



Grant Title: *Establishing a research infrastructure for ESG intelligence: A multi-stakeholder perspective (UGC/IDS(R)14/21)*

Topic: *ESG reporting disclosure evaluation: a proprietary scoring system (APE scores)*

February 2024

IDS Progress Report

Research Component (RC) 2: *Improve KPIs of ESG reporting for listed firms*

RGC IDS Grant (UGC/IDS(R)14/21) RC2 Progress Report

Grant Title: Establishing a research infrastructure for ESG intelligence: A multi-stakeholder perspective (UGC/IDS(R)14/21)

Research Component (RC) 2: Improve KPIs of ESG reporting for listed firms

Topic: ESG reporting disclosure evaluation: a proprietary scoring system (APE scores)

1. Introduction

RC2 is in accounting which tackles the challenges of ESG reporting for listed firms in Hong Kong and Mainland. The objective of RC2 is to identify the role of ESG related to environmental and social aspects of ESG reports in creating ESG intelligence. The research component coordinator conducted a preliminary analysis on the accuracy of 2017-18 ESG reports of HKEx listed firms and 815 mistakes or an average of 4.5 mistakes per firm were identified, indicating a serious problem with the ESG reports. Previous research indicates that there are many errors and misunderstandings in the content of the ESG reports, which are a mandatory requirement for Hong Kong listed firms. To provide references for the listed firms' ESG reporting, this analysis classified the mistakes and misinformation into 5 categories, namely, Misunderstanding of Stakeholder Engagement, Environmental Data Collection, Environmental Data Calculation, Misunderstandings in Social Aspect, and Misalignment between HKEx Guidelines. Therefore, RC2 should bring significant value to the overall ESG intelligence for researchers, regulators and industry professionals who need ESG intelligence reflecting the quality of ESG reports of listed firms.

2. Methodology and Evaluation Design

2.1. APE ESG disclosure valuation approach:

The methodology was developed by Prof. Louis Cheng with support from external experts. The methodology was developed based on HKEx ESG framework to evaluate disclosure rating of ESG reports for Hong Kong listing firms. The methodology was being tested and the sample of the result is listed in part 2 below.

2.1.1. APE methodology based on HKEx ESG framework

APE Score Methodology

- Point Allocation
 - **Environmental (Total: 17.8 pts)**
 - o Aspects: 1.2 pts
 - A1 – Emissions
 - A2 – Use of Resources
 - A3 – Environment and Natural Resources
 - A4 – Climate Change
 - o KPIs: 1 pt
 - A1.1 – Types of emissions and respective emissions data
 - A1.2 – Scope 1 and Scope 2 GHG Emissions and, where appropriate, Intensity

- A1.3 – Total Hazardous Waste Produced and, where appropriate, Intensity
 - A1.4 – Total Non-hazardous Waste Produced and, where appropriate, Intensity
 - A1.5 – Targets and Steps Taken to Achieve Them (Emissions)
 - A1.6 – Targets and Steps Taken to Achieve Them (Waste)
 - A2.1 – Direct and/or Indirect Energy Consumption by Total and Intensity
 - A2.2 – Water Consumption by Total and Intensity
 - A2.3 – Description of Energy Use Efficiency Targets and Steps Taken to Achieve Them
 - A2.4 – Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them
 - A2.5 – Total Packaging Material Used and, if applicable, with reference to per unit produced
 - A3.1 – Significant Impact of Activities on Environment and Natural Resources, and the actions taken to manage them
 - A4.1 – Significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them
- **Social (Total: 21.1 pts)**
 - Aspects: 1.2 pts
 - B1 – Employment
 - B2 – Health and Safety
 - B3 – Development and Training
 - B4 – Labour Standards
 - B5 – Supply Chain Management
 - B6 – Product Responsibility
 - B7 – Anti-corruption
 - B8 – Community Investment
 - KPIs: 1 pt
 - B1.1 – Total Workforce by Gender, Employment Type, Age Group and Geographical Region
 - B1.2 – Employee Turnover Rate by Gender, Age Group and Geographical Region
 - B2.1 – Number and rate of work-related fatalities occurred in each of the past three years including reporting year
 - B2.2 – Lost Days Due to Work Injury
 - B2.3 – Description of occupational health and safety measures adopted, and how they are implemented and monitored
 - B3.1 – Percentage of employees trained by gender and employee category
 - B3.2 – Average training hours completed per employee by gender and employee category

