ESG RATING FORMULA FOR FREIGHT FORWARDING INDUSTRY

by

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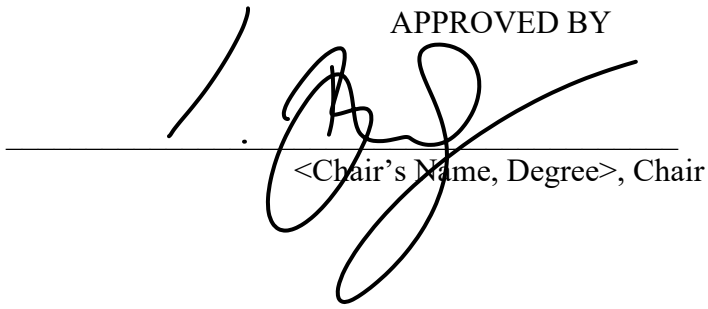
APPROVED BY



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Dedication

THIS DISSERTATION IS DEDICATED TO MY PARENTS

LATE Mr. PHILIP GEORGE AND Mrs. SOPHY PHILIP.

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ABSTRACT

ESG RATING FORMULA FOR FREIGHT FORWARDING INDUSTRY

This study focuses on ESG rating for Freight Forwarding Industry, which is mainly an asset light industry. Freight Forwarding Industry uses Ships, Aircrafts, Trucks, Warehouses etc. owned by other companies. Currently there are various ESG rating agencies which collects data from company websites, annual reports, CSR reports / Sustainability reports, media sources, company disclosures, NGO reports, stock exchange filing, survey etc. ESG does not have a Globally Uniform Standard Reporting, which makes it confusing and difficult to compare. As of now, rating agencies use different weightage, criteria, and evaluation methods irrespective of geographical location. Further, they are mainly transaction focused and not system focused. For multinational companies which operates in many countries, country specific weightages are not considered.

This study derives a new a formula for ESG rating by considering all the possible criteria, giving appropriate weightage to environment, social and governance for the respective country. The final company score will be the cumulative of, country score and business volume for the respective year. The Global ESG Score for a company will be represented as GS (Global ESG Score).

$$GS = \Sigma (CS_i * BV_i)$$

Global ESG Score = Σ (Country ESG Score * Country's Business volume)

The weightages used are globally accepted country specific indexes. This will help different stake holders (viz, shareholders, employees, business partners, government) of the company to have measurable, testable, and convincing SBTi with respect to ESG score.

To have better clarity and understanding on the new formula, a case study with 3 years real data of an MNC has been included in this study.

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INTRODUCTION

1.1 Introduction

The concept of ESG (Environment, Social and Governance) is very old. But it took the present form in 2004, after the publication of United Nation's report entitled – *Who Cares Wins.*

Almost after 20 years, most of the governments realised the need for and importance of the ideology and passed various enactments for the implementation of ESG ideology. This initiative has a rampant growth which is visible now. Majority of fortune 500 companies publishes ESG report along with their annual report.

According to, Who Cares Wins, sound corporate governance and risk management systems are crucial pre-requisites to successfully implement policies and measures to address environmental and social challenges. Companies that perform better in ESG issues can increase shareholder value by, properly managing risks, anticipating regulatory action, or accessing new markets, while at the same time contributing to the sustainable development of the societies in which they operate. Moreover, these issues can have a strong impact on reputation and branding, which brings value addition to the company. Finally, successful investment depends on a vibrant economy, which depends on a healthy civil society, which is ultimately dependent on a sustainable planet. In the long run, therefore, investment markets have a clear self-interest in contributing to better

management of environmental and social impacts in a way that contributes to the sustainable development of global society. A better inclusion of environmental, social, and corporate governance (ESG) factors in investment decisions will ultimately contribute to more stable and predictable market.

ESG is a long-term transformational force. It is immature and unrealistic to expect short term results from ESG implementation. ESG gives good results in long term. FMCG giant M/s Unilever is a classic example. M/s Unilever saved $ 1.27 Billion in costs throughout its operations by putting sustainability at the heart of business in 10 to 20 years' time. They achieved this by focusing on sustainable sourcing and addressing the risk of climate change. This growth came from new brands that Unilever launched, called Sustainable Living Brands, which embodied a strong social and environmental purpose. (Source: Unilever Annual Report on Form20-F2022)

A sustainable growth is a growth which fulfils the needs of the present without compromising the needs of the future. This includes environmental, social, and economic growth. UN SDG (United Nations - Sustainable Development Goals) is a smart move in achieving sustainable growth. There are 17 goals in UN SDG targeted to be achieved by 2030. UN SDG will be elaborated separately.

The logistics sector plays a pivotal role in the economic development of a country. However, it can also affect environmental quality as it is viewed as a major energy consuming sector.

Global logistics play a vital role in global supply chain management and contribute significantly towards economic development (Lean et al., 2014). Logistic activities can

also impact environmental quality. Thus, logistics performance and environmental quality have been a subject of intense discussion in recent years.

The concept of ESG performance is intended to provide an assessment of how well a company is managing environmental, social, and governance risks and opportunities (Christensen et al., 2022) .

As per the study by Statista (2023), Transportation industry ranks second, in Carbon dioxide emission in 2021 (20.2 %) . Power Industry is in the top with 37.7 %, Other Industrial combination – 21.4 %, building – 9 % and all other sectors – 11.7 %.

The study further divides the Carbon dioxide emission by transportation industry as – Passenger cars – 39 %, Medium & Heavy trucks – 23 %, Shipping 11 %, Aviation 9 % , Buses & Mini Buses – 7 % , Light commercial vehicles – 5 % , 2 /3 Wheelers – 3 % and Rail - 3 %

1.1.1 Environment:

Global warming is a topic which requires immediate action for the survival of the planet. It is the long-term warming of the planet's overall temperature. The main reason for increase in temperature is emission of greenhouse gas (GHG) into atmosphere.

According to Center for Climate and Energy Solutions, the global manmade greenhouse gas emission's ratio in 2015 is - Carbon dioxide (CO_2) 76 % , Methane (CH_4) - 16 % , Nitrous Oxide (N_2O) - 6 % , Hydrofluorocarbon (HFC) , Sulphur hexafluoride (SF_6) etc. jointly – 2 % . Two characters of atmospheric gases determine the strength of their greenhouse effect. The first is their ability to absorb energy and radiate

it (their “radiative efficiency “) . The second is the atmospheric lifetime, which measures how long the gas stays in the atmosphere before natural processes (e.g., Chemical reactions) removes it.

These characteristics are incorporated in the Global Warming Potential (GWP) , a measure of the radiative effect (i.e. the strength of their greenhouse effect) of each unit of gas (by weight) over a specified period of time, expressed relative to the radiative effect of carbon dioxide (CO_2) . This is often calculated over 100 years, though it can be done for any period. Gases with high GWP s will warm the earth more than an equal amount of CO_2 over the same period. A gas with a long lifetime, but relatively low radiative efficiency, may end up exerting more warming influence than a gas that leaves the atmosphere faster than the time window of interest but has a comparatively high radiative efficiency, and this would be reflected in a higher GWP.

Despite carbon dioxide’s comparatively low GWP among major greenhouse gases, the large human-caused increase in its atmospheric concentration has caused most of the global warming. Likewise, methane is responsible for a large portion of recent warming despite having a GWP much lower than several other greenhouse gases because emissions have increased drastically.

Table 1: Global warming potential & atmospheric lifetime for major greenhouse gases

Global Warming Potential and Atmospheric Lifetime for Major Greenhouse Gases			
SOURCE			
Fifth Assessment Report (Intergovernmental Panel on Climate Change, 2014).			
Greenhouse gas	**Chemical formula**	**Global Warming Potential, 100-year time horizon**	**Atmospheric Lifetime (years)**
Carbon Dioxide	CO2	1	100*
Methane	CH4	25	12
Nitrous Oxide	N2O	265	121
Chlorofluorocarbon-12 (CFC-12)	CCl2F2	10,200	100
Hydrofluorocarbon-23 (HFC-23)	CHF3	12,400	222
Sulfur Hexafluoride	SF6	23,500	3,200
Nitrogen Trifluoride	NF3	16,100	500

(Source: Fifth Assessment report (Intergovernmental panel on climate change, 2014))

According to Intergovernmental panel on climate change (IPCC), there is more than 50% chance that global temperature rise will reach or surpass 1.5 degrees C (2.7 degrees F) between 2021 and 2040 across studied scenarios, and under a high-emissions pathway, specifically, the world may hit this threshold even sooner — between 2018 and 2037

Net Zero is the amount of greenhouse gases that are removed from the atmosphere being equal to those emitted by human activity. Whereas carbon neutral means, removing the equivalent amount of CO_2 emitted, which are absorbed by carbon sinks. Carbon sinks viz oceans, forests etc. absorbs and stores more carbon from the atmosphere than they emit. The ocean absorbs CO_2 through photosynthesis by plant like organisms (phytoplankton). Also, carbon dioxide dissolves in salt water and becomes carbonic acid, which will break

apart producing bicarbonate ions and hydrogen ions. The sea algae absorb more CO_2 than trees since it can grow faster and have more coverage. The Southern Ocean (surrounding Antarctica) absorbs more carbon from atmosphere than it releases. This is because cold water dissolves and absorbs more CO_2 compared to warm water.

1.1.2 Paris Agreement on Climate Change:

In 2015 , parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached an agreement at Paris, for combating climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. This conference , which is the main decision making body of UNFCCC is known as Convention of Parties (COP). The Paris agreement is a legally binding international treaty in climate change, which is adopted by 196 parties during COP 21.

The main aim of Paris agreement is to strengthen the global response to the threat of climate change by keeping a global temperature rise in this century well below 2 degree Celsius above pre industrial level and to pursue efforts to limit the temperature increase even further to 1.5 degree Celsius. Additionally, the agreement aims to increase the ability of countries to deal with the impacts of climate change, and at making finance flow consistent with a low GHG emissions and climate resilient pathway. To achieve this temperature goal, parties aim to reach global peaking of GHG as soon as possible.

Pre Industrial period is the time before starting the industrial revolution, which is generally considered from 1750 to 1850.

Some of the other key aspects of Paris Agreements are as below :

- Global peaking and climate neutrality : To achieve this temperature goal, parties aim to reach global peaking of greenhouse gas emissions as soon as possible , recognising peaking will take longer for developing country parties, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHG in the second half of the century.
- Mitigation : The Paris agreement establishes binding commitments by all parties to prepare , communicate and maintain a nationally determined contribution (NDC) and to pursue domestic measures to achieve them. It also prescribes that parties shall communicate their NDCs every 5 years and provide necessary information for clarity and transparency.
- Sinks and reservoirs : The parties has to conserve and enhance, as appropriate , sinks and reservoirs of GHG including forests.
- Adaptation : The agreement establishes a global goal on adaptation – of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change in the context of the temperature goal of the agreement.
- Loss & Damage : The agreement recognises the importance of averting , minimising and addressing loss and damage associated with the adverse effects of climate change , including extreme weather events and slow onset events , and the role of sustainable development in reducing risk of loss and damage.
- Finance, technology and capacity building support : The Paris agreement reaffirms the obligations of developed countries to support the efforts of developing countries

to build clean, climate resilient futures , while for first time encouraging voluntary contributions by other parties. It also provides for the financial mechanism of the convention, including the Green Climate Fund (GCF)

- Climate change education, training, public awareness, public participation and public access to information are also to be enhanced under the agreement.
- Transparency , implementation and compliance : The agreement relies on a robust transparency and accounting system to provide clarity on action and support by the parties, with flexibility for their differing capabilities.

The first Global stocktaking took place in 2023 during COP 28 in Dubai. There will be subsequent stocktaking every five years to assess the collective progress in achieving the goals.

COP 28 was particularly momentous as it marked the conclusion of the first 'global stocktake' of the world's efforts to address climate change under the Paris Agreement. Having shown that progress was too slow across all areas of climate action – from reducing greenhouse gas emissions, to strengthening resilience to a changing climate, to getting the financial and technological support to vulnerable nations – countries responded with a decision on how to accelerate action across all areas by 2030. This includes a call on governments to speed up the transition away from fossil fuels to renewables such as wind and solar power in their next round of climate commitments.

1.1.3 Key highlights of COP 28

Signalling the 'beginning of the end' for the fossil fuel era

COP 28 closed with an agreement that signals the "beginning of the end" of the fossil fuel era by laying the ground for a swift, just and equitable transition, underpinned by deep emissions cuts and scaled-up finance

The call on nations to transition away from fossil fuels was part of a decision by nearly 200 Parties on the world's first 'global stocktake' to ratchet up climate action before the end of the decade – with an overarching aim to keep the global temperature limit of 1.5°C within reach.

The 'global stocktake' is considered the central outcome of COP 28 – as it contains every element that was under negotiation and can now be used by countries to develop stronger climate action plans due by February 2025.

The stocktake recognizes the science that indicates global greenhouse gas emissions need to be cut 43% by 2030, compared to 2019 levels, to limit global warming to 1.5°C. But it notes Parties are off track when it comes to meeting their Paris Agreement goals.

The stocktake calls on Parties to take actions towards achieving, at a global scale, a tripling of renewable energy capacity and doubling energy efficiency improvements by 2030. The list also includes accelerating efforts towards the phase-down of unabated coal power, phasing out inefficient fossil fuel subsidies, and other measures that drive the transition away from fossil fuels in energy systems, in a just, orderly and equitable manner, with developed countries continuing to take the lead.

In the short-term, Parties are encouraged to come forward with ambitious, economy-wide emission reduction targets, covering all greenhouse gases, sectors and categories and aligned with the 1.5°C limit in their next round of climate action plans (known as nationally determined contributions) by early 2025.

New funding for loss and damage

The conference got underway with a historic agreement on the operationalization of funding arrangements for addressing loss and damage, including a new dedicated fund under the UNFCCC. Commitments to address loss and damage started coming in moments after the decision was gavelled, totalling more than USD 600 million.

This historic agreement builds on the landmark decision a year earlier at COP 27, where nations agreed to set up a fund to support vulnerable countries and communities already experiencing the adverse impacts of climate change. Discussions on operationalizing the new funding arrangements, including this fund, for loss and damage took place during 2023 in meetings of a Transitional Committee, which brought together representatives of both developed and developing countries.

The establishment of the fund, with commitments totalling USD 661 million to date, is an important symbol of global solidarity, reflecting both the urgency of the climate emergency and a step forward in international climate justice.

Enhancing global efforts to strengthen resilience

In a major step forward, Parties agreed on targets for the Global Goal on Adaptation (GGA) and its framework, which identify where the world needs to get to, in order to be resilient to the impacts of a changing climate and to assess countries' efforts.

The GGA framework reflects a global consensus on adaptation targets and covers the themes of water, food, health, ecosystems, infrastructure, poverty eradication and cultural heritage. The decision gives adaptation progress a future orientation for the first time, reflecting aspiration and ambition, as opposed to the previous practice of measurement against past efforts. While adaptation efforts are more difficult to quantify (unlike the efforts to reduce greenhouse gas emissions) and are very specific to the locations and geographies of implementation, the GGA aims to guide adaptation planning and strategies at all levels, and to align the finance, technology and capacity-building support needed to achieve these.

The Green Climate Fund (GCF) received a boost to its second replenishment with six countries pledging new funding at COP28 with total pledges now standing at a record USD 12.8 billion from 31 countries, with further contributions expected.

Eight donor governments announced new commitments to the Least Developed Countries Fund and Special Climate Change Fund totalling more than USD 174 million to date, while new pledges, totalling nearly USD 188 million so far, were made to the Adaptation Fund at COP 28.

However as highlighted in the 'global stocktake', current climate finance flows channelled by multilateral, bilateral and private sources taken together are far short of the trillions eventually needed to support developing countries with clean energy transitions, implementing their national climate plans and adaptation efforts. In order to deliver such funding, the 'global stocktake' underscores the importance of reforming the multilateral financial architecture, scaling up climate finance through grants and concessional finance and accelerating the ongoing establishment of new and innovative sources of finance.

Linking climate action with nature conservation

COP 28 resulted in unprecedented recognition and momentum for linking efforts to address the climate and biodiversity crises. Alongside pollution, these make up the triple planetary crisis – the three, main interlinked environmental issues facing humanity. Governments were called on to consider ecosystems, biodiversity and carbon stores, such as forests, when developing their stronger national climate action plans (known as nationally determined contributions), which are due by early 2025.

This call was part of a wide-ranging, comprehensive decision by Parties on the world's first 'global stocktake' to ratchet up climate action before the end of the decade with the aim of limiting the global temperature rise within 1.5°C.

The decision emphasizes "the importance of conserving, protecting and restoring nature and ecosystems towards achieving the Paris agreement temperature goal" through protecting "terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse

gases and by conserving biodiversity." This also includes "halting and reversing deforestation and forest degradation by 2030", which would eliminate about 14% of global emissions and enhance the capacity of forests to store more carbon.

Recognizing "the need for enhanced support and investment, including through financial resources, technology transfer and capacity-building" for these combined efforts to address the climate and biodiversity crises, governments are urged to approach this based on "the best available science as well as indigenous peoples' knowledge and local knowledge systems". Nature-based solutions were also recognized in the decision on the 'global stocktake', recognizing that nature and biodiversity are keys to mitigating a heating planet and protecting vulnerable communities from the impacts of a changing climate.

Ramping up practical climate solutions

In parallel with the formal negotiations, the Global Climate Action space at COP 28 provided a platform for governments, businesses and civil society to collaborate and showcase their practical climate solutions.

Looking ahead

The negotiations on the 'enhanced transparency framework' at COP 28 laid the ground for a new era of implementing the Paris Agreement. UN Climate Change is developing the transparency reporting and review tools for use by Parties, which were showcased and tested at COP 28. The final versions of the reporting tools should be made available to Parties by June 2024.

The next two years will be critical. At COP 29, governments must establish a new climate finance goal, reflecting the scale and urgency of the climate challenge. Also at COP 30, they must come prepared with new nationally determined contributions that are economy-wide, cover all greenhouse gases and are fully aligned with the 1.5°C temperature limit.

(Source : https://unfccc.int)

1.1.4 Social :

The main characteristic of a civilized society is social equality. There cannot be any discrimination with respect to race, religion, sex, colour, nationality, language etc. in a civilized society.

Being responsible corporate citizens, companies should have various policies to achieve social equality. Below are few examples:

- Diversity & Inclusion policy
- Human Rights policy
- Health & Safety Policy
- Fair pay and living wages
- Equal employment opportunities
- Opportunity for learning and development
- Rural transformation
- Restoration of heritage

Any violation of the above should be addressed on priority to an impartial and unbiassed panel of experts and the findings, actions, recommendations etc. should be published and implemented without fail. This helps in getting the best manpower resources, eventually making the company to climb new heights. The result will be better brand value, rewarding various stake holders, viz, shareholders, employees, customers etc.

1.1.5 Governance:

According to World Economic forum, (document titled - Defining the ‘G ‘in ESG published in June 2022) corporate governance includes factors as per table below.

Table 2: Factors included in corporate governance - Defining 'G' in ESG, by WEF

Factors	Example Sub factors, key indicators
Business ethics	Purpose, value, culture, integrity beyond compliance, ESG integration, pursuit of and reporting on KPIs
Board composition	Competencies, diversity, structure, committees, oversight capacity, independence
Corporate leadership	Tone, knowledge, experience, power allocation, compensation, decision-making process, independence, and empowerment of compliance function.
Risk and crisis management	Preparedness, mitigation, past performance, regulatory compliance, segregation of duties, audit independence, shareholder rights, information governance, cyber security
Resource allocation	Capital allocation, personnel allocation, mergers and acquisition
Incentive structures	Compensation, promotion, reporting structures, defined prohibited misconduct, disciplinary measures.
Political responsibility	Lobbying, amicus briefs, campaign finance, political contribution
Transparency	Ownership, subsidiaries / holdings, open contracting, lobbying, charitable donations, countries of operation, verifiability of disclosures
Anti-corruption and integrity	Training and communications, whistle–blower protocols, due diligence, risk assessments, public procurement, government relations, gifts and entertainment, conflict of interest, remuneration and payment procedures, record keeping, financial controls, reporting and accounting, contractual obligations, public commitments, past incidents, internal investigation and remediation
Tax strategy	Tax compliance, anti-tax avoidance, tax disclosures
Fair competitive practices	Anti-collusion, anti-exclusion, anti-monopoly, anti-coercion, market-based pricing
Stakeholder engagement	Understanding corporate impact and stakeholder priorities, pursuing stakeholder-centred practices
Supply/value chain management	ESG integration, transparency, contractual obligations, countries of operation

(Source: World Economic Forum)

1.1.6 United Nations - Sustainable Development Goals (UN – SDG)

In 2018, the Sustainable Development Goals were proposed by United Nations Conference on Sustainable Development in Rio de Janeiro to tackle the urgent challenges in social, economic and environment throughout the world. The 2030 agenda for Sustainable development, adopted by all United Nations member states in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries, developed and developing – in a global partnership. They recognise that ending poverty and other deprivations must go hand in hand with strategies that improve health and education, reduce inequality, and super economic growth – all while tackling climate change and working to preserve our oceans and forests. On a plane reading we may think that all the 17 goals are not much connected to freight forwarding industry, but a professionally designed ESG policy can accommodate all the 17 Sustainable Development Goals.

The 17 Sustainable Development goals are :

1. No Poverty
2. Zero Hunger
3. Good Health and Well Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation

7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduce Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnership for the Goals

The SDGs and ESG factors are closely related in a way that the SDG can be achieved by implementing strong and good ESG policy. Corporate strategy should be focused on ESG principles so that achieving sustainability will be easy.

Table 3: Sustainable Development Goals

(Source : https://sdgs.un.org/goals#icons)

United Nations has provided a brief narration with recent developments and factual figures in their website. Sustainability, being a vital topic and closely connected to ESG, has to be addressed in detail. United Nations' brief explanation is reproduced as below:

1. No Poverty : The first goal being No Poverty means to end Poverty in all its forms everywhere. In 2020, the number of people living in extreme poverty (living on less than US $ 2.15 a day) rose to 724 million. Those living in extreme poverty struggle to fulfil the most basic needs (health , education , access to water and sanitation)Recovery from the pandemic has been slow and uneven, with extreme poverty dropping from 9.3 % in 2020 to 8.8 % in 2021. The conflict in Ukraine has disrupted global trade, leading to increased living cost that are disproportionately impacting the poor. Furthermore, climate change poses substantial threats to poverty reduction. Data suggest that by the end of 2022, 8.4 % of world's population , or as many as 678 million people , could still be living in extreme poverty. Poverty affects developed countries as well. Almost 30 million children are growing up poor in the world's richest countries. Eradicating poverty in all its forms remains one of the greatest challenges facing humanity. While the number of people living in extreme poverty dropped by more than half between 1990 and 2015 – from 1.9 billion to 731 million – too many are still struggling for the most basic human needs. A surge in action and investment to enhance economic opportunities , improve education and extended social protection to all, particularly the most

excluded, is crucial to delivering on the central commitment to end poverty and leave no one behind.

2. Zero Hunger: Zero hunger means to end hunger and to achieve food security and improved nutrition and promote sustainable agriculture. In 2022, about 9.2 per cent of the world population was facing chronic hunger, equivalent to about 735 million people - 122 million more than in 2019. Hunger and malnutrition are barriers to sustainable development because hungry people are less productive, more prone to disease, and less able to improve their livelihoods. To nourish today's 735 million hungry people and the additional 2 billion people expected by 2050, a profound change of the global food and agriculture system is needed. To achieve zero hunger by 2030, urgent coordinated action and policy solutions are imperative to address entrenched inequalities, transform food systems, invest in sustainable agricultural practices, and reduce and mitigate the impact of conflict and the pandemic on global nutrition and food security

3. Good Health and Well Being : Good health and well-being , ensures healthy lives and promote well-being for all at all ages. Great strides have been made in improving people's health in recent years. 146 out of 200 countries or areas have already met or are on track to meet the SDG target on under-5 mortality. Effective HIV treatment has cut global AIDS-related deaths by 52 per cent since 2010 and at least one neglected tropical disease has been eliminated in 47 countries. However, inequalities in health care access still persist. The COVID-19 pandemic and other ongoing crises have impeded progress

towards Goal 3. Childhood vaccinations have experienced the largest decline in three decades. Tuberculosis and malaria deaths have increased compared with pre-pandemic levels. The Sustainable Development Goals (SDGs) make a bold commitment to end the epidemics of AIDS, tuberculosis, malaria and other communicable diseases by 2030. The aim is to achieve universal health coverage, and provide access to safe and affordable medicines and vaccines for all. To overcome these setbacks and address long-standing health care shortcomings, increased investment in health systems is needed to support countries in their recovery and build resilience against future health threats.

