flows.
  - 75% have reserves between (R9241.63) and R30.36
  - 75% have net worth between (R9075.73) and R43.58
  - 75% have average operating cash flows between (R1447.90) and R9.08.
  - There are however companies below the median market cap with higher values.
- Variables that are strongly positively correlated to market cap ( $>+0.5$ ) are
  - Reserves: 0.81
  - Total Capital Employed: 0.75
  - Current Liabilities: 0.72
  - Current Assets: 0.67
  - Trade receivables: 0.64
  - Average operating cashflows: 0.62

The most strongly negatively correlated ( $<-0.5$ ) to it is:

- Average investment cashflows: -0.64

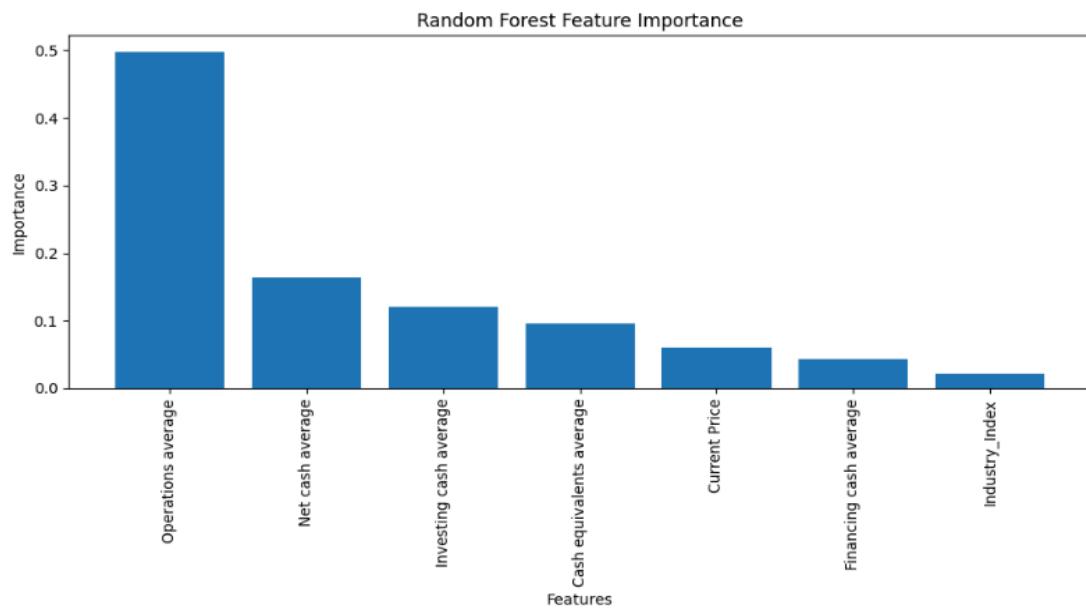
- Investment cash flows are high for most clients; 3435 clients (bottom 74%) have average investment cashflows between (R431 499.11) and R0.029 indicating sufficient investment spending.
  - Of the clients with market cap above R500 000, 9 out of 10 have high investments cash flows, the highest being Reliance Industries. The remaining client has a positive value for average investment cashflows and yet is a top performer.
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### **Key Market Capitalization Indicators**

- The Top 10 determinants of high market capitalization in order are:
    - Reserves
    - Operations cash flows
    - Net worth
    - Current Assets
    - Free & Net cash
    - Current price
    - Market cap to cash flow
    - Trade receivables
    - Investment cash flows
    - EVEBITDA
  - Clients that have a high value of each feature mentioned investments will have a high market cap. Since the data for investment cash flows is recorded as negative, the value has to be high in magnitude but negative.
  - Top features analysis:
    - Reserves  
Average reserves is R2070.42 and the median is R0.00. There are 746 clients with negative reserves and 75% of them fall below the median market cap and have a market cap of between R0.11 and R74.58.  
All clients with market cap above R500 000 have cash reserves above R50 900. Furthermore, the correlation between market cap and reserves is 0.81 showing that high reserves indicate higher market cap. Reliance Industries has the highest reserves at R793 481.
    - Operations cashflows  
Average operations cashflows is R1012.05 and the median is R9.30. There are 1495 clients with negative average operations cashflows. Average operations cashflows and market capitalization have a correlation of 0.62 showing that the more operations cashflows a company has, the more its market cap.
    - Net worth  
Average net worth is R2227.90 and the median is R70.86. Of the 1495 clients with negative net worth, 80% have market cap below R0.11 and R0.00 showing. Average net worth is low and only companies with high market cap have high net worth.  
For all the clients in the top 13, the lowest net worth is R51 218 and the highest is R793 481. Reliance Industries also has the highest net worth.
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### Cashflows analysis