- B4.1 – Description of measures to review employment practices to avoid child and forced labour
 - B4.2 – Description of steps taken to eliminate such practices when discovered
 - B5.1 – Number of suppliers by geographical region
 - B5.2 – Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored
 - B5.3 – Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored
 - B5.4 – Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored
 - B6.1 – Percentage of total products sold or shipped subject to recalls for safety and health reasons
 - B6.2 – Number of products and service related complaints received and how they are dealt with
 - B6.3 – Description of practices relating to observing and protecting intellectual property rights
 - B6.4 – Description of quality assurance process and recall procedures
 - B6.5 – Description of consumer data protection and privacy policies, and how they are implemented and monitored
 - B7.1 – Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases
 - B7.2 – Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored
 - B7.3 – Description of anti-corruption training provided to directors and staff
 - B8.1 – Focus areas of contribution
 - B8.2 – Resources contributed to focus area
- Scoring Criteria
- Fully complied or explained
 - Aspects: 1.2 pts
 - Environmental KPI: 1 pt
 - Social KPI: 0.5 pt
 - Partially complied or explained (e.g. lack of description, laws and regulations not provided, breakdown categories not fully followed, etc.)
 - Aspects: 0.6 pt
 - Environmental KPI: 0.5 pt
 - Social KPI: 0.25 pt
 - Not complied nor explained
 - Aspects, KPI: 0 pts

- Industry Weighting

- Formula:

Environment Sub-Total divided by 17.8, then multiply by corresponding industry weighting; plus Social Sub-Total divided by 21.1, then multiply by corresponding industry weighting

- Environment/Social Weighting:

GICS Level 1	E	S
Communication Services	40	60
Consumer Discretionary	50	50
Consumer Staples	50	50
Energy	60	40
Financials	40	60
Health Care	40	60
Industrials	55	45
Information Technology	40	60
Materials	55	45
Real Estate	55	45
Utilities	60	40

- Example:

A Materials company with 16.3 pts in Environmental and 19.85 pts in Social

Calculation:

$$\begin{aligned}
 APE\ Score &= \frac{16.3}{17.8} \times 55 + \frac{19.85}{21.1} \times 45 = 50.3651 \dots + 42.3341 \dots \\
 &= 92.69
 \end{aligned}$$

2.2. Testing Sample

The testing sample contains 125 listed firms at HKEx, covering 11 industrial sectors under GICS1. Appendix 1 lists the details of the firm information and APE scores. Overall, in Table 1, the mean of the total sample's APE score is 87.0 and the range is between 62.4 to 100.0. Due to the small sample size and the unequal sample sizes per group, the median of APE score is used to demonstrate the average level of each sector. The highest median is from the Information and Technology sector, reaching 93.4 and the lowest median is 83.0, from the Industrial sector. Communication Service and Materials sectors have the smallest standard deviation of 3.6, indicating their APE scores are of a consistent level. While the Energy sector's standard deviation is the largest among all the sectors, peaking at 13.1, which may be caused by the small group sample size and the industry performance gap. The overall statistics from the testing sample indicate that the APE score is an acceptable measure. The APE score distribution ranges are listed in Table 2 below. There is a distinctive differentiation of APE scores among the sample firms.

Table 1. Overall statistics from the testing sample

GICS1	Mean of APE	Median of APE	StdDev of APE	Max of APE score	Min of APE
Communication Services	87.8	87.9	3.6	92.8	81.0
Consumer Discretionary	86.0	88.4	9.0	98.6	62.4
Consumer Staples (n=10)	87.4	87.3	6.3	96.8	76.1
Energy (n=4)	82.8	86.1	13.1	93.3	65.6
Financials (n=12)	88.9	89.9	6.3	100.0	76.4
Health Care (n=18)	88.6	91.4	8.4	98.3	67.7
Industrials (n=12)	80.8	83.0	11.1	95.8	64.6
Information Technology	91.3	93.4	7.8	98.6	69.8
Materials (n=8)	88.5	89.7	3.6	92.7	82.4
Real Estate (n=12)	86.4	88.1	7.8	98.5	74.4
Utilities (n=7)	85.8	90.7	9.2	93.5	69.5
Grand total (n=125)	87.0	89.4	8.2	100.0	62.4

Table 2. Frequency distribution of the testing sample

Range	Frequency	Percentage
Very high (100>n>=95)	14	11.2%
High (95>n>=90)	44	35.2%
Median (90>n>=85)	30	24.0%
Low (85>n>=80)	15	12.0%
Very low (80>n)	22	17.6%

Appendix 1: Testing a sample of listed firms using APE methodology (Fiscal Year 2022)

