

FINSCIENCE ALTERNATIVE ESG SCORE

Alternative Data
to integrate sustainability
in investment decisions.



FinScience
investment AI

INTRODUCTION



THE COMPANY

FinScience is a data-driven fintech company founded in 2017 by **Google's** former senior managers and **Alternative Data** experts, who have combined their digital and financial expertise. FinScience, thus, originates from this **merger** of the world of **Finance** and the world of **Data Science**.

FinScience leverages **3rdPlace's** experiences concerning Data Governance, Data Modeling and Data Platforms solutions. These are further enriched through the tech role in the european consortium **SSIX** (Horizon 2020 program) focused on the building of a Social Sentiment for financial purposes.

FinScience is the only Italian one selected by **siliconrepublic.com** among the 25 European deep-tech start-ups to watch in 2019.

FinScience is part of **Datrix group**.



FINSCIENCE FOR ESG



In the last years, investors' interest in company performances around **ESG** (Environment Social Governance) factors has grown exponentially. Driven by an increased attention to customer expectations around the **environmental and social impacts** generated by corporations – as well as by the realization that robust ESG strategies can support the long-term viability of organisations - sustainable investing assets across the world have exceeded **USD 30 trillions** in 2018 (Global Sustainable Investment Alliance, 2019).

While a number of rating systems are available to score large companies ESG performances, sometimes they fail in providing a holistic picture of their real intent and contribution in solving some of the most pressing global sustainability issues.

In summer 2019, FinScience launched the **ESG Alternative Score**, a scoring system aiming to integrate traditional, CSR report-based, self-disclosed and yearly updated data (the so-called '**internal data**') with '**alternative data**' coming from NGOs, social media, specialized blogs and news and reviews websites, global CSR rankings and other stakeholder-generated data sources in order to offer a complete and updated assessment of corporate ESG performance.

After one year since the launch, the company, in partnership with **ADAM AI Solutions**, has been revising the scoring methodology in order to adopt the **UN SDGs** as main framework (instead of ISO 26000), and to **enrich the number of data sources** used to track corporate sustainability performance and provide a better-weighted sector-specific evaluation.



SCORE OVERVIEW

KEY FEATURES

- **400+** SDG-related indicators
- **100,000+** data sources
- **AI-driven** data collection
- **Daily** updates
- **Sentiment-analysis** integration
- **Corporate reputation** evaluation
- **Green/social washing** detecting tools
- **Controversial activities** detection
- **Benchmarking** tools



KEY PEOPLE

- Data Scientists
- Financial Quantitative Analysts
- Big Data Architects
- ESG Specialists
- Digital & Alternative Data Experts
- UX/UI Designers

The aim of FinScience ESG scores is to provide **corporates** and **investors** with an in-depth **data-driven assessment** of companies' ESG performance, based on more of **350 SDG-related indicators** and both traditional and 'alternative' data sources.

The integration of **corporate self-disclosed data** with the analysis of great amounts of **external Alternative Data** – by adopting an AI-based approach – provides a more complete view of which are the **corporate opportunities/risks** in terms of performance associated to specific strategies and activities, and enables the **cross-checking of** information by comparing different and independent sources of information.

The final **Alternative ESG Score** comprises two overall ESG scores:

1. **ESG internal Score** – measures the company's ESG performance based on corporate self-reported and disclosed data.

2. **ESG external Score** – measures the company's ESG 'perceived' performance based on alternative external stakeholder-generated data, in order to provide an on-time evaluation of the company's sustainability impact and conduct.

Moreover, for each company we also provide the **FinScience ESG Industry Score**, which is the weighted average ESG score performed by companies operating in the same industry.