4. Quality Education: Quality education means ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all. Progress towards quality education was already slower than required before the pandemic, but COVID-19 has had devastating impacts on education, causing learning losses in four out of five of the 104 countries studied. Without additional measures, an estimated 84 million children and young people will stay out of school and approximately 300 million students will lack the basic numeracy and literacy skills necessary for success in life. In addition to free primary and secondary schooling for all boys and girls by 2030, the aim is to provide equal access to affordable vocational training, eliminate gender and wealth disparities, and achieve universal access to quality higher education. Education is the key that will allow many other Sustainable Development Goals (SDGs) to be achieved. When people are able to get quality education they can break from the cycle of poverty. Education helps to reduce inequalities and to reach gender equality. It also empowers

people everywhere to live more healthy and sustainable lives. Education is also crucial to fostering tolerance between people and contributes to more peaceful societies. To deliver this goal, education financing must become a national investment priority. Furthermore, measures such as making education free and compulsory, increasing the number of teachers, improving basic school infrastructure and embracing digital transformation are essential.

5. Gender Equality: Gender equality aims to achieve gender equality and empower all women and girls. Women and girls represent half of the world's population and therefore also half of its potential. But gender inequality persists everywhere and stagnates social progress. On average, women in the labour market still earn 23 percent less than men globally. On average, women spend about three times as many hours in unpaid domestic and care work as men. Sexual violence and exploitation, the unequal division of unpaid care and domestic work, and discrimination in public office, all remain huge barriers. All these areas of inequality have been exacerbated by the COVID-19 pandemic: there has been a surge in reports of sexual violence, women have taken on more care work due to school closures, and 70% of health and social workers globally are women. At the current rate, it will take an estimated 300 years to end child marriage, 286 years to close gaps in legal protection and remove discriminatory laws, 140 years for women to be represented equally in positions of power and leadership in the workplace, and 47 years to achieve equal representation in national parliaments. Political leadership, investments and comprehensive policy reforms are needed to dismantle systemic

barriers to achieving Goal 5. Gender equality is a cross-cutting objective and must be a key focus of national policies, budgets and institutions. Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.

6. Clean Water and Sanitation : This goal aims to ensure availability and sustainable management of water and sanitation for all. Access to water, sanitation and hygiene is a human right. Yet billions are still faced with daily challenges accessing even the most basic of services. Water scarcity is projected to increase with the rise of global temperatures as a result of climate change. In 2020, 2.4 billion people lived in water-stressed countries. In 2022, 2.2 billion people still lacked safely managed drinking water, including 703 million without a basic water service; 3.5 billion people lacked safely managed sanitation, including 1.5 billion without basic sanitation services; and 2 billion lacked a basic handwashing facility, including 653 million with no handwashing facility at all. There has been positive progress. Between 2015 and 2022, the proportion of the world's population with access to safely managed drinking water increased from 69 per cent to 73 per cent. Investments in infrastructure and sanitation facilities; protection and restoration of water-related ecosystems; and hygiene education are among the steps necessary to ensure universal access to safe and affordable drinking water for all by 2030. It’s difficult to achieve this goal by 2030. To get back on track, key strategies include increasing sector-wide investment and capacity-building, promoting innovation and evidence-based action, enhancing cross-sectoral coordination

and cooperation among all stakeholders, and adopting a more integrated and holistic approach to water management.

7. Affordable and Clean Energy: Affordable and clean energy ensures access to affordable, reliable, sustainable and modern energy for all. Our everyday life depends on reliable and affordable energy. And yet the consumption of energy is the dominant contributor to climate change, accounting for around 60 percent of total global greenhouse gas emissions. From 2015 to 2021, the proportion of the global population with access to electricity has increased from 87 per cent to 91 per cent. In 2021, developing countries installed a record-breaking 268 watts per capita of renewable energy-generating capacity. And yet, in 2021 there were still 675 million people around the world with no access to electricity. Ensuring universal access to affordable electricity by 2030 means investing in clean energy sources such as solar, wind and thermal. Expanding infrastructure and upgrading technology to provide clean energy in all developing countries is a crucial goal that can both encourage growth and help the environment. To ensure access to energy for all by 2030, we must accelerate electrification, increase investments in renewable energy, improve energy efficiency and develop enabling policies and regulatory frameworks.
8. Decent Work and Economic Growth: The objective of this goal is Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. Multiple crises are placing the global economy under serious threat. Global real GDP per capita growth is forecast to slow down in 2023 and with ever increasing challenging economic conditions, more workers are turning to informal employment.

Globally, labour productivity has increased and the unemployment rate has decreased. However, more progress is needed to increase employment opportunities, especially for young people, reduce informal employment and labour market inequality (particularly in terms of the gender pay gap), promote safe and secure working environments, and improve access to financial services to ensure sustained and inclusive economic growth. The global unemployment rate declined significantly in 2022, falling to 5.4 per cent from a peak of 6.6 per cent in 2020 as economies began recovering from the shock of the COVID-19 pandemic. This rate was lower than the pre-pandemic level of 5.5 per cent in 2019. A persistent lack of decent work opportunities, insufficient investments and under-consumption contribute to the erosion of the basic social contract: that all must share in progress. The creation of quality jobs remain a major challenge for almost all economies. Achieving Goal 8 will require a wholesale reform of the financial system to tackle rising debts, economic uncertainty and trade tensions, while promoting equitable pay and decent work for young people.

9. Industry, Innovation and Infrastructure: This goal aims to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. The manufacturing industry's recovery from COVID-19 is incomplete and uneven. Global manufacturing growth slowed down to 3.3 per cent in 2022, from 7.4 per cent in 2021. The share of manufacturing in Least Developed Countries (LDCs) remains low, posing a serious challenge to the target of doubling industry’s share of GDP by 2030. However, medium-high and high-technology industries demonstrated robust growth rates. As of 2022, 95

per cent of the world's population was within reach of a mobile broadband network, but some areas remain underserved. Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries. To achieve this goal by 2030, it is also essential to support LDCs, invest in advanced technologies, lower carbon emissions and increase mobile broadband access.

10. Reduce Inequalities: The aim of this goal is to reduce inequality within and among countries. Inequality threatens long-term social and economic development, harms poverty reduction and destroys people's sense of fulfilment and self-worth. The incomes of the poorest 40 per cent of the population had been growing faster than the national average in most countries. But emerging yet inconclusive evidence suggests that COVID-19 may have put a dent in this positive trend of falling within-country inequality. The pandemic has caused the largest rise in between-country inequality in three decades. Reducing both within- and between-country inequality requires equitable resource distribution, investing in education and skills development, implementing social protection measures, combating discrimination, supporting marginalized groups and fostering international cooperation for fair trade and financial systems.

11. Sustainable Cities and Communities: The objective of this goal is to make cities and human settlements inclusive, safe, resilient and sustainable. Half of the world's population live in cities. This is projected to reach 70 per cent by 2050. In the developing world,

the rapid growth of cities, along with the increasing rural to urban migration, has led to a boom in mega-cities. In 1990, there were ten mega-cities with 10 million inhabitants or more. In 2014, there are 28 mega-cities, home to a total of 453 million people. This rapid urbanization outpaces the development of housing, infrastructure and services, which led to a rise in slums or slum-like conditions. In 2020, an estimated 1.1 billion urban residents lived in slums or slum-like conditions. Over the next 30 years, an additional 2 billion people are expected to live in such settlements. Sustainable development cannot be achieved without significantly transforming the way urban spaces are built and managed. Making cities safe and sustainable means ensuring access to safe and affordable housing, upgrading slum settlements, investing in public transport, creating green spaces, and improving urban planning and management in a way that is both participatory and inclusive.

12. Responsible Consumption and Production: This goal ensure sustainable consumption and production patterns. If the global population reaches 9.8 billion by 2050, the equivalent of almost three planets will be required to provide the natural resources needed to sustain current lifestyles. Global crises triggered a resurgence in fossil fuel subsidies, nearly doubling from 2020 to 2021. In 2021, governments spent an estimated $732 billion on subsidies for coal, oil and gas, nearly doubling the $375 billion spent in 2020. In 2021, although 828 million people were facing hunger, 13.2 per cent of the world's food was lost after harvest along the supply chain from farm to consumer. The trend towards sustainability reporting is on the rise, with around 70 per cent of

monitored companies publishing sustainability reports in 2021. In 2022, 67 national governments reported to the United Nations Environment Programme on the implementation of sustainable public procurement policies and action plans, a 50 per cent increase from 2020. Support should be provided to developing countries to move towards more sustainable patterns of consumption by 2030.

13. Climate Action: This goal requires urgent action to combat climate change and its impacts. Climate change affects every country on every continent. It is caused by human activities and threatens the future of our planet. With rising greenhouse gas emissions, climate change is occurring at rates much faster than anticipated and its effects are clearly felt world-wide. The impacts include changing weather patterns, rising sea level, and more extreme weather events. If left unchecked, climate change will undo a lot of the progress made over the past years in development. It will also provoke mass migrations that will lead to instability and wars. Between 2010 and 2020, highly vulnerable regions, home to approximately 3.3–3.6 billion people, experienced 15 times higher human mortality rates from floods, droughts and storms compared to regions with very low vulnerability. Sea levels continued to rise in 2022, reaching a new record since satellite measurements in 1993. Affordable, scalable solutions are now available to enable countries to leapfrog to cleaner, more resilient, and low-carbon economies. Climate change is a global challenge that requires coordinated international cooperation.

14. Life below Water : The aim of this goal is to conserve and sustainably use the oceans, seas and marine resources for sustainable development. Oceans cover three-quarters of the Earth's surface, contain 97 percent of the Earth's water, and represent 99 percent of the living space on the planet by volume. The world's oceans provide key natural resources including food, medicines, biofuels and other products; help with the breakdown and removal of waste and pollution; and their coastal ecosystems act as buffers to reduce damage from storms. However, marine pollution is reaching alarming levels, with over 17 million metric tons clogging the ocean in 2021, a figure set to double or triple by 2040. Currently, the ocean's average pH is 8.1, about 30 per cent more acidic than in pre-industrial times. Ocean acidification threatens the survival of marine life, disrupts the food web, and undermines vital services provided by the ocean and our own food security. Careful management of this essential global resource is a key feature of a sustainable future. This includes increasing funding for ocean science, intensifying conservation efforts, and urgently turning the tide on climate change to safeguard the planet's largest ecosystem.

15. Life on Land : Life on land aims to Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss. Terrestrial ecosystems are vital for sustaining human life, contributing to over half of global GDP and encompassing diverse cultural, spiritual, and economic values. Global forest coverage decreased from 31.9 per cent in 2000 (4.2 billion hectares) to 31.2 per cent (4.1 billion hectares) in 2020. In 2021,

Official Development Assistance (ODA) in support of biodiversity increased by 26.2 per cent from $7.7 billion in 2020 to $9.8 billion. In 2022, 21 per cent of reptile species are threatened. Between 2015 and 2019, at least 100 million hectares of healthy and productive land were degraded every year, impacting the lives of 1.3 billion people. Halting deforestation and restoring the use of terrestrial ecosystems is necessary to reduce the loss of natural habitats and biodiversity which are part of our common heritage.

16. Peace, Justice and Strong Institutions: This goal aims to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels. People everywhere should be free of fear from all forms of violence and feel safe as they go about their lives whatever their ethnicity, faith or sexual orientation. Civilian deaths directly related to 12 of the world's deadliest conflicts increased by 53 per cent between 2021 and 2022, marking the first rise since the adoption of the 2030 Agenda in 2015. The year 2022 witnessed a more than 50 per cent increase in conflict-related civilian deaths. High levels of armed violence and insecurity have a destructive impact on a country's development. Sexual violence, crime, exploitation and torture are prevalent where there is conflict or no rule of law, and countries must take measures to protect those who are most at risk. By the end of 2022, 108.4 million people were forcibly displaced worldwide – an increase of 19 million compared with the end of 2021 and two and a half times the number of a decade ago. In 2021, there were approximately 458,000 intentional homicides – the

highest number in the past two decades. Governments, civil society and communities need to work together to find lasting solutions to conflict and insecurity. Strengthening the rule of law and promoting human rights is key to this process, as is reducing the flow of illicit arms, combating corruption, and ensuring inclusive participation at all times.

17. Partnership for the Goals : The aim of this goal is to strengthen the means of implementation and revitalize the global partnership for sustainable development. The 2030 Agenda for Sustainable Development is universal and calls for action by all countries – developed and developing – to ensure no one is left behind. It requires partnerships between governments, the private sector, and civil society. The Sustainable Development Goals can only be realized with a strong commitment to global partnership and cooperation. The total external debt of low- and middle-income countries reached $9 trillion in 2021, recording a 5.6 per cent increase from 2020. In 2022, global exports increased sharply by 12.3 per cent, and global trade reached a record $32 trillion. In 2022, net ODA flows by member countries of the Development Assistance Committee (DAC) reached $206 billion. To be successful, everyone need to mobilize both existing and additional resources, and developed countries will need to fulfil their official development assistance commitments.

(Source : https://www.un.org)

1.1.7 Freight Forwarding Industry:

Freight forwarding includes logistics planning and execution for movement of goods. Major freight forwarders handle international movements of goods. They ensure the cargo is transported in safest, cost efficient and professional way. For this, correct data with respect to ship / aircraft schedule, voyage days, berth availability in the loading and destination ports, warehouse space availability, local transport – road / rail etc. should be known well in advance. Any disruption in the chain should be backed by plan B, so that material reaches the destination at the earliest. This reduces carbon emission, reduces cost, and improves efficiency, eventually bringing value addition. There will be different modes of transport and services involved viz:

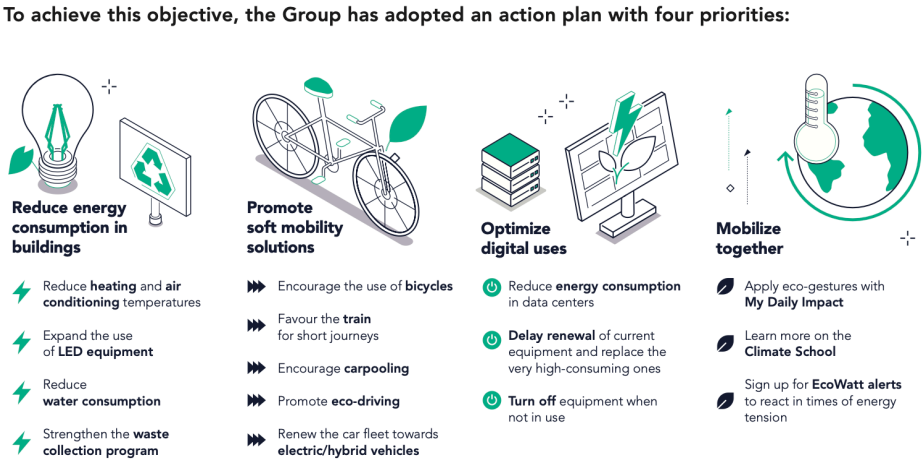
- Sea freight
- Air freight
- Road logistics
- Rail movement
- Warehousing services
- Combination of sea, air, road & rail (all or any)

1.1.8 ESG Initiatives by Freight Forwarding Companies:

Freight forwarding being a major energy consuming sector, various companies has taken initiatives to improve ESG rating specifically in Environment.

M/s CMA CGM Group, has accelerated the use of alternative fuels such as VLSFO (Very Low Sulphur Fuel Oil) and LNG (Liquefied Natural Gas) or cold ironing and scrubber system in ships to remain below the thresholds of current regulations. To discourage deforestation in West Africa, the company has suspended handling exports of timber from Gambia.

Table 4: Environment action plan with four priorities by CMA CGM group



- (Source: Executive Summary CMA CGM 2022 Sustainability Report 2022 and CMA CGM CSR Report 2022 (Non-Financial Performance Report)

In March 2022, the company launched eGreen program with two main objectives viz.

1. Reducing the digital carbon footprint by making IT systems and tools more environmental friendly (Green IT)
2. Helping the CMA CGM group to decarbonise its business up to 15 % using information technology and digital solutions (IT for Green)

In 2022, M/s Maersk invested in, additional green methanol enabled vessels bringing the total order to 19 vessels. The company has already signed memorandum of understanding with nine green fuel producers around the world. Additionally , the company took steps to move away from fossil fuel to electric energy in terminals and logistics network, including placing order for 400 + heavy duty electric vehicles in North America. Maersk is helping customers in rewiring supply chains from offshoring to nearshoring and from single source to multi sourcing, so that supply chain across air , land and sea can be sustainably operated with fewer intermediate products being traded over long distances. Additional support in decarbonising and offering low GHG emission solutions for all transport models are offered to customers, which is a part of ESG strategy.

Table 5: Maersk's ESG Strategy

(Source: Maersk Sustainability yearly Report – 2022)

The main challenge in decarbonising air is the high cost and low availability of Sustainable Aviation Fuel (SAF), which is replacement of fossil fuel in decarbonising initiatives.

Note : Sustainable Aviation Fuel (SAF), is a biofuel used to power aircraft , which is safe, reliable , fuel efficient and low carbon footprint. SAF emit equivalent carbon as fossil fuel when burned in flight, but with almost 80 % reduction in CO_2 lifecycle.

(Source: https://ghgprotocol.org)

1.1.9 ESG Rating Agencies, Rating scales and Data collection:

The major ESG rating agencies and their gradings are as below:

- Morgan Stanley Capital International (MSCI) ESG rating – AAA to CCC
- Sustainalytics ESG risk rating – Negligible to Severe
- Institutional Shareholder Services (ISS) ESG Corporate ranking – A+ to D-
- Standard & Poor (S&P) Global – 100 to 0
- Moody's ESG Score – Advanced to Weak
- Carbon Disclosure Project (CDP) climate change – A to D-
- Financial Times Stock Exchange (FTSE) Russell – 5 to 0

Currently ESG rating agencies collects data from company website, annual reports, CSR reports / sustainability reports, media source, company disclosures, NGO Reports, stock exchange filing, survey etc. There is no data collection and evaluation within the company and System evaluation is totally ignored by giving focus to transactions.

1.2 Research Problem

ESG rating does not have a uniform reporting standard globally, which makes it confusing and difficult to compare. Currently, different rating agencies gives non uniform results for the same company. Studies show the need for a uniform reporting standard to have a better comparison and to avoid confusion. In depth study of Literature review shows that difference weightage, bench marking irrespective of industry, geographical factors, emphasis on transactions than system etc. are the main reasons for divergence.

According to Larry Swedroe in his article titled – "Do wide divergences in ESG ratings doom investors "published in www.advisorperspectives.com (20th June 2021) makes comparison of ESG rating by three different agencies for six different companies. The result is not uniform. There was wide difference in total score as well as in individual factors viz environment, social and governance.

This study is to arrive at a formula for calculating ESG score of a freight forwarding company by giving equal weightage to all the three factors and operating geography. Additionally, more focus is on system than transactions.

This study will be focusing on freight forwarding industry, which is mainly an asset light industry. They use ships / aircrafts / trucks etc. owned by other companies. The difference in ESG rating by different agencies is due to difference in coverage, measurability, weightage etc.

1.3 Purpose of Research

The purpose of this study, is to arrive at a formula for ESG rating by filling the gaps with respect to:

- Criteria
- Weightage
- Geography
- Evaluation method
- Standard reporting formats
- Difficult cross company comparison
- System evaluation

1.4 Significance of the Study

The major ESG rating agencies and their gradings are as below:

- Morgan Stanley Capital International (MSCI) ESG rating – AAA to CCC
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- Moody's ESG Score – Advanced to Weak
- Carbon Disclosure Project (CDP) climate change – A to D-
- Financial Times Stock Exchange (FTSE) Russell – 5 to 0

The data used in preparing ESG Score differ widely among the rating agencies.

Currently, ESG rating agencies collect data from company website, annual report, CSR reports / Sustainability report, media source, company disclosures, NGO Reports, stock exchange filing, survey etc. Also, they are mainly transaction focused and not system focused.

The significance of this study is to arrive at a new formula for ESG rating by considering all the possible criteria, giving appropriate weightage to environment, social and governance of the respective country and by giving focus on system than transactions. This will benefit all the stake holders of the industry including governments, investors, employees, vendors, customers, bankers etc.

1.5 Research Purpose and Questions

Environment, Social and Governance have equal importance in a civilized society. Corporates have the social responsibility to implement ESG initiatives and monitor the progress regularly. If you don't measure, you can't evaluate it. There are various agencies doing ESG rating. But they do not show uniform grading due to difference in valuation approach, weightage, criteria etc... Also environmental, social and governance indexes of the country / countries of operation is also not considered for the weightage.

The purpose of this study is to derive an ESG rating formula for freight forwarding industry. The new formula will ensure all the identified gaps are filled.

The questions to be answered for arriving at the formula are:

1. What are the scoring criteria to be considered?
2. How are the scoring criteria professionally evaluated?
3. How will be the score related to the business operated in different geographies?
4. Which are the best data sources?
5. How to evaluate the system with respect to creation of policy, implementation, corrective action, periodical upgradation and updating with respect to technological advancement and contingencies.
6. How the score related to the financials / business volume
7. How to identify a justifiable index / weightage

CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

The study seeks to understand the discrepancy in ESG score for the same company evaluated by different rating agencies. Since ESG does not have a globally standardised rating system, this literature review is to identify all potential gaps and to suggest solutions to fill the gap.

García-Peñalvo, F.J., (2022) has opined that , a systematic literature review is a systematic method for identifying, evaluating, and interpreting the work of scholars and practitioners in a chosen field. Its purpose is to identify gaps in knowledge and research needs in a particular field. Systematic reviews form a broad family of methods and approaches and are made absolutely necessary by the enormous volume of scientific output in digital format that is potentially accessible .

Research on the systematic literature review process is extensive, but a justified explanation of how a narrative literature review process remains absent from the existing literature (Juntunen, M et al., 2021). The purpose of the study is to increase understanding about the narrative literature review process. The study attempts to explain the progress of a literature review process with the help of process theory, thereby, offering novel insights into the research on literature reviews in general and on narrative literature reviews across various fields of human sciences specifically.

2.2 Theoretical Framework

According to Lopez C et al., (2020), using a common set of variables would partially resolve inconsistencies and the lack of comparability across rating providers that often confuse investors. Furthermore, the study disassociates the impact of the rating agencies' different focus on "E", "S" or "G" from that of using different data. While the former, if properly disclosed, can be useful as it allows investors to choose what rating will be more in line with their preferences, the latter necessarily requires harmonization of the data collected.

It is significant to mention that, according to the study by Zumente, I et al., (2021), with the rise of responsible investments, the demand for non-financial data has multiplied. Even for those companies who have obtained an environmental, social and governance (ESG) assessment, the scores issued by rating agencies tend to depict differing pictures of the sustainability performance. The study explores the approaches employed by different ESG rating providers and it aims to evaluate the availability and correlation of multiple third-party ratings awarded to companies that are stock listed on European stock exchanges. An independent *t*-test analysis is performed to explore whether the lack of ESG rating availability in the region of Central and Eastern Europe (CEE) has a negative impact on stock's trading volume and returns. The results suggest substantial divergence in the ratings awarded to the European companies; therefore, companies should pay attention to the methodologies and practices applied by differing agencies to make sure that their efforts are appropriately evaluated, while investors should bear in mind the correlation coefficient of only 0.58 between the two most popular ESG ratings. The analysis on CEE companies

shows significant differences in the trading volume between companies that have been awarded an ESG rating and those that have not, implying the importance of the ESG score not only for the investors but also for the companies.

The study by Larcker, D.F et al., (2022), provides information by ESG rating firms to investors, analysts, and corporate managers about the relation between corporations and non-investor stakeholders interests. ESG ratings providers have come under scrutiny over concerns of the reliability of their assessments. The study reviews the demand for ESG information, the stated objectives of ESG ratings providers, how ratings are determined, the evidence of what they achieve, and structural aspects of the industry that potentially influence ratings. The purpose of the study is to help companies, investors, and regulators better understand the use of ESG ratings and to highlight areas where they can improve. The study found that while ESG ratings providers may convey important insights into the nonfinancial impact of companies, significant shortcomings exist in their objectives, methodologies, and incentives which detract from the informativeness of their assessments.

Billio, M et al. (2021) analysed that ESG rating criteria used by prominent agencies showed there is a lack of a commonality in the definition of ESG (i) characteristics, (ii) attributes and (iii) standards in defining E, S and G components. Their study provides evidence that heterogeneity in rating criteria can lead agencies to have opposite opinions on the same evaluated companies and that agreement across those providers is substantially low. Those alternative definitions of ESG also affect sustainable investments leading to the

identification of different investment universes and consequently to the creation of different benchmarks. This implies that in the asset management industry, it is extremely difficult to measure the ability of a fund manager if financial performances are strongly conditioned by the chosen ESG benchmark. Finally, the study finds that the disagreement in the scores provided by the rating agencies disperses the effect of preferences of ESG investors on asset prices, to the point that even when there is agreement, it has no impact on financial performances.

