

TODAY IS TOMORROW

2019 ESG INCIDENT REPORT



This report is based on Who's Good ESG Incident Analysis, powered by Artificial Intelligence (AI) algorithms and news data based on 90+ local and national news media providers in Korea.

www.whosgood.org

ESG Incident Analysis: www.esgincident.com

Contact: info@whosgood.org

TODAY'S NEWS, TOMORROW'S IMPACT

ESG INCIDENT ANALYSIS.

This report is based on Who's Good ESG Incident Analysis, powered by Artificial Intelligence (AI) algorithms and news data based on 90+ local and national news media providers in Korea. This report provides an overview of the corporate ESG incidents in 2019, analyzed by industry groups, ESG issues and company groups.

Asia's First AI-Driven ESG Insight Provider

About Who's Good, PBC

Using public data, Who's Good provides objective and up-to-date corporate ESG insights. Our products include ESG Performance Analysis, which evaluates non-financial (ESG) management performance based on public data; ESG Incident Analysis, which analyzes companies' ESG risks utilizing news data; and SCB (Sustainability Credit Bureau), which is a sustainability credit rating service, selected as 'Innovative Financial Services' by the Financial Services Commission of Korea.

2019

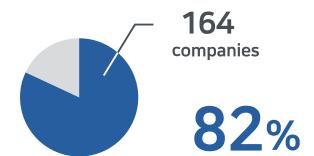
ESG Incidents at a Glance

Number of Companies with ESG Incidents

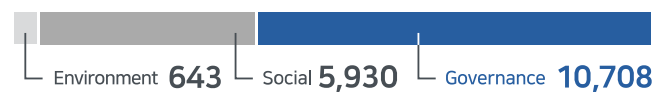
Companies with ESG Incidents



Companies with ESG Incidents among KOSPI 200 Companies



Number of articles of ESG incidents



Total : 17,281 articles

ESG Keywords

- Most frequently tagged keywords

Environment **Air Pollution**



Social **Union Strike**

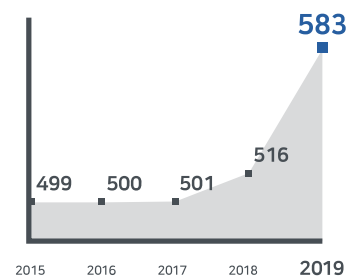


Governance **Accounting Fraud**



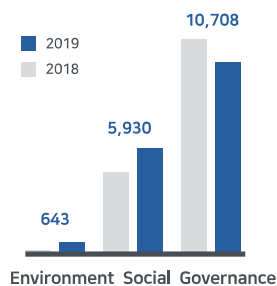
Companies with ESG Incidents

- Recent 5 years
(Unit: Number of companies)



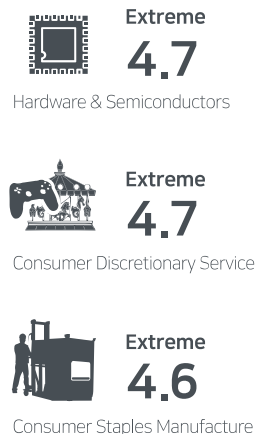
Number of ESG Articles

- Year-on-year
(Unit: Number of articles)



ESG Risk by Industry

- Riskiest Industries



ESG Risk by Issues

- ESG Issues Risk Ranking



Riskiest Issues

- Issues with the highest ESG risks

Business Ethics



Working Conditions



Data Collection

- 2019. 1. 1 ~ 2019. 12. 31
- 91 local and national media in Korea

Who's Good.PBC

info@whosgood.org
esgincident.com

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 - YG Entertainment, Inc.
3. Consumer Discretionary Manufacture
 - Hyundai Motor Co., Ltd.
4. Energy
 - SK Innovation Co., Ltd.
5. Industrials
 - Korea Shipbuilding & Offshore Engineering Co., Ltd.
6. Materials
 - Young Poong Corp.
7. Financial & Holdings
 - Shinhan Financial Group Co., Ltd.
8. Information & Communication Technology
 - KT Corp.
9. Transportation
 - Asiana Airlines, Inc.
10. Bio & HealthCare
 - KOLON Life Science, Inc.
11. Consumer Staples Manufacture
 - Aekyung Industrial Co., Ltd.
12. Commercial & Professional Service
 - Samsung C&T Corp.

V . Appendix: ESG Issue Classification

Authors

Duk Chan Yoon

Maxim Nam

Vasundhara Dehiya

Soo Young Kim

Ju Yeon Lee

Jiwon Kim

Advisor

Bruce Wonil Lee



I . Preface

2019 was a remarkable year for responsible investment in the Korean financial market. Among three major policies required for responsible investment, which are ESG integration of pension funds, stewardship code, and the disclosure of corporate ESG information, Korea has made exceptional progress in implementing the stewardship code and integrating ESG.

First, 2019 is the first year to implement the stewardship code in Korea which was introduced in 2018 by the National Pension Service (NPS), the world's third-largest national pension fund. Until recently, the NPS voted against 10% of proposals in shareholders meetings, but in 2019 the number increased to 20% for the first time. One significant case was to vote against Chairman Cho Yang-ho's re-election as a director of Korean Air. Cho Yang-ho, the chairman of Hanjin Group, which is the 13th biggest business group in Korea, stepped down after 20 years of management because of his family-risk over *gapjil* scandals. This indicates a noteworthy moment not only in the history of Korea's responsible investment, but also in the Korean capital market and the industry. The incident alarmed many Korean companies, and it led to the increased awareness of the importance of ESG. It also became an opportunity for overseas institutional investors to re-evaluate the Korean capital market.

Second, the NPS released the policy to boost responsible investment on November 30, 2019. This includes a detailed plan to apply responsible investment to domestic and foreign stocks and bonds worth 600 trillion Korean won in the fund. It marks the first time for NPS to release this kind of comprehensive RI plan in more than a decade, since joining the UN PRI in 2009. Considering that its fund with responsible investment was only 7 trillion Korean won in 2016, this is a breakthrough for responsible investment in Korea.

In the near future, ESG disclosure will be required not only by key stakeholders in the market but by the law, and the scope for disclosure will be increased. While governance has been emphasized the most among E, S and G so far, environmental and social performance also will be required to strengthen corporate sustainability and corporate value. The capital market has been moving towards sustainability, transparency, and stewardship responsibility in this decade, led by countries in Europe and the United States, since the 2008 global financial crisis.

Since 2014, Who's Good has analyzed the company's ESG data based on public data and big data to respond quickly to this global movement towards corporate sustainability and provided Korean companies' ESG data and insights to investors around the world. ESG Incident Analysis, launched in 2018, automatically analyzes ESG related news data. In 2019, we upgraded our analysis algorithms and provided raw data, platform, and reports to suit the needs of our customers.

This is the second annual ESG Incident Report after its launch in 2018. We hope that this report can be a valuable resource for global investors to observe Korea's movement towards responsible investment and for companies to observe their own ESG risks and strategize CSR policies. Furthermore, we sincerely hope to see even more active participation and dynamic discussion on corporate sustainability, social responsibility, and investors' stewardship responsibility in 2020.



II . Methodology

ESG Incident Analysis analyzes news articles about corporate incidents in real-time through artificial intelligence (AI) to provide corporate environmental, social, and governance (ESG) risk data.

Analysis Process

Who's Good ESG Incident Analysis is based on automation and Artificial Intelligence algorithms, including Natural Language Processing and Machine Learning. Automation of big data analysis allows us to scale up faster and process large volumes of content that are generated daily. Corporate ESG risk is evaluated based on the severity and frequency of ESG incidents.

NEWS ARTICLES

Collect more than 10,000 corporate news articles every day.

17 ESG ISSUES

Analyze articles using AI and categorize them into 17 ESG issues.

RISK SCORING

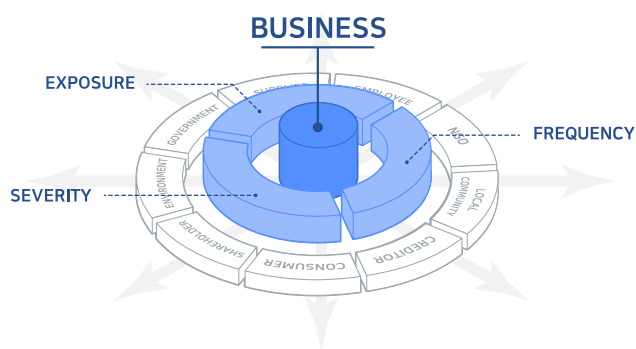
Evaluate ESG risk by measuring the severity and frequency of incidents.