SCORE METHODOLOGY

KEY REFERENCE FRAMEWORKS

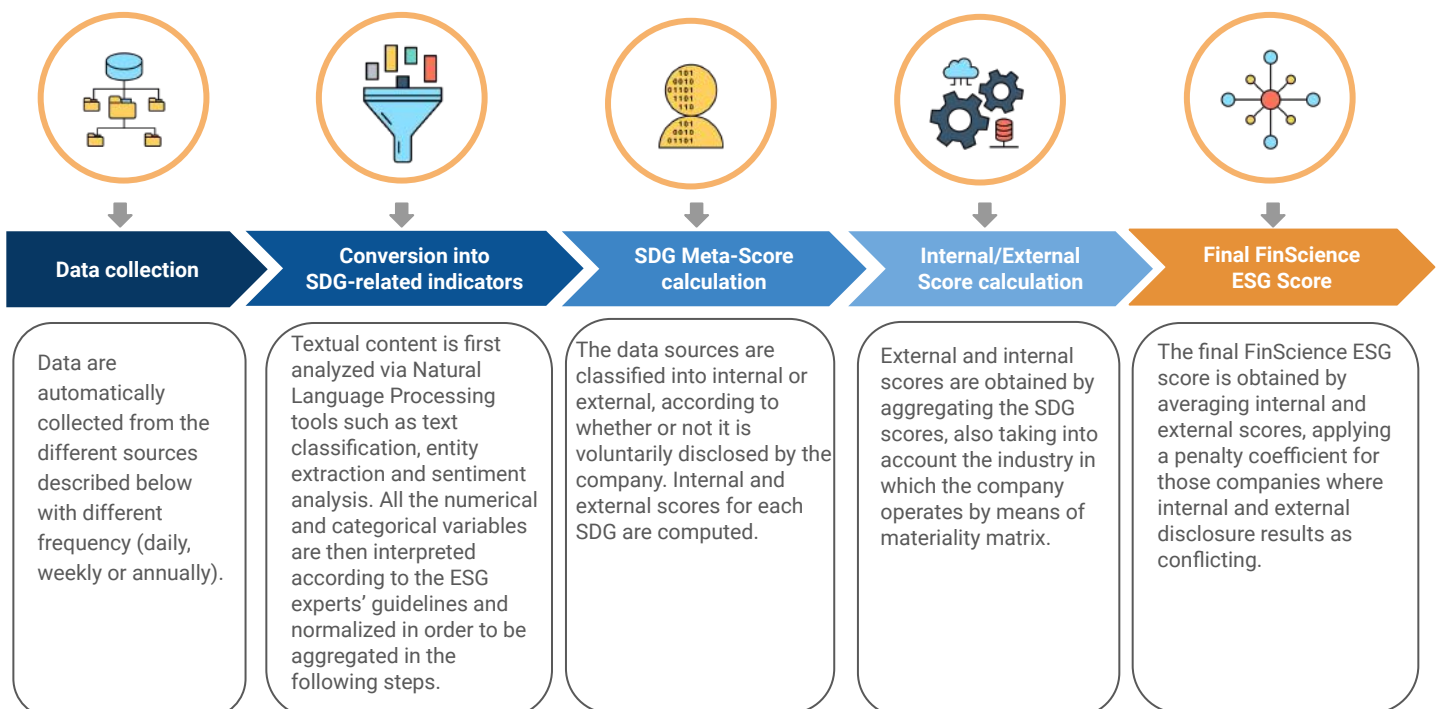


FinScience Alternative ESG Scores evaluate corporate sustainability based on company performance on each of 17 UN Sustainable Development Goals (SDGs) of the UN 2030 Agenda. The **17 SDGs**, together with 169 specific targets, provide a **framework** for governments to address their actions and investments in tackling current and future global **challenges for society and the environment**.

However, the scoring process and evaluation also take into consideration other **global sustainability standards and frameworks** such as **SASB**, **GRI**, **IIRC** and **CDP**.



SCORING PROCESS





Different weights for different data sources: all indicators are weighted based on the reliability of the data source on which they are based and their relative impact. Internal data are voluntarily disclosed by the company, thus the weights are somewhat inversely correlated to the possible influence by the company (e.g. financial statement data are less biased by the company's will than mission/value statements). On the other hand, external data weights rely on the prominence of the specific data source (e.g. NGO websites are much more important than social media data) and have, accordingly, a very different impact on the final score.



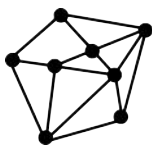
Industry score weighting: the final Alternative ESG Score is obtained by weighting each of the 17 SDGs meta-scores based on the industry in which each company operates (following a financial materiality criteria), to reduce the presence of biases as a result of a sector's inherent alignment with specific goals (e.g. power utility and SDG 7 - affordable and clean energy).



Data normalization: prior to the score calculation, all the data extracted from the various sources are transformed into meaningful features and normalized in order to have comparable values belonging to the same interval.



Lack of Internal or External data: the partial or full absence of internal data that should be provided by the company implies a clear lack of consideration for the ESG theme and therefore has a negative impact on the FinScience ESG Score, where our ESG experts devised a procedure to incorporate the effect of missing information for each metric. On the other hand, the lack of external data for a company may depend on a multitude of exogenous factors. As such, the lack of external data is in general not considered a penalizing factor in the FinScience ESG Score unless such absence is linked to issues that are known to the market and when the company is not providing appropriate response.