According to Veenstra, E.M et al., (2020), offering environmental, social, and governance (ESG) assessment and certification can invite organizations to adapt their activities to accommodate environmental, social, and governance concerns. Prior research points to shortcomings in accurately monitoring and assessing organizational sustainability performance. This contribution aims to highlight the role of ESG indicators as motivating organizations to prioritize sustainability goals. Theory and research elucidate that the definition of specific goals, guides the degree of effort organizations invest, the priorities they set, and the persistence they display in pursuing targeted outcomes. The extent to which performance assessments of rating agencies specify and integrate ESG concerns thus impacting the likelihood that organizations will address each of these sustainability targets. The likely impact of ESG indicators was examined by consulting ratings, rankings, and indexes from 130 rating agencies included in the Reporting Exchange Platform. The study identified and categorized 237 unique indicators in over 600 corporate ESG indicators. Results reveal that themes covered are less well specified in the governance domain than in the environmental and social domain. Further, different dimensions are emphasized

depending on which stakeholder is addressed (investors, consumers, companies). Taken together, the study conclude that this makes it more difficult for organizations to adopt a holistic approach to the achievement of sustainability goals.

Research by Kimbrough, M.D et al., (2022), shows US companies are increasingly responding to demand from investors and other stakeholders for transparent information about company's environmental, social, and governance (ESG) performance by issuing ESG reports on a voluntary basis. The study examined whether these reports help to resolve the previously documented disagreement among ESG rating agencies about individual company's ESG performance. Consistent with this possibility, the study finds that, disagreement among ESG rating agencies is lower for firms that voluntarily issue ESG reports. In particular, disclosures about the environmental and social dimensions help reduce disagreement about the company's performance on those dimensions. Using textual analysis, the study found that longer reports are associated with reduced disagreement among ESG raters, while reports with more positive tones or that use a greater number of sticky words are associated with heightened disagreement. The association between ESG disclosure and ESG disagreement is more pronounced when firms obtain third-party attestations on their ESG reports, especially from accounting firms, and when firms adhere to advanced levels of Global Reporting Initiative (GRI) reporting standards. Finally, ESG disagreement is positively associated with disagreement and uncertainty in the capital market, providing strong motivation for firms to voluntarily disclose ESG reports to reduce ESG disagreement.

According to Muñoz-Torres et al., (2019), the development of sustainable finance favours the appearance of environmental, social, and governance (ESG) rating agencies as providers of ESG information and tools for measuring the contribution of companies to sustainable development. The study attempts to show whether assessment methods adopted by eight ESG agencies are consistent with the Integrative ESG Sustainable Value Framework proposed according to the literature and sustainable business models' (SBMs) conceptualization. Exploratory research analyses whether these methods are identifying and/or driving more SBMs that contribute to promote the creation of sustainable value, seeking to generate economic, social, and environmental value. Results indicate that ESG rating agencies identify the short-term results in the internal organizational perspective mainly in the environmental dimension, whereas social aspects are emphasized from the external organizational perspective. However, ESG rating agencies are not driving more SBMs that must integrate ESG criteria in a holistic way with a short-term and long-term perspective.

It's also significant to mention that the study by Serafeim, G et al., (2023) , on Stock price reactions to ESG news, found that the presence of high disagreement between raters, the relation between news and market reactions weakens, while the rating with the most predictive power predicts future stock returns. The study was on, whether environmental, social, and governance (ESG) ratings predict future ESG news and the associated market reactions. The main finding is , that the consensus rating predicts future news, but its predictive ability diminishes for firms with large disagreement between raters. The relation between news and market reaction is moderated by the consensus rating.

Overall, while rating disagreement hinders the incorporation of value-relevant ESG news into prices, ratings predict future news and proxy for market expectations of future news.

Researches by Berg, F. et al., (2022), investigates the divergence of environmental, social, and governance (ESG) ratings based on data from six prominent ESG rating agencies: Kinder, Lydenberg, and Domini (KLD), Sustainalytics, Moody's ESG (Vigeo-Eiris), S&P Global (RobecoSAM), Refinitiv (Asset4), and MSCI. The study documents the rating divergence and map the different methodologies into a common taxonomy of categories. Using this taxonomy, the study decompose the divergence into contributions of scope, measurement, and weight. Measurement contributes 56% of the divergence, scope 38%, and weight 6%. Further analysing the reasons for measurement divergence, it was found that a rater effect where a rater's overall view of a firm influences the measurement of specific categories. The results call for greater attention to how the data underlying ESG ratings are generated.

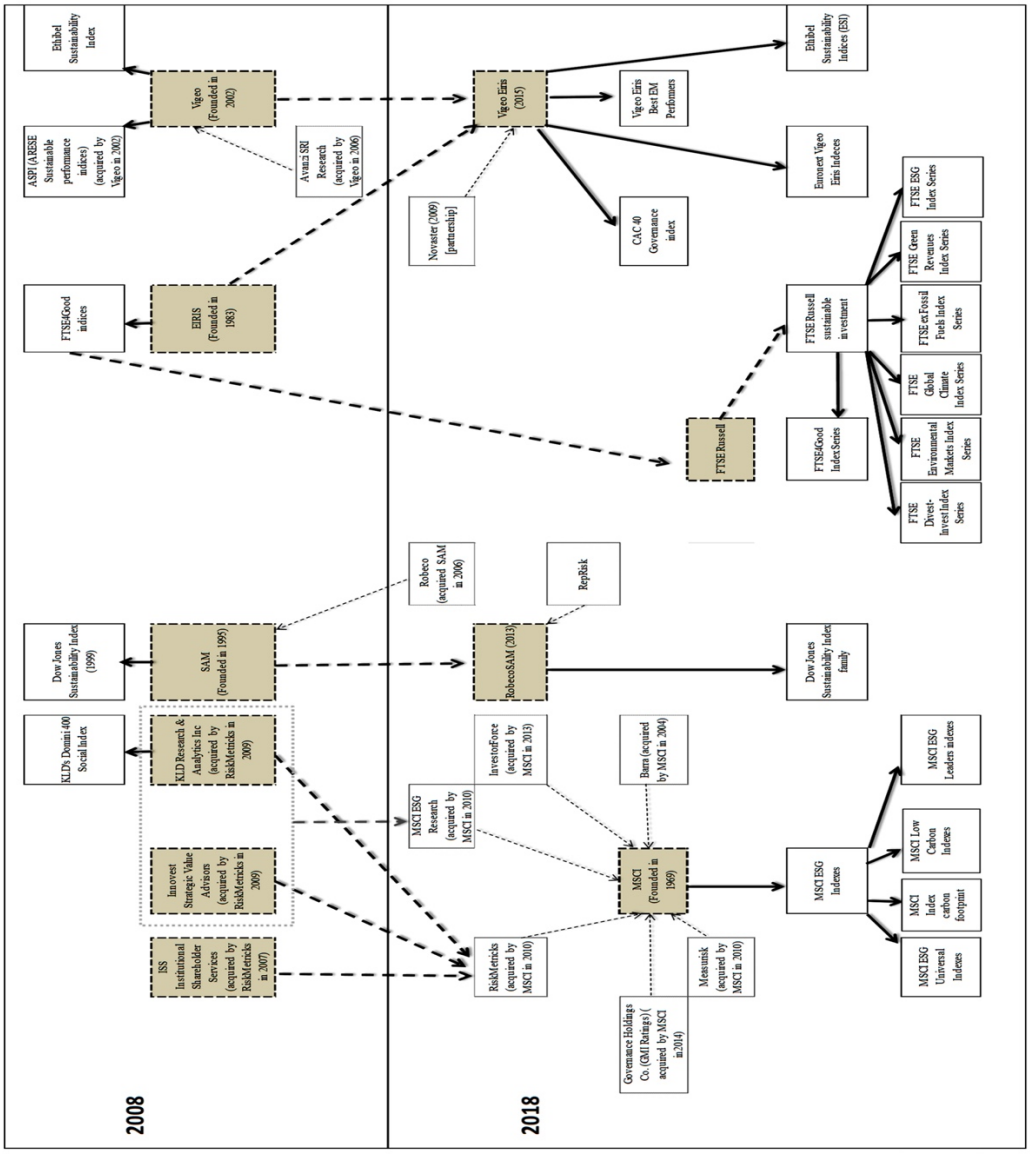
According to Tsang Y.P., et al (2023), the popularity of environmental, social, and governance (ESG) performance measurement has dramatically increased, particularly to listed companies, for supporting various investment decisions. Companies with high ESG scores imply that their ongoing business development is recognised to be economically, socially, and environmentally sustainable. The existing measurement frameworks are difficult to be implemented in small and medium enterprises with unstructured and non-standardised business data, especially in logistics and supply chain management practice. Through consolidating the opinions from logistics practitioners, it is found that fair labour

practice, reverse logistics and human rights in supply chains are the most essential areas to further enhance ESG capabilities in the logistics industry. In addition, the viability of the ESG performance measurement has been validated, and thus the sustainable and human-centric logistics practice can be developed to achieve business sustainability.

The study by Escrig-Olmedo, E. et al., (2019), reveals that , the ESG rating agency industry has gone through a lengthy merger and acquisition process, which has redefined the industry map with bigger, more professionalized and finance industry-connected companies. In the last decade, the ESG rating industry has grown considerably and has already undergone a phase of consolidation, not only with merger and acquisition processes among the existing ESG rating agencies but also through the new entrance of financial rating and information provider agencies.

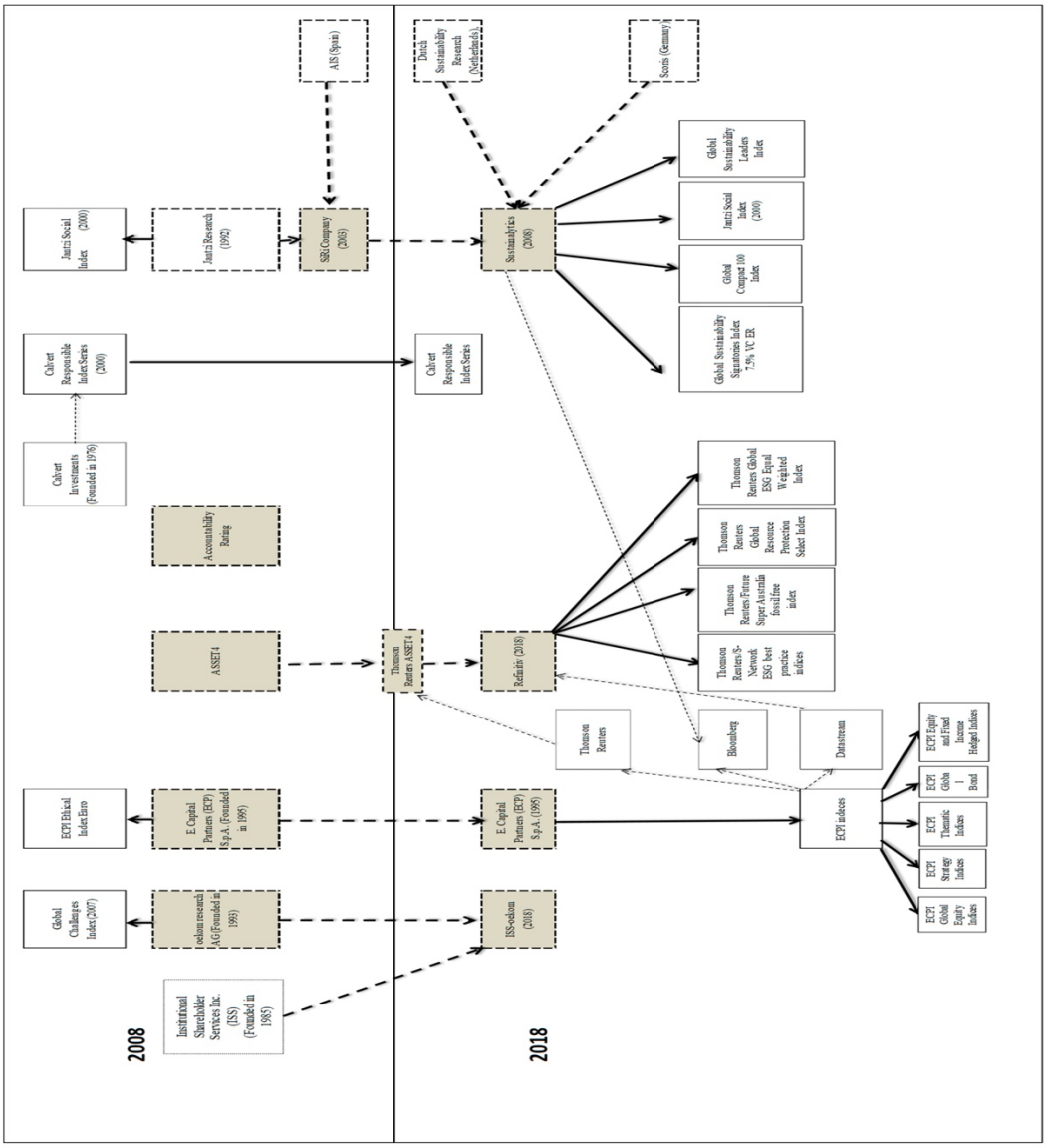
The assessment process of the existing rating agency and the new / merged rating agency may not be the same always. So, there is a high chance of confusion and disagreement, if the rating given for a company by a firm got merged or evaluated by another firm which follows a totally different assessment process for ESG rating. Below charts explain the mergers and acquisitions occurred from 2008 to 2018.

Table 6: Mergers and acquisitions occurred from 2008 to 2018 in ESG rating agencies (1)



(Source : Escrig-Olmedo, E., Fernández-Izquierdo, M.Á., Ferrero-Ferrero, I., Rivera-Lirio, J.M. and Muñoz-Torres, M.J., 2019. Rating the raters: Evaluating how ESG rating agencies integrate sustainability principles.)

Table 7: Mergers and acquisitions occurred from 2008 to 2018 in ESG rating agencies (2)



(Source : Escrig-Olmedo, E., Fernández-Izquierdo, M.Á., Ferrero-Ferrero, I., Rivera-Lirio, J.M. and Muñoz-Torres, M.J., 2019. Rating the raters: Evaluating how ESG rating agencies integrate sustainability principles.)

According to Jacobs, B.I et al., (2022), due to the lack of a common framework for ESG rating construction, ESG ratings on companies from different vendors show substantial disparities. These disparities have real consequences for asset owners, policymakers, academics, and asset managers. Investors need to be aware of and understand these disparities when choosing ESG rating data and implementing ESG integration. Despite noisy ESG ratings, disentangling may be suitable for assessing the efficacy of multidimensional ESG data in the presence of other characteristics impacting stock returns

Li et al., (2020) analysed the performance of two portfolios created in the US and Europe based on the assessment of two different ESG data providers. The results, despite the identical portfolio construction process, showed a difference of the cumulative performance in both portfolios of 10.0% in Europe and 24.1% in the US over 8 year period, stressing the importance of the divergence arising from the different ratings each company receives. The results imply that choosing a different ESG rating can significantly alter the investment universe and therefore, the expected returns.

Many challenges are faced by investors who are choosing an ESG ratings provider because of the sheer number and different types of providers available and the lack of correlation and consistency in ratings produced by the different providers. The study also demonstrates , two well-known, well established providers with robust methodologies can assign different ratings to the same company, but that hurdle alone should not prevent investors from considering or adopting an ESG strategy. Researches also opined that

investors should study the various ESG ratings providers' methodologies to select the provider whose ratings align more closely with the investor's own views on ESG.

Researches by Gibson Brandon et al., (2021), opines that , a lot of attention has been drawn to divergence of ratings issued by different ESG rating providers for the same firm. For example, in a Wall Street Journal article, Mackintosh (2018) points out that Tesla was rated highly by MSCI regarding environmental issues in 2018. In contrast, FTSE came to the opposite conclusion, rating Tesla poorly on environmental matters.

The study further states that rating disagreement is generally more pronounced for firms that belong to the consumer durables and telecommunications industries, providing important insights for financial analysts that cover firms from these sectors.

All providers supply a total ESG score, an environmental score, a social score, and a (corporate) governance score. In addition, M/s Inrate AG, also provides a labor score. Since the labor score captures a social topic, the study uses the average of the original social and the labor score as the social score.

A recent study by Kim, S.E, (2023) opines that, as more attention is given to environmental, social, and governance considerations of firms, ESG data and ratings providers are serving an increasingly important function in the corporate discourse. It is reported that there were more than 160 ESG data and ratings providers in 2020, and more than 600 ESG ratings and rankings products available globally as of 2018. Even as the ESG provider and product markets have grown exponentially, however, the lack of ESG data has been cited as an impediment to a broader embrace of the ESG movement. One source

of this perception of inadequacy originates from the widely reported variance among ESG assessments. Variance among assessments may be a source of concern if it results from inconsistent application of methodologies, poor quality data, conflicts of interest, error, prejudice, or bias. At the same time, convergence is not necessarily a proxy for reliability and may itself also be the product of inflation, laxity, groupthink, or monopolistic market conditions. This was the case with the credit ratings of structured finance products during the 2007–2008 period, which were highly convergent, yet were later found to have been inflated and believed to have been the catalyst of one of the most devastating financial recessions in recent history.

Liu, M., (2022) has studied ESG rating data of Chinese A-share listed companies. The study observes that , it is widely documented in both academic literature and investment practices that ESG ratings of a given firm can be extremely different across rating providers. However, despite the disagreement in ESG ratings being subject to a lot of criticism, only few studies have examined the sources and determinants of rating divergence. The study examines whether quantitative ESG disclosure is conducive to rating convergence among agencies. It's found that greater quantitative ESG disclosure, especially disclosure on environmental and social pillars, results in greater divergence of ESG ratings. When employing a difference-in-differences design with a quasi-experiment of disclosure guidance introduced by Hong Kong Exchange, the results show that if ESG disclosure is standardized and comparable, more numerical information reduces agencies' rating disagreement instead. Further analyses show that the lack of agreement is related to a low rating in the future. The study also finds that the effect of quantified ESG disclosure

on rating divergence is more pronounced when firms are single businesses rather than diversified businesses with poor ESG performance rather than good ESG performance. The results are robust to alternative measures of ESG rating divergence, alternative sample, two-way clustering, and additional control variables. Taken together, the results indicate that quantitative ESG disclosure degenerates rating disagreement.

Capizzi, V. et al., (2021) did a study in Divergence on ESG rating with respect to Italian listed companies found that, sustainability issues in finance has brought a proliferation of environmental, social, and governance (ESG) metrics and rating providers that results in divergences among the ESG ratings. The study investigates these divergences through a framework that decomposes ESG ratings into a value and a weight component at the pillar (i.e. E, S, and G) and category (i.e. sub-pillar) levels. The main finding is that weights' divergence and social and governance indicators are the main drivers of rating divergences. The study stresses the need to understand what is really measured by the ESG rating agencies and the need for standardization and transparency of ESG measurement to favour a more homogeneous set of indicators.

According to Hughes, A. et al., (2021) , Environmental, Social and Governance (ESG) rating agencies have been instrumental in mainstreaming sustainability in the investment industry. Traditionally, they have relied on company disclosure and human analysis to produce their ratings. More recently, however, technological innovations in data scraping and Artificial Intelligence (AI) have undercut the traditional approach. Tech-driven Alternative ESG ratings are becoming increasingly influential, yet remain critically

underexplored in sustainable finance scholarship. The study shows that differences in ratings are driven by four main factors: differences in ESG theorisation based on key issue selection, differences in data sources analysed, differences in weighting structures for rating aggregation, and finally differences in controversy analysis.

Research by Zou, J, et al., (2023) investigation on the influence of ESG rating confusion on bond spreads, with special emphasis on Chinese data reveals that , despite the recognition of ESG rating confusion, their effects on the bond market remain less explored. Leveraging a corporate bond pricing model, the study reveals that ESG rating confusion widens the bond spread. The study identified environmental and weighting inconsistencies as crucial sources of ESG rating confusion. The findings underscore the necessity of a standardized ESG rating system to enhance investor confidence and support ESG-related project financing.

The study by Rönnberg, V. (2024) ,focuses on reviewing the ESG (Environmental, Social, Governance) scoring system and assessing its comparability and accuracy with the goal of comparing and measuring ESG ratings performance. ESG scoring has become an important tool to assess the sustainability of companies and to better guide sustainable investments. The study sought to determine how much variation there is between the scores given by different ESG rating agencies. It also seeks to understand the factors that cause the differences in scores. The research is based on previous literature and studies whose findings suggest that different ESG rating scores for the same company may vary significantly. This study uses a quantitative and deductive research method. The

quantitative approach was chosen because it provides an objective and systematic way of analysing large amounts of data. The deductive approach was also used to conduct the research. The deductive approach helps and enables the study to explore these differences in a systematic way and to analyse possible root causes. Four different ESG rating agencies were selected for the study and their scores were compared across 100 of the largest US companies by market capitalization. The results of the study show that there are clear differences between the scores given by ESG rating agencies. This difference is largely due to the weightings used by the ESG rating agency and the scoring methodology, which also differ significantly.

Sandu, D. M. (2024) has studied the ESG risk rating disagreement across two-well established rating providers and its implication on portfolio performance. By deriving a proxy for rating disagreement using the average standard deviation of pairwise percentile ranking across Refinitiv and Sustainalytics, this study examined the risk-adjusted performance of high and low disagreement portfolios. For each portfolio, four risk-adjusted measures (Sharpe ratio, Treynor ratio, Modigliani Squared and Jensen's alpha) were calculated. In general, the study found that the best performer has the low-disagreement portfolio, but the results were not favourable for any portfolio.

According to Mao Z et al., (2024) , the existing studies on the relationship between ESG and earnings management provide mixed evidence and ignore ESG rating divergence. The study used samples of Chinese listed firms from 2009 to 2021, to examine the effect of ESG performance on earnings management under different levels of ESG rating divergence. The results reveal a negative association between ESG performance and

earnings management. Meanwhile, among firms with high (low) ESG rating divergence, our results show that the degree of earnings management rises (falls) when the firms engage in ESG practices. The findings are robust to alternative variable definitions and the Heckman two-stage selection model. In addition, the study excluded alternative explanations and consider the effect of greenwashing. Cross-sectional analyses show that the moderating effect of ESG rating divergence is significant only among firms with greater CEO power and higher agency costs, suggesting that agency problems are the mechanism by which ESG rating divergence positively moderates the relationship between ESG performance and earnings management. This study advances the existing research on ESG and earnings quality by presenting new empirical evidence and revisits ESG rating divergence through the lens of agency theory, revealing that management could use ESG for opportunistic behaviour in the presence of ESG rating divergence. The study also shows that the divergence in ESG ratings can affect the economic consequences of firms' ESG practices, offering insights for future research on ESG and ESG rating divergence and for regulators to improve the regulation of ESG disclosure and rating.

The study by Liao Y et al., (2024), reveals that the global financial markets have experienced a significant development with the emergence of the notions of "sustainable development" and "green investing". This development involves the integration of Environmental, Social, and Governance (ESG) information into investment decisions. A significant advancement in the worldwide financial market is the integration of ESG (Environmental, Social, and Governance) data into investing choices. ESG ratings have emerged as a significant benchmark for investors in this scenario. However, there is now a

considerable disparity in the rating outcomes provided by various rating agencies for particular companies. This disparity distorts the ratings and thus triggers exaggerated reactions from investors. This study investigates the influence of differences in ESG ratings on investor sentiment and its underlying mechanism using a sample of businesses listed on the A-share market in Shanghai and Shenzhen between 2015 and 2022. Research has shown that when there is a significant difference in ESG ratings, it has a detrimental effect on investor sentiment. This means that when there is a large divergence in ESG ratings, it negatively affects investor sentiment, leading to a decrease in their evaluation and confidence in the company. Empirical investigations demonstrate that the focus and consideration given by analysts and research reports play a crucial role in how differences in ESG ratings impact investor sentiment. Additional investigation reveals that the adoption of GRI standards and the verification of ESG reports by third-party entities can somewhat reduce the influence of divergence on the fluctuation of investor mood, as well as enhance investor acknowledgment of revealed information. The study examines the influence of disagreement in ESG ratings on investor mood, contributes to existing research on ESG ratings dispute, and presents empirical evidence to support the development of China's ESG ratings system and the establishment of a "rational" investment market.

According to Rubino M et al., (2024) , the lack of convergence between rating agencies in the assessment of environmental, social, and governance (ESG) aspects of companies leads to the so-called ESG rating disagreement. Although this phenomenon causes confusion and uncertainty among investors, it is still little investigated. Previous

research has only focused on some determinants of the disagreement, mainly related to nonfinancial disclosure and corporate aspects, while broader determinants remain unexplored. This study aims to fill this gap by analysing the effects of market value, industry sensitivity, and institutional context on disagreement between two different rating providers. To achieve this goal, a cross-sectional analysis was conducted for 1809 companies from the S&P 1200 Global Index. The results show that companies with a better market rating, belonging to critical sectors and located in countries with a better institutional environment, have a lower level of ESG disagreement.

