Project Report

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Tools Used: MS Excel, PostgreSQL, Power BI

Title: ESG Risk Scores & Financial Returns Stock Performance Analysis: Data-Driven Insights for Responsible Investing in India

1. Project Goal

The aim of this project was to analyze the relationship between ESG Risk Scores and Stock Performance of Indian companies, enabling investors to identify firms that balance financial returns with responsible and sustainable practices.

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2. Data Collection/Sources

- ESG Scores Data– Kaggle dataset containing ESG risk scores, Environment Risk Scores, Governance Risk Score, Social Risk Score by company and industry – NIFTY 50

- ESG Risk Data – Kaggle dataset containing ESG risk scores, ESG Risk Level by company and industry – NIFTY 50

- Stock Prices Data – Kaggle dataset with historical daily stock prices (Date Open, Close, High, Low, Volume) – NIFTY 50

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3. Workflow & Tools

Step 1 – Data Collection

- Downloaded three datasets from Kaggle: esg_score.csv, esg_risk.csv, stock_prices.csv.

Step 2 – Data Cleaning

- SQL:
  - Removed duplicates (DISTINCT).
  - Filtered out records with null values in key columns (e.g., close price, risk score).
  - Created View Selected only relevant columns and merged them into single dataset combined_esg_data.

- Excel:

- Change Columns Names.
- Checked for spelling inconsistencies in company names.
- Power BI Query Editor:
  - Merged many stock_price csvs dataset intro one datset
  - Trim Company name
  - Changed data types (date → Date, close → Decimal Number).
  - Created calculated columns using DAX:
    - Daily Return % = ((Close - Previous Close) / Previous Close) * 100
    - Average ESG Risk Score
    - Average Stock Return %

Step 3 – Data Modelling in Power BI

- Established relationships between tables
- Added slicers for:
  - Date
  - Industry
  - Company Name

Step 4 – Dashboard Pages

The Metrics implemented:

1. ESSG & Return Executive Summary
   - KPIs:
     - Top Performing Company
     - Average ESG Risk Score
     - Average Stock Return %
     - Lowest Risk (Safest) Company
     - Highest Risk (Riskiest) Company
   - Slicers for Date, Industry.

- o Scatter Chart: Risk vs Return

- o Bar chart: Top 5 Companies

- o Bar Chart: ESG Risk & Stock Return

- o Conditional formatting in table:

  - ▪ Green = High Returns, Low Risk

  - ▪ Red = Low Returns, High Risk

- o Metrics:

  - ▪ Avg Total ESG Risk

  - ▪ Avg Daily Return %

2. Company Profile (Drill-through Page)

- o KPIs: Selected Company, CompanyAvg DailyReturn, CompanyAvgESGRisk

- o Area Chart: ESG Risk Score trend over time

- o Bar Chart: Peer Comparison Avg Daily Return % by Company

- o Line Chart: Company Daily Return/Performance Trend Over Time

3. ESG Risk Insights

- o KPIs: Avg Total ESG Risk, Avg Predicated ESG Score, Avg Env Risk ,Avg Gov Risk, Avg Soc Risk

- o Bar Chart: Controversy Level Distribution by Company

- o Bar Chart: Avg ESG Risk Score by Industry

- o Donut Chart: ESG Risk Level distribution

- o Scatter Plot: ESG Risk vs. Predicted Score

4. Stock Price Insights

- o Line Chart: ESG and Close price by Company

- o Line Chart: Stock Price Trend

- o Area Chart: Volume Trend

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4. Key Metrics

- Avg ESG Risk Score: 26.55

- Avg Stock Return %: 8.16%

- Top Performing Company: Hero Motor(highest Avg Daily Return %)

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5. Key Insights

1. Some high-return companies also carry high ESG risk, indicating possible sustainability concerns.

2. Certain industries (e.g., Services, Manufacturing) show better balance between return & risk.

3. Investors looking for long-term responsible investments may need to avoid companies in the top 10% of ESG risk.

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6. Recommendations

- For Investors: Prioritize companies with low ESG risk and above-average returns for sustainable growth.

- For Companies: Focus on improving ESG practices to attract responsible investors.

- For Analysts: Incorporate ESG factors alongside traditional financial metrics for a holistic view.

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7. Conclusion

This dashboard demonstrates the power of data-driven responsible investing.
By combining ESG risk scores and stock returns, investors can align their portfolios with both financial goals and ethical standards. The interactive dashboard enables quick filtering, drill-through analysis, and risk–return optimization.