INSIGHTS

Provide ESG risk insights with historic trends graph and peer comparison.

ESG Incident Risk Score

A company's incidents can damage a wide range of stakeholders. For example, harmful chemical substances emitted from a company's factory can pollute the environment, which can directly damage the health of local residents or workers. ESG risk scores are derived by measuring the severity and frequency of incidents in news articles that have affected various stakeholders.



RISK LEVEL SEVERITY

Extreme	4.6 - 5.0
Very High	3.6 - 4.5
High	2.6 - 3.5
Medium	1.6 - 2.5
Low	0.0 - 1.5

ESG Company Risk Score

A company's ESG risk is scored by themes and issues in consideration of the frequency of articles and severity of the incidents. The higher the ESG risk score, the more frequently and recently companies are exposed to a variety of ESG issues. Our clients can observe ESG risk changes over time, compare scores with peer companies, and determine whether any ESG incident has affected stock prices.



III. Summary of 2019 ESG incidents

1. 2019 Analysis Overview

According to our analysis of more than 5.1 million news articles reported by the Korean media on 2,280 listed companies between Jan. 1 and Dec. 31, 2019, a total of 583 (25.6%) of the listed companies had incidents related to the environment, society and governance (hereinafter ESG). Of the KOSPI 200 listed companies, 164 (82%) experienced at least one ESG incident, which comprises four out of five companies. During this period, a total of 714,298 articles were corporate news, of which 17,281 were about ESG incidents.

ESG INCIDENT ANALYSIS

TODAY'S NEWS,
TOMORROW'S IMPACT

Analysis Period	Jan 1, 2019 - Dec 31, 2019
Number of media sources	91 local and national media in Korea
Number of companies analyzed	2,280 companies
Number of companies with ESG incidents by category	583 companies - Environment 30 companies - Social 290 companies - Governance 487 companies
Number of companies with ESG incidents among KOSPI200	164 companies
Number of news articles analyzed	5,096,644 articles
Number of ESG incident news / corporate news	17,281 articles / 714,298 articles

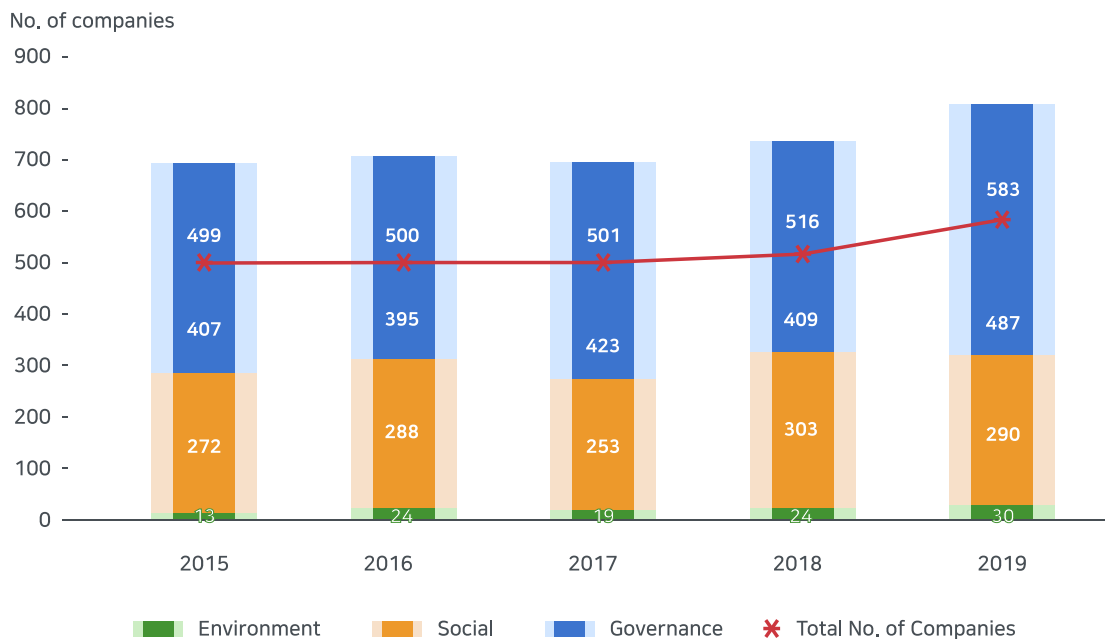


2. ESG Incident Trend

583 companies with ESG incidents increased by 12% year-on-year.

The number of companies with ESG incidents has increased from 499 in 2015 to 583 in 2019, based on 5-year analysis data. While this may have been the result of more ESG accidents over the previous year, it may be more reasonable to say that it is due to increased media monitoring and increased public interests. It is becoming more crucial for companies to identify and objectively manage ESG risks. It is also evident that the number of companies with environmental issues is on the rise, while social and governance issues are more apparent among ESG.

Number of Companies with ESG Incidents in 2015~2019



Among the 583 companies that experienced ESG incidents in 2019, 30 companies had environmental issues, 290 companies had social issues, and 487 companies had corporate governance issues. It can be inferred that corporate governance issues are getting more attention compared to environmental and social issues. The number of companies with ESG issues in 2019 has increased by 12 % to 583 compared to 516 companies in the previous year.



YG Entertainment and SK Innovation's ESG Risk Upsurge from 2018 .

Companies with increased ESG risk ratings over the previous year

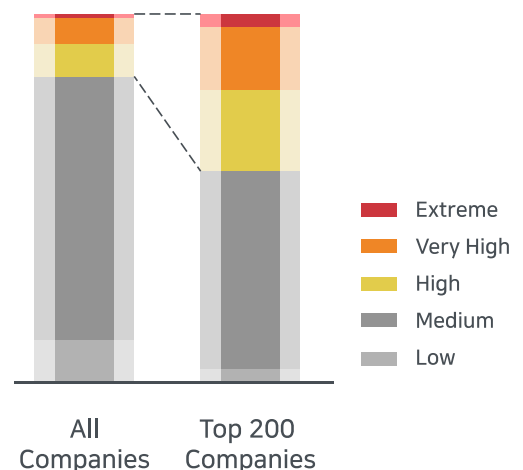
	Company Name	2018 ESG Rating and Score	2019 ESG Rating and Score	Trend
1	YG Entertainment, Inc.	Medium(1.6)	Extreme(4.7)	▲ 3
2	SK Innovation Co., Ltd.	Medium(2.5)	Extreme(4.6)	▲ 3
3	Kia Motors Corp.	Very High(3.9)	Extreme(4.6)	▲ 1
4	Young Poong Corp.	Very High(4.5)	Extreme(4.6)	▲ 1
5	SK Chemicals Co. Ltd.	Medium(2.2)	Very High(4.5)	▲ 2
6	Hyundai Steel Co.	High(3.2)	Very High(4.4)	▲ 1
7	KOLON Life Science, Inc.	Low(1.4)	Very High(4.3)	▲ 3
8	LG Chem Ltd.	Medium(2.0)	Very High(4.3)	▲ 2
9	HANJIN KAL Corp.	Medium(2.5)	Very High(4.2)	▲ 2
10	SK Holdings Co., Ltd.	High(3.1)	Very High(4.1)	▲ 1

62 (19%) out of 328 companies* had higher ESG risk levels compared to 2018. Among the seven companies with the highest level of ESG risks in 2019, YG Entertainment and SK Innovation's ESG risk ratings rose three levels to the highest in 2019. In the case of YG Entertainment, the issue of Business Ethics such as allegations of drug use, assault, and sexual bribery for foreign investors emerged in 2019. SK Innovation has caused controversy over its Anti-competitive Practices and Consumer Relations risks in the social sector, due to ongoing lawsuits for thefts of trade secrets and the cover-up of reports on the harmful effects of humidifier disinfectants, which caused 1,403 deaths in Korea. Kolon Life Science also rose three ESG risk levels from Low level in 2018 to Very High in 2019.

Only 17% of all companies have High or higher ESG risk rating, but the number goes up to 43% among 200 top companies. It suggests that the larger the company, the greater the impact of ESG incidents on society, and thus the higher ESG risk rating.