Research by Liu X et al., (2024), opines that , following the increasing importance of sustainable development and the popularity of ESG investing activities, ESG ratings have grown to be crucial references for investors' decision-making. However, there are substantial disagreements among different rating agencies. This study examines the impact of ESG rating disagreement on idiosyncratic return volatility using data from five prominent rating agencies: SynTao Green Finance, Huazheng, Hexun, Bloomberg, and Rankins ESG Ratings. The findings suggest that ESG rating disagreement will increase idiosyncratic return volatility. This relation is driven by investor attention and noise trading. Heterogeneity tests reveal that the higher analyst coverage and greater analyst forecast bias, the more pronounced the impact of ESG rating disagreement on idiosyncratic return volatility. While firms with foreign investors and more institutional investors can alleviate the interference.

According to Wang, H et al., (2024), ESG rating have progressively become an important reference index within the investment decision-making process. However, divergence might arise among diverse ESG rating agencies when appraising the same company. Such divergence affects investors' perception of a companies' ESG performance, consequently affecting its excess stock returns. The study delves into the mechanics behind ESG rating divergence on excess stock returns based on the ESG rating data encompassing Shanghai and Shenzhen A-share listed companies in China spanning from 2018 to 2022. The research reveals the following findings: Firstly, ESG rating divergence negatively impact stock excess return rates. Investor sentiment, ESG improvement potential and information transparency play a positive moderating role in the influence of ESG rating divergence on excess stock returns. Secondly, there are heterogeneity characteristics in the impact of ESG rating divergence on excess stock returns. Companies that actively disclose ESG reports, low-carbon companies, companies with QFII, and those with high divergence and high rating experience a greater impact form ESG rating divergence on their excess stock returns. Thirdly, the social rating divergence has the greatest impact on excess stock returns, followed by environmental and governance levels.

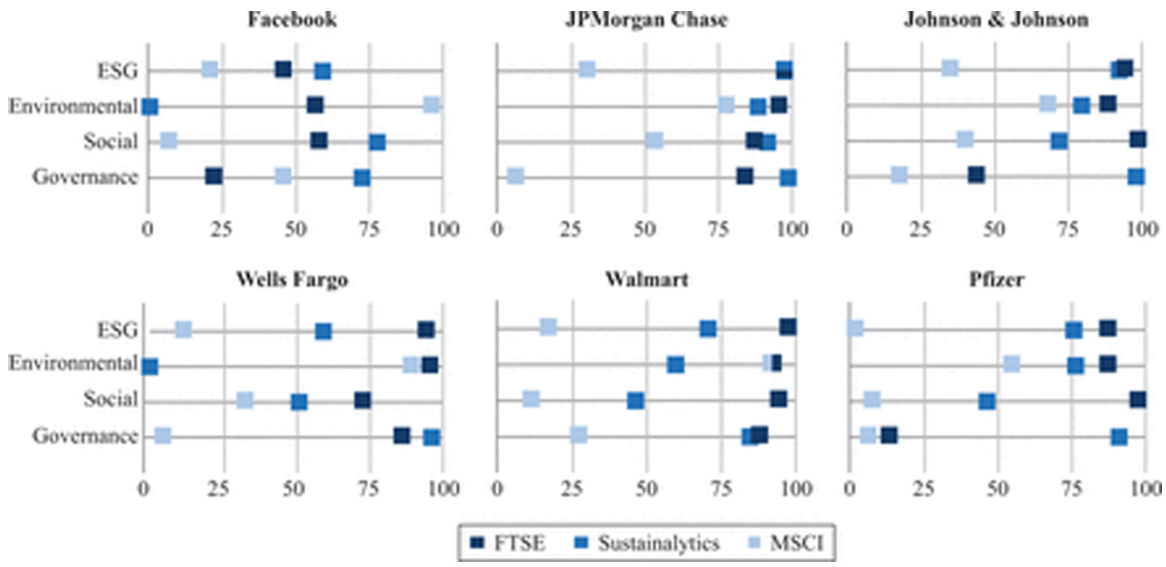
Wang, J et al., (2024) studied on ESG rating disagreement and stock returns with emphasis to Chinese capital market and observed that environmental, social, and governance (ESG) ratings are receiving increasing attention in the financial market. However, ESG rating disagreement creates a barrier to ESG investment. The study explores empirically how ESG rating disagreement affects the Chinese capital market based on rating data from six agencies. The results show that ESG rating disagreement has a

significant negative impact on stock returns. Mechanism analysis indicates that ESG rating disagreement can lead to decreased investor sentiment and, subsequently, a drop in stock returns. Heterogeneity analysis reveals that this negative impact is more pronounced in non-state-owned enterprises, companies with higher average ESG ratings, and those with fewer institutional investors. Moreover, the governance dimension is the crucial factor driving the drop in stock returns.

The study by Avramov, D et al., (2022) , analyses the asset pricing and portfolio implications of an important barrier to sustainable investing—uncertainty about the corporate ESG profile. In equilibrium, the market premium increases and demand for stocks declines under ESG uncertainty. In addition, the CAPM alpha and effective beta both rise with ESG uncertainty and the negative ESG-alpha relation weakens. Employing the standard deviation of ESG ratings from six major providers as a proxy for ESG uncertainty, provide supporting evidence for the model predictions. The findings help reconcile the mixed evidence on the cross-sectional ESG-alpha relation and suggest that ESG uncertainty affects the risk-return trade-off, social impact, and economic welfare.

According to Larry Swedroe in his article titled – "Do wide divergences in ESG ratings doom investors "published in www.advisorperspectives.com (20th June 2021) makes comparison of ESG rating by three different agencies for six different companies. The result is not uniform. The reason includes difference in valuation approach, weightage given to environment, social and governance by different agencies are different and varying from industry to industry etc. In the below chart environmental factor for Facebook is 1 percentile by Sustainalytics and 96 percentiles by MSCI.

Table 8: Comparison of ESG rating by 3 different agencies for six different companies



(Source : Data from MSCI , FTSE Russell and Sustainalytics)

In the above study Six company's ESG ratings by Three agencies were analysed. The Companies are:

- Facebook
- JP Morgan Case
- Johnson & Johnson
- Wells Fargo
- Walmart
- Pfizer

The Three rating agencies are :

- FTSE (Financial Times Stock Exchange) Russell ESG Rating
- MSCI (Morgan Stanley Capital International) ESG ratings
- Sustainalytics

Let's evaluate the case of M/s Facebook.

Environment score given by M/s Sustainalytics is almost zero (minimum) , whereas M/s MSCI is close to 100 (maximum) and M/s FTSE gave slightly over 50, which is the midway. When it comes to the score for social element, MSCI gave low score whereas Sustainalytics gave higher score which is above 75 and FTSE gave slightly high than 50. For Governance element FTSE gave close to 25, whereas MSCI and Sustainalytics's scores were close to 50 and 75 respectively. Considering the overall ESG score MSCI and FTSE gave less than 25 and 50 respectively , whereas Sustainalytics gave higher than 50 . So to conclude the case of M/s Facebook , all the three rating agencies gave scores with wide variance.

Let's evaluate the second case of M/s JP Morgan Chase :

Environment score given by M/s Sustainalytics , M/s FTSE and M/s MSCI are in between 75 and 100, which shows some similarity. For social element, Sustainalytics and FTSE gave scores in between 75 and 100, whereas MSCI gave only close to 50. Governance element 's score also is almost in line with social score . Sustainalytics and FTSE gave scores in between 75 and 100, whereas MCSI score is very low – close to minimum. The consolidated ESG score given by Sustainalytics and FTSC are similar whereas MSCI is close to 25. On an overall analysis Sustainalytics and FTSE gave almost similar scores , whereas MCSI gave lesser score

compared to others. So to conclude the case of M/s JP Morgan Chase , FTSE and Sustaianalytics gave similar score , without much variation. But MSCI's scores are much lower than the other two rating agencies.

Let's evaluate the third case – M/s Johnson & Johnson :

Environment score given by M/s Sustainalytics and M/s FTSE is between 75 and 100, whereas MSCI is between 50 and 75. For social element, the scores awarded by three agencies have wide variations viz FTSE gave scores in close to 100, Sustainalytics gave slightly less than 75 and MSCI awarded between 25 and 50. Governance element 's score has wide variance : MSCI is less than 25 , FTSE is slightly less than 50 and Sustainalytics is close to 100. But the overall ESG score awarded by Sustainalytics and FTSE are similar (between 75 and 100) , whereas MSCI is between 25 and 50. So the analysis in the case of M/s Johnson & Johnson is MSCI's score is much lesser than other two rating agencies, even though there are variations in FTSE and Sustainalytics 's score but not so big as MSCI.

Let's evaluate the fourth case – M/s Wells Fargo :

Environment score given by M/s MSCI and M/s FTSE is close to 100, whereas Sustainalytics is close to minimum. For social element, the scores awarded by three agencies have no similarity, MSCI between 25 and 50 , Sustainalytics – slightly above 50 and FTSE – close to 75. Governance element 's score by FTSE and Sustainalytics are almost equal (between 75 and 100) , whereas MSCI is close to minimum. The overall ESG score awarded by MSCI is less than 25 , Sustainalytics is slightly higher than 50 and FTSE close to maximum. So , to conclude ,almost all the individual elements and consolidated score have wide variance.

Let's evaluate the fifth case – M/s Walmart :

Environment score given by M/s MSCI and M/s FTSE is close to 100, whereas Sustainalytics is slightly higher than 50. For social element, the scores awarded by three agencies have no similarity, MSCI is close to minimum , Sustainalytics – slightly less than 50 and FTSE – close to 100. Governance element 's score by FTSE and Sustainalytics are almost equal (between 75 and 100) , whereas MSCI is close to 25. The overall ESG score awarded by MSCI is less than 25 , Sustainalytics is close to 75 and FTSE close to maximum. So , to conclude ,almost all the three elements and consolidated score have wide variance .

Let's evaluate the case of M/s Pfizer.

Environment score given by M/s Sustainalytics and FTSE is between 75 and 199, whereas M/s MSCI is close to 50. When it comes to the score for social element, MSCI gave low score whereas Sustainalytics is on the midway , close to 50 and FTSE gave close to 100. For Governance element FTSE and MSCI gave very less - whereas Sustainalytics's gave a higher score close to 100. Considering the overall ESG score MSCI gave less than 25 (close to minimum) , whereas Sustainalytics gave close to 75 and FTSE higher than 75 . So to conclude the case of M/s Pfizer , all the three rating agencies gave scores with wide variance.

It is significant to analyse the study by Billio, M et al., (2021), to understand the similarities , variances , source data , number of criteria , main risk factors etc. used by ESG rating agencies in arriving at the score.

Table 9: Key differences between major ESG rating agencies

	MSCI	Vigeo- Eiris	Refinitiv	Sustainalytics	ISS Oekom	RobecoSAM	ECPI	Bloomberg	FTSE Russell
Rating score	CCC to AAA	−− to ++	D- to A+ and 0 to 100	0 to 100	D- to A+	0 to 100	F to EEE	0 to 100	0 to 5
History	1990	1983	2002	1992	1985	1995	1997	2008	2001
Headquarter	New York, United States	Paris, France	Toronto, Canada	Amsterdam, Netherlands	Munich, Germany	Zurich, Switzerland	Milan, Italy	New York, United States	London, United Kingdom
Sources	Company disclosure, 1600+ Media sources, 100+ specialized dataset	Company disclosure, Recommendation, Conventions	Company websites, Company reports, NGO websites, Media and news, Stock exchange filings	Public disclosure, Media and news, NGO reports	Publicly available information, Interview with stakeholders, information on company policies and practices, company direct contact	Survey approach	Company reports, Media and news, Regulatory data, Bloomberg and Thomson Reuters, University networks	Company reports, Publicly available information, Company direct contact	Publicly available information, Company direct contact, Other sources (governments and NGOs)
N. Criteria	37	38	178	155	100	74	80/86	120	300
Main risk factors	*Environmental* Climate change, Natural resources, Pollution and waste, Management, Environmental opportunities *Social* Product liability, Human capital, Stakeholder needs, Social opportunities *Governance* Corporate behavior, Corporate governance	Human resources, Human rights, Environment, Business behavior, Community, Involvement, Corporate governance	*Environmental* Resource use, Emission, Innovation *Social* Workforce, Human rights, Community, Product responsibility *Governance* Management, Shareholders, CSR strategy	Industry-specific indicators. Factors change according to the industrial group to which a company belongs	*Environment* Climate change strategy, Ecoefficiency, Energy Mgmt, Env. impact of product, Env. Mgmt, water risk and impact *Social* Equal opportunities, Freedom of association, Health and safety, Human rights, Product responsibility, Social impact of product, Supply chain mgmt, Taxes *Governance* Business ethics, Compliance, Independence of the board, Remuneration, Shareholder democracy and structure	About 21 Industry-Specific indicators. Three main dimensions: *Economic* (38/100) *Environmental* (27/100) *Social* (35/100)	*Environmental* Environmental strategy policy, Environmental Mgmt, Products, Production process *Social* & *Governance* Employees and human capital, Community relations, Markets, Corporate governance & shareholder	*Environmental* Carbon emissions, Climate change effect, Pollution, Waste disposal, Renewable energy, Resource depletion *Social* Supply chain, Political contributions, Discrimination, Diversity, Community relations, Human rights, *Governance* Cumulative voting, Executive compensation, Shareholders' Rights, Takeover Defense, Staggered boards, Independent directors	*Environmental* Biodiversity, Climate change, Pollution & resources, Water security, Supply chain *Social* Labor standards, Human rights & community, Health & safety, Customer responsibility, Supply chain *Governance* Tax transparency, Risk management, Corporate governance, Anti-corruption

(Source: Billio, M., Costola, M., Hristova, I., Latino, C. and Pelizzon, L., 2021. Inside the ESG ratings:(Dis) agreement and performance.)

Below table is the comparison of ESG score for four different companies by four different ESG rating agencies

Table 10: Comparison of ESG score of four companies by 4 different ESG rating agencies

Company	Sustainalytics	RobecoSAM	Refinitiv	MSCI
Nissan Motor Co., Ltd	6	77	72	CCC
Verizon Communications Inc.	91	20	67	BB
Oracle Corp. Jpn	78	8	63	BB
Goodman Group	86	21	58	AA

(Source : Billio, M., Costola, M., Hristova, I., Latino, C. and Pelizzon, L., 2021. Inside the ESG ratings:(Dis) agreement and performance.)

2.3 Comparison of ESG Score of Freight Forwarding companies:

Table 11: ESG-Score - Kuehne + Nagel International AG

	Performance		Scoring Scale	
Rating Agency	2022	2021	Best	Worst
Ecovadis	72 (Gold Medal)	70 (Gold Medal)	100	0
Cybervadis	897	NA	1000	0
MSCI	AAA 'Leader'	AAA 'Leader'	AAA	CCC
Sustainalytics	17.8 (Low Risk)	17.9 (Low Risk)	0	50

Status December 2022

(Source : Kuehne + Nagel Sustainability Report 2022 Edition)

The above table shows the ESG score of M/s Kuehne + Nagel International AG for two years by four different ESG rating agencies. For the year 2022 , first two agencies shows slightly bigger variance viz 72 % and 89.7 %, which is close to 18 % variance. For MSCI , the highest rating is AAA, which is far high from score rated by Ecovadis viz 72. Another observation is , three of the ESG rating agencies gave similar rating for two years. For Sustainalytics, the range is from 0 to 50, where 0 (Zero) is the best score. Even if , we recalculate the score with Ecovadis and Cybervadis , the score will be around 65 % , which is also far below the other rating agencies' score for 2022.

Table 12: ESG Score - Deutsche Post DHL Group

	**CDP** 'B' Rating confirmed for climate protection reporting 'A-' Rating confirmed for supplier management.
	**FTSE Russell** Listed in the FTSE4Good index series for >20 years.
	**ISS ESG** PRIME Status confirms highest quality scores in environmental and social aspects; No.1 in terms of transparency and disclosure of these aspects.
	**MSCI** Upgrade to 'AA' Rating.
	**S&P Global ESG** The Group has numbered among the top 10% of evaluated companies for ten years.
	**Sustainalytics** Low ESG risk confirmed.
	**Ecovadis** The Group ranks among the top 3% of evaluated companies in the industry ('Advanced' Status).

(Source : Deutsche Post DHL Group 2022 ESG Presentation)

The scoring in the above table is confusing and difficult to compare for the year 2022.

Table 13: ESG-Score - DSV Global Transport & Logistics.

Rating agency *Scoring scale*	**Performance**	
	2022	2021
MSCI *CCC-AAA (AAA is the highest score)*	**AA**	A
Sustainalytics *50-0 (the lower the better)*	**14.1 (low risk)**	16.7 (low risk)
CDP Climate Change *F-A (A is the highest score)*	**B**	C
EcoVadis *0-100***	**74/100 (Gold)**	72/100 (Gold)
S&P Global *0-100***	**53/100**	46/100
ISS QualityScore *10-1 (the lower the better)Scoring updated on monthly basis*	**1 - Governance** **2 - Social** **2 - Environment**	1 - Governance 2 - Social 3 - Environment
FTSE Russel *0-5***	**3.3**	3.0
Moody's ESG Solutions *0-100***	*	45/100

(Source : DSV Sustainability Report 2022)

The above table shows wide variation in ESG score by different agencies for the same year. EcoVadis and S&P Global uses the same range (0 to 100) . But the score for 2022 is 74 and 53 respectively, which is 21 % variance.

2.4 ESG Rating Agencies and their Methodology :

The Prominent ESG Rating agencies are :

- Bloomberg ESG Ratings
- MSCI (Morgan Stanley Capital International) ESG ratings
- Sustainalytics ESG risk ratings
- ISS (Institutional Shareholder Services) ESG Rating & Ranking
- Standard & Poor (S&P) Global
- Moody's ESG Score (VIGEO – EIRIS)
- CDP Scores (Formerly Carbon Disclosure Project)
- FTSE (Financial Times Stock Exchange) Russell ESG Rating
- Refinitiv ESG Scores
- Reprisk ESG Rating (RRR)
- Thomson Reuters ESG Research Data
- Dow Jones Sustainability Index (DJSI)
- Corporate Knights Global 100
- Ecovadis

Bloomberg ESG Ratings: Launched in 2008 after the acquisition of New Energy Finance, is a service that provides information on the environmental, social, and governance (ESG) performance of over 10,000 publicly listed companies globally. The service evaluates companies annually by collecting public ESG information disclosed by companies through corporate social responsibility (CSR) or sustainability reports, annual reports, websites, and other public sources, as well as through direct contact with the companies. The data is checked and standardized, including 120 indicators for environmental, social, and governance, such as carbon emissions, climate change impact, pollution, waste disposal, renewable energy, resource depletion, supply chain, political contributions, discrimination, diversity, community relations, human rights, cumulative voting, executive compensation, shareholder rights, takeover defence, staggered boards, and independent directors. Companies that do not disclose data will be penalized by the rating service. The rating scale ranges from 0 to 100, with scores from third-party rating agencies such as RobecoSam, Sustainalytics, ISS Quality Score, and CDP Climate Disclosure Score, as well as an overview of historical ESG performance relative to peers. Bloomberg ESG Ratings focuses on mid-to large-cap companies with a market cap of more than $2 billion.

MSCI (Morgan Stanley Capital International) ESG Rating : MSCI ESG Rating provides a comprehensive evaluation of a company's environmental, social, and governance performance. MSCI ESG Research is one of the largest independent providers of ESG ratings, providing ESG ratings for over 6,000 global companies and more than 400,000 equity and fixed-income securities. The ratings are based on a scale of AAA-CCC

and are updated every week. MSCI ESG Research looks at 37 key ESG issues, divided into three pillars (environmental, social, and governance) and ten themes. The data is collected from various sources such as government databases, company disclosures, and macro data from academic, government, and NGO databases. Companies are systematically monitored and reviewed, and new information is reflected in updates in reports weekly. In-depth company reviews occur at least annually. Companies are also invited to participate in a formal data verification process before the publication of their ESG Ratings report. The ratings are available through subscription-based access to reports . MSCI is currently consulting on whether ESG factors should be reflected in the MSCI GIMI (Global Investable Market Indices), which would likely mean that MSCI's ESG research would be integrated into the MSCI GIMI methodology.

Sustainalytics: Sustainalytics is a leading provider of ESG research and data, which helps investors identify and manage the risks and opportunities of investing in companies based on their environmental, social, and governance practices.

The rating scale used by Sustainalytics is a score out of 100, which is based on a sector/industry comparison. The methodology used involves analysing key ESG issues and indicators, which are split into three themes: environmental, social, and governance. The set of issues and indicators analysed will vary by industry, with a specific weight placed on each issue.

Sustainalytics covers at least 70 indicators in each industry. The ESG indicators are split into three dimensions: preparedness, disclosure, and performance. The company's ESG

rating report is based on a quantitative and qualitative assessment of the company's performance and considers the company's management systems and policies, as well as their level of transparency and controversial incidents they may have been involved in.

ISS (Institutional Shareholder Services) : ISS offers a range of ESG solutions to assist institutional investors in integrating responsible investment policies and practices into their investment decisions, engaging with companies, and executing their policies through voting. In 2015, ISS acquired Ethix SRI Advisors and formed a strategic partnership with RepRisk, allowing ISS to expand its ESG and socially responsible investing (SRI) research. ISS also provides climate change data and analytics from its acquisition of Climate Neutral Investments. ISS Quality Score offers in-depth research on corporate governance for over 5,600 publicly traded companies globally.

The ISS Quality Score rating scale is based on a 1st to 10th decile, with a score in the 1st decile indicating relatively higher quality governance practices and lower governance risk, while a score in the 10th decile indicates relatively higher governance risk. The methodology analyses over 200 factors, divided into four pillars: board structure, compensation/remuneration, shareholder rights, and audit & risk oversight. A specific weight is placed on each factor depending on the governance standards in each region, the ISS voting policy, and the impact on governance practices.

ISS-Ethix provides research, screening, and analysis on various ESG topics such as controversial weapons screening, ethical screens, energy & extractives screening, global

sanctions screening, and research on companies' adherence to human rights, labour standards, environmental protection, and anti-corruption.

S&P (Standard & Poor) Global ESG Score : S&P Global ESG Scores are a measure of a company's exposure to and performance on key environmental, social, and governance (ESG) risks and opportunities. The scores focus on quantitative, performance-driven metrics, as well as management programs and policies . The scores are measured on a scale of 0 – 100, where 100 represents the maximum score. Points are awarded based on the availability, quality, relevance, and performance of data points on ESG topics. These scores are constructed through the annual S&P Global Corporate Sustainability Assessment (CSA), which invites all companies in the research universe to participate. Companies submit responses and supporting evidence through an online portal and the data is assessed based on the latest financial year reporting. The scores and underlying data levels are updated monthly to reflect changes that may result from ongoing research processes. The CSA evaluates corporate sustainability risks, opportunities, and stakeholder impacts over the short, medium, and long term, with general criteria and industry-specific factors being assessed. The questions within each criterion are structured to assess a company's awareness of the relevance and impact, quantification of risk exposure and potential opportunities, and implementation of strategies to manage sustainability risks and capitalize on opportunities.

Moody's ESG (VIGEO-EIRIS): Moody's ESG assessments measure the degree to which companies manage environmental, social, and governance (ESG) factors that affect their financial performance and how their business impacts the environments and societies in which they operate. The assessments are based on double materiality, meaning they include external environmental and social risks to financial performance, as well as how the company's operations impact its surroundings.

Moody's ESG Solutions has adopted a revised version of the methodology. The key revisions to the current methodology include the introduction of an appendix that provides more details on the credit implications for financial institutions of E, S, and G considerations and how Moody's assigns IPSs (issuer profile scores) and CISs (credit impact scores). The assessment of a financial institution's exposure to ESG risks and benefits is primarily qualitative, and the methodology describes relevant considerations generally applicable across financial institution sectors. Additionally, a compendia document appendix will be introduced that provides more details on the qualitative considerations and illustrative types of quantitative metrics informing IPSs and CISs for financial institutions. Moody's may expand this compendium to provide further details of more sector-specific considerations and types of metrics as more data become available or indicators become relevant to their analysis. Moody's expects no changes to outstanding ratings for financial institutions.

CDP : Formerly known as the Carbon Disclosure Project, is a scoring system that works to motivate companies to disclose and take action to reduce their environmental impacts. CDP uses its scoring methodology to incentivize companies to measure and manage environmental impacts through participation in CDP's Climate Change, Water, Forests, and Supply Chain programs. The scoring methodology assesses the level of detail and comprehensiveness of a company's response, as well as its awareness of environmental issues, management methods, and progress toward environmental stewardship. CDP's scoring partners produce scores based on the data provided in company responses and the methodology is available online for transparency. The scoring system is divided into four levels: Disclosure, Awareness, Management, and Leadership, with companies being assessed and awarded points at each level. The points are then converted into a percentage, providing a snapshot of how a company compares with others in their sector. The scoring system is mission-driven, focusing on CDP's principles and values for a sustainable economy, and aims to drive changes in company behaviour to improve environmental performance.