Stock #	Company Name	GICS1	APE
02858.HK	Yixin Group Limited	Financials	100.0
01992.HK	Fosun Tourism Group	Consumer Discretionary	98.6
01361.HK	361 Degrees International Limited	Consumer Discretionary	98.6
09990.HK	Archosaur Games Inc.	Information Technology	98.6
02423.HK	Ke Holdings Inc.	Real Estate	98.5
01167.HK	Jacobio Pharmaceuticals Group Co., Ltd.	Health Care	98.3
01611.HK	Huobi Technology Holdings Limited	Information Technology	97.9
01717.HK	Ausnutria Dairy Corporation Ltd.	Consumer Staples	96.8
00588.HK	Beijing North Star Company Limited	Real Estate	96.6
01830.HK	Perfect Medical Health Management	Consumer Staples	95.9
03996.HK	China Energy Engineering Corporation	Industrials	95.8
03877.HK	CSSC (Hong Kong) Shipping Company	Financials	95.7
06606.HK	New Horizon Health Limited	Health Care	95.6
00400.HK	Ingdan, Inc.	Information Technology	95.0
01675.HK	AsiaInfo Technologies Limited	Information Technology	94.5
01958.HK	Baic Motor Corporation Limited	Consumer Discretionary	94.4
03800.HK	GCL Technology Holdings Limited	Information Technology	94.1
06826.HK	Shanghai Haohai Biological Technology	Health Care	94.1
02158.HK	Yidu Tech Inc.	Health Care	93.8
09969.HK	Innocare Pharma Limited	Health Care	93.7
03868.HK	Xinyi Energy Holdings Limited	Utilities	93.5
00020.HK	Sense Time Group Inc.	Information Technology	93.4
06699.HK	Angelalign Technology Inc.	Health Care	93.4
01733.HK	E-Commodities Holdings Limited	Energy	93.3
06078.HK	Hygeia Healthcare Holdings Co., Limited	Health Care	93.3
01916.HK	Jiangxi Bank Co., Ltd.	Financials	93.0
03948.HK	Inner Mongolia Yitai Coal Co.,Ltd	Energy	92.8
01970.HK	IMAX China Holding, Inc.	Communication Services	92.8
06655.HK	Huaxin Cement Co., Ltd.	Materials	92.7
03633.HK	Zhongyu Energy Holdings Limited	Utilities	92.3
01119.HK	iDreamSky Technology Holdings Limited	Communication Services	92.2
02160.HK	Microport Cardioflow Medtech Corporation	Health Care	92.0

00520.HK	Xiabuxiabu Catering Management (China	Consumer Discretionary	92.0
03698.HK	Huishang Bank Corporation Limited	Financials	91.7
00182.HK	Concord New Energy Group Limited	Utilities	91.7
00327.HK	PAX Global Technology Limited	Information Technology	91.6
01558.HK	Yichang Hec Changjiang Pharmaceutical	Health Care	91.6
09923.HK	Yeahka Limited	Consumer Discretionary	91.5
01258.HK	China Nonferrous Mining Corporation	Materials	91.5
03669.HK	China Yongda Automobiles Services	Consumer Discretionary	91.3
01068.HK	China Yurun Food Group Limited	Consumer Staples	91.3
09997.HK	Kangji Medical Holdings Limited	Health Care	91.1
00732.HK	Truly International Holdings Ltd.	Information Technology	91.1
09966.HK	Alphamab Oncology	Health Care	90.8
03836.HK	China Harmony Auto Holding Limited	Consumer Discretionary	90.7
01890.HK	China Kepei Education Group Limited	Consumer Discretionary	90.7
00603.HK	China Oil and Gas Group Limited	Utilities	90.7
00107.HK	Sichuan Expressway Company Limited	Industrials	90.7
00316.HK	Orient Overseas (International) Ltd.	Industrials	90.6
01907.HK	China Risun Group Limited	Materials	90.6
00596.HK	Inspur International Limited	Information Technology	90.5
00826.HK	Tiangong International Company Limited	Materials	90.5
09677.HK	Weihai City Commercial Bank Co.,Ltd	Financials	90.4
09968.HK	Huijing Holdings Company Limited	Real Estate	90.4
00053.HK	Guoco Group Ltd.	Real Estate	90.4
01477.HK	Ocumension Therapeutics	Health Care	90.3
02666.HK	Genertec Universal Medical Group	Financials	90.2
01566.HK	CA Cultural Technology Group Limited	Consumer Discretionary	90.1
09909.HK	Powerlong Commercial Management	Industrials	89.9
01368.HK	Xtep International Holdings Limited	Consumer Discretionary	89.7
01282.HK	Glory Sun Financial Group Limited	Financials	89.7
00778.HK	Fortune Real Estate Investment Trust	Real Estate	89.5
06088.HK	Fit Hon Teng Limited	Communication Services	89.4
02772.HK	Zhongliang Holdings Group	Real Estate	89.2
06055.HK	China Tobacco International (HK)	Consumer Staples	89.0
00468.HK	Greatview Aseptic Packaging	Materials	88.9
00737.HK	Shenzhen Investment Holdings	Industrials	88.5
02400.HK	Xd Inc.	Communication Services	88.5