*Number of companies with ESG articles in both years of 2018 and 2019

ESG Risk Level Distribution

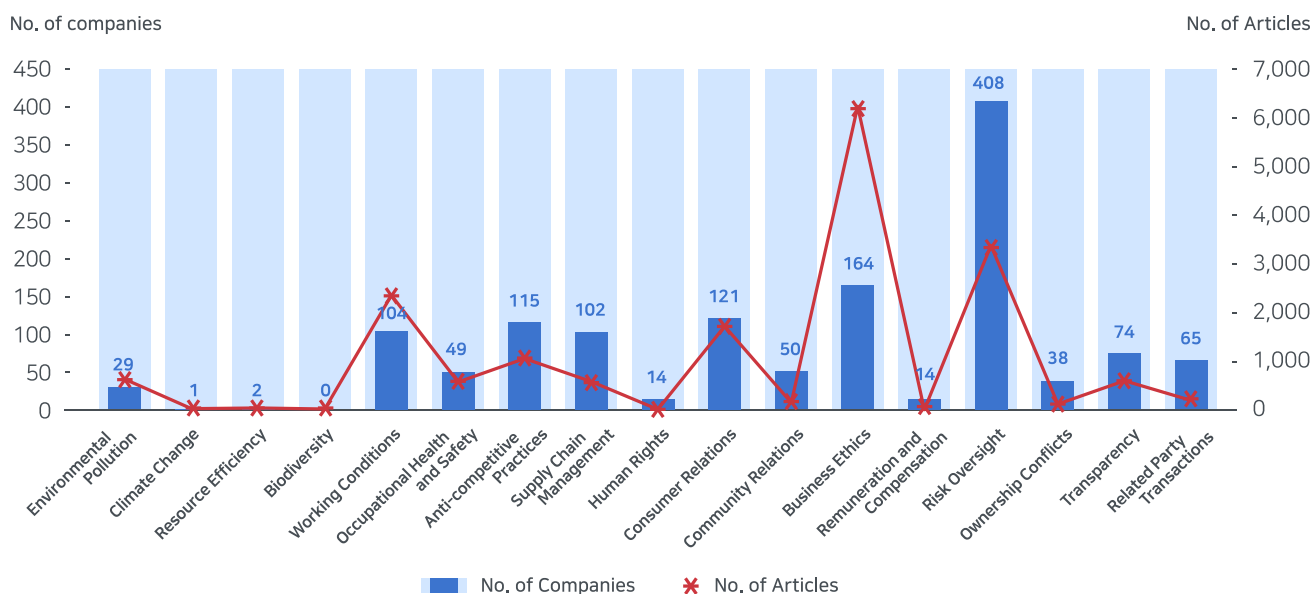




3. Issue Analysis

'Business Ethics' issue is the most controversial .

Number of Articles and Companies by ESG Issues



NUMBER OF ESG ARTICLES BY THEME

Governance

62.0 %

Social

34.3 %

Environment

3.7 %

In 2019, it was found that 10,708 articles were on corporate governance, accounting for 62% of the total articles, followed by 5,930 (34.3%) for social and 643 (3.7%) for environment. While issues arising from corporate governance account for more than half, social and environmental issues are steadily increasing compared to last year, indicating the growing interest.

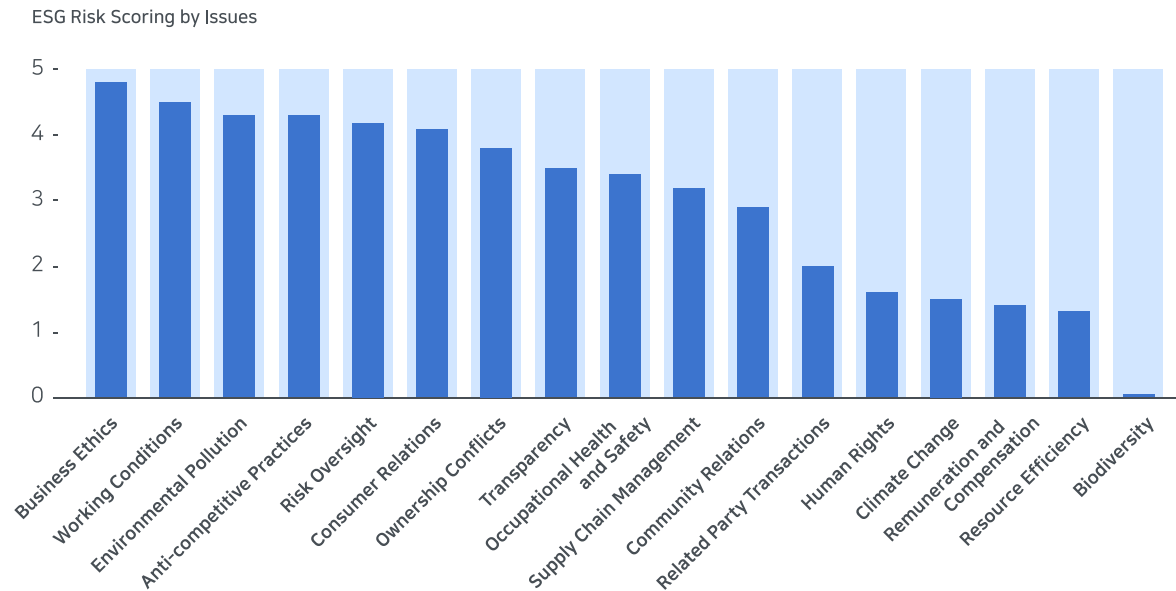
Among the governance issues, the number of articles regarding Business Ethics totaled 6,249, accounting for 36.2% of the total ESG articles and was the most controversial of the 17 ESG issues. The Business Ethics issues included cases of the immorality of the company's management, which sparked a public backlash throughout the society, such as accounting fraud, embezzlement, ownership of borrowed-name stocks, cover-up of corruption, sexual bribery, illegal recruitment of politicians and government officials' family members, and company owner family's drug use.

Among the 583 companies that had ESG issues in 2019, the most common ESG issue was Risk Oversight (408 companies). There were 8.3 news articles on this issue per company. Risk Oversight issue includes disputes on acquisition and delisting, decreasing sales and management crises that arose from mishandling ESG issues in the past. There were 164 companies that had Business Ethics issues, second only to Risk Oversight issues.

Considering the fact that Business Ethics and Risk Oversight issues have been reported the most, we can infer that there are still many problems arising from Korean corporate governance. We can also see why Korean society has been demanding more transparent corporate governance, especially regarding anti-corruption, ethical management and transparent management of a company.



ESG Risk Scoring by Issues



* Highest ESG risk score within issue



Among 17 ESG issues, Business Ethics (4.8, Extreme) and Working Environment (4.5, Very High) issues were the most severe events in terms of corporate sustainability in 2019. Keywords derived from articles on Business Ethics issue include accounting fraud (1,973 articles), breach of duty (1,120 articles), embezzlement (1,115 articles), and illegal activities such as bribery (734 articles), drugs (878 articles), and sexual bribery (344 articles). Keywords in the Working Condition issue were mostly related to conflicts with labor unions, such as strike (1,732 articles) and union sabotage (267 articles).

While there are relatively fewer articles on Environmental Pollution issues, the ESG risk score and rating were high (4.3, Very High). This is because in 2019 it was found that large companies such as Young Poong, Hyundai Steel, POSCO, and LG Chem manipulated their data on pollutant emissions and air pollution levels. In addition, ESG issues that must be urgently managed by Korean listed companies were identified in the order of Anti-competitive Practices (4.3, Very High), Risk Oversight (4.2, Very High), Consumer Relations (4.1, Very High), and Ownership Conflicts (3.8, Very High).





4. Business Group Analysis

Samsung has the highest ESG risk among business groups*.

No.	Business Group	Company with Highest ESG risk	ESG Rating and Score**	ESG Issue with Highest Risk
1	Samsung	Samsung Electronics Co., Ltd.	Extreme(4.7)	Working Conditions
2	SK	SK Innovation Co., Ltd.	Extreme(4.6)	Anti-competitive Practices
3	Hyundai Motor	Kia Motors Corp., Hyundai Motor Co., Ltd.	Extreme(4.6)	Working Conditions
4	Hyundai Heavy Industries	Korea Shipbuilding & Offshore Engineering Co., Ltd.	Extreme(4.6)	Working Conditions
5	Young Poong	Young Poong Corp.	Extreme(4.6)	Environmental Pollution
6	KT	KT Corp.	Very High(4.5)	Business Ethics
7	Hanjin	HANJIN TRANSPORTATION Co., Ltd.	Very High(4.4)	Business Ethics, Ownership Conflicts
8	Kumho Asiana	Asiana Airlines, Inc.	Very High(4.4)	Risk Oversight
9	LG	LG Chem Ltd.	Very High(4.3)	Anti-competitive Practices
10	Kolon	KOLON Life Science, Inc.	Very High(4.3)	Business Ethics

* Large business groups that are subject to the disclosure regulations under the Monopoly Regulation and Fair Trade Act, listed by the Korea Fair Trade Commission

** The highest ESG risk score among business groups

Out of 59 large business groups listed in 2019, 53 (90%) experienced ESG incidents, indicating that ESG risk is not managed well across large business groups. In addition, 19 companies (40%) were found to have at least Very High ESG risks of 3.6 or higher.