FTSE Russell : FTSE Russell's ESG Ratings and data model provide investors with a comprehensive understanding of a company's exposure and management of ESG issues. The data is flexible and customizable and is built on over 300 individual indicator assessments that are applied to each company's unique circumstances. The ESG Scores are calculated using an Exposure-weighted average, meaning that the most material ESG issues

are given the most weight when determining a company's scores. FTSE Russell's ESG data model is overseen by an independent external committee and supports alignment with the UN Sustainable Development Goals (SDGs). The data is designed to assist in managing exposure to ESG aspects, meet mandated stewardship requirements, integrate ESG data into securities and portfolio analysis, and implement ESG-aware investment strategies. The data collection process for FTSE Russell's ESG research relies on publicly disclosed information only and companies are allowed to provide feedback and additional information that could be factored into the analysis.

Refinitiv ESG Score : Refinitiv's ESG Score provide a transparent and objective measurement of a company's environmental, social, and governance performance, commitment, and effectiveness. Based on publicly available data, the scores are calculated, which are grouped into 10 categories that form the three pillar scores. These categories include emissions, environmental product innovation, human rights, shareholders, and more. Refinitiv's ESG score reflects the underlying ESG data framework, considering industry materiality and company size biases. The final ESG score reflects the company's performance, commitment, and effectiveness based on publicly reported information. It allows investors to understand a company's exposure to ESG issues, helping them make informed investment decisions. Companies are given access to review and provide feedback on the data used in the assessment, and Refinitiv's team of analysts will determine if a change in assessment is warranted.

RepRisk : RepRisk is a leading provider of ESG research and ratings for private and public companies. Founded in 1998, the company offers reports for more than 84,000 companies in 34 sectors globally, as well as over 14,000 NGOs and 10,000 governmental bodies. RepRisk's rating scale ranges from AAA to D, with updates provided daily. The company's methodology involves screening relevant data from over 80,000 media and stakeholder sources, with a focus on 28 ESG issues that are divided into environmental, community relations, employee relations, and corporate governance categories. Additionally, RepRisk also examines 45 specific ESG hot topics. Companies are invited to participate in a formal data verification process before the publication of their ESG ratings reports. RepRisk has formed partnerships with organizations such as the Carbon Disclosure Project and the United Nations-supported Principles of Responsible Investment. RepRisk's company reports, and Director's Briefs can be accessed through the company's ESG Risk Platform or bought individually.

Thomson Reuters ESG Research Data : Thomson Reuters ESG Research Data provides a comprehensive analysis of environmental, social, and governance (ESG) factors for public companies. The company uses a percentile rank scoring methodology to calculate its ESG scores, which are based on over 400 different ESG metrics that are grouped into 10 categories: Resource use, emissions, innovation, management, shareholders, CSR strategy, workforce, human rights, community, and product responsibility. Each category is weighted based on the number of measures it contains, with categories that have multiple

issues, such as management, having a higher weight than lighter categories such as human rights. The company also includes an analysis of 23 “Controversy Topics” in its ESG Score, which covers topics such as business ethics, intellectual property, public health, and human rights. The ESG Scores are available on the Thomson Reuters Eikon platform, but it is not specified how the data is used by investors or if companies can provide input or feedback on their scores.

Dow Jones Sustainability Index (DJSI) : The Dow Jones Sustainability Index is a float-adjusted market capitalization-weighted index that measures the performance of companies selected based on Environmental, Social, and Governance (ESG) criteria using a best-in-class approach. The DJSI is created in partnership with S&P Global Sustainable, a specialist in ESG research and data, to provide investors with objective benchmarks for managing their sustainability investment portfolios. The DJSI index family includes sub-indices that exclude companies engaged in certain activities widely considered unsustainable. The DJSI benchmarks are comprised of three geographical breakdowns: DJSI World, DJSI Regions, and DJSI Countries. The key factor in selecting constituents for any DJSI index is a company’s S&P Global ESG Score, calculated under the S&P Global Corporate Sustainability Assessment (CSA). Companies are assessed based on their industry classification on the last business day of March, and if a company changes its domicile or industry, it will be eligible under its new classification starting with the subsequent assessment cycle. In the case of multiple classes of stock, only the stock with the largest float-adjusted market capitalization is considered for selection.

EcoVadis : The EcoVadis methodology aims to measure the quality of a company's sustainability management system through its policies, actions, and results. The assessment evaluates 21 sustainability criteria that are grouped into four themes: Environment, Labour & Human Rights, Ethics, and Sustainable Procurement. These criteria are based on international sustainability standards such as the UN Global Compact, the International Labour Organization (ILO) conventions, the Global Reporting Initiative (GRI) standards, the ISO 26000 standard, the CERES Roadmap, and the UN Guiding Principles on Business and Human Rights.

EcoVadis provides web-based collaboration tools for businesses, which allow procurement executives to access easy-to-use, dynamic scorecards, and to monitor the sustainability performance of their trading partners as well as their continuous improvement actions. The EcoVadis process includes seven management principles, 21 CSR criteria across four themes, a data collection and rating process, a diversity of data sources, and technology and CSR expert analysis.

To participate in the EcoVadis assessment, companies can register online and create a company profile, specifying their business activity, contact information, etc. They will then answer a customised questionnaire and upload supporting documents. The questionnaire is secure, confidential, and multilingual with a support team ready to help. Once completed, EcoVadis analysts will distil the answers into a Scorecard, an independent questionnaire, and a document-based management system assessment. Companies can access their

Scorecard results online, share them, collaborate with customers, improve their performance, and broadcast their success.

The Corporate Knights Global 100 : The Corporate Knights Global 100 is an annual ranking of the world's most sustainable corporations, published in 2005. The ranking is conducted by Corporate Knights, a specialized media and investment research firm based in Toronto. Corporate Knights is an employee-owned B Corp that operates in three segments: Corporate Knights Magazine, Corporate Knights Research, and Council for Clean Capitalism. The Global 100 ranking is based on a rigorous assessment of public companies with revenue over $1 billion and is based mostly on publicly disclosed data. The ranking is based on up to 24 key performance indicators covering resource management, employee management, financial management, clean revenue & clean investment, and supplier performance. Eligibility for the ranking is based on size and Corporate Knights Industry Group and geography. The ranking is meant to be representative of business sustainability in the current socio-economic context and is transparent, objective, and based on public data. Companies are compared against their Corporate Knights Industry Group peers and stakeholders' feedback is actively solicited throughout the project.

(Source : www.iriscarbon.com)

2.5 Summary :

A systematic literature review is a systematic method for identifying, evaluating, and interpreting the work of scholars and practitioners in a chosen field (Escrig-Olmedo et al., 2019).

We can summarise the above Literature review into three parts. First part is the analysis of various research studies. Second part is the ESG rating of companies by different rating agencies. Third part is the overview of various rating agencies and their methodologies . The study highlights common findings which are the causes of ESG rating variation viz .

- Different methodology
- Different Source data
- Different Criteria
- Different Weightage
- Operating Geography not considered.
- Focus on transaction than system evaluation

The above reasons for ESG rating variance will result in poor data quality. Also, non-disclosure of full and complete procedure raises the question of transparency. The volume of data analysed is also not disclosed. The volume of data analysed should be in line with the company's size and number of countries where it operates.

Inconsistency of ESG rating methodology is another case. This is mainly due to mergers and acquisition of ESG rating agencies. A company rated by one agency which got merged

with another agency and follows a different rating methodology will give a different and confusing score to the investor or any other stake holder of the company.

Most of the ESG criteria are non-financial in nature. They won't find place in most of the company disclosures, media reports, stock exchange filing etc. Also, while evaluating the ESG score of a multinational company (MNC) operating in more than 100 countries, there may be negative points in few counties which won't find place in the consolidated report. So, the overall score will be wrong and misleading the stake holders viz investors, employees, customers etc.

Another major observation of literature review is that the existing agencies are evaluating the transaction not the system. Transaction evaluation won't help to have a proper system in place to have a professional management for the company. To have professionalism, there should be proper system in place, and it should be managed properly with respect to deviation, corrective action, revision with respect to technological as well as situational need and proper education to all the stake holders.

The next chapter will discuss research methodology, including research design , data collection , data analysis , data validation , limitations etc. in detail.

CHAPTER III

METHODOLOGY

3.1 Overview of the Research Problem

The need for this study is due to variances in ESG rating by various rating agencies for the same company. In-depth study of the literature review shows that there are major and minor variation in the rating of three elements (E, S & G) individually and consolidated score. ESG do not have a uniform reporting standard globally, which makes it confusing and difficult to compare. The major reasons for variations are:

- varying criteria
- evaluation method
- not considering operating geography
- no uniform reporting formats
- complex data from outside the company
- different methodologies and matrices applied
- lack of system evaluation / emphasis on transactions evaluation etc

The study will address the gaps and formulate a new ESG rating formula for freight forwarding industry.

In the second stage, a real time case study will be done by applying the real time data for 3 years of an MNC to the newly formulated ESG rating formula.

In the final stage various analysis, comparison and gradings will be done based on the case study results, where the new ESG rating formula is applied.

3.2 Operationalization of Theoretical Constructs

The three main research methods are qualitative, quantitative, and mixed method. In qualitative method, the volume of sample and data will be less compared to quantitative method. But the critical thing is the reliability and validity of the data. The qualitative method is used in this study since it identifies the abstract concept. According to Fossey, E et al., (2002), qualitative research aims to address questions concerned with developing an understanding of the meaning and experience dimensions of humans' lives and social worlds. Central to good qualitative research is whether the research participants' subjective meanings, actions, and social contexts, as understood by them, are illuminated. Criteria for evaluating quality are interconnected with standards for ethics in qualitative research. They include principles for good practice in the conduct of qualitative research, and for trustworthiness in the interpretation of qualitative data.

Research by Hennink, M. et. al., (2020) opines that qualitative research is a broad umbrella term that covers a wide range of techniques and philosophies; thus, it is not easy to define. In broad terms, qualitative research is an approach that allows you to examine people's experiences in detail by using a specific set of research methods such as in-depth interviews, focus group discussions, observation, content analysis, visual methods, and life histories or biographies. Qualitative research, however, is much more than just the application of qualitative methods. Simply applying the methods does not automatically make you a qualitative researcher. Perhaps one of the most distinctive features of qualitative research is that the approach allows you to identify issues from the perspective

of your study participants and understand the meanings and interpretations that they give to behavior, events, or objects. To derive this information a qualitative researcher needs to be open-minded, curious, and empathic, flexible, and able to listen to people telling their own story. Qualitative researchers also study people in their natural settings, to identify how their experiences and behavior are shaped by the context of their lives, such as the social, economic, cultural, or physical context in which they live.

According to Hammarberg K. et al., (2016), research that uses qualitative methods is not, as it seems sometimes to be represented, the easy option, nor is it a collation of anecdotes. It usually involves a complex theoretical or philosophical framework. Rigorous analysis is conducted without the aid of straightforward mathematical rules. Researchers must demonstrate the validity of their analysis and conclusions. Research requires different kinds of evidence that is generated by qualitative methods.

Study by Wieland A. et al., (2024) , argues for the expansion of qualitative research approaches in supply chain management (SCM). By comparing mainstream qualitative approaches to popular Parisian landmarks, it argues that just as tourists can miss the city's essence by visiting only famous sites, SCM researchers limit their understanding by relying solely on conventional approaches. It emphasizes that, much like exploring lesser-known parts of a city, incorporating diverse qualitative approaches can enrich SCM research. Highlighting the dominance of realist and positivist approaches, the study calls for greater inclusion of nominalist and anti-positivist approaches. It introduces different “buildings” of qualitative research (grounded theory, interpretive research, sensemaking,

sociomateriality , actor–network theory, ethnography, action research, discourse analysis, narrative research, and historical research), each offering unique insights into SCM. The study argues that embracing these diverse approaches can lead to a deeper understanding of complex global supply chain phenomena and encourage innovative theoretical development, thereby broadening the scope and impact of the discipline.

3.3 Research Purpose and Questions

Environment, Social and Governance have equal importance in a civilized society. Corporates has the social responsibility to implement ESG initiatives and monitor the progress regularly. If you don't measure, you can't evaluate it. There are various agencies doing ESG rating. But they don't show uniform grading due to difference in valuation approach, weightage, criteria etc... Also environmental, social and governance indexes of the country / countries of operation are not considered for the scoring mechanism.

The purpose of the research is to develop a globally accepted ESG Rating formula for freight forwarding industry. The new formula will ensure all the identified gaps has been filled.

The questions to be answered for arriving at the formula are:

1. What are the scoring criteria to be considered?
2. How are the scoring criteria professionally evaluated?
3. How will be the score related to the business operated in different geographies?
4. Which are the best data sources?
5. How to evaluate the system with respect to creation of policy, implementation, corrective action, periodical upgradation and updating with respect to technological advancement and contingencies.
6. How the score relates to the financials / business volume
7. How to identify a justifiable index / weightage

3.4 Research Design

To answer the research questions, the study shall use qualitative method. According to Busetto L et al., (2020), qualitative research can be defined as the study of the *nature* of phenomena and is especially appropriate for answering questions of *why* something is (not) observed, assessing complex multi-component interventions, and focussing on intervention improvement. The most common methods of data collection are document study, (non-) participant observations, semi-structured interviews and focus groups.

The structure of the study will be, first in depth professional analysis of Literature review and identify the gaps. Relevant updated data has been collected from various industrial as well as scientific sources, which are analyzed thoroughly. Evaluation charts are prepared for Environment, Social and Governance separately, which focuses on system than transaction. The evaluation sheet will cover all the possible system criteria for ESG rating with respect to freight forwarding industry. Operating country level evaluation of each category is done by team of professionals by verifying the data shared by the company and not from any external or third-party sources.

Next step is to identify weightage for each category depending on the operating country. Globally accepted weightage / index should be identified, which should also be justifiable to all the three pillars of ESG viz Environment, Social and Governance of the respective operating countries.

The broad criteria for selecting index are:

For environment, index will be selected based on parameters such as Climate mitigation, Air quality, Sanitation and drinking water, Waste management, Biodiversity, Agriculture etc ... On analysis of the parameters, Environment Performance Index published by Yale University and Columbia University in collaboration with the World Economic forum is taken as index for weightage.

For Social, index selection will be based on the parameters such as Equality and Inclusiveness, Personal Safety, Nutrition and Basic Medical Care, Wellness (including health, shelter, water and sanitation), Access to Basic Knowledge, Access to information and communication, Personal Rights, Personal freedom and choice , Access to Advanced Education etc . Social Progress Index (SPI) prepared by a renowned NGO, Social Progress Imperative fulfils the criteria, so it's taken as the index for weightage.

For Governance, index selection will be based on the parameters viz Rule of Law, Human Rights / Participation, Sustainable development, Peace / Security, Human development etc. as parameters. Almost all the above parameters are considered in preparing World Governance Index (WGI) by World Bank. So, the study considers WGI as the most appropriate index for weightage.

The Country ESG score will be the average of cumulative product of each element's evaluation score and country index.

A multinational company will be operating in different geographies and the size of operation varies from country to country. To have a realistic and acceptable ESG score, the operating country which have more business should be given more weightage. So, the ESG

score for the company will be cumulative product of country score and percentage of business volume of the respective country.

Countries will have different accounting year, but for ESG Score, we consider the year from 1st January to 31st December and uniform currency will be taken for business volume consideration.

To have uniformity in weightages, percentile figures are used for Environment Performance Index, Social Progress Index and World Governance Index.

3.5 Population and Sample

The population and sample selection are classified into three categories viz.

1. Freight Forwarding companies.
2. ESG rating agencies
3. Global Indexes

Annual reports (including Sustainability Reports) of top six freight forwarding / Logistics companies are analysed in detail. The detailed analysis helps to identify the criteria / scope for deriving an ESG rating formula.

The rating methodology, data source, criteria, risk factors etc applied by each ESG rating agencies are studied in detail. This helps to identify the gaps in the existing ESG rating formula.

Various global indexes were analysed and the best fit index, which matches the parameters and published by globally renowned organisations / entities are selected. Since the index is used as country level weightage, the organisation must publish the index for all countries every year. Most of the global freight forwarding companies operated in more than 100 countries.

3.6 Participant Selection

According to Tong A et al., (2016), qualitative studies seek to obtain a range and depth of perspectives and meaning, not to quantify frequency of opinion. Thus, the sample size tends to be smaller compared with quantitative studies. A purposive sampling strategy is generally recommended, whereby researchers select "information-rich" participants who can articulate perspectives relevant to the research question and represent a wide range of characteristics (e.g., age, sex, and ethnicity). The number of participants usually depends on feasibility, scope of the research question, and theoretical or conceptual saturation, defined as when no new concepts are being raised in subsequent data collection.

Generally, an MNC freight forwarding company operates in more than 100 countries. For research case study, evaluating all the operating countries is not practically possible and won't provide any material findings. So, countries contributing to more than 75 % of total business volume and at least one country each form every continent is selected. The existing ESG rating parameters did not consider geography, and in this study, geography has given weightage in deriving ESG Score, as such, at least one country each from every continent is included. Three years evaluation (2020, 2021 & 2022) will be done for each country. Evaluation sheets will be shared with the respective operating country and professional evaluation will be done for the three ESG pillars viz Environment, Social and Governance. General guidelines for evaluation are also shared with evaluation sheets.

3.7 **Instrumentation**

Data collection is mainly done by the following methods.

- Direct Observation
- Document analysis.

The data is collected from primary and secondary sources. Documents of the major freight forwarding / logistics companies were studied and summarised for 2 years.

- Financial statements
- ESG reports
- Sustainability report etc.

An in-depth study of the above documents will help to identify the possible expected technological changes, future measures for environment protection (mainly for carbon reduction), policy changes with respect to social and governance, etc.. This will help to identify and fix the probable criteria for ESG rating.

Parallelly, ESG rating methods of various rating agencies and the reasons for divergence were studied, based on various research materials, web site information and disclosure documents.

Applications such as Microsoft Word, Microsoft Excel and Pivot table are used to arrange and create reports for comparative study, variance analysis, year on year score analysis etc. A good volume of data is inputted into Excel file and various Pivot tables are created for analysis and systematic study.

3.8 Data Collection Procedures

Researcher Khan S.N. (2014) , opined that grounded theory is one of the data collection approach in qualitative research methods which is totally based on data rather than trying to emerge theory from data. The study also specifies that ethics plays a crucial role while conducting and gathering a qualitative data. Moreover, the study throws light on history of grounded theory and how it rather approach works, target population, sampling technique, data collection methods and the role of a researcher.

According to Oun M.A et al., (2014), data collection is one of the two bases of qualitative research method. Qualitative research depends on massive data collection process. The better the data collected during this process, the better the quality of the research will be. The study species four different ways of data collection viz, individual interviews, focus groups, observations and self-study. The criteria of selecting data collection method should be based on the method which will guarantee success in the research paper

In the current study, a good volume of data is collected and analysed to have a quality output. The main ways of data collection were self-study and observation. While collecting data from various countries, it is ensured that the selected countries will cover more than 75 % in business volume and at least one country from every continent with respect to the selected MNC freight forwarding company. The representation of all continents will ensure that fair valuation is done in environment , social and governance.

3.9 Data Analysis

According to Thorne. S. (2000) , creating a database is not sufficient to conduct a qualitative study. In order to generate findings that transform raw data into new knowledge, a qualitative researcher must engage in active and demanding analytic processes throughout all phases of the research. Understanding these processes, is therefore an important aspect, not only of doing qualitative research, but also of reading and interpreting it.

The study first ensures that all the data are from reliable sources. This is the prime requirement for a quality data. Secondly , the validation of the data is done. Even though the data may be from a reliable source , may not be relevant or valid for the current study. Both reliability and validity is ensured by professional data analysis which places less dependency on third party information. The weightage indexes are carefully identified and selected after assuring that they are published by world renowned organisations / entities. In addition to that, it is ensured that indexes meets the required parameters.

A large volume of numerical data are inputted in an Excel file and due to higher volume, Excel reports are not possible . So Pivot table are prepared for numerical data analysis . Using Pivot table, there is an advantage of preparing various reports from the same source of data and do various analysis viz. variance analysis , performance analysis , year on year comparison etc.

3.10 Research Design Limitations

The limitations with respect to the research design are:

- Assumption - Equal weightage to all the three elements of ESG (E, S & G)
- Practical difficulty in evaluating all operating countries.
- Hesitant to share data openly by the stake holders.
- Honesty and accuracy of the evaluator
- Dependency on global indices
- Professionalism of the evaluator
- Human error due to lack of understanding of the core subject, which can affect the scoring.
- Business volume is depended on customer choice in this industry. In an international cargo movement, billing can be done in origin or destination, which is purely customer's discretion.

3.11 Conclusion

The chapter outlined the research methodology, by detailing Research problem, Research purpose, Research questions, Research Design, Sampling, Data (collection procedure, analysis & methods) and Research Limitations.

To summaries, this chapter throws light on the processes followed in the research study. The study first identifies the gaps in the existing situation by a professional evaluation of literature review. Qualitative method is used in this study. The purpose of the research is to derive a new formula by filling the gaps in the existing evaluation process of ESG Rating mechanism. The research is designed in such a way that maximum possible data collection is done by studying and evaluating the latest and relevant documents / reports from top freight forwarding companies. Also, a thorough study for identifying the appropriate weightages / indexes has been done. The methods used for data collection are document analysis, direct observation etc. The collected large volume numerical data are keyed into Excel file and analyzed via Pivot table. In depth study has been done using Pivots by preparing reports for analysis and comparison. The limitations in Research design have also been provided in brief. They are the assumptions viz. equal weightage to the three elements of ESG (Environment, Social & Governance), practical difficulty in having 100 % coverage in all operating countries, openness, honesty, accuracy, professionalism, dependency, human error etc.

CHAPTER IV

RESULTS

4.1 Introduction

In Chapter 3, discussions on Research methodology, detailing Research problem, Research purpose, Research question, Research design, Sampling, Data collection procedures & analysis, Research limitations etc. to validate the research findings are done. In this chapter, the findings of the research study are elaborated. The data collection is done by studying large volume of corporate documents, research materials, environment data web site analysis, various indexes, direct observation etc. The results have been reached after analysing literature review, which helped in identifying the gaps in the existing ESG rating mechanism. For qualitative research method, a good volume of reliable and relevant documents was studied in detail and analysed professionally. The study derived a formula for ESG rating for freight forwarding industry, which will fill the identified gaps in the existing rating mechanism. After arriving at the formula, further study has been conducted to test the formula with real data. Data from an MNC for three years were applied in the formula to arrive at the ESG score of the Multinational Company. Also, global indexes for environment, social and governances for the respective countries are applied in the formula to arrive at the ESG score for the company. This will be explained in detail in chapter 5.

4.2 Research Questions

The need for this study is due to variances in ESG rating by various rating agencies for the same company. In-depth study of the literature review shows that there are major and minor variation in the rating of three elements (E, S & G) individually and consolidated score. ESG do not have a uniform reporting standard globally, which makes it confusing and difficult to compare. The study will address the gaps and derive a new ESG rating formula for freight forwarding industry. So, the research question or the questions to be answered for arriving at the formula to grade ESG using the data within the company by providing weightage as country specific indexes are:

1. What are the scoring criteria to be considered?
2. Which are the best data sources?
3. How to evaluate the system with respect to creation of policy, implementation, corrective action, periodical upgradation and updating with respect to technological advancement and contingencies?
4. How are the scoring criteria professionally evaluated?
5. How to identify a justifiable index / weightage?
6. How will be the score related to the business operated in different geographies?
7. How the score relates to the financials / business volume?

There are three steps in arriving at a new formula for ESG Score viz.

1. Category score for all the three elements of ESG
2. Country ESG Score
3. Global ESG Score

To address the research questions on criteria, system evaluation, data source and scoring, evaluation sheets are prepared for all the three elements of ESG viz Environment, Social and Governance, respectively. This focuses on system evaluation than transaction analysis. All the system check points related to the three elements, relevant to freight forwarding industry have been included in the evaluation sheet. This evaluation sheets are verified by a professional by checking the data from the company itself. So, the data source or the evaluation is done within the company. No third-party information, web site data, media source, NGO reports etc are considered. The entire evaluation is done based on the data and information available and shared by the company itself. This will enhance the creditability and reliability of the evaluation. All the three elements are given equal weightage. Every operating country will have a separate evaluation process for deriving category score. This will help in year-on-year comparison at country level, which is lacking in the existing scoring mechanism. To match the arithmetical equation, average percentage of each element of ESG is taken by the evaluator. So, the category score for each element of ESG will be done by a professional applying his experience and expertise.

The Environment, Social and Governance condition will vary from country to country. Even though the same company operates in different countries, the Environment, Social and Governance conditions will vary due to different geography. To arrive at ESG score for the country, a justifiable country specific weightage must be applied to each element of ESG. After a detailed and through evaluation, three country specific indexes have been identified. The main criteria for index selection, in addition to parameters are that it should be published by a globally reputed organisation and there should be an index for every country.