FinScience SDG Text Classifier: we developed a text classification algorithm that is able to detect the presence of the topics related to the 17 SDGs in a text, by means of a supervised machine learning model. The algorithm is employed to automatically analyze every single paragraph of the CSR/sustainability report and each section of the corporate website of the companies, and to recognize the SDGs that are being addressed. This allows to better understand which specific sustainability-related topics pervade the corporate communication style.

THE INTERNAL ESG SCORE



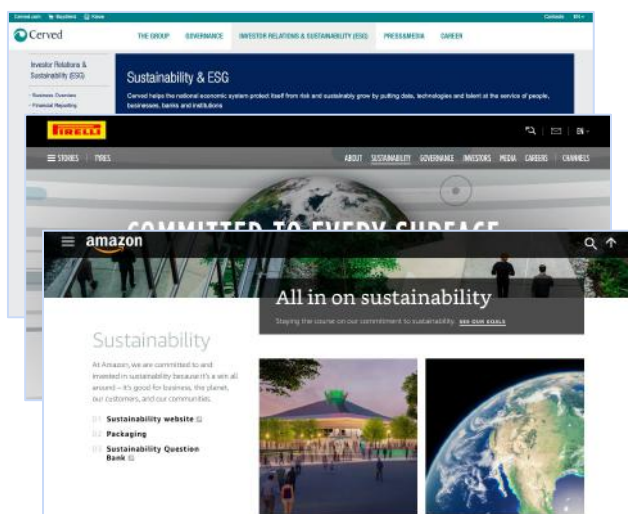
'INTERNAL' DATA SOURCES

1 Sustainability/CSR Reports



N.	Relevant indicators (TOT: 106)	SDGs
1	Third-party assurance on SR	16
2	SDG topics mentioned in the report	1-17
3	Sustainability certifications (ISO 14001, ISO 20400, ISO 50001, BS OHSAS 18001, SA8000 etc.)	1-16
4	Adoption of a Climate Change Policy	13
5	Total Energy Consumption (compared to previous year)	7, 12, 13
6	% Water recycled (compared to previous year)	6, 12, 14
7	Women employees %	5, 8, 10
8	Employee CSR Training Policy	4, 8
9	Women in the board %	5, 10
10	...	...

2 Corporate Websites



N.	Relevant indicators (TOT: 8)	SDGs
1	Sustainability/CSR/GRI section on company website	1-16
2	SDG topics mentioned in the website	1-17
3	Transparency on diversity section on company website	5, 16
4	Transparency on compensation section on company website	16
5	...	...

3 Sustainability Memberships/Affiliations



N.	Relevant indicators (TOT: 48)	SDGs
1	Reporting to CDP - Climate Change	7, 12, 13
2	Reporting to CDP - Water security	6, 12
3	Reporting to CDP - Forests	12, 14
4	Circular Economy 100 - Members	4, 11, 12, 13
5	CSR Europe - Corporate Member	1-17
6	Global Compacts - Participant	1-17
7	Oceana Partner	12, 14, 17
8	TCFD supporter	7, 13, 16, 17
9	Fair Labor Association - Participating Company	1, 2, 3, 4, 5, 8, 16
10	...	...

4 Sustainability Corporate Engagement - Shareholder Proposals

N.	Relevant indicators (TOT: 12)	SDGs
1	Shareholder proposals on Climate Change	7, 13
2	Shareholder proposals on Environmental Management	6, 7, 12, 13, 14, 15
3	Shareholder proposals on Animal Welfare	14
4	Shareholder proposals on Human rights	1, 2, 3, 4, 10
5	Shareholder proposals on Workplace diversity	5, 8, 10,
6	Shareholder proposals on Sustainability Oversight & Management	1-16
7	Shareholder proposals on Decent Work	8, 10
8	...	...