Among business groups, Samsung had the highest ESG risks, and the highest companies within the group include Samsung Electronics (4.7, Extreme), Samsung BioLogics (3.8, Very High), and Samsung Heavy Industries (3.3, High). Samsung's ESG incidents varies in terms of ESG categories and impacted stakeholders. In environment, it was found that they allegedly manipulated fine dust emissions data; in governance, Samsung was investigated and found guilty on accounting fraud and its spoliation of evidence; and in the social category, incidents include bribery charges in the U.S., union sabotage, harmful chemical leaks at workplaces and crane accidents, *gapjil* over suppliers, and overseas labor exploitation.

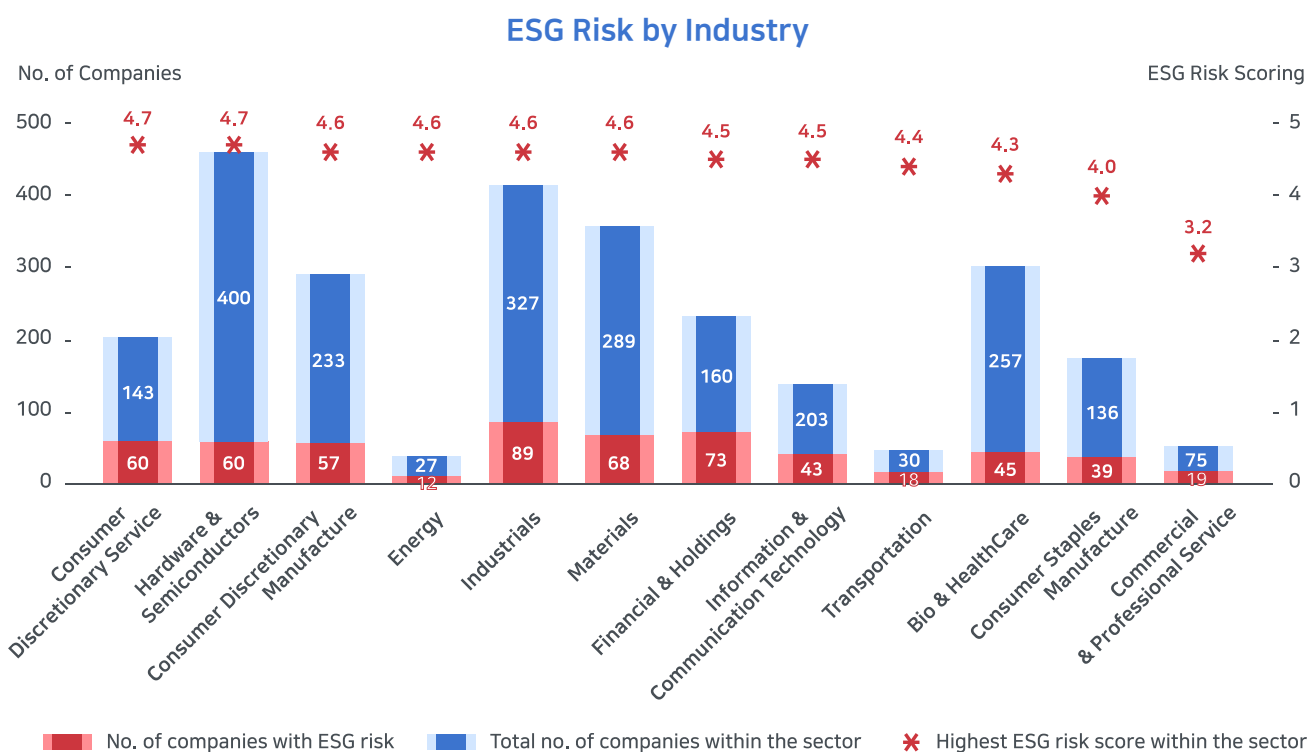
SK group's ESG risk was Very High in the order of SK Innovation (4.6, Extreme), SK Chemicals (4.5, Very High). In social, SK Innovation's ESG risk was the highest due to ongoing lawsuit for thefts of trade secrets and patent infringements with LG Chem and the cover-up of the reports on the toxicity of humidifier disinfectants.

Hyundai Motor group's ESG risk level was at High, in the order of Hyundai Motor (4.6, Extreme), and Kia Motors (4.6, Extreme). ESG issues were mostly in social category, such as alleged cover-up of product defects, illegal dispatch of workers, labor strikes and leaks of confidential information from suppliers.



5. Sector Analysis

Consumer Discretionary Service,
Hardware & Semiconductors sector have the **highest ESG risk level**



Consumer Discretionary Service

YG Entertainment (4.7, *Extreme*) and CJ ENM (4.1, *Very High*)'s ESG risk levels were the highest within the sector. YG Entertainment became mired in controversy, due to tax evasion, sexual bribery and illegal gambling abroad. CJ ENM had a Consumer Relations incident where a number of management members were indicted in vote manipulation of the reality audition program that the company produced.

Consumer Discretionary Manufacture

The ESG risk levels of Kia Motors and Hyundai Motor (4.6, *Extreme*) were at the highest in the sector, due to various controversies in the social category, such as product defects and labor conflicts. The CEO of Yoosung Enterprise (3.8, *Very High*) was found guilty of utilizing the company budget to break up its labor unions. Hankook Tire & Technology (3.7, *Very High*) was fined for forcing its dealers to sell tires at above certain prices and its CEO was arrested on charges of embezzlement of corporate fund and bribery.

Hardware & Semiconductors

Samsung Electronics (4.7, *Extreme*) was ranked the riskiest within the sector. It is followed by LG Display (3.9, *Very High*) with confidential information leakage issue, and SK Hynix (3.8, *Very High*) with the United States International Trade Commission (USITC) decision of its patent infringement.

Energy

Within the Energy sector, SK Innovation (4.6, *Extreme*) and Korea Electric Power Corporation (hereinafter KEPCO) (4.2, *Very High*) had the highest ESG risk level. SK Innovation had an ongoing international lawsuit over the misappropriation of trade secrets. At KEPCO, 15 of its employees were indicted on receiving bribery from suppliers for illegally owned solar power plant under the borrowed name to utilize corporate money for personal use. Also, safety accidents of subcontractor employees and conflicts with the local community entailed the controversy.



Industrials

Within the Industrials sector, the riskiest companies were in the following order: Korea Shipbuilding & Offshore Engineering (4.6, Extreme), Daewoo Shipbuilding & Marine Engineering (4.2, Very High), Hanjin Heavy Industries (3.9, Very High). Korea Shipbuilding & Offshore Engineering's union strike, safety accident of subcontract employees, and *gapjil* over subcontractors spiked public attention. At Daewoo Shipbuilding & Marine Engineering, a former president, Nam Sang-tae, was found guilty of breach of duty and embezzlement. Hanjin Heavy Industries & Construction's capital erosion caused the financial risks of its suppliers of more than 280 companies.

Materials

Within the Materials sector, metal and chemical companies under large business groups had the highest ESG risks. Young Poong (4.6, Extreme) continuously was reported for its environmental pollution and manipulation of air pollution data. SK Chemical (4.5, Very High)'s high ESG risk rating was due to the controversy over cover-up the harmful effects of its humidifier disinfectant products. Hyundai Steel (4.4, Very High) was reported on the safety accidents involving the death of subcontractor employees, embezzlement of union fees, labor strikes, and illegal emission of air pollutants.

Financial & Holdings

Shinhan Financial Group (4.5, Very High) was ranked the highest within the sector due to the allegation on the bribery for the former president Lee Myung-bak after his winning the election, its former CEO Yong-Byoung Cho's recruiting scandal, and its employee's embezzlement. Former CEO of Woori Financial Group (4, Very High) also was involved in recruiting scandals. Also, its Consumer Relations risk in the social category was Very High due to its incomplete sales of high-risk derivatives-linked securities (DLS).