The selected indexes are:

- Environment Performance Index (EPI)
- Social Progress Index (SPI)
- World Governance Index (WGI)

The parameters for Environment Performance Index are, climate mitigation, air quality, sanitation and drinking water, waste management, biodiversity, agriculture etc. It is published by Yale University and Columbia University in collaboration with the World Economic Forum. Environmental Performance Index (EPI) provides a data-driven summary of the state of sustainability around the world. It uses various performance indicators across 11 issue categories. EPI ranks about 180 countries on climate change performance, environmental health, and ecosystem vitality. These indicators provide a gauge at a country level scale to establish environmental policy targets. The EPI offers a scorecard that highlights leaders and laggards in environmental performance and provides practical guidance for countries that aspire to move toward a sustainable future.

EPI indicators provide a way to spot problems, set targets, track trends, understand outcomes, and identify best policy practices, going beyond the aggregate scores and drilling down into the data to analyse performance by issue category, policy objective, peer group, and country offers even greater value for policymakers. This granular view and comparative perspective can assist in understanding the determinants of environmental progress and in refining policy choices.

(Source : https://epi.yale.edu)

Natural Capital Index was also considered for the weightage purpose. The natural capital of a country is defined by the natural physical environment. The natural capital model incorporates the essence of resources that allow a country to be completely self-sustaining: land, water, climate, biodiversity, food production and capacity, and energy and mineral resources. In addition, the level of depletion or degradation of those resources that could endanger future self-sufficiency are taken into account to reflect the full picture of the available natural capital. The Natural Capital Index is based on 33 quantitative indicators, forming 6 clusters – water, other natural resources, biodiversity. food security, infrastructure and nature, and exposure to climate risks.

(Source : https://solability.com)

Since EPI found to be the best fit, the study choose it as weightage index for environment.

The parameters for Social Progress Index are, Equality and Inclusiveness, Personal Safety, Nutrition and Basic Medical Care, Wellness (including health, shelter, water and sanitation), Access to Basic Knowledge, Access to Information and Communication, Personal Rights, Personal freedom and choice, Access to Advanced Education etc.. Social Progress Index (SPI) prepared by a renowned NGO; Social Progress Imperative, fulfils the criteria, so it's taken as the index for weightage.

The Social Progress Index offers a rich framework for measuring the multiple dimensions of social progress, benchmarking success, and catalysing greater human wellbeing. Social Progress Index ranks about 179 countries on social progress. It measures at least some aspects of social progress across which covers more than 99.97% of the world's population. SPI is used as a tool to assess strengths and weaknesses, spur

constructive dialogue, catalyse change, and improve people's lives. Progress on social issues does not automatically accompany economic development. Rising income usually brings major improvements in areas such as access to clean water, sanitation, literacy, and basic education. But on average, personal security is no better in middle-income countries than low-income ones, and is often worse. And, too many people, regardless of income, live without full rights and experience discrimination or even violence based on gender, religion, ethnicity, or sexual orientation. Traditional measures of national income, such as GDP per capita, fail to capture the overall progress of societies. The Social Progress Index rigorously measures country performance on many aspects of social and environmental performance which are relevant for countries at all levels of economic development. It enables an assessment of not just absolute country performance but also relative performance compared to a country's economic peers. The Social Progress Index also allows to assess a country's success in turning economic progress into improved social outcomes. Overall, the Social Progress Index provides the first concrete framework for benchmarking and prioritizing an action agenda, advancing both social and economic performance. The index is structured around 12 components and 53 distinct indicators. The framework not only provides an aggregate country score and ranking, but also allows benchmarking on specific areas of strength and weakness. Transparency of measurement based on a comprehensive framework allows change-makers to set strategic priorities, acting upon the most pressing issues in their societies.

(Source : https://www.socialprogress.org)

The study has considered Social Capital Index for weightage purpose. The Social Capital of a nation is the sum of social stability and the well-being (perceived or real) of the entire population. Social capital generates social cohesion and a certain level of consensus, which in turn delivers a stable environment for the economy and prevents natural resources from being over-exploited. In addition to local historical and cultural influences, the social consensus in a society is affected by several factors: health care systems and their universal availability / affordability (measuring physical health); income and asset equality, which are correlated to crime levels; demographic structure (to assess the future generational balance within a society); freedom of expression and freedom from fear; and the absence of violent conflicts. Only in these circumstances can the economy flourish, generate value, jobs and income for the population. The Social Capital Index is based on indicators related to the following clusters:

- Health
- Equality
- Crime
- Freedom
- Satisfaction.

(Source : https://solability.com)

Another index considered for the weightage element of Social is Human Development Index. The Human Development Index (HDI) is a statistic developed and compiled by the United Nations since 1990, to measure various countries' levels of social and economic development. It is composed of four principal areas of interest: mean years of schooling, expected years of schooling, life expectancy at birth, and gross national income (GNI) per capita.

This index is a tool used to follow changes in development levels over time and compare the development levels of different countries. The HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. It uses components such as average annual income and educational expectations to rank and compare countries. Social advocates have criticized the HDI for not representing a broad enough measure of the quality of life and economists for providing little additional useful information beyond simpler measures of the economic standard of living.

(Source : https://hdr.undp.org)

Since SPI found to be a better fit, the study chose it as weightage index for Social.

The parameters for World Governance Index are Rule of Law, Human Rights / Participation, Sustainable development, Peace / Security, Human development etc... Almost all the above parameters are considered in preparing World Governance Index (WGI) by World Bank. The Worldwide Governance Indicators report on six broad

dimensions of governance for over 200 countries and territories . The six composite WGI measures are useful as a tool for broad cross-country comparisons and for evaluating broad trends over time.

(Source : https://www.worldbank.org)

The study also considered Global Governance index for the weightage of Governance element of ESG. Governance is responsible for and designs the environment in which the country's natural, social and intellectual capital can flourish to generate new and sustain existing wealth. The Global Governance Index evaluates the performance of a country's regulatory framework and infrastructure environment to facilitate sustainable competitiveness, based on 33 quantitative indicators. The Governance Index does not assess the quality of regulatory frameworks itself – only the qualitative outcomes.
(Source : https://solability.com)

Since WGI found to be a better fit, the study chooses it as weightage index for Governance.

To have arithmetical uniformity, percentile of all the three indexes is considered. This will give equal importance for all the three elements of ESG. The average score of the product of category score in the evaluation sheet and the respective index will give the country ESG Score

To arrive at global ESG score, data should be of a uniform period and uniform currency for all the operating countries.

Category score card templates are as below:

	Evaluation Score - Environment (Year)		
	Country		
No.	Item Head	Percentage	Guidelines
1	Environmental Policy	XX	Does the company have a written environment policy (including waste management) commensurate with its size of operation. How efficient is the policy implementation viz violation (if any) and corrective actions dealt with. Does the policy have periodic revision with respect to statutory requirement and technological upgradation
2	Dangerous Goods Policy	XX	Does the company have a written DG matching with the requirements of freight forwarding industry. How efficient is the policy implementation viz violation (if any) and corrective actions dealt with. Does the policy have periodic revision with respect to statutory requirement and technological
3	CO_2 Reduction - (Carbon neutral / GHG reduction etc)	XX	Does the company calculates emission trend (reduction over past 3 years) Does the company have initiated steps for net zero (GHG reduction projects), carbon neutral etc Does the company uses services of aircrafts flying with SAF, if yes % of total usage Does the company uses services of ships installed with scrubbers for removing sulphur from their exhaust, if yes % of total usage Does the company uses electric vehicles for road movement, if yes % of total usage.
4	Energy usage and efficiency	XX	Does the company took steps to improve efficiency in energy usage in heating, Cooling, Lighting, Power Source, LED, VRF (Variable Refringent flow) A/c, Inverter, UPS etc Does the company's warehouses and offices uses clean energy (Solar, Wind power etc) Whether the company have future plans to shift to 100 % renewable energy in office and WHs
5	Biodiversity	XX	Whether the company has initiated programs to educate the stake holders (employees, vendors, customers, public etc) on protection of planet, climate change, reduction of GHG, air & water preservation / pollution, bio diversity , reforestation , removal of plastic from ocean / sea / lakes / rivers etc.
6	Green Procurement policy	XX	Whether the company's procurement policy has given adequate emphasis for green procurement, eco labelling, local purchase, environment compatible / recyclable packaging, take back / buy back ,4R - Reduce, Reuse, Recycle and Responsible disposal. If yes, % compared to total procurement. Whether the company has initiated steps for paper usage reduction and promotion of digitalisation. If yes, % of saving in paper consumption
	Evaluation Score (Average)	XX	

(Source: Author's work)

Evaluation Score - Social (Year)			
Country			
No.	Item Head	Percentage	Guidelines
1	People	XX	Does the company has Diversity, Equality & Inclusion (DEI) Policy commiserating with the size of the entity. Does DEI policy includes work life balance, team work, respectful communication, community engagement (including social media, local public) , various diversities viz racial, religious, sexual , gender, age , physical disability etc Does the DEI policy includes fair pay and living wages, equal employment opportunities, employee benefit, adherence to labour laws, opportunity for learning and development, leadership development, succession planning, employee engagement and feedback. Does any deviations to the policy has been reported in the year. If yes, whether corrective action has been taken. CSR policy, implementation and outcomes, beneficiaries
2	Health & Safety	XX	Does the company have a health & safety policy in line with the freight forwarding industry. Does the policy has been updated with respect to recent developments (eg. Hand sanitation etc during COVID period) Does any deviations to the policy has been reported in the year. If yes, whether corrective action has been taken. Whether the company has a disaster management team (DMT). Do they conduct mock drills, if yes how many in last one year.
3	Human Rights Policy	XX	Does the company have a Human Rights policy. Does any deviations to the policy has been reported in the year. If yes, whether corrective action has been taken.
4	Customer experience / satisfaction	XX	Does the company have invested in online tools for receiving supplier feedback. Whether there is a periodic review on customer feedback Whether necessary corrective actions / improvements have been initiated based on customer feedback.
5	Rural transformation	XX	Whether the company have a policy for rural employment, viz office in rural areas / giving priority for employees from rural area, if yes, what %
6	Grievance redressal of all stake holders (Shareholders, customers, employees etc)	XX	Whether the company have a system of confidential reporting, if yes how many complains received and actioned. Whether the company has a whistle blower policy, if yes how much information's received and actioned. How is the whistle blower protected.
	Evaluation Score (Average)	XX	

(Source: Author's work)

Evaluation Score - Governance (Year)			
Country:			
No.	Item Head	Percentage	Guidelines
1	Code of Conduct	XX	Does the company have a written Code of Conduct. How efficient is the CoC implementation viz violation (if any) and corrective actions dealt with. Does the company have taken initiatives for educating employees on CoC Does CoC have periodic revision with respect to statutory requirement and technological upgradation
2	Good Practices	XX	Does the company have a written anti bribery policy (including gifts, donations & political lobbying, corruption, scandal etc). How efficient is the policy implementation viz deviation (if any) and disciplinary action dealt with. How many cases reported. Does the company have taken initiatives for educating employees on Anti Bribery policy Does policy have periodic revision with respect technological upgradation viz online payments, freebees etc
3	Cyber security	XX	Does the company have an IT policy covering cyber / information security. Does the company has an SOP for regular data backup and storage Whether there is a periodic review of IT policy and updating based on technological advancement Any violation of policy reported. Whether necessary corrective actions / improvements have been initiated based on the review
4	Privacy Policy	XX	Does the company have Privacy policy. Does the company has the practice of getting confidentiality agreement signed by all stake holders (employee, customer, vendor etc). Whether there is a periodic review on privacy policy violation (if any) and necessary corrective actions / improvements has been initiated based on the review"
5	BCP - Business Continuity Plan	XX	Whether the company has a Business Continuity plan (BCP) to face contingency, so that the going concern principle of the entity is not affected. Does the entity has a disaster management plan (DMP) to face any Act of God. Does there is a periodic review of BCP and DMP. Whether necessary upgradation / changes have been initiated based on the previous experience or technological changes.
6	Compliance	XX	Whether the company has a written corporate governance principle which includes transparency, accountability, security etc towards all stake holders. Does it includes constitution of committees for audit, shareholders engagement, compensation, CSR, environment awareness etc. Tax evasion should be strictly dealt with whereas tax planning is permitted. The committees should ensure that all the statutory compliances has been strictly followed. Frequency of the committee meeting and attendance of the members should be reviewed. Deviations / violations must be listed, and action taken should be checked
	Evaluation Score (Average)	XX	

(Source: Author's work)

Evaluation Score (E) = Average (Environment Score card total)

Evaluation Score (S) = Average (Social Score card total)

Evaluation Score (G) = Average (Governance Score card total)

The next step is to apply the correct weightages to the evaluation score and to arrive at the country score. For this, country specific weightages have been identified for Environment, Social and Governance. For environment, Environment Performance Index (EPI) is the weightage applied and for social, Social Performance Index (SPI) is the weightage applied. World Governance Index (WGI) is the weightage applied for Governance element of ESG. So, the formula for country score is:

Country ESG Score = Average (Evaluation Score (E) * EPI + Evaluation Score (S) * SPI + Evaluation Score (G) * WGI)

The Global ESG score of a company will be the cumulative product to country ESG score and business volume.

Global ESG Score = Σ (Country ESG Score * Country's Business volume)

$$GS = \Sigma (CS_i * BV_i)$$

The above formula answers all the identified gaps in the existing ESG rating mechanism. The Global score will be out of 100 or can be treated as percentage.

The findings are:

- This formula is simple and easy to understand.
- Focuses on system than transactions.
- Covers all the geographies a company operates, irrespective of size.
- Evaluation done based on the data from the company itself. No third-party data used.
- Globally accepted indexes used for weightage.
- Motivates companies to do more business in countries with improving indexes.
- Year on Year country level comparison possible.

4.3 Summary of Findings

The findings are the answer given to the questions or gaps raised after the literature review. The existing ESG rating formulas do not have a globally accepted framework. Criteria, weightage, parameters etc vary from ESG rating agency to agency. The existing rating criteria do not consider the company's operating geography. The study derives a new formula which answers the above said gaps or questions.

$$GS = \Sigma (CS_i * BV_i)$$

Global ESG Score = Σ (Country ESG Score * Country's Business volume)

The steps can be summarised in three stages viz.

1. Category Score
2. Country ESG Score
3. Global ESG Score

The category score is the professional evaluation of the systems relating to Environment, Social and Governance. All the probable criteria relating to freight forwarding industry is included in the evaluation sheet.

The country ESG score is the average of cumulative product of category score and respective index. This will answer the weightage based on operating geography.

The Global ESG score for the company is the cumulative product of Country ESG Score and Business volume. This will ensure that all the operating geographies has been adequately considered for weightage. It will also ensure that the geography whose business volume increases over the period will get more weightage.

4.4 Conclusion

The chapter justifes the forula derived below by fullfilling the identied gaps and providing adequate weightage for each elament of ESG. Moreover, the operating geographies are given correct weightage based on the business volume.

Global ESG Score = Σ (Country ESG Score * Country's Business volume)

$$GS = \Sigma (CS_i * BV_i)$$

CHAPTER V

DISCUSSION

5.1 Discussion of Results

The result being a formula, is tested with three years data of an MNC. This MNC operates in 101 countries. As a research case study, it is not possible to study all 101 countries.

So, a general guideline is applied, that the sample should cover a business volume not less than 75 % and at least one country from every continent. The below list of countries has been selected and evaluation sheet for Environment, Social and Governance has been shared. The guidelines for evaluation are shared with the sheet. Few calls were arranged in Microsoft Teams, to clarify doubts and confusions. Few individuals from different countries were also reached out with queries, comments, and suggestions. All the queries were answered, comments and suggestion have been considered in the study. The percentage of business volume of the selected countries for 2020, 2021 & 2022 are 76.35 %, 78.13 % and 77.43 % respectively. Also, representation from all continents is ensured for sample selection. For business volume calculation uniform currency is applied throughout the year. To have a better clarity, the year-end figures are not converted to have uniformity. Conversions happened as and when the transactions have taken place throughout the 100 + countries. Monthly exchange rates are applied.

Below is the list of countries selected for evaluation:

No	Country	Continent
1	USA	North America
2	Germany	Europe
3	China	Asia
4	Great Britain	Europe
5	France	Europe
6	Canada	North America
7	Netherlands	Europe
8	Belgium	Europe
9	Switzerland	Europe
10	Italy	Europe
11	Mexico	North America
12	Austria	Europe
13	Australia	Australia
14	South Africa	Africa
15	Brazil	South America

(Source: Author's work)

Ample time has been given to each operating country/ entity to submit the full evaluation data. Being a case study, the respective departments were asked to evaluate their respective areas. Generally, Human resource department, Quality department, Operations department, Warehouse department, Compliance department, Finance department etc. are involved in getting the evaluation sheet fully evaluated. Out of the fifteen countries, eleven countries

submitted the fully completed evaluation sheet before the cut off time. Four countries were not able to submit the fully completed evaluation sheet before the cut off time. The case study is done with the available data of the fully completed evaluation sheets. Since there is a change, the business volume, percentile must be recalculated for arriving at the case study ESG Score. This change need not be applied for a scenario, where data from 100 % of the operating counties are available.

Below is the status chart of data evaluation sample send & received fully.

No	Country	Continent	Status
1	USA	North America	Full data not received before cut off time
2	Germany	Europe	Full data received before cut off time
3	China	Asia	Full data received before cut off time
4	Great Britain	Europe	Full data received before cut off time
5	France	Europe	Full data received before cut off time
6	Canada	North America	Full data not received before cut off time
7	Netherlands	Europe	Full data received before cut off time
8	Belgium	Europe	Full data not received before cut off time
9	Switzerland	Europe	Full data received before cut off time
10	Italy	Europe	Full data received before cut off time
11	Mexico	North America	Full data not received before cut off time
12	Austria	Europe	Full data received before cut off time
13	Australia	Australia	Full data received before cut off time
14	South Africa	Africa	Full data received before cut off time
15	Brazil	South America	Full data received before cut off time

(Source: Author's work)

Due to some unavoidable reasons, full data from USA, Mexico, Canada, and Belgium were not received before cut-off time. So, the study must reclassify the business volume percentile. Also, representation from North America will be missing.

The data received from the fully completed evaluation sheets are analysed and collated for each element of ESG, viz. Environment, Social & Governance. All the numerical data are keyed into Excel file, where different Pivot tables are prepared to generate different reports, analysis sheets etc. Pivot tables are prepared for each element of ESG separately for three years.

The country wise score of evaluation sheet with respect to Environment is as below:

		Evaluation Score - Environment		
No.	**Country**	**2020**	**2021**	**2022**
1	Australia	90.79%	90.79%	77.15%
2	Austria	96.48%	96.48%	85.37%
3	Brazil	62.06%	62.06%	55.97%
4	China	45.21%	45.21%	36.46%
5	France	96.97%	96.97%	80.23%
6	Germany	93.58%	93.58%	80.10%
7	Great Britain	98.55%	98.55%	99.74%
8	Italy	86.06%	86.06%	74.07%
9	Netherlands	91.27%	91.27%	80.36%
10	South Africa	52.24%	52.24%	47.75%
11	Switzerland	98.79%	98.79%	84.60%

(Source: Author's work)

After generating the evaluation report for environment, next Pivot table is prepared to generate evaluation report for Social.

The country wise score of evaluation sheet with respect to Social is as below:

		Evaluation Score - Social		
No	**Country**	**2020**	**2021**	**2022**
1	Australia	97.08%	97.46%	96.79%
2	Austria	96.87%	96.56%	97.04%
3	Brazil	78.56%	77.79%	78.53%
4	China	70.51%	70.65%	72.45%
5	France	95.09%	95.25%	94.85%
6	Germany	97.96%	97.51%	97.77%
7	Great Britain	94.99%	95.27%	94.92%
8	Italy	93.62%	93.45%	93.93%
9	Netherlands	98.26%	97.78%	98.05%
10	South Africa	75.15%	74.67%	77.09%
11	Switzerland	98.89%	99.08%	99.47%

(Source: Author's work)

After generating the evaluation report for Social, next Pivot table is prepared to generate evaluation report for Governance.

The country wise score of evaluation sheet with respect to Governance is as below:

		Evaluation Score - Governance		
No.	Country	2020	2021	2022
1	Australia	92.95%	94.58%	95.42%
2	Austria	93.12%	92.85%	90.06%
3	Brazil	43.42%	42.18%	41.28%
4	China	43.46%	44.61%	42.71%
5	France	81.90%	84.48%	82.95%
6	Germany	90.44%	92.29%	91.45%
7	Great Britain	88.00%	88.18%	88.42%
8	Italy	67.83%	70.07%	69.69%
9	Netherlands	95.00%	96.56%	94.95%
10	South Africa	53.68%	51.61%	48.25%
11	Switzerland	98.63%	99.58%	100.00%

(Source: Author's work)

The weightages are selected from globally accepted indexes, where the parameters for environment, social and governances meet. To have arithmetical uniformity, percentile score of each country has been arrived at and keyed into the excel file, where Pivot tables are prepared based on the keyed in data for report preparation and analysis.

Environment Index for the country is the percentile of Environment Performance Index of the respective year. The Environment Performance Index is published once in two years, so the index for 2021 will be the same as 2020. The Environment Performance Index for

the years 2020, 2021 & 2022 for all the countries along with the percentile has been provided in Appendix A

Below is the list of Environment Score (Percentile) for the countries in the case study:

	Environment Index (Year Wise)		
Country	**2020**	**2021**	**2022**
Australia	90.79	90.79	77.15
Austria	96.48	96.48	85.37
Brazil	62.06	62.06	55.97
China	45.21	45.21	36.46
France	96.97	96.97	80.23
Germany	93.58	93.58	80.10
Great Britain	98.55	98.55	99.74
Italy	86.06	86.06	74.07
Netherlands	91.27	91.27	80.36
South Africa	52.24	52.24	47.75
Switzerland	98.79	98.79	84.60

(Source: Author's work)

Since EPI is published once in two years, the index for 2020 and 2021 will be the same. Similarly, the next step is to collate the results of social element of ESG in the evaluation sheets. Pivot tables are prepared for three years. Social Index for the country is the

percentile of Social Progress Index of the respective year. The Social Progress Index for the years 2020, 2021 & 2022 for all the countries along with the percentile has been provided in Appendix B

Below is the list of Social Progress Index (Percentile) for the countries in the case study:

	Social Progress Index (Year Wise)		
Country	**2020**	**2021**	**2022**
Australia	97.08	97.46	96.79
Austria	96.87	96.56	97.04
Brazil	78.56	77.79	78.53
China	70.51	70.65	72.45
France	95.09	95.25	94.85
Germany	97.96	97.51	97.77
Great Britain	94.99	95.27	94.92
Italy	93.62	93.45	93.93
Netherlands	98.26	97.78	98.05
South Africa	75.15	74.67	77.09
Switzerland	98.89	99.08	99.47

(Source: Author's work)

Similarly, the next step is to collate the results of Governance element of ESG in the evaluation sheets. Pivot tables are prepared for three years. Governance Index for the country is the percentile of World Governance Index of the respective year. The World

Governance Index for the years 2020, 2021 & 2022 for all the countries along with percentile has been provided in Appendix C

Below is the list of World Governance Index (Percentile) for the countries in the case study:

	World Governance Index (Year Wise)		
Country	**2020**	**2021**	**2022**
Australia	92.95	94.58	95.42
Austria	93.12	92.85	90.06
Brazil	43.42	42.18	41.28
China	43.46	44.61	42.71
France	81.90	84.48	82.95
Germany	90.44	92.29	91.45
Great Britain	88.00	88.18	88.42
Italy	67.83	70.07	69.69
Netherlands	95.00	96.56	94.95
South Africa	53.68	51.61	48.25
Switzerland	98.63	99.58	100.00

(Source: Author's work)

After preparing the weightage indexes for environment, social and governance the next step is the grouping of evaluation sheet. Evaluation sheets for environment, social and governance has been grouped for three years.

Below is the three-year grouping of Indexed Environment Score

	Environment Score		
Country	2020	2021	2022
Australia	65.07%	76.42%	66.60%
Austria	71.40%	74.29%	66.59%
Brazil	33.62%	40.13%	37.60%
China	28.63%	32.02%	28.87%
France	36.36%	42.42%	37.11%
Germany	59.89%	63.63%	57.67%
Great Britain	60.12%	68.00%	71.81%
Italy	62.48%	65.28%	60.44%
Netherlands	41.98%	49.29%	49.82%
South Africa	34.48%	35.52%	32.47%
Switzerland	68.33%	71.62%	64.15%

(Source: Author's work)

On analysing the country wise environment score, Australia's score has increased in 2021 because of higher score in the evaluation sheet. But in 2022 it got reduced despite higher evaluation score. This is because the EPI percentile has reduced from 90.79 to 77.15. Similar is the case with Austria, Brazil, China, France Germany, Italy, South Africa, and Switzerland. Whereas, Environment score of Great Britain has increased in 2022, due to the combined effect of higher evaluation score and increase in index ranking.