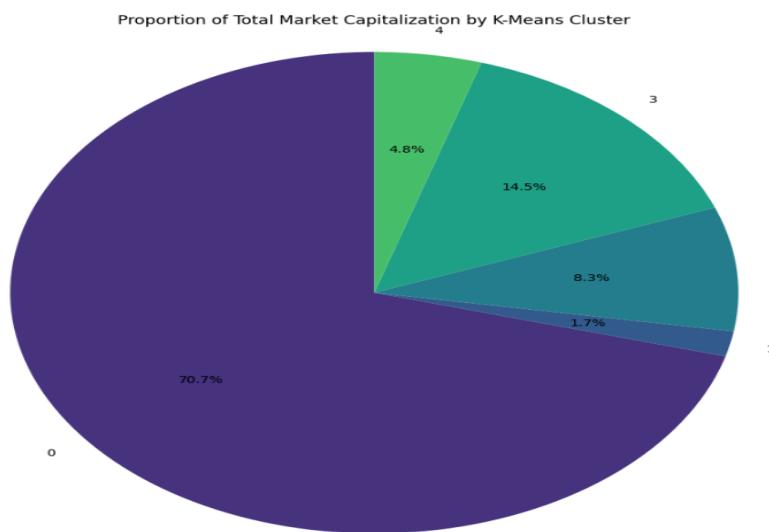
For information from the statement of cashflows, the following plot ranks the cashflows in order of importance. It is evident that operating cash flows are important in determining the market cap of a company.



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### Clustering

- The client base can be grouped into 5 groups:
  - Group 1 also has one client, Bank of India, a top performer in terms of market capitalization.
  - Group 2 has 9 companies and these are mostly banks and only one investment firm. Only one bank is not included in this group.
  - Group 3 has 17 clients who are mostly major corporations, some are multinationals such as Tata Group. These companies are involved in telecommunications, mining and mineral refinery, such as Coal India and Vodafone Idea.
  - Group 4 has only Reliance Industries, another top performing client.
  - Group 0 consists of the rest of the clients that are statistically similar to each other by performance.
- The pie chart shows that Reliance Industries and Bank of India both are outliers, outperforming every client with the market cap and other metrics.