Information & Communication Technology

KT (4.5, Very High), Naver (3.8, Very High) and Kakao (3.5, High) had the highest ESG risk rankings within the sector. KT was in controversy over the preferential hiring of a daughter of a lawmaker as bribery. Naver's Very High ESG risk rating was due to its conflict with employees, personal information leakage and the abuse of market dominance. Kakao had governance issues of neglecting a disclosure obligation regarding its five affiliate companies. Also, its launch of Kakao Taxi entailed conflicts with the taxi industry.

Transportation

Within the Transportations sector, Asiana Airlines (4.4, Very High) was ranked the highest, followed by Hanjin group companies such as Hanjin Shipping (4.4, Very High), Hanjin Kal (4.2, Very High), Jin Air (3.9, Very High). Asiana Airlines failed to get auditors' sign-offs on their annual reports which triggered warnings of credit rating downgrade. Also, the company had a Working Conditions issue of illegal overtime work for pregnant employees. In the case of Hanjin Group, Chairman Cho Yang-ho lost his position as internal director after family scandals, and the company had conflicts with the shareholder, Korea Corporate Governance Improvement (KCGI) regarding its ownership.

Bio & Health Care

Within the Bio & Health Care sector, the ESG risk rating of Kolon Life Science (4.3, Very High) was the highest, followed by Samsung BioLogics (3.8, Very High), and Kolon TissueGene (3.6, Very High). Kolon Life Science and Kolon TissueGene were found to mislabel and falsify the report on a key ingredient in its drug product, Invossa. A number of top management members were arrested, and it caused its stock price to decline. Samsung BioLogics faced governance risk as it was sued and raided for alleged accounting fraud.

Consumer Staples Manufacture

Aekyung Industrial (4, Very High), SPC Samlip (3.3, high), Samyang Food (3.2, high) had the highest ESG risk ranking within the sector. Aekyung Industrial's former CEO found guilty due to a 2011 scandal involving toxic humidifier disinfectants. Also, Korea's Fair Trade Commission found SPC Samlip's inter-affiliate transactions classed as unfair support, and it caused higher governance risk for the company. Samyang Food had Business Ethics issues where the chairman was indicted in embezzlement of 5 billion Korean won and tax evasion.

Commercial & Professional Service

Samsung C&T (3.2, High), Woongjin Coway (2.8, High) were at the highest ESG risk ranking within the sector. Samsung BioLogics' accounting fraud was found to be for Samsung C&T and Cheil Industries' controversial merger. In addition, Samsung executives were sentenced to jail for attempting to break up a labor union at Everland of Samsung C&T. Woongjin Coway had ongoing legal disputes with consumers over its product defects, and raised concerns over its decision-making process when its parent company Woongjin Group tried to sell Woongjin Coway within 3 months after its acquisition.



IV. ESG Risks by Industry Group

1. **Hardware & Semiconductors:**
 - Samsung Electronics Co., Ltd.
2. **Consumer Discretionary Service:**
 - YG Entertainment, Inc.
3. **Consumer Discretionary Manufacture:**
 - Hyundai Motor Co., Ltd.
4. **Energy:**
 - SK Innovation Co., Ltd.
5. **Industrials:**
 - Korea Shipbuilding & Offshore Engineering Co., Ltd.
6. **Materials:**
 - Young Poong Corp.
7. **Financial & Holdings:**
 - Shinhan Financial Group Co., Ltd.
8. **Information & Communication Technology:**
 - KT Corp.
9. **Transportation:**
 - Asiana Airlines, Inc.
10. **Bio & HealthCare:**
 - KOLON Life Science, Inc.
11. **Consumer Staples Manufacture:**
 - Aekyung Industrial Co., Ltd.
12. **Commercial & Professional Service:**
 - Samsung C&T Corp.



SAMSUNG ELECTRONICS CO., LTD.

HARDWARE & SEMICONDUCTORS

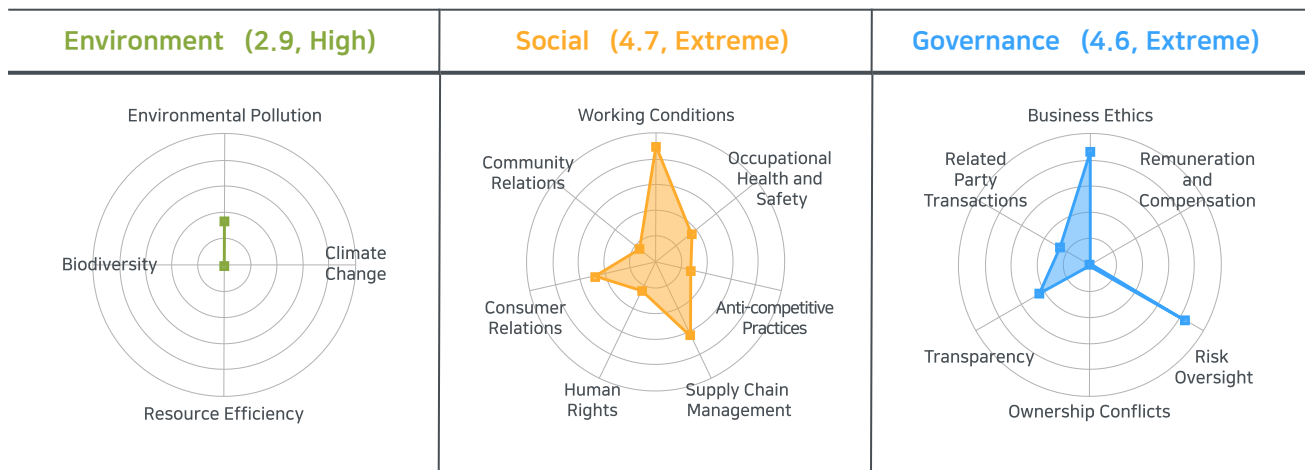
ESG Risk Rating
4.7, Extreme

No. of ESG Articles
1,233

Business Ethics and Working Conditions Risk 'Extreme'

Samsung Electronics' ESG risk level was at the highest, especially regarding the issues of Business Ethics in governance and Working Conditions in the social category. The high-profile member was arrested (May) for sabotaging evidence related to accounting fraud to cement Lee Jae-yong's control of the Samsung group. Additionally, he faced retrial regarding bribery of 86 billion Korean Won for ex-President Park Geun-hye (August). In the social category, the executives were sentenced to prison (December) for systematic union breakdowns. Also, Occupational Health and Safety risk increased because 13 of Samsung and its supplier's employees and executives were indicted in the case of carbon dioxide leakage in 2018, which killed two workers and injured one (December).

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Risk Oversight	2019-01-25	Moneytoday	Samsung Electronics Employee jailed for taking bribery from suppliers
Consumer Relations	2019-02-20	The Electronic Times	Samsung Electronics settles US lawsuit on product defect at \$6.5 million
Business Ethics	2019-05-30	The Hankook Ilbo	Arrest warrant issued for two Samsung executives on accounting fraud
Occupational Health and Safety	2019-06-05	The Seoul Shinmun	Samsung worker with brain tumor recognized as occupational disease
Occupational Health and Safety	2019-12-26	The Kyunghyang Shinmun	Employees of Samsung Electronics indicted on CO2 leak accident



YG ENTERTAINMENT, INC.