THE EXTERNAL ESG SCORE



'EXTERNAL' DATA SOURCES

1 Sustainability Rankings



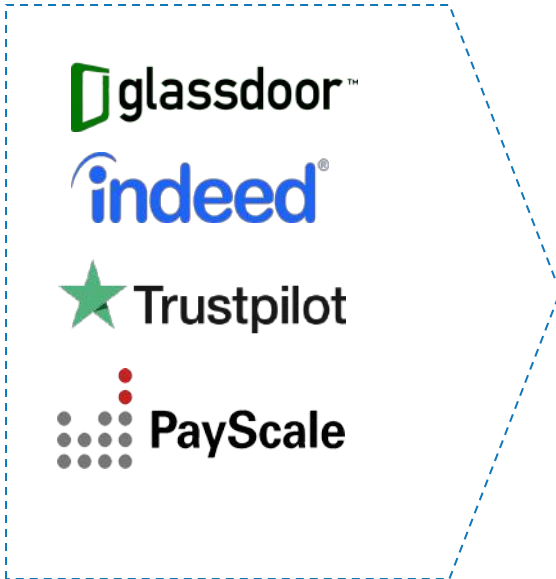
N.	Relevant indicators (TOT: 55)	SDGs
1	Corporate Knights Global 100	1-16
2	Best Workplace for Commuters	8, 10
3	Comparably - Best Places to Work for Culture	8
4	Comparably - Best Places to Work for Women	5, 8, 10
5	Computerworld - Computer World 100 Best Places to Work in IT	8, 9
6	GreatPlacetoWork - World's Best Workplaces	8
7	Fortune 100 Best Companies to work for	8
8	Forbes The World's Most Innovative Companies	9
9	Training Magazine Top 125 for Employee Development	4, 8
10	...	...

2 ESG Controversial Activities



N.	Relevant indicators (TOT: 11)	SDGs
1	SIPRI - Contribution to arm industry	16
2	ChemSec SIN Producers	3, 16, 12, 14, 15
3	PERI - Toxic 100 Water Polluters Index	3, 6, 12, 14
4	PERI - Toxic 100 Greenhouse Gas Index	3, 7, 12, 13, 14, 15
5	PERI - Toxic 100 Air Polluters Index	3, 12, 13, 15
6	Workplace safety or health violations	3, 8
7	Environmental violations	6, 12, 13, 14, 15
8	Employment discrimination violations	6, 8, 10
9	...	...

3 Reviews



N.	Relevant indicators (TOT: 36)	SDGs
1	Glassdoor: Overall/Rating Trend	5, 8, 16
2	Glassdoor Culture & Values/Rating Trend	8, 16
3	Glassdoor Diversity Commitment Pledge	5, 8, 10
4	Glassdoor Senior Management/Rating Trend	8, 16
5	Trustpilot overall rating	16
6	Indeed Work Happiness Score	8
7	Indeed Inclusion Score	8, 10
8	Indeed Learning Score	4, 8
9	PayScale Learning and Development	4, 8
10	PayScale Fair Pay Score	5, 8, 10
11	...	...

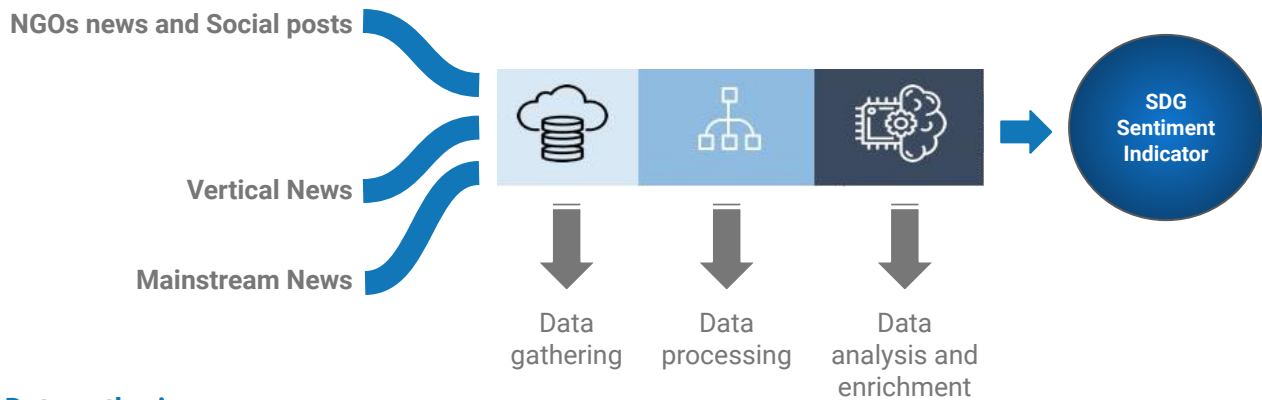
4 ESG Indexes



N.	Relevant indicators (TOT: 13)	SDGs
1	Bloomberg Gender Equality Index	5, 8, 10
2	Nasdaq Clean Edge Green Energy	7, 9, 11, 12, 13
3	Nasdaq ISE Clean Edge Global Wind Energy Index	7, 9, 11, 12, 13
4	Nasdaq ISE Clean Edge Water Index	6, 14
5	Nasdaq OMX Clean Edge Smart Grid Infrastructure Index	9, 11
6	Calvert US Large Cap Responsible Index Fund	1-16
7	iShares MSCI KLD 400 Social Index Fund	1-16
8	...	...