01316.HK	Nexteer Automotive Group Limited	Consumer Discretionary	88.4
02218.HK	Yantai North Andre Juice Co., Ltd.	Consumer Staples	88.3
01686.HK	Sunevision Holdings Ltd.	Information Technology	88.2
01896.HK	Maoyan Entertainment	Communication Services	88.1
00317.HK	CSSC Offshore & Marine Engineering (Group)	Industrials	87.8
01860.HK	Mobvista Inc.	Communication Services	87.8
06988.HK	Joy Spreader Group Inc.	Communication Services	87.6
01691.HK	Js Global Lifestyle Company Limited	Consumer Discretionary	87.5
00553.HK	Nanjing Panda Electronics	Communication Services	87.5
02171.HK	Carsgen Therapeutics Holdings Limited	Health Care	87.2
01387.HK	China Dili Group	Real Estate	87.1
01302.HK	LifeTech Scientific Corporation	Health Care	86.9
01578.HK	Bank of Tianjin Co., Ltd.	Financials	86.9
02233.HK	West China Cement Limited	Materials	86.3
01610.HK	COFCO Joycome Foods Limited	Consumer Staples	86.2
01600.HK	Tian Lun Gas Holdings Limited	Utilities	85.9
00405.HK	Yuexiu Real Estate Investment Trust	Real Estate	85.7
01839.HK	Cimc Vehicles (Group) Co., Ltd.	Consumer Discretionary	85.2
02888.HK	Standard Chartered PLC	Financials	85.1
02099.HK	China Gold International Resources Corp.	Materials	85.0
01910.HK	Samsonite International S.A.	Consumer Discretionary	84.8
01458.HK	Zhou Hei Ya International Holdings	Consumer Staples	84.8
02255.HK	Haichang Ocean Park Holdings Ltd.	Consumer Discretionary	84.2
01375.HK	Central China Securities Co., Ltd.	Financials	84.2
02616.HK	CStone Pharmaceuticals	Health Care	83.7
00973.HK	L'occitane International S.A.	Consumer Staples	83.7
00606.HK	Sce Intelligent Commercial Management	Real Estate	83.7
01905.HK	Haitong UniTrust International Leasing	Financials	83.0
00811.HK	Xinhua Winshare Publishing & Media	Communication Services	82.9
00546.HK	Fufeng Group Ltd	Materials	82.4
06821.HK	Asymchem Laboratories (Tianjin)	Health Care	82.2
01478.HK	Q Technology (Group) Company Limited	Consumer Discretionary	82.0
00073.HK	Asian Citrus Holdings Limited	Consumer Staples	81.7
01137.HK	Hong Kong Technology Venture Company	Communication Services	81.0

01114.HK	Brilliance China Automotive Holdings Ltd.	Consumer Discretionary	80.1
00276.HK	Mongolia Energy Corporation Limited	Energy	79.5
00038.HK	First Tractor Company Limited	Industrials	78.2
00087.HK	Swire Pacific Ltd.	Consumer Discretionary	77.9
02618.HK	Jd Logistics, Inc.	Industrials	77.7
01065.HK	Tianjin Capital Environmental Protection Group	Utilities	77.0
06968.HK	Ganglong China Property Group Limited	Real Estate	76.9
01963.HK	Bank of Chongqing Co., Ltd.	Financials	76.4
09987.HK	Yum China Holdings, Inc.	Consumer Staples	76.1
00041.HK	Great Eagle Holdings Limited	Real Estate	75.0
01622.HK	Redco Properties Group Limited	Real Estate	74.4
00921.HK	Hisense Home Appliances Group Co., Ltd.	Consumer Discretionary	73.3
01765.HK	Hope Education Group Co.,Ltd.	Consumer Discretionary	71.9
06100.HK	Tongdao Liepin Group	Industrials	71.9
01415.HK	Cowell e Holdings Inc.	Information Technology	69.8
01635.HK	Shanghai Dazhong Public Utilities(Group)	Utilities	69.5
02138.HK	EC Healthcare	Health Care	68.9
01952.HK	Everest Medicines Limited	Health Care	67.7
00187.HK	Beijing Jingcheng Machinery Electric	Industrials	67.0
01330.HK	Dynagreen Environmental Protection Group	Industrials	66.8
00568.HK	Shandong Molong Petroleum Machinery	Energy	65.6
03369.HK	Qinhuangdao Port Co., Ltd.	Industrials	64.6
01913.HK	PRADA S.p.A.	Consumer Discretionary	62.4