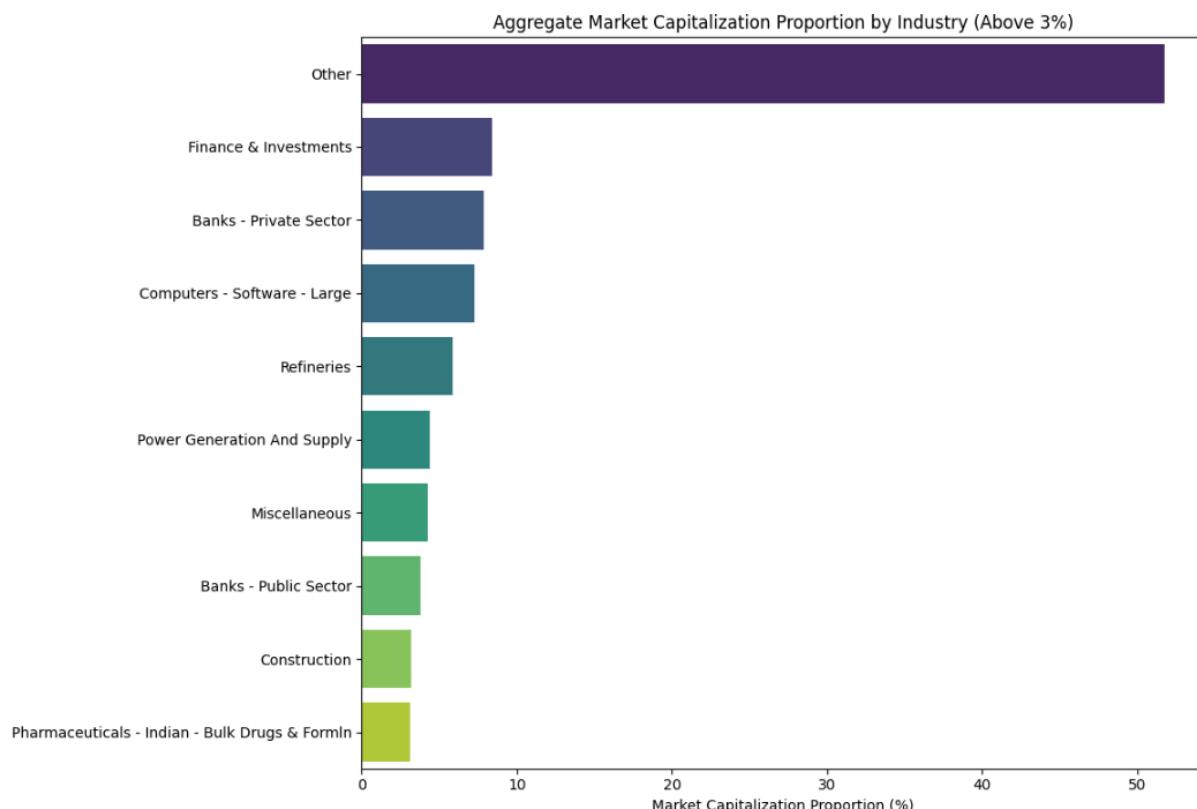


- There is a clear distinction between companies with market cap below and above R8000. This boundary also can be used to assess client differences.
  - Generally, group 1, 2, 3 and 4 can be classified as outliers, then the rest of the clients can be subjected to further data mining.
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## **Industries**

The following plot shows the top 8 industries with the highest aggregate market capitalization. These are consistent with the industries for the companies in group 1, 2, 3 and 4 from the previous section.

- Private and public banks, finance & investment firms and large software companies rank top of all industries.