CONSUMER DISCRETIONARY SERVICE

ESG Risk Rating

Extreme, 4.7

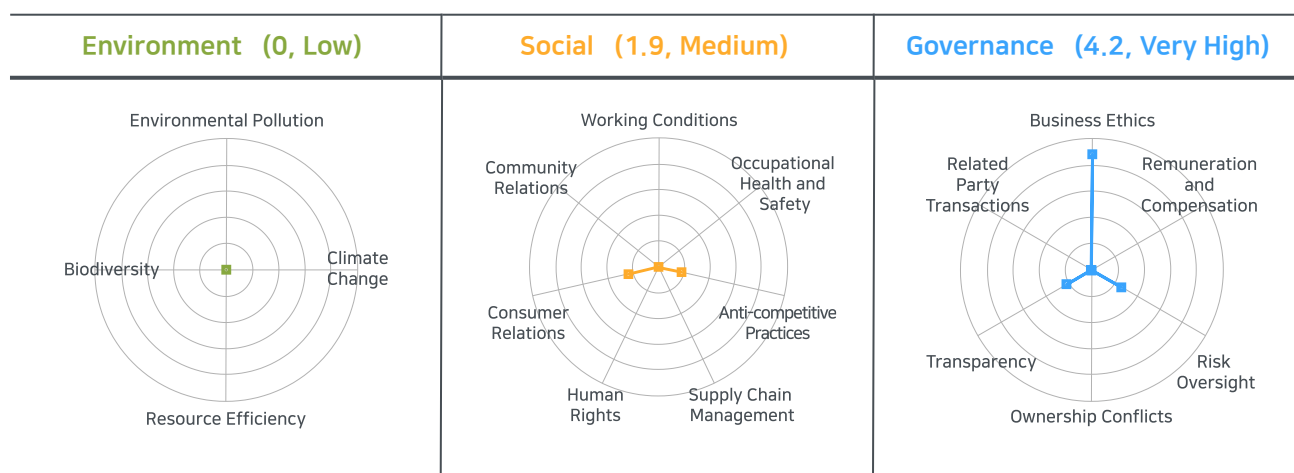
No. of ESG Articles

756

Business Ethics Risk 'Extreme' Due To Drug Use and Sexual Bribery

YG Entertainment's ESG risk rating surged from Medium in 2018 to the highest, because the company has been under fire for its Business Ethics issues. Former CEO Yang Hyun-suk allegedly covered up one of the company's artists providing sexual bribery for foreign investors and drug use (January), and was investigated for tax evasion (March). This caused stock prices to plummet and ultimately had to repay investments (October). While Chairman Yang Min-seok, a brother of Yang Hyun-suk was re-elected at a shareholders meeting (March), soon both CEOs resigned from their posts (June). Yang Hyun-suk was arrested and banned from leaving the country on charges of prostitution brokerage, illegal gambling abroad, and threatening whistleblowers, but he was cleared of charges after investigation (November). In January, there was also a controversy over plagiarism of its songs.

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Risk Oversight	2019-02-26	The Kukmin Ilbo	YG Entertainment's stock price plunges after controversy
Business Ethics	2019-06-14	Maeil Business Newspaper	Yang Hyun-suk resigns from all positions at YG Entertainment
Business Ethics	2019-06-20	The JoongAng Ilbo	YG allegedly cover up its artists' drug use
Risk Oversight	2019-09-16	Aju Business Daily	YG may have to repay investment of 67bn to Louis Vuitton Group
Business Ethics	2019-11-26	The Asia Business Daily	Prosecution found no evidence for Yang Hyun-suk's prostitution mediation



HYUNDAI MOTOR CO., LTD.

CONSUMER DISCRETIONARY MANUFACTURE

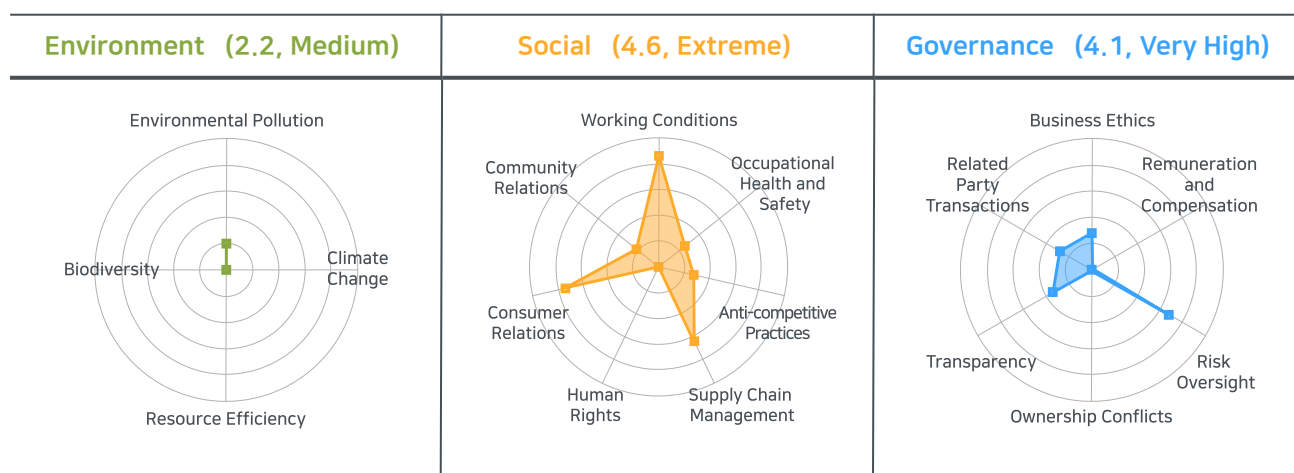
ESG Risk Rating
4.6, Extreme

No. of ESG Articles
558

Social Risk 'Extreme' Due To Labor Conflicts and Product Defects

Hyundai Motor had a particularly high level of social risk in 2019. The conflicts with the union continued not only in Korea but also in India, which is responsible for 14% of global production (January). In addition, an executive was investigated for covering up a product defect (February). In North America, the company recalled due to engine defects (March), which increased its Consumer Relations risk. Conflicts between suppliers and technology leaks within the supply chain caused Supply Chain Management risk (September). The company was also reported as one of the companies getting many opposition votes from the National Pension Service during shareholders meeting regarding executive appointment (February).

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Working Conditions	2019-02-03	The Chosun Ilbo	Hyundai Motor and Hyundai Heavy Union says they will strike soon
Consumer Relations	2019-02-20	Seoul Economic Daily	Hyundai Motor raided for the suspicion of concealing defects in vehicles
Related Party Transactions	2019-03-26	The Segye Times	Hyundai Motor paid the biggest penalty and fines in 4 years
Consumer Relations	2019-03-30	Maeil Business Newspaper	Hyundai recalls 20,000 Velosters for engine defects in North America
Supply Chain Management	2019-09-01	The Kukmin Ilbo	Hyundai Motor's 2nd supplier threatens 1st supplier and extorters 3.8bn



SK INNOVATION CO., LTD.

ENERGY

ESG Risk Rating
4.6, Extreme

No. of ESG Articles
465

Anti-competitive Practices Risk 'Very High' Due To Ongoing Lawsuit

SK Innovation faced Anti-competitive Practices risk due to ongoing international lawsuits with LG Chem regarding theft of trade secrets and patent infringement. This case was brought to the U.S. International Trade Commission (USITC) for investigation (April). In November, USITC recognized SK Innovation had been engaging in "a comprehensive destruction" of evidence against its order and thus default judgment against the company would be granted. In addition, it was found that SK Innovation intentionally concealed the toxicity research report when the Ministry of Environment was investigating the case, where a humidifier disinfectant, one of its products, caused more than a thousand deaths (May). There was also environmental risk where SK Innovation's Cheongju plant was caught exceeding the legal standards for air pollutant emissions (May).

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Transparency	2019-03-20	Moneytoday	National Pension Funds opens its direction of proxy voting
Risk Oversight	2019-04-30	Maeil Business Newspaper	LG Chem sues SK Innovation to the USITC court for alleged theft of technology
Environmental Pollution	2019-05-06	The Daejeon Ilbo	Big companies lack of awareness in protecting environment
Consumer Relations	2019-05-23	Maeil Business Newspaper	SK Chemicals/Innovation indicted in concealing reports on product toxicity
Anti-competitive Practices	2019-11-14	YTN	LG Chem claims that SK innovation destroyed evidence



KOREA SHIPBUILDING & OFFSHORE ENGINEERING CO., LTD. INDUSTRIALS

ESG Risk Rating
4.6, Extreme

No. of ESG Articles
667

Social Risk 'Extreme' Due To Labor Conflicts and *Gapjil* Over Suppliers

Korea Shipbuilding & Offshore Engineering scored the highest risk in the social sector. The conflicts with the union over the acquisition of Daewoo Shipbuilding & Marine Engineering Co. continued to escalate, causing labor unions to occupy the venue and stage an all-out strike to disrupt the shareholders' meeting, which was to decide on modalities of the merger (May). While the conflict between union and management continued until the end of the year, Supply Chain Management and Occupational Health and Safety risks emerged as a result of the death of a subcontractor employee working without safety devices (September). In addition, the Fair Trade Commission fined the company 20.8 billion Korean won (December) for violating subcontract law. It is accused of not having delivered contract documents to subcontractors before they began their work and forcing to lower the preset prices.

