

# Data Sources

## ESG Performance Data

This research collected this dataset for the following purposes

- Analyse the relationship between the scores of the same companies under different ESG scoring frameworks
- Evaluate the link between company disclosures and ESG scores
- As part of the training data, train a model that predicts scores from disclosures
- As part of the training data, train a model that comprehensively evaluates a company's ESG performance through disclosure information

This dataset collects information on the ESG performance of companies in the FTSE-Allshare and Russell-3000 indices from three platforms: MSCI, S&P Global, and Sustainalytics.

The dataset dimensions are **3358 x 204**, with each row representing a company for which at least one ESG score is available from three platforms. The number of companies from the FTSE-Allshare index with at least one, two, and all three ESG scores are **351**, **160**, and **62** respectively. For the Russell-3000 index, the corresponding numbers are **2603**, **1110**, and **438**.

## Company general Data

1. Ticker: Ticker of the Company (no unique because different market may have same Ticker)
2. Industry: Industry of the companies.
3. Group: 'FTSE' or 'RUSSELL', indicate the company stocks belong to which Index

## Data from MSCI

MSCI provides a comprehensive ESG rating system that evaluates companies based on their exposure to ESG risks and how well they manage those risks relative to their industry peers.

1. MSCI\_Score: ESG Rating of the Company evaluated by MSCI, ranging from 'aaa' to 'ccc' where 'aaa' is the best indicates the best ESG performance.
2. History\_Score: Historical ESG scores of the company over time.

3. LAGGARD: Key ESG issues where the company lags behind its industry.
4. AVERAGE: Areas where the company has an average track record in managing ESG risks.
5. LEADER: Key ESG issues where the company leads its industry.
6. Banned\_Controversial\_Weapons, Gambling, Tobacco, Alcohol: Involvement in controversial industries or activities.
7. Decarbonization\_Target: Information on whether the company has a decarbonization target.
8. Decarbonization\_Target\_ITR, Year, Comprehensiveness, Ambition: Details about the company's decarbonization target, including comprehensiveness and ambition levels.
9. Controversies\_{KeyIssuesName}: Level of involvement in controversies related to specific ESG issues.

## Data from S&P

S&P Global Ratings provides a detailed breakdown of ESG performance across various pillars and specific issues.

1. SP\_Score: Overall ESG Rating of the company by S&P, range from **0 to 100**, the higher score indicates the better ESG performance.
2. Score\_CSA, Score\_Modeled: Scores based on actual required public disclosure and modeling approaches.
3. Score\_Env, Score\_Social, Score\_Gov: ESG scores across Environmental, Social, and Governance pillars.
4. Env\_Score\_Industry\_Mean,Max;Social\_Score\_Industry\_Mean,Max;Gov\_Score\_Industry\_Mean,Max: Industry mean and maximum scores for the respective pillars.
5. RPDRDAR%, RPDRDAR: Public disclosure rate data availability relative to peers.
6. RPDCSAMIS, PSRPDR, ASRPD: Scores related to required public disclosure.
7. ADRDAR%, ADRDAR, ADCSAMIS, PSADR, ASAD: Scores related to additional disclosure.
8. NQMA: Number of questions based on modeling approaches.
9. Score\_{KeyIssueName},IndustryMaxScore\_{KeyIssueName},IndustryMeanScore\_{KeyIssueName}: Scores related to key ESG issues.

## Data from Sustainalytics

Sustainalytics focuses on ESG risk ratings, evaluating companies based on their exposure to ESG risks and how well they manage those risks.

- 1. SUS\_Score: ESG Risk Rating by Sustainalytics, different from MSCI\_Score and SP\_Score, it measures risk exposure, with higher scores representing higher ESG risk exposure and poorer company performance
- 2. Market: Exchange code on which the company is listed.
- 3. Risk: ESG Risk Level of the company.
- 4. URL: Link to the Sustainalytics research page for the company.

The data from MSCI, S&P, and Sustainalytics provide a multi-dimensional view of a company's ESG performance. The MSCI data focuses on rating the company's performance and identifying specific areas where it excels or lags. S&P data offers detailed scores across different ESG pillars and highlights industry comparisons. Sustainalytics data provides another perspective on overall risk ratings

In subsequent experiments, we will use a neural network to learn the process from company disclosure to the final three ESG scores, and based on this we will find a mediator score able to combine their information by analysing the correlation of the three ESG scores. In order to improve the model's ability to generate comprehensive reports, we will continue to train the model using industry comparison data like LAGGARD,AVERAGE,LEADER and data on key issue controversies and ratings like Controversies\_{KeyIssuesName} and Score\_{KeyIssueName}.