5 News and Social Media

FinScience daily retrieves news content from the web. About **1.5 million web pages are visited every day** on about **35.000 different domains**. The content of these pages is extracted, interpreted and analysed to identify valuable information and sources. The FinScience's **news data pipeline** can be divided into 3 steps, depicted below:



Data gathering

This phase involves the collection of data from different **web sources: websites, social network pages, news or blogs**. The latter are identified mainly by following two different criteria that are not necessarily connected to each other: (i) the level of sharing and visibility of a content; (ii) the identification of specific sources linked to a particular topic of interest.

Then, the contents are extracted from the web pages and are pre-processed via a first level of data cleaning for the elimination of noise and the extraction of the main body: this is the input to the next phase of data processing.

Data processing

At this stage, **Natural Language Processing (NLP)** methods are carried out. The contents collected in the data gathering phase are subjected to an NLP analysis that allows to determine the objects (companies and SDG topics...) disseminated and discussed on the web.

Data analysis and enrichment

Once the topics covered have been identified, the data are analysed, normalised and **enriched to obtain further metrics** such as:



Digital popularity Value (DPV): a measure of the diffusion of a digital signal on the web. It is obtained by aggregating the diffusion metrics of the news mentioning the signal at hand and can take only positive values.



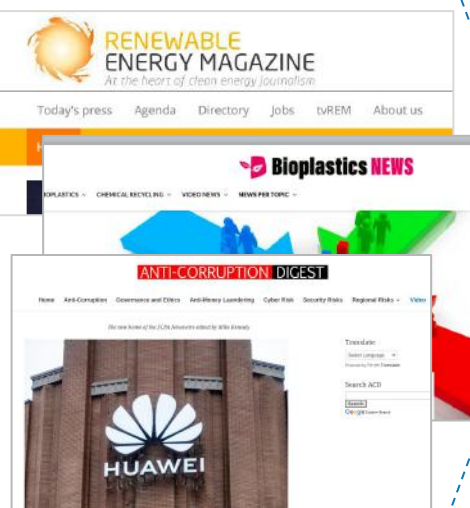
Sentiment: it measures how users feel about a specific company or information and can take values in the interval $(-1, 1)$. This indicator seeks to quantify how current beliefs and positions affect future behaviors. Our sentiment analysis algorithm is based on a semi-supervised method.

The **sentiment value - weighted by DPV** - is finally assigned for the company in relation to each SDG to reflect the **public perception** of corporate sustainability efforts/impact.

NGOs - News/Social posts



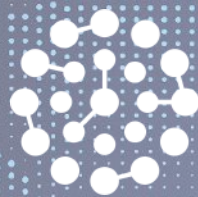
Vertical Websites



Mainstream News

1.5 million+ web pages
visited **every day** on
35.000+ domains

N.	Relevant indicators (TOT: 79)	SDGs
1	CERES - Twitter Post Sentiment*Digital Popularity Value	1-16
2	Greenpeace- Twitter Post Sentiment*Digital Popularity Value	6, 7, 11, 12, 13, 14, 15
3	WWF- Twitter Post Sentiment*Digital Popularity Value	12, 14, 15
4	Oxfam International- Twitter Post Sentiment*Digital Popularity Value	1-16
5	Ocean Conservancy- Twitter Post Sentiment*Digital Popularity Value	14
6	Food And Water Watch - Twitter Post Sentiment*Digital Popularity Value	1, 2, 3, 6, 12
7	Conservation International - Twitter Post Sentiment*Digital Popularity Value	13, 14, 15
8	International Federation for Human Rights - Twitter Post Sentiment*Digital Popularity Value	1, 2, 4, 5, 8, 10
9	Amnesty International - Twitter Post Sentiment*Digital Popularity Value	1, 2, 3, 4, 5, 8, 10, 16
10	Human Rights Watch - Twitter Post Sentiment*Digital Popularity Value	1, 2, 3, 4, 5, 8, 10, 16
11	Environmentalleader.com - Sentiment*Digital Popularity Value	6, 7, 11, 13, 14, 15
12	Dailyclimate.org - Sentiment*Digital Popularity Value	7, 13
13	Transparency.org - Sentiment*Digital Popularity Value	16
14	Cleanenergywire.org - Sentiment*Digital Popularity Value	7, 11, 13
15	Newplasticseconomy.org - Sentiment*Digital Popularity Value	12, 15
16	Renewablewatch.in - Sentiment*Digital Popularity Value	7, 11, 13
17	SDGs Mainstream News/Social Posts - Sentiment*Digital Popularity Value	1-17
18



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