Below is the three-year grouping of Indexed Social Score

	Social Score		
Country	2020	2021	2022
Australia	81.55%	81.87%	96.79%
Austria	54.25%	54.07%	93.16%
Brazil	62.06%	61.45%	63.61%
China	45.83%	47.34%	49.56%
France	35.66%	40.48%	47.43%
Germany	62.86%	65.01%	67.63%
Great Britain	81.69%	83.84%	85.43%
Italy	78.64%	84.11%	92.05%
Netherlands	70.75%	70.40%	76.48%
South Africa	61.38%	60.98%	62.96%
Switzerland	56.04%	56.15%	60.51%

(Source: Author's work)

There is no major variation in the percentile of social performance index for 2020, 2021 & 2022. The positive and negative variations are meagre. But the Social score for all the countries is showing positive trends. This is due to the continuing improvement which reflected in the evaluation sheet. Austria and Italy did well in 2022 compared to previous years. The lower score of China is due to low SPI percentile. But the low scores of France and Switzerland need to be further investigated. The primary observation is that the evaluator would have taken a very conservative view in his judgement. This is one of the limitations of this method. This can be overcome by rotation of evaluators. When it comes

to real time rating, professional evaluators will be doing it. So, the chances of error can be reduced or minimised.

Below is the three-year grouping of Indexed Governance Score

	Governance Score		
Country	2020	2021	2022
Australia	92.95%	94.58%	95.42%
Austria	91.56%	91.30%	90.06%
Brazil	43.42%	42.18%	41.28%
China	43.46%	44.61%	42.71%
France	81.90%	84.48%	82.95%
Germany	90.44%	92.29%	91.45%
Great Britain	86.53%	86.71%	86.94%
Italy	67.83%	70.07%	69.69%
Netherlands	79.96%	87.71%	86.24%
South Africa	53.68%	51.61%	48.25%
Switzerland	83.02%	85.47%	87.50%

(Source: Author's work)

Governance, generally based on various policies framed by the company, viz. Privacy policy, Code of Conduct, Anti bribery policy, Information / Cyber security policy, confidential reporting, whistle blower policy etc. For an MNC operating in various countries, the policies are same and mostly monitored centrally. A good number of MNCs will have a centrally located confidential reporting, where anybody can report anonymously. So, the evaluation score will be almost uniform. Governance Score for a well-disciplined company will be higher than Environment and Social score, because of the simple reason that the company will have a professional approach to all the policy with

respect to creation, modification and periodic review. The variance in governance score will be mainly due to difference in index, viz. World Governance Index. Low scores of China, Brazil and South Africa are due to comparatively lower index.

The next step of the case study is to arrive at country score, which is the average score of indexed environment, social and governance scores.

Below is the three-year score for the respective country.

	Country Score		
Country	2020	2021	2022
Australia	79.86	84.29	86.27
Austria	72.40	73.22	83.27
Brazil	46.37	47.92	47.49
China	39.31	41.32	40.38
France	51.31	55.80	55.83
Germany	71.06	73.64	72.25
Great Britain	76.11	79.51	81.39
Italy	69.65	73.15	74.06
Netherlands	64.23	69.13	70.85
South Africa	49.84	49.37	47.89
Switzerland	69.13	71.08	70.72

(Source: Author's work)

Brazil, China, and South Africa scored less than 50 in Country Score. This is not because the company in the respective country is not doing well with respect to ESG, but due to the comparatively lower EPI, SPI and WGI of the respective country. The general trend of

year-on-year increase in score is a positive sign and an indication that the company is doing good with respect to ESG initiatives.

Below is the business volume data for three years, which is the percentile of business volume of the countries from which full data received before cut off time.

	Business Volume Percentile (Year wise)		
Country	**2020**	**2021**	**2022**
Australia	2.40	2.28	2.87
Austria	3.32	2.91	3.26
Brazil	2.38	2.64	2.83
China	9.93	20.85	20.52
France	13.22	10.84	9.42
Germany	36.81	34.77	34.62
Great Britain	15.35	11.43	10.74
Italy	3.75	3.46	3.59
Netherlands	6.07	5.23	5.26
South Africa	3.99	3.12	2.84
Switzerland	2.78	2.47	4.05
Total	**100.00**	**100.00**	**100.00**

(Source: Author's work)

Business volume figures have to be regrouped, since full details from four countries were not received before the cut off time. Data from USA, Canada, Mexico and Belgium are missing. So, representative sample from North America is missing. All the four countries are high index countries, and the final score will be comparatively less, if the data from these countries has been included. This will get offset, since we didn't take samples from low business volume countries, which have comparatively lesser indices.

The last stage is arriving at the final ESG Score for the company. This is the cumulative score of the product of country score and business volume.

Global ESG Score Calculation

	Country Score			Turnover Percentile			Global Score		
Country	2020	2021	2022	2020	2021	2022	2020	2021	2022
Australia	79.86	84.29	86.27	2.40%	2.28%	2.87%	1.92	1.92	2.48
Austria	72.40	73.22	83.27	3.32%	2.91%	3.26%	2.40	2.13	2.71
Brazil	46.37	47.92	47.49	2.38%	2.64%	2.83%	1.10	1.27	1.34
China	39.31	41.32	40.38	9.93%	20.85%	20.52%	3.90	8.62	8.29
France	51.31	55.80	55.83	13.22%	10.84%	9.42%	6.78	6.05	5.26
Germany	71.06	73.64	72.25	36.81%	34.77%	34.62%	26.16	25.61	25.01
Great Britain	76.11	79.51	81.39	15.35%	11.43%	10.74%	11.68	9.09	8.74
Italy	69.65	73.15	74.06	3.75%	3.46%	3.59%	2.61	2.53	2.66
Netherlands	64.23	69.13	70.85	6.07%	5.23%	5.26%	3.90	3.62	3.73
South Africa	49.84	49.37	47.89	3.99%	3.12%	2.84%	1.99	1.54	1.36
Switzerland	69.13	71.08	70.72	2.78%	2.47%	4.05%	1.92	1.76	2.86
Total							**64.37**	**64.12**	**64.44**

(Source: Author's work)

The company's ESG score remains almost the same throughout three years close to 64 out of 100, which is good. On an in-depth analysis, the major observation is that, the business volume from China has doubled from almost 10 % to 20 %, which is a substantial business volume. The index of China is less compared to other countries. Considering this major

observation, we can infer that the company is doing well in ESG despite the increase in business volume from low index countries, and also, marginal reduction in business volume from high index countries.

5.2 Discussion of Research Questions

The research questions raised in this study are:

1. What are the scoring criteria to be considered and evaluated?
2. Which are the best data sources?
3. How to evaluate the system with respect to creation of policy, implementation, corrective action, periodical upgradation and updating with respect to technological advancement and contingencies?
4. How will be the ESG score related to the business in different geographies?
5. How to identify a justifiable index / weightage?
6. How the score relates to the financial / business volume?

The first three questions can be taken as one set. The evaluation sheet answers the first three questions. The evaluation sheet evaluates the system than transactions in a professional way. This comprises of all the possible system queries with respect to freight forwarding industry. Above all, the data and information are taken from the company itself, which is the best source. No third party / outside information has been considered. Questions four and five can be taken as another set. The weightage factor used in the formula are globally accepted indexes which fulfils the required parameters of the three elements of ESG viz Environment, Social and Governance. Since the indexes are country centric, operating geographies are given adequate weightage. The final question relates to business volume, which varies from year to year. This is given effect by factoring business volume in the final formula for Global ESG score.

5.3 DISCUSSION - ESG DATA AND COMPANY

After a through study and professional evaluation of the various reports, website information and other related documents of the top freight forwarding companies, systems related to freight forwarding industry with respect to the three pillars of ESG has been identified. All the ESG data required for the evaluation is purely system / process related . Initially, let's discuss on environment .

Evaluation score for Enivironment element is done based on the professional judgement on Environment policy, Dangerous goods policy , CO_2 / GHG reduction initiatives , Efficency in energy usuage , Biodiversity initiatives and Green procurement policy. The data required to do the evalauation are mainly , whether there is a written policy communsurate with the size of the company. The next step is to verify the data with respect to implimentation of the policy,whether the policies are implimented correctly and deviations / variances properly recorded. This can be done by site visits , document verification , inputs from employees etc.. The next set of data to be evaluated is the number of training / education provided on different policies under environment . The number of participents , whether they still work with the company etc. has to be throughly verified. The next set of data to be verified is , whether proper corrective actions have been taken and recored for the deviations / violation of the policy. The most important data to be verified is the data on periodice revision / updation of the policy with respect to techonolgical advancement and needs of the suituation (eg. COVID). With respect to Dangerous goods policy , the number of trained / certified employes has to be corelated with the number of dangerous goods shipment handled , area of warehouse where

dangerous goods are stored etc.. Efficency of energy usage can be checked by verification of energy bills , initiatives in buying energy efficent equipments , usage of green energy instead of usage of fossil fuel etc.. Data on protection of Biodiversity can be checked by number of trainings , awareness, initiatives etc. given / taken up to various stake holders, viz. employees, customers, other business partners of the company. The professional analysis and evaluation of these data will help the evaluater to arrive at a logical conclusion on the score to be given for the company in that particular geography.

Evaluation score for social element is done based on the professional judgement of DEI (Diversity, Equality & Inclusion) policy, Healthy & Safety policy, Human rights policy , Policy on grievence redressal , Rural transformation policy and Customer experience / satisfaction initiatives. The data required to do the evalauation are mainly the compliants received and actions taken on racial , religious, sexual and other discriminations , human rights violation etc.. Purchase & usuage data of consumable and equipments with respect to health , safety and sanitation is in line with the size of the company has to be checked . Freight forwarding companies mainly have offices near airport and seaports , which are mainly in urban areas. So rural transformation is mainly for warehousing and applies to geographies in Africa , Asia and South America in particular. The data regarding rural transformation can be verified with respect to offices / warehouses in rural areas and percentage of employees from rural areas in the company’s payroll. This percentage will vary with country to country . So, a benchmark cannot be set. Customer satisfaction data can be verified from the number of customer appreciations / feedbacks received . Also how the company reacts to positive and creative criticism from the customer has to be analysed.

This included corrective action , improvements with respect to service quality , investing in new online tools for receiving feedbacks etc. Most of the top companies will have a confidential reporting line with respect to grievance redressal. Since it is confidential, there will be difficulty in getting full details from the management. In such suituations, number of compliants, action taken , modification in the policy based on frequent complaints of same nature, updatation / revision in policy with respect to complaint history etc. has to to verified and recorded.

Evaluation score for governance element is done based on the professional judgement of Compliance policy, Code of conduct evaluation , Privacy policy, Cyber security policy, Anti bribery policy and business continuity plan. The data required to do the evalauation are mainly the compliants received and actions taken on code of conduct violation, breach of privacy policy , breach of information security policy , violation of anti bribery policy ,compliance violation etc.. The number of violations / breaches has to be recorded and evaluated considering the number of employees in the company. Corrective action taken , periodic evaluations , necessary changes / updation in policy has to be checked. These are the data required for evaluating the governance element of ESG. In addition to the above , the company should have a plan for busines countinuty to face any contingency (eg. COVID). Company has to ensure , proper education and training to be given on code of conduct, cyber security , compliance policy, privacy policy, anti bribery policy etc.

To summarise, all these data has to be collected by the professional evaluator to have a logical conclusion for guaging the evaluation score for the three elements of ESG.

Index data have nothing to do with the company. Its purely a weightage used for the geographies where the company operates. The index has been selected after a very long evaluation which best fits the three element of ESG.

Business volume data is very crucial in arriving the ESG Score as per the new formula. The relevance of the business volume is to make all operating geographies an integral part of the ESG score depending on their contribution to global sales of the company. This will ensure that all the operating geographies contribute to the global ESG Score according to the business they generate for the company. This will help the company to integrate finacial performance to ESG score to a certain extent.

To have an error free score, the data from all the operating countries should be of uniform period and same currency.

5.4 DISCUSSION - HOW COMPANY CAN IMPROVE ESG SCORE

A company can improve its ESG score by improving the evaluation score and doing more business in countries where EPI , SPI & WGI are high. The second option would not work much with business, as, doing business in a specific geography is a commercial decission .So, it would not be practally workable to insist on doing business in high EPI, SPI & WGI countries. It will be prudential to work on improving evaluation score. This can be achieved by implementing good Environmental policy, Dangerous goods policy , Green procurement policy , CO_2 and GHG reduction initiatives,use energy efficient equipments, initiatives to protect biodiversity etc. Implimentation includes deviation analysis, corrective action , educating , periodic revisions with respect to technological upgradation and needs due to change in suituation (eg. COVID).

Evaluation score with respect to Social can be improved by implementing good DEI (Diversity, Equality and Inclusion) policy , Human rights policy , Health & Safety policy, Forum for grievence redressal, Rural transormation etc.. Implimentation includes deviation analysis, corrective action , educating , periodic revisions with respect to technological upgradation and needs due to change in suituation.

Evaluation score with respect to Governance can be improved by implementing good Code of Conduct, Cyber security policy , Privacy policy, Compliance guidelines , policy to arrest bribery , lobbying, corruption , scandals etc . Implimentation includes deviation analysis,

corrective action , educating , periodic revisions with respect to technological upgradation and needs due to change in suituation.

ESG score helps investor to identify potential risk linked to operational , regulatory and reputation, which affects the going conern concept of the company. This also helps the policy makers in the company to identify the weaknesses and to take corrective action to avoid present and future risks. A good ESG score is the sign of high brand value , customer satisfaction , productivity etc.

CHAPTER VI

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

The research is to derive a new ESG Rating formula for companies in freight forwarding industry. The need for this is due to major variance in score of the same company by different rating agencies. The study is limited to freight forwarding industry, otherwise parameters for different industry must be studied and analysed. This will not be practically possible due to time and resource constrains.

A systematic literature review has been done to identify the gaps in the existing ESG rating methods. The gaps were identified, analysed, and reviewed. This becomes the foundation of the research study. A qualitative study has been done to provide insight into the problem and find a solution which fills the identified gaps.

The research is designed to have maximum possible data collection by studying and evaluating the latest and relevant documents / reports from top freight forwarding companies. The methods used for data collection are document analysis, direct observation etc. The collected large volume numerical data are keyed into Excel file and analyzed via Pivot table. In depth study has been done using Pivots by preparing reports for, analysis and comparison.

The study derives ESG Rating formula for freight forwarding industry as below:

$$\mathbf{GS = \Sigma (CS_i * BV_i)}$$

Global ESG Score = Σ (Country ESG Score * Country's Business volume)
(Source: Author's work)

6.2 Implications

This study brings a new formula for ESG rating by considering all the possible criteria, giving appropriate weightage to environment, social and governance for the respective country where the company operates. Business volume of the operating countries is also factored in the new formula.

This rating formula will help the company and all the stake holders to compare year on year ESG Score at country level and global level. The logic and methodology used in the formala is simple and easy to understand. The highlight of this formula is , all the operating countries has been adequaltely factored in ESG element weightage and business volume. This gives a better and realistic score than other rating agencies. The other rating agencies use data from company website, annual report, CSR reports / Sustainability report, media source, company disclosures, NGO Reports, stock exchange filing, survey etc... These disclosures are mainly finacial data or semi financial data, whereas ESG rating data are mainly non finacial informations. Generally, violations of policy , periodic revisions with respect to technological upgradation or need of the suituation , preventive action , educating the team on policy and its implimemtation, etc. will not find place in company disclosures . For a Multi National Company (MNC) operating in more than 100 countries and say , ten countries reports deviation in policy implimentation, wont figure out in the consolidated report. This study requires country level information, so that the deviation or flow in implimentation will be identified and figure out in the scoring mechanism. So this

can be verified and evaluated only by a process similar to financial audit, where the company documents can be verified and a logical conclusion can be reached. The informations with respect to Social and Governance are mostly non financial and difficult to find in public domain , company disclosures , media report etc. The evaluation based on a low and inadequate volume of data would not give the correct picture / score.

In the current study , emphasis is on system evaluation than tranasction evaluation. This will give the correct and exact evaluation with respect to all the three elements of ESG with more clarity on social and governance pillar. The violations, corrective actions, educating the stake holders etc. mainly with respect to social and governance (eg. code of conduct , cyber security , privacy policy , compliance , diversity , equality & inclusion policy , human rights policy) will be properly evaluated by a professional , which will help in arriving at a correct and transparent score. This will help the company to identify the area to be improved to have a better ESG score for future years. The current rating methodology will not give a clarity on the process / systems followed by the company , which will create confusion to all the stake holders including the investors , NGO s etc.

All the countries where the company operates will be contributing to the ESG Score. It will not be a criteria , where the company is head quartered. Evaluation is done for the system and not transactions , so company to company comparision is also possiable. Since it is a system evaluation the size of the company doesn’t matter.

6.3 Recommendations for Future Research

The study also suggests avenues for future research. In the current study, a new formula has been derived for calculation of ESG Score of a freight forwarding company. In this study an evaluation sheet, which comprises of system evaluation to be done by a professional, has been used. In future, there can be technological changes, which can be inputted to have an updated and upgraded evaluation sheet. Any invention with respect to GHG reduction, carbon neutral, preservation of biodiversity, statutory requirement with respect to diversity, inclusion, equality etc. must be factored in the evaluation sheet.

Second recommendation is with respect to weightage. There can be better indexes in future, which fulfills the ESG parameters. So, applying those indexes as a weightage is also recommended.

Another expected change in the formula is with respect to new index for ESG. Any reputed organization / institute can come up with a new ESG index for every country. Then, we can remodify the formula with the new ESG index, instead of using Environment Performance index, Social Progress index and World Governance Index separately. In such a case the evaluation sheet must be remodified and reclassify, so that equal weightage will be giving to Environment, Social and Governance elements. It's very important to ensure that the new index is fulfilling all the criteria / parameters which justifies the index for ESG formula. As in the case of Environment Performance index, World Economic Forum publishes the index based on the study of M/s Yale University and M/s Columbia University: An organization with similar repute and assistance from reputed university or

business school can come up with ESG index which considers and factors for all the parameters / criteria of Environment Performance index, Social Progress index and World governance index.

Future research can cover all the industry, by modifying the evaluation sheet. But this will have a lot of parameters relevant and irrelevant for a particular industry. A professional study will help to identify all the criteria. A computer program for calculating the formula will reduce the clerical work and error percentage. A software developed for score calculation will help to bring uniformity and acceptance.

In the current study, all three elements of ESG have given equal weightage. This can be changed after analyzing the development over a period.

6.4. **Conclusion**

ESG is very relavent topic which requires attention from the corporate world. If you don't measure, you can't evaluate it. So, a realistic and accurate scoring mechanism is required. Companies that perform better in ESG issues can increase shareholder value by, properly managing risks, anticipating regulatory action, accessing new markets, while at the same time contributing to the sustainable development of the societies in which they operate. Moreover, a good ESG Score will give a strong impact on reputation and branding, which brings value to company. Ultimately, successful investment depends on a vibrant economy, which depends on a healthy civil society, which is ultimately dependent on a sustainable planet. A better inclusion of environmental, social, and corporate governance factors in investment decisions will finally contribute to more stable and predictable market. Sound corporate governance and risk management systems are crucial pre-requisites to successfully implement policies and measures to address environmental and social challenges.

The aim of this research is to derive a ESG rating formula for companies in freight forwarding industry. Currently, ESG rating agencies do not have a globally accepted scoring mechanism. They use different methodology, weightage, source data, etc. which make it confusing and difficult to understand. The current study derives a formula ,which is simple and easy to understand . It has used globally accepted weightages and all the operating countries have been factored based on the business volume generated from those countries.

The formula derived from the study can be used for any industry by modifying the evaluation table for the required industry. The evaluation criteria vary from industry to industry. The country indexes and the business volume elements remain the same.

The key feature of this formula is that all the operating geographies are covered, and system evaluation is applied instead of transaction evaluation. These elements will help to capture the elements missed out in the consolidated reports, which are critical non-financial elements of ESG rating. A good ESG score indicates positive sustainable growth. It is the responsibility of all the corporate entities to work for a sustainable planet.

A sustainable growth is a growth which fulfils the needs of the present without compromising the needs of the future. This includes environmental, social, and economic growth. A good ESG Score will help all stake holders of the company in bringing value addition for a better tomorrow.

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APPENDIX A:

ENVIRONMENT PERFORMANCE INDEX

Environment Performance Index					
No	**Country**	**EPI 2022**		**EPI 2020**	
		Score	**Percentile**	**Score**	**Percentile**
1	Denmark	77.90	100.00	82.50	100.00
2	United Kingdom	77.70	99.74	81.30	98.55
3	Finland	76.50	98.20	78.90	95.64
4	Malta	75.20	96.53	70.70	85.70
5	Sweden	72.70	93.32	78.70	95.39
6	Luxembourg	72.30	92.81	82.30	99.76
7	Slovenia	67.30	86.39	72.00	87.27
8	Austria	66.50	85.37	79.60	96.48
9	Switzerland	65.90	84.60	81.50	98.79
10	Iceland	62.80	80.62	72.30	87.64
11	Netherlands	62.60	80.36	75.30	91.27
12	France	62.50	80.23	80.00	96.97
13	Germany	62.40	80.10	77.20	93.58
14	Estonia	61.40	78.82	65.30	79.15
15	Latvia	61.10	78.43	61.60	74.67
16	Croatia	60.20	77.28	63.10	76.48
17	Australia	60.10	77.15	74.90	90.79
18	Slovakia	60.00	77.02	68.30	82.79
19	Czech Republic	59.90	76.89	71.00	86.06
20	Norway	59.30	76.12	77.70	94.18
21	Belgium	58.20	74.71	73.30	88.85
22	Cyprus	58.00	74.45	64.80	78.55
23	Italy	57.70	74.07	71.00	86.06
24	Republic of Ireland	57.40	73.68	72.80	88.24
25	Japan	57.20	73.43	75.10	91.03
26	New Zealand	56.70	72.79	71.30	86.42

27	Spain	56.60	72.66	74.30	90.06
29	Greece	56.20	72.14	69.10	83.76
28	The Bahamas	56.20	72.14	43.50	52.73
30	Romania	56.00	71.89	64.70	78.42
31	Lithuania	55.90	71.76	62.90	76.24
32	Seychelles	55.60	71.37	58.20	70.55
33	Hungary	55.10	70.73	63.70	77.21
34	North Macedonia	54.30	69.70	55.40	67.15
35	Botswana	54.00	69.32	40.40	48.97
37	Saint Vincent and the Grenadines	53.20	68.29	48.40	58.67
36	Barbados	53.20	68.29	45.60	55.27
38	São Tomé and Príncipe	52.90	67.91	37.60	45.58
40	United Arab Emirates	52.40	67.27	55.60	67.39
39	Antigua and Barbuda	52.40	67.27	48.50	58.79
41	Bulgaria	51.90	66.62	57.00	69.09
42	Dominica	51.20	65.73	44.60	54.06
43	United States	51.10	65.60	69.30	84.00
45	Singapore	50.90	65.34	58.10	70.42
44	Namibia	50.90	65.34	40.20	48.73
46	Poland	50.60	64.96	60.90	73.82
47	Panama	50.50	64.83	47.30	57.33
48	Portugal	50.40	64.70	67.00	81.21
50	Canada	50.00	64.18	71.00	86.06
49	Belize	50.00	64.18	41.90	50.79
51	Gabon	49.70	63.80	45.80	55.52
52	Ukraine	49.60	63.67	49.50	60.00
53	Saint Lucia	49.40	63.41	43.10	52.24
54	Kiribati	49.00	62.90	37.70	45.70
55	Belarus	48.50	62.26	53.00	64.24
56	Armenia	48.30	62.00	52.30	63.39
57	Israel	48.20	61.87	65.80	79.76
58	Grenada	47.90	61.49	43.10	52.24
59	Trinidad and Tobago	47.80	61.36	47.50	57.58
60	Cuba	47.50	60.98	48.40	58.67
61	Djibouti	47.50	60.98	28.10	34.06
62	Albania	47.10	60.46	49.00	59.39