For more details of this Dataset see [Appendix I](#)

## Appendix I - Dictionary of ESG Performance Data

Attribute_Name	Descirption
Ticker	str, Ticker of the Company(no unique because different market may have same Ticker)
MSCI_Score	str, ESG Rating of the Comapany evaluated by MSCI [aaa-aa-a-bbb-bb-b-ccc:10-8.571-5.714-4.286-2.857-1.429-0], From MSCI
History_Score	Date:MSCI Score, From MSCI
LAGGARD	list of str,Key Issues that lagging the industry in its management of these ESG risks, From MSCI

AVERAGE	list of str, mixed or unexceptional track record of managing these ESG risks relative to peer, From MSCI
LEADER	list of str, Key Issues that leading the industry in its management of these ESG risks, From MSCI
Banned_Controversial_Weapons	str, Is the company involved in activities relate to Banned Controversial Weapons, From MSCI
Gambling	str, Is the company involved in activities relate to Gambling, From MSCI
Tobacco	str, Is the company involved in activities relate to Tobacco, From MSCI
Alcohol	str, Is the company involved in activities relate to Alcohol, From MSCI
Decarbonization_Target	str, Does the company have a decarbonization target?, From MSCI
Decarbonization_Target_ITR	str, Does the company have a decarbonization target that is considered in the calculation of Implied Temperature Rise? From MSCI
Decarbonization_Target_Year	str(int), Target Year of 'Decarbonization_Target_ITR', From MSCI
Decarbonization_Target_Comprehensiveness	str(num), % of company footprint covered by target, From MSCI
Decarbonization_Target_Ambition	str(num), Projected reduction per year to meet stated target, From MSCI
Controversies_{KeyIssuesName}	str[Red: Indicates that a company is involved in one or more very severe controversies, Orange: Indicates that a company has been involved in one or more recent severe structural controversies that are ongoing, Yellow: Indicates that the company is involved in severe-to-moderate level controversies, Green: Indicates that the company is not involved in any major controversies. However, this could indicate that the company is involved in minor or moderate controversies], How much the company been accused of any controversial behavior related to Key Issues? From MSCI
SP_Score	ESG Rating of the company evaluated by S&P Global, From S&P
Score_CSA	str(num), = Actual Score based on CSA Required Public Disclosure + Actual Score based on CSA Additional Disclosure, From S&P
Score_Modelled	str(num), Score based on Modeling approaches, From S&P
Score_Env	str(num), Score of the Environmental Pillar, From S&P
Env_Score_Industry_Mean	str(num), Industry Mean Score of the Environmental Pillar, From S&P
Env_Score_Industry_Max	str(num), Industry Maximum Score of the Environmental Pillar, From S&P
Score_Social	str(num), Score of the Social Pillar, From S&P
Social_Score_Industry_Mean	str(num), Industry Mean Score of the Social Pillar, From S&P
Social_Score_Industry_Max	str(num), Industry Maximum Score of the Social Pillar, From S&P
Score_Gov	str(num), Score of the Governance&Economic Pillar, From S&P
	str(num), Industry Mean Score of the Governance&Economic Pillar,

Gov_Score_Industry_Mean	From S&P
Gov_Score_Industry_Max	str(num), Industry Maximum Score of the Governance&Economic Pillar, From S&P
RPDRDARP%	str(num%), CSA Required Public Disclosure Rate Data Availability Relative to Peers, From S&P
RPDRDARP	str, CSA Required Public Disclosure Rate Data Availability Relative to Peers, From S&P
RPDCSAMIS	str(num), Required Public Disclosure CSA Maximum Industry Score, From S&P
PSRPDR	str(num), Potential Score based on Required Public Disclosure Rate, From S&P
ASRPD	str(num), Actual Score based on Required Public Disclosure, From S&P
ADRDARP%	str(num%), Additional Disclosure Rate Data Availability Relative to Peers, From S&P
ADRDARP	str, Additional Disclosure Rate Data Availability Relative to Peers, From S&P
ADCSAMIS	str(num), Additional Disclosure CSA Maximum Industry Score, From S&P
PSADR	str(num), Potential Score based on Additional Disclosure Rate, From S&P
ASAD	str(num), Actual Score based on Additional Disclosure, From S&P
NQMA	str(num/num), Number of questions based on modeling approaches, From S&P
Score_{KeyIssueName}	str(num), Score of the company in the most relevant Key Issue, From S&P
IndustryMaxScore_{KeyIssueName}	str(num), Maximun Score of the company's Industry in the most relevant Key Issue, From S&P
IndustryMeanScore_{KeyIssueName}	str(num), Average Score of the company's Industry in the most relevant Key Issue, From S&P
Name	Company Name at sustainalytics.com, From Sustainalytics
Market	str, Exchange code on which the company is listed, From Sustainalytics
SUS_Score	str(num), ESG Risk Rating of the company evaluated by Sustainalytics, From Sustainalytics
Risk	str, ESG Risk Level of the company evaluated by Sustainalytics, From Sustainalytics
URL	str(url), URL showing the results of sustainalytics ESG's research on the company

Industry	str, Industry of ftse companies form [ <a href="https://www.fidelity.co.uk/shares/ftse-all-share/?p=0&amp;c=300">https://www.fidelity.co.uk/shares/ftse-all-share/?p=0&amp;c=300</a> ]; Industry of russell companies form [ <a href="https://www.ishares.com/us/products/239714/ishares-russell-3000-etf">https://www.ishares.com/us/products/239714/ishares-russell-3000-etf</a> ]
Group	str, FTSE or RUSSELL, indicate the company stocks belong to which Index