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Working Conditions	2019-01-06	The Kyungsang Ilbo	Hyundai Heavy Industries conflicts with labor union on salary agreement
Working Conditions	2019-02-20	Daily Hankook	Union of Hyundai Heavy Industries, strikes against M&A
Supply Chain Management	2019-04-16	The Kyungsang Ilbo	Suppliers of Hyundai Heavy stops paying for employee
Supply Chain Management	2019-08-16	The Herald Business	Court says the death at Hyundai Heavy was not a suicide but an occupational accident
Anti-competitive Practices	2019-12-18	The Hankyoreh	Hyundai Heavy Industries fined for unfair subcontract contracts



YOUNG POONG CORP.

MATERIALS

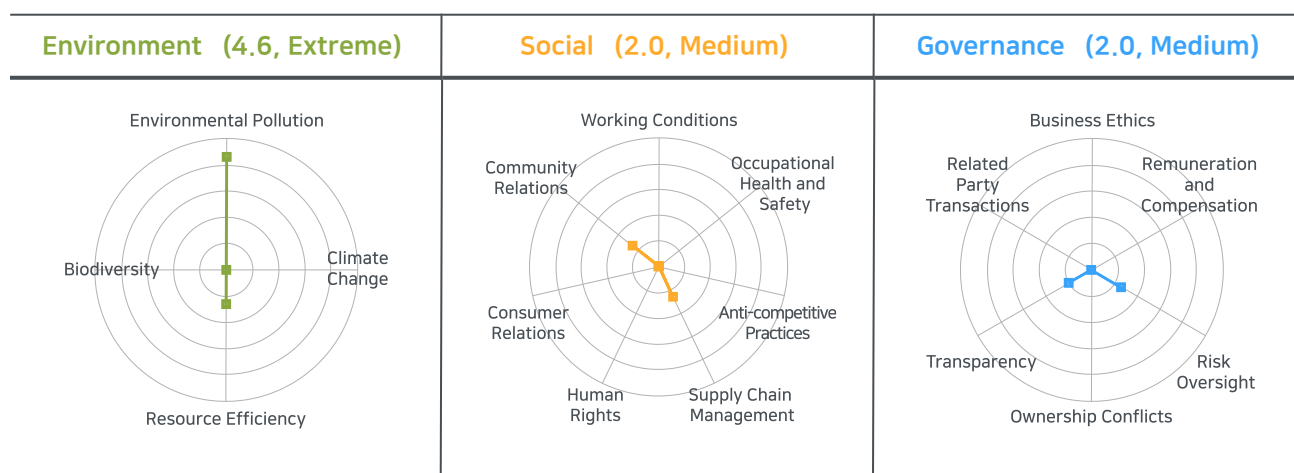
ESG Risk Rating
4.6, Extreme

No. of ESG Articles
179

Environment Risk 'Extreme' Due To Continuous Air and Water Pollution

Young Poong continued to conflict with environmental NGOs and local residents over the continuous discharge of wastewater, soil pollution, and air pollution. This led to a 120-day shutdown of its refinery in Seokpo (May), but residents opposed it due to the fear of a local economic downturn. Moreover, one of Young Poong's executives and its air-quality analyzing firms were arrested for allegedly manipulating its emissions data (November). The company was considering moving the refinery to Okgye, Gangneung, but it caused the opposition of the city congress and local community due to its pollution issue (December).

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Transparency	2019-02-22	Etoday	NPS oppose to Young Poong for electing executives
Environmental Pollution	2019-04-14	The Kyungbukdomin Ilbo	Pollutants found again at Young Poong
Environmental Pollution	2019-06-18	The Dong-A Ilbo	Young Poong Seokpo Refinery shut-down for 120 Days
Environmental Pollution	2019-07-21	The Hankyoreh	Executive at Young Poong arrested for manipulation of air pollutant data
Environmental Pollution	2019-11-06	Daegu Ilbo	Executive at Seokpo Refinery found guilty for pollution data manipulation



SHINHAN FINANCIAL GROUP CO., LTD.

FINANCIAL & HOLDINGS

ESG Risk Rating

4.5, Very High

No. of ESG Articles

182

Governance Risk 'Very High' Due To Recruitment Scandals

Shinhan Financial Group was on the allegations of delivering 300 million won as a bribery to the former president, Lee Myung-bak, in 2010, which led to higher Business Ethics risk. The company was cleared of the allegation (June). In addition, it was found that an employee at Shinhan Card embezzled 1.4 billion won (July), which caused the concerns over its lack of internal control system. The most controversial case was Chairman Cho Yong-byoung's trial for illegal hiring. Despite the Business Ethics issue, the company's nomination committee recommended the chairman's re-election, raising concerns about its governance (November). Additionally, Consumer Relations risk was emerged, due to Financial Supervisory Service's decision for the company's responsibility to pay indemnities for the alleged misselling of derivatives (December). The knock-in, knock-out (KIKO) products caused 723 local businesses to lose a total of 3.3 trillion won in 2008.

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Business Ethics	2019-04-10	The Kyunghyang Shinmun	Prosecutors summoned former chief of Shinhan Bank for perjury
Risk Oversight	2019-07-23	The Seoul Shinmun	Shinhan Card employee arrested for embezzling 14 billion won
Transparency	2019-11-28	The Herald Business	Financial authorities concerns Shinhan's transparency during nomination
Consumer Relations	2019-12-13	The Seoul Shinmun	KIKO* total compensation up to 256 billion
Business Ethics	2019-12-18	Maeil Business Newspaper	Shinhan President sentenced to 3 years in prison for recruitment scandal

* "Knock-in, knock-out" currency derivatives



KT CORP.

INFORMATION & COMMUNICATION TECHNOLOGY

ESG Risk Rating

4.5, Very High

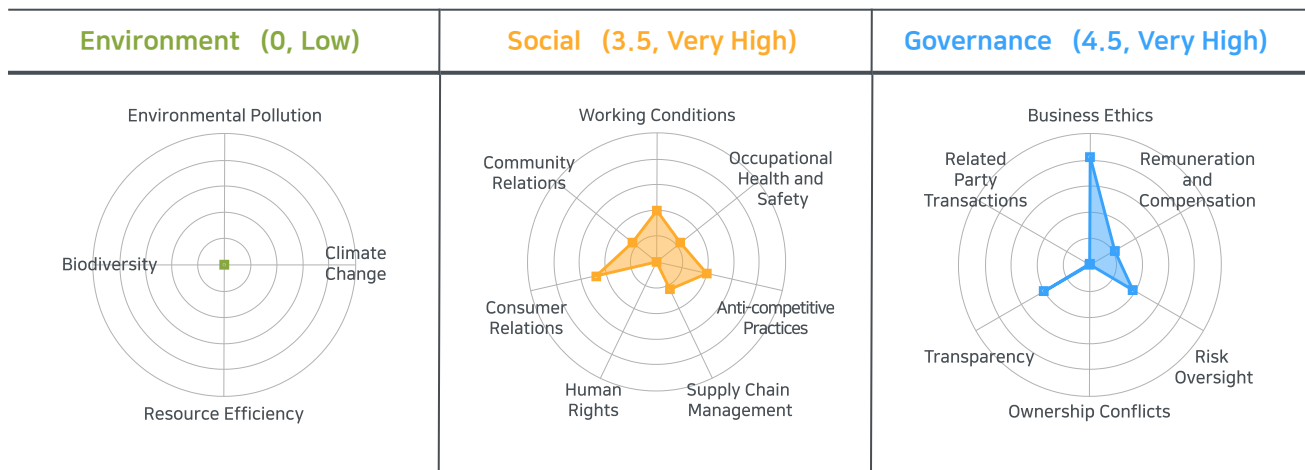
No. of ESG Articles

794

Governance Risk 'Very High' Due To Management Corruption

KT has been accused of illegal hiring of applicants with ties to powerful figures by former executive president Seo Yoo-yeol and former chairman Lee Seok-chae (May). Moreover, KT Chairman Hwang Chang-gyu allegedly hired a number of management advisers for lobbying purposes. Concerns were raised about Consumer Relations issues because of conflicts with local business regarding the service disruption occurred in 2018 (February), and the controversy over false advertisement in promoting its LTE technology (July). There was also a safety accident of the employee of KT's subsidiary (March). KT was fined 5.74 billion won and the government filed complaints with the prosecution for rigging bids for state projects (April).

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Community Relations	2019-01-10	The Hankyoreh	Small business owners compensated for KT service disruption
Occupational Health and Safety	2019-03-05	Nocut News	KT subsidiary employee cuts wrist due to safety accident
Business Ethics	2019-03-27	The Chosun Ilbo	Prosecutor confirms 9 cases of KT illegal hiring
Anti-competitive Practices	2019-04-25	The Herald Business	KT, LGU+, SK fined of 13.3 billion won for price-fixing
Business Ethics	2019-12-03	Moneytoday	KT Chairman Hwang Chang-gyu investigated for illegal advisory fees



ASIANA AIRLINES, INC.