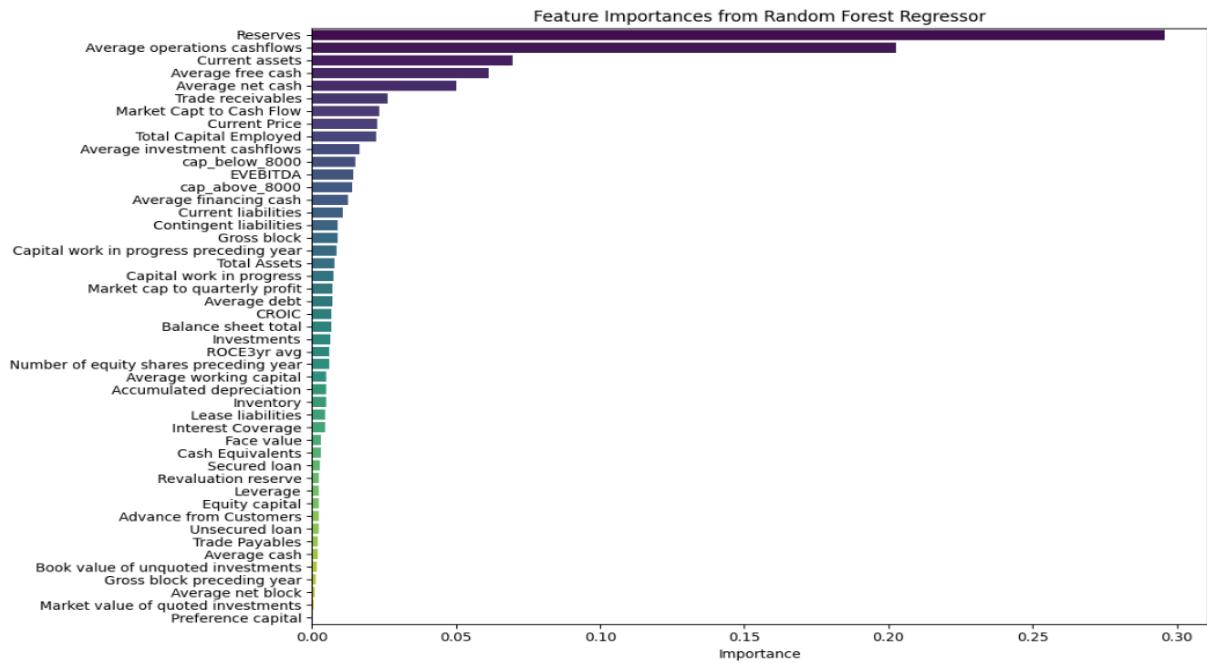

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## **Conclusions**

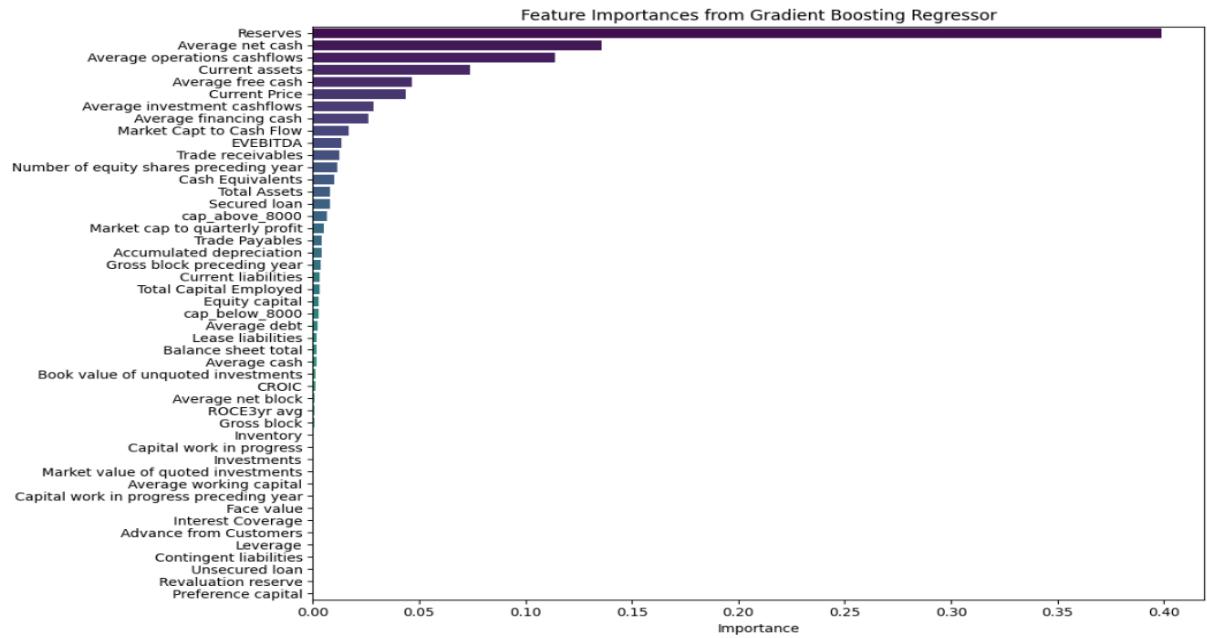
- The most important indicators of a client with a high market cap is having high cash reserves, high net worth and high operations cashflows. The client with the highest market cap, Reliance Industries, has the highest cash reserves, net worth and operations cash flows and is an outlier for all important metrics.
- To accurately predict or understand a company's market cap, we would need to look at each of the important features mentioned above, these are cash reserves, operations cash flows, net worth, current assets, current price and trade receivables.
- The top performing industries having companies with high market capitalization are; finance and investment firms, private sector banks, large software banks, Refineries (mining and minerals), power generation & supply, and construction companies.
- Reliance Industries and Bank of India are top performers, each with highest market capitalization, cash reserves and operations cashflows.
- The more working capital and more operational capacity a company has the higher its market capitalization. Additionally, the more investments a business has, the higher its market capitalization.

## Feature Importance Plots

Plot 1: Random Forest Regressor model



Plot 2: Gradient Boosting Regressor model



## Other visualisations