TRANSPORTATION

ESG Risk Rating

4.5, Very High

No. of ESG Articles

199

Governance Risk 'Very High' Causes CEO Resignation

Asiana Airlines' governance risk was the highest as it failed to get auditors' sign-offs on their annual reports, and the company's bond was delisted. It led to the resignation of its chairman Park Sam-koo (March). Until the acquisition of the company by HDC Hyundai Development Company was decided, articles on Asiana Airlines' financial risk regarding liquidity crisis continued. Also, the airline struggled with incidents regarding social issues. The company had a Working Conditions issue of illegal overtime work for pregnant employees (May). The risk in Consumer Relations issue also emerged. The Supreme Court upheld the 45-day suspension on the Incheon-San Francisco route over its deadly crash landing, saying the crash was primarily due to pilot error and the lack of training (October). There were also safety accidents where the engine caught fire (October), and the plane made an emergency landing due to the engine defect (November).

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Risk Oversight	2019-03-21	The Hankyoreh	Asiana Airlines share trading halted after auditor's red flag
Risk Oversight	2019-03-28	Aju Business Daily	Park Sam-gu, Chairman of Kumho Asiana Group, resigns
Anti-competitive Practices	2019-04-18	Edaily	Asiana Airlines caught unfair transactions with travel agencies
Consumer Relations	2019-10-17	The Korea Economic Daily	Supreme Court upheld suspension on the ICN-SFO route over deadly accident
Consumer Relations	2019-11-10	MBC	Asiana airliner emergency return due to engine failure



KOLON LIFE SCIENCE, INC.

BIO & HEALTHCARE

ESG Risk Rating

4.3, Very High

No. of ESG Articles

257

Consumer Relations and Business Ethics Risk 'Very High'

Kolon Life Science was found to mislabel and falsify the report on a key ingredient in its drug product, Invossa. The U.S. Food and Drug Administration (FDA) ordered them to suspend patient enrollment for clinical trials, and South Korean drug authorities also canceled the license for the drug. Its Consumer Relations risk went up as its consumers and civic organizations sued the company (April), and so did its shareholders (May). Prosecutors sought an arrest warrant for two executives for submitting false data (November). This incident involved not only customers who were provided false information, but the shareholders who were damaged due to the plunge of the stock price and the suspended transaction of Kolon TissueGene, the drugmaker's U.S. biopharma affiliate.

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Consumer Relations	2019-03-31	The Asia Business Daily	Patients shocked by the sales suspension of Invossa
Risk Oversight	2019-04-02	The Maeil Shinmun	Kolon's 1 trillion won company value evaporation
Transparency	2019-05-28	Asia Today	Angered patients and shareholders started lawsuit
Risk Oversight	2019-09-02	Edaily	Kolon Life Sciences is sued for 6.5 billion won damages
Business Ethics	2019-12-28	Seoul Economic Daily	Arrest warrant for Lee Woo-suk, CEO of Kolon Life Sciences, rejected



AEKYUNG INDUSTRIAL CO., LTD.

CONSUMER STAPLES MANUFACTURE

ESG Risk Rating

4.0, Very High

No. of ESG Articles

268

Consumer Relations Risk 'Very High' Due To Toxic Product

Aekyung Industrial was raided by prosecutors in January for making and selling toxic humidifier disinfectants, which caused more than one thousand deaths (January). It was found that customers reported their physical illness using the products during 2007~2009, but the company mishandled the complaints (March). Moreover, prosecutors found the company was also involved in manufacturing of the products, while they argued that they were only a distributor of the product (May). It was revealed that the company bribed a former aide of a lawmaker to cover up the case, and Ko Kwang-hyun, former Chairman of Aekyung Industrial, was sentenced to prison in the first trial for destroying evidence regarding the toxicity of the product (August).

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Consumer Relations	2019-05-02	The Chonbuk Domin Ilbo	Aekyung released toxic product aware of its toxicity
Business Ethics	2019-06-05	Nocut News	Prosecutors found Aekyung Industrial's lobby, the broker was arrested
Consumer Relations	2019-07-23	Nocut News	Ministry of Environment workers deleted documents to cover up
Consumer Relations	2019-08-23	Moneytoday	Former President Aekyung gets 2 years and 6 months prison sentence
Business Ethics	2019-12-26	The Kyunghyang Shinmun	Aekyung fired the staff in charge of humidifier disinfectant during investigation



SAMSUNG C&T CORP.

COMMERCIAL & PROFESSIONAL SERVICE

ESG Risk Rating

3.2, High

No. of ESG Articles

101

'High' Risk Due To **Union-busting** and **Accounting Fraud**

Samsung C&T was raided on charges of deliberately inflating the corporate value of Samsung BioLogics, a subsidiary of Cheil Industries, to lead to a favorable merger rate for Samsung Electronics Vice Chairman Lee Jae-yong (March). Top Samsung executives were arrested, accused of having destroyed and hidden evidence related to the accounting fraud (October). The company also had supply chain issues where the company's first-tier supplier, Nookwoo Engineering & Construction, failed to pay more than 70 of second-tier suppliers which led to financial risks to the companies (April). Regarding Working Environment issues, a Samsung executive was sentenced to one year and four months in prison for bursting Everland's labor union and pledged to prevent a recurrence to the public (December).

ESG Risk by Issues



Top ESG News

ESG Issue	Date	Media	Article Title
Business Ethics	2019-03-14	Asia Today	Samsung C&T raided for accounting fraud of Samsung BioLogics
Supply Chain Management	2019-04-19	The Seoul Shinmun	More than 70 Samsung C&T suppliers at financial risk
Business Ethics	2019-09-23	YTN	Prosecutors raid National Pension Service and Samsung C&T
Risk Oversight	2019-10-23	The Hankyoreh	Samsung C&T's 1.6 trillion won accounting fraud revealed
Working Conditions	2019-12-13	Seoul Broadcasting System	Vice President of Samsung 1 year 4 months in jail for union breakdown



V. Appendix: ESG Issue Classification

Category	ESG Issues	Definition
Environment	Environmental Pollution	Refers to chemical accidents such as leakage, explosion, and environmental contamination.
	Climate Change	Refers to a company's greenhouse gas (GHG) reduction, adaptation and emission trading issues.
	Resource Efficiency	Refers to issues regarding inefficient use of energy and materials. Ineffective use of resources impacts a company's sustainability.
	Biodiversity	Refers to a company's environmental destruction and negative impacts on biodiversity caused by business activities.
Social	Working Conditions	Refers to any labor-related conflicts such as unfair labor conditions, labor rights violations and unfair pressure imposed on labor unions.
	Occupational Health and Safety	Refers to occupational health and safety accidents at the workplace. Safety measures need to be in place to prevent industrial health and safety accidents.
	Anti-competitive Practices	Refers to any unfair business practices such as price-fixing, monopoly, unfair transactions, and copyrights violations.
	Supply Chain Management*	Refers to ESG incidents in a company's supply chain. (*The supply chain risk issue can be tagged along with other issues.)
	Human Rights	Refers to human rights infringement incidents such as child labor, forced labor, and discrimination at work.
	Consumer Relations	Refers to issues related to a company's products and services such as product safety, recall, data privacy and any conflict with consumers.
	Community Relations	Refers to a company's conflicts with local communities. A company has a responsibility to contribute towards community development and to build positive relationships with the community.
Governance	Business Ethics	Refers to moral hazard issues among top management, such as executives' corruption, <i>gapjil</i> , tax evasion and unethical management.
	Remuneration and Compensation	Refers to the issues surrounding the process of determining the appropriate level of remuneration and compensation for the board and management.
	Risk Oversight	Refers to poor risk management systems, such as lack of policies and procedures and inappropriate decision-making processes, that could lead to a company's increased risk exposure.
	Ownership Conflicts	Refers to a conflict of interest for company stakeholders regarding company ownership. The lack of company level policy and manual on mitigating conflict of interests amongst various stakeholders could exacerbate ownership conflicts.
	Transparency	Refers to issues concerning the transparency of the board and shareholder rights. It concerns the lack of independence of the board and the negligence of shareholders' interests.
	Related Party Transactions	Refers to transactions of assets, equity and goods among affiliated firms within a business group, which may lead to ravage small businesses and obstruct fair competition.



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