64	South Korea	46.90	60.21	66.50	80.61
63	Montenegro	46.90	60.21	46.30	56.12
65	Chile	46.70	59.95	55.30	67.03
66	Ecuador	46.50	59.69	51.00	61.82
67	Venezuela	46.40	59.56	50.30	60.97
68	Costa Rica	46.30	59.44	52.50	63.64
69	Zimbabwe	46.20	59.31	37.00	44.85
70	Suriname	45.90	58.92	45.20	54.79
71	Brunei	45.70	58.66	54.80	66.42
72	Jamaica	45.60	58.54	48.20	58.42
73	Mexico	45.50	58.41	52.60	63.76
74	Taiwan	45.30	58.15	57.20	69.33
75	Central African Republic	44.90	57.64	36.90	44.73
76	Eswatini	44.90	57.64	33.80	40.97
78	Mauritius	44.80	57.51	45.10	54.67
77	Equatorial Guinea	44.80	57.51	38.10	46.18
79	Serbia	43.90	56.35	55.20	66.91
80	Tonga	43.80	56.23	45.10	54.67
83	Jordan	43.60	55.97	53.40	64.73
82	Brazil	43.60	55.97	51.20	62.06
81	Afghanistan	43.60	55.97	25.50	30.91
84	Moldova	42.70	54.81	44.40	53.82
85	Bhutan	42.50	54.56	39.30	47.64
86	Comoros	42.50	54.56	32.10	38.91
88	Kuwait	42.40	54.43	53.60	64.97
87	Colombia	42.40	54.43	52.90	64.12
89	Dominican Republic	42.20	54.17	44.60	54.06
90	Bahrain	42.00	53.92	51.00	61.82
91	Cape Verde	41.90	53.79	32.80	39.76
92	Argentina	41.10	52.76	52.20	63.27
94	Paraguay	40.90	52.50	46.40	56.24
93	Kazakhstan	40.90	52.50	44.70	54.18
95	El Salvador	40.80	52.37	43.10	52.24
96	Tunisia	40.70	52.25	46.70	56.61
97	Malawi	40.60	52.12	38.30	46.42
98	Guinea-Bissau	40.20	51.60	29.10	35.27
99	Bolivia	40.10	51.48	44.30	53.70

100	Republic of the Congo	40.10	51.48	30.80	37.33
101	Peru	39.80	51.09	44.00	53.33
102	Bosnia and Herzegovina	39.40	50.58	45.40	55.03
103	Georgia	39.10	50.19	41.30	50.06
104	Azerbaijan	38.60	49.55	46.50	56.36
105	Guyana	38.50	49.42	35.90	43.52
106	Zambia	38.40	49.29	34.70	42.06
107	Uzbekistan	38.20	49.04	44.30	53.70
108	Thailand	38.10	48.91	45.40	55.03
109	Saudi Arabia	37.90	48.65	44.00	53.33
110	Nicaragua	37.70	48.40	39.20	47.52
111	Niger	37.70	48.40	30.80	37.33
112	Russia	37.50	48.14	50.50	61.21
115	Uruguay	37.40	48.01	49.10	59.52
113	Maldives	37.40	48.01	35.60	43.15
114	Federated States of Micronesia	37.40	48.01	33.00	40.00
116	South Africa	37.20	47.75	43.10	52.24
117	Tajikistan	37.10	47.63	38.20	46.30
118	Turkmenistan	37.00	47.50	43.90	53.21
119	Democratic Republic of the Congo	36.90	47.37	36.40	44.12
120	Vanuatu	36.90	47.37	28.90	35.03
121	Honduras	36.50	46.85	37.80	45.82
123	Samoa	36.40	46.73	37.30	45.21
122	The Gambia	36.40	46.73	27.90	33.82
124	Marshall Islands	36.20	46.47	30.80	37.33
125	Uganda	35.80	45.96	35.60	43.15
126	Kyrgyzstan	35.70	45.83	39.80	48.24
128	Egypt	35.50	45.57	43.30	52.48
127	Burkina Faso	35.50	45.57	38.30	46.42
129	East Timor	35.10	45.06	35.30	42.79
130	Malaysia	35.00	44.93	47.90	58.06
131	Solomon Islands	35.00	44.93	26.70	32.36
132	Sri Lanka	34.70	44.54	39.00	47.27
133	Iran	34.50	44.29	48.00	58.18

134	Tanzania	34.20	43.90	31.10	37.70
135	Togo	34.00	43.65	29.50	35.76
136	Senegal	33.90	43.52	30.70	37.21
137	Qatar	33.00	42.36	37.10	44.97
139	Rwanda	32.80	42.11	33.80	40.97
138	Ivory Coast	32.80	42.11	25.80	31.27
140	Sierra Leone	32.70	41.98	25.70	31.15
141	Lesotho	32.30	41.46	28.00	33.94
142	Lebanon	32.20	41.34	45.40	55.03
143	Ethiopia	31.80	40.82	34.40	41.70
145	Mozambique	31.70	40.69	33.90	41.09
144	Eritrea	31.70	40.69	30.40	36.85
146	Guinea	31.60	40.56	26.40	32.00
147	Fiji	31.30	40.18	34.40	41.70
148	Kenya	30.80	39.54	34.70	42.06
150	Oman	30.70	39.41	38.50	46.67
149	Laos	30.70	39.41	34.80	42.18
151	Angola	30.50	39.15	29.70	36.00
152	Burundi	30.50	39.15	27.00	32.73
153	Cameroon	30.20	38.77	33.60	40.73
154	Cambodia	30.10	38.64	33.60	40.73
155	Algeria	29.60	38.00	44.80	54.30
157	Mongolia	29.60	38.00	32.20	39.03
156	Benin	29.60	38.00	30.00	36.36
158	Philippines	28.90	37.10	38.40	46.55
159	Mali	28.50	36.59	29.40	35.64
161	Morocco	28.40	36.46	42.30	51.27
160	China	28.40	36.46	37.30	45.21
162	Nepal	28.30	36.33	32.70	39.64
163	Nigeria	28.30	36.33	31.00	37.58
164	Indonesia	28.20	36.20	37.80	45.82
166	Mauritania	28.10	36.07	27.70	33.58
165	Chad	28.10	36.07	26.70	32.36
167	Guatemala	28.00	35.94	31.80	38.55
168	Madagascar	28.00	35.94	26.50	32.12
169	Iraq	27.80	35.69	39.50	47.88
170	Ghana	27.70	35.56	27.60	33.45

171	Sudan	27.60	35.43	34.80	42.18
172	Turkey	26.30	33.76	42.60	51.64
173	Haiti	26.10	33.50	27.00	32.73
174	Liberia	24.90	31.96	22.60	27.39
175	Papua New Guinea	24.80	31.84	32.40	39.27
176	Pakistan	24.60	31.58	33.10	40.12
177	Bangladesh	23.10	29.65	29.00	35.15
178	Vietnam	20.10	25.80	33.40	40.48
179	Myanmar	19.40	24.90	25.10	30.42
180	India	18.90	24.26	27.60	33.45

APPENDIX B:

SOCIAL PROGRESS INDEX

No	Country	2020		2021		2022	
		Score	Percentile	Score	Percentile	Score	Percentile
1	Norway	90.85	100.00	92.63	100.00	90.74	100.00
2	Denmark	90.58	99.70	92.15	99.48	90.54	99.78
3	Finland	90.49	99.60	92.26	99.60	90.46	99.69
4	Switzerland	89.84	98.89	91.78	99.08	90.26	99.47
5	Iceland	89.54	98.56	91.78	99.08	89.54	98.68
6	Sweden	89.37	98.37	91.20	98.46	89.42	98.55
7	Netherlands	89.27	98.26	90.57	97.78	88.97	98.05
8	Germany	89.00	97.96	90.32	97.51	88.72	97.77
9	Japan	87.83	96.68	90.44	97.64	88.19	97.19
10	Canada	87.98	96.84	91.41	98.68	88.17	97.17
11	Austria	88.01	96.87	89.44	96.56	88.05	97.04
12	Australia	88.20	97.08	90.28	97.46	87.83	96.79
13	Ireland	87.76	96.60	89.47	96.59	87.69	96.64
14	Luxembourg	87.78	96.62	88.75	95.81	87.48	96.41
15	New Zealand	87.44	96.25	90.02	97.18	87.26	96.16
16	Belgium	87.09	95.86	88.68	95.74	87.22	96.12
17	Korea, Rep.	85.88	94.53	88.42	95.46	86.47	95.29
18	Estonia	85.39	93.99	87.38	94.33	86.16	94.95
19	United Kingdom	86.30	94.99	88.25	95.27	86.13	94.92
20	France	86.39	95.09	88.23	95.25	86.07	94.85
21	Spain	85.77	94.41	87.53	94.49	85.35	94.06
22	Italy	85.05	93.62	86.56	93.45	85.23	93.93
23	Czech Republic	84.77	93.31	86.60	93.49	85.19	93.88
24	Portugal	85.10	93.67	85.97	92.81	84.75	93.40
25	United States	85.27	93.86	86.29	93.16	84.65	93.29
26	Malta	83.73	92.16	85.24	92.02	84.52	93.15
27	Slovenia	85.34	93.94	85.83	92.66	84.19	92.78

28	Singapore	83.46	91.87	84.73	91.47	83.76	92.31
29	Lithuania	83.44	91.84	85.58	92.39	83.71	92.25
30	Cyprus	82.77	91.11	85.03	91.80	83.18	91.67
31	Israel	81.81	90.05	83.81	90.48	83.17	91.66
32	Latvia	81.82	90.06	83.43	90.07	82.46	90.88
33	Greece	82.26	90.54	84.37	91.08	82.44	90.85
34	Croatia	81.17	89.35	82.82	89.41	82.32	90.72
35	Slovak Republic	80.91	89.06	83.69	90.35	81.29	89.59
36	Chile	79.77	87.80	82.18	88.72	80.78	89.02
37	Costa Rica	80.18	88.26	81.73	88.23	80.65	88.88
38	Uruguay	81.25	89.43	81.15	87.61	80.27	88.46
39	Poland	81.08	89.25	83.08	89.69	80.17	88.35
40	Barbados	79.65	87.67	80.74	87.16	79.60	87.72
41	Argentina	77.86	85.70	80.38	86.78	78.64	86.67
42	Hungary	78.25	86.13	80.15	86.53	78.21	86.19
43	Romania	76.48	84.18	78.41	84.65	76.89	84.74
44	Bulgaria	76.28	83.96	78.81	85.08	76.81	84.65
45	Serbia	75.64	83.26	75.99	82.04	75.80	83.54
46	Trinidad and Tobago	75.35	82.94	76.82	82.93	75.58	83.29
47	Mauritius	76.87	84.61	77.30	83.45	75.44	83.14
48	Armenia	74.16	81.63	74.56	80.49	74.78	82.41
49	Montenegro	74.65	82.17	74.15	80.05	74.64	82.26
50	Georgia	74.34	81.83	75.47	81.47	74.43	82.03
51	Moldova	72.42	79.71	73.67	79.53	74.19	81.76
52	Ukraine	73.20	80.57	75.78	81.81	74.17	81.74
53	Albania	73.23	80.61	74.51	80.44	74.12	81.68
54	Malaysia	73.71	81.13	75.22	81.20	74.08	81.64
55	Kuwait	73.19	80.56	75.32	81.31	74.06	81.62
56	Panama	74.07	81.53	75.01	80.98	74.02	81.57
57	Jamaica	72.83	80.17	75.00	80.97	73.48	80.98
58	Macedonia	72.03	79.28	73.05	78.86	72.74	80.16
59	Russian Federation	72.00	79.25	73.45	79.29	71.99	79.34
60	Ecuador	71.78	79.01	73.85	79.73	71.75	79.07
61	Belarus	75.33	82.92	74.83	80.78	71.49	78.79
62	Brazil	71.37	78.56	72.06	77.79	71.26	78.53
63	Bosnia and Herzegovina	70.49	77.59	71.91	77.63	71.23	78.50
64	Suriname	70.09	77.15	70.22	75.81	71.22	78.49

65	Kazakhstan	70.33	77.41	72.23	77.98	71.21	78.48
66	Mexico	71.32	78.50	71.52	77.21	70.84	78.07
67	Peru	70.85	77.99	73.61	79.47	70.70	77.91
68	United Arab Emirates	70.59	77.70	71.58	77.28	70.70	77.91
69	South Africa	68.27	75.15	69.17	74.67	69.95	77.09
70	Colombia	70.16	77.23	71.35	77.03	69.83	76.96
71	Thailand	69.30	76.28	70.96	76.61	69.80	76.92
72	Tunisia	70.67	77.79	73.95	79.83	69.77	76.89
73	Dominica	67.59	74.40	70.71	76.34	69.76	76.88
74	Sri Lanka	69.29	76.27	70.81	76.44	69.22	76.28
75	Cape Verde	68.91	75.85	70.00	75.57	69.01	76.05
76	Paraguay	67.99	74.84	71.49	77.18	68.96	76.00
77	Vietnam	68.02	74.87	69.70	75.25	68.18	75.14
78	Bhutan	66.76	73.48	68.44	73.89	68.05	74.99
79	Maldives	67.05	73.80	70.40	76.00	68.02	74.96
80	Oman	66.74	73.46	68.09	73.51	67.70	74.61
81	Philippines	67.59	74.40	65.73	70.96	67.46	74.34
82	Jordan	68.61	75.52	68.77	74.24	67.32	74.19
83	Kyrgyz Republic	68.58	75.49	68.78	74.25	67.23	74.09
84	Mongolia	67.07	73.82	69.18	74.68	67.21	74.07
85	Bolivia	65.84	72.47	67.69	73.08	67.15	74.00
86	Fiji	67.22	73.99	69.06	74.55	67.02	73.86
87	Indonesia	66.15	72.81	66.26	71.53	66.67	73.47
88	Türkiye	66.20	72.87	67.99	73.40	66.59	73.39
89	Lebanon	66.90	73.64	67.79	73.18	66.48	73.26
90	Qatar	67.43	74.22	68.07	73.49	66.47	73.25
91	Uzbekistan	63.99	70.43	65.90	71.14	66.12	72.87
92	Bahrain	65.54	72.14	65.85	71.09	66.09	72.83
93	Botswana	64.43	70.92	66.96	72.29	65.89	72.61
94	China	64.06	70.51	65.44	70.65	65.74	72.45
95	Algeria	65.87	72.50	67.04	72.37	65.59	72.28
96	Guyana	64.93	71.47	66.27	71.54	65.54	72.23
97	West Bank and Gaza	65.60	72.21	66.73	72.04	65.19	71.84
98	Ghana	63.55	69.95	65.67	70.89	64.80	71.41
99	El Salvador	65.43	72.02	64.25	69.36	64.42	70.99
100	Morocco	62.87	69.20	65.24	70.43	64.04	70.58
101	Saudi Arabia	63.50	69.90	63.73	68.80	63.89	70.41

102	Iran, Islamic Rep.	64.00	70.45	65.72	70.95	63.72	70.22
103	Azerbaijan	62.74	69.06	62.90	67.90	63.26	69.72
104	São Tomé and Principe	61.77	67.99	64.62	69.76	62.49	68.87
105	Gabon	60.89	67.02	64.05	69.15	62.18	68.53
106	Namibia	61.35	67.53	63.38	68.42	62.00	68.33
107	Honduras	60.90	67.03	60.19	64.98	61.17	67.41
108	Nicaragua	60.56	66.66	62.45	67.42	60.23	66.38
109	Guatemala	59.85	65.88	59.54	64.28	60.21	66.35
110	India	58.31	64.18	58.81	63.49	60.19	66.33
111	Nepal	59.51	65.50	59.06	63.76	59.39	65.45
112	Timor-Leste	57.63	63.43	58.85	63.53	58.92	64.93
113	Egypt, Arab Rep.	57.81	63.63	60.29	65.09	58.73	64.72
114	Venezuela, RB	59.51	65.50		0.00	58.62	64.60
115	Kenya	56.18	61.84	58.76	63.44	57.96	63.87
116	Senegal	56.18	61.84	59.73	64.48	57.70	63.59
117	Iraq	55.41	60.99	58.35	62.99	56.82	62.62
118	Turkmenistan	55.85	61.47	57.58	62.16	56.75	62.54
119	Bangladesh	55.47	61.06	56.87	61.39	56.06	61.78
120	Tajikistan	55.75	61.36	56.33	60.81	56.05	61.77
121	Cambodia	54.66	60.17	54.52	58.86	55.71	61.40
122	Benin	53.99	59.43	55.43	59.84	55.59	61.26
123	Tanzania	53.28	58.65	55.17	59.56	54.87	60.47
124	Gambia, The	54.55	60.04	56.49	60.98	54.68	60.26
125	Malawi	52.15	57.40	55.64	60.07	54.29	59.83
126	Libya	55.24	60.80	58.23	62.86	54.28	59.82
127	Côte d'Ivoire	53.06	58.40	53.89	58.18	54.01	59.52
128	Nigeria	52.51	57.80	52.65	56.84	52.97	58.38
129	Lesotho	51.08	56.22	53.97	58.26	52.90	58.30
130	Solomon Islands	51.09	56.24	54.03	58.33	52.40	57.75
131	Rwanda	52.36	57.63	53.01	57.23	52.18	57.50
132	Zimbabwe	50.85	55.97	53.33	57.57	52.17	57.49
133	Comoros	50.73	55.84	54.71	59.06	52.11	57.43
134	Zambia	51.66	56.86	53.29	57.53	52.07	57.38
135	Syrian Arab Republic	51.29	56.46	53.78	58.06	51.98	57.28
136	Togo	51.11	56.26	53.51	57.77	51.58	56.84
137	Myanmar	56.91	62.64	58.62	63.28	51.46	56.71
138	Cameroon	50.17	55.22	52.07	56.21	51.40	56.65

139	Pakistan	49.37	54.34	50.82	54.86	51.32	56.56
140	Laos	49.91	54.94	50.09	54.08	51.17	56.39
141	Sierra Leone	48.86	53.78	53.01	57.23	50.48	55.63
142	Burkina Faso	49.93	54.96	50.65	54.68	49.83	54.92
143	Djibouti	48.51	53.40	49.91	53.88	49.39	54.43
144	Uganda	48.79	53.70	52.02	56.16	49.34	54.38
145	Eswatini	48.84	53.76	52.00	56.14	49.19	54.21
146	Liberia	48.65	53.55	51.67	55.78	49.03	54.03
147	Mozambique	46.77	51.48	47.89	51.70	48.27	53.20
148	Papua New Guinea	47.19	51.94	46.06	49.72	48.12	53.03
149	Congo, Rep.	46.91	51.63	49.45	53.38	47.54	52.39
150	Ethiopia	47.71	52.52	48.80	52.68	47.43	52.27
151	Madagascar	46.27	50.93	48.75	52.63	47.07	51.87
152	Mali	47.23	51.99	47.86	51.67	46.93	51.72
153	Angola	45.97	50.60	47.23	50.99	46.87	51.65
154	Guinea-Bissau	43.94	48.37	45.49	49.11	46.65	51.41
155	Mauritania	46.80	51.51	47.63	51.42	46.60	51.36
156	Equatorial Guinea	45.98	50.61	46.61	50.32	46.58	51.33
157	Haiti	45.31	49.87	45.96	49.62	45.42	50.06
158	Sudan	43.79	48.20	46.40	50.09	45.41	50.04
159	Niger	41.97	46.20	42.02	45.36	43.14	47.54
160	Burundi	42.08	46.32	42.64	46.03	42.91	47.29
161	Congo, Dem. Rep.	41.07	45.21	42.11	45.46	42.70	47.06
162	Guinea	42.12	46.36	43.26	46.70	42.41	46.74
163	Yemen, Rep.	37.95	41.77	38.90	42.00	39.08	43.07
164	Afghanistan	39.61	43.60		0.00	37.34	41.15
165	Somalia	34.48	37.95	35.62	38.45	35.85	39.51
166	Eritrea	34.50	37.97	35.33	38.14	34.85	38.41
167	Chad	33.70	37.09	34.60	37.35	34.69	38.23
168	Central African Republic	31.56	34.74	33.53	36.20	32.39	35.70
169	South Sudan	28.88	31.79	32.50	35.09	30.65	33.78
170	Cuba		0.00	70.18	75.76		0.00

Appendix C:

World Governance Index

No.	Country	Percentile 2020	Percentile 2021	Percentile 2022
1	New Zealand	100.00	99.89	99.92
2	Norway	99.93	99.91	97.00
3	Switzerland	98.63	99.49	100.00
4	Luxembourg	98.62	99.90	98.94
5	Finland	98.57	100.00	98.53
6	Liechtenstein	97.54	97.58	98.43
7	Denmark	97.18	99.02	98.61
8	Iceland	96.41	98.08	96.41
9	Sweden	96.20	97.69	96.41
10	Netherlands	95.00	96.47	94.95
11	Canada	94.49	95.23	94.05
12	Andorra	93.54	94.59	94.09
13	Austria	93.12	92.77	90.06
14	Australia	92.95	94.49	95.42
15	Ireland	91.89	93.10	94.62
16	Greenland	91.28	91.57	91.11
17	Singapore	90.99	92.36	92.95
18	Germany	90.44	92.21	91.45
19	Jersey, Channel Islands	90.31	90.60	91.59
20	Japan	90.05	91.08	92.69
21	Monaco	89.94	90.95	91.67
22	San Marino	89.73	90.83	92.48
23	Aruba	89.17	86.95	86.50
24	Estonia	88.80	89.48	90.12
25	United Kingdom	88.00	88.10	88.42
26	Taiwan, China	86.84	87.91	87.25
27	Belgium	86.38	87.11	87.53
28	Uruguay	83.83	85.03	86.07
29	Portugal	83.74	83.80	82.89
30	French Guiana	82.98	83.51	82.98
31	Lithuania	82.59	83.46	82.28
32	American Samoa	82.24	83.35	84.22
33	France	81.90	84.40	82.95

34	Guam	81.46	82.81	82.71
35	Malta	81.05	77.95	77.99
36	Czechia	80.88	83.77	83.34
37	Hong Kong SAR, China	80.52	79.93	81.28
38	Slovenia	80.32	80.00	79.91
39	Korea, Rep.	80.31	82.39	81.93
40	Cayman Islands	79.50	82.73	83.22
41	United States	79.29	81.27	80.54
42	Macao SAR, China	78.56	78.31	79.24
43	Palau	78.02	78.34	78.87
44	Barbados	77.71	80.08	79.46
45	Mauritius	77.12	76.69	76.69
46	Latvia	76.66	79.84	77.79
47	Brunei Darussalam	76.25	77.95	78.97
48	Chile	76.21	75.85	74.71
49	Spain	75.63	76.98	75.69
50	St. Vincent and the Grenadines	74.68	74.79	74.61
51	Samoa	74.09	72.56	72.60
52	Costa Rica	72.86	71.96	73.10
53	Dominica	72.38	72.39	73.06
54	Slovak Republic	72.35	72.53	70.07
55	St. Kitts and Nevis	72.00	72.66	72.73
56	Cyprus	71.88	71.96	72.17
57	St. Lucia	71.60	68.90	70.22
58	Kiribati	71.36	71.54	70.10
59	Cabo Verde	70.79	71.04	71.04
60	Bermuda	70.68	72.15	70.98
61	United Arab Emirates	70.26	71.24	72.68
62	Botswana	69.93	72.95	73.83
63	Poland	69.82	68.07	68.24
64	Seychelles	69.54	72.17	74.58
65	Bahamas, The	69.50	71.12	69.98
66	Bhutan	68.77	68.94	69.00
67	Israel	68.59	71.37	70.85
68	Tuvalu	68.19	70.79	72.48
69	Italy	67.83	70.01	69.69
70	Qatar	67.48	70.81	72.85
71	Anguilla	67.48	68.19	70.33
72	Hungary	67.26	67.80	64.80
73	Micronesia, Fed. Sts.	67.06	70.05	71.82
74	Marshall Islands	66.58	66.95	70.35

75	Antigua and Barbuda	66.38	65.84	66.38
76	Greece	65.80	65.91	64.87
77	Croatia	65.09	66.18	67.75
78	Grenada	64.91	69.94	70.28
79	Virgin Islands (U.S.)	64.58	61.51	63.17
80	Malaysia	64.16	63.60	65.80
81	Martinique	63.47	64.38	64.56
82	Georgia	62.75	62.34	62.07
83	Fiji	62.69	61.76	62.04
84	Tonga	62.55	63.20	61.03
85	Nauru	62.15	62.71	66.21
86	Puerto Rico	62.00	63.72	62.04
87	Reunion	61.38	62.02	61.87
88	Namibia	61.03	61.17	61.80
89	Romania	59.16	60.43	61.97
90	Jamaica	59.10	59.22	61.81
91	Vanuatu	56.22	59.84	59.47
92	Oman	55.80	52.76	55.93
93	Trinidad and Tobago	54.31	55.36	54.01
94	Bulgaria	54.19	56.48	54.05
95	Montenegro	53.86	55.34	55.35
96	South Africa	53.68	51.57	48.25
97	Panama	53.40	53.21	49.77
98	Ghana	52.83	52.07	52.19
99	Kuwait	52.10	51.98	54.84
100	Rwanda	51.92	53.94	54.48
101	North Macedonia	51.83	52.95	54.29
102	Jordan	50.41	50.04	50.76
103	Mongolia	50.19	48.50	47.47
104	Bahrain	49.41	53.45	54.43
105	Senegal	49.09	49.52	49.16
106	Solomon Islands	48.33	43.25	44.30
107	India	47.98	48.06	49.55
108	Sri Lanka	47.84	45.07	36.99
109	Indonesia	47.72	49.46	50.05
110	Albania	47.69	49.49	52.17
111	Serbia	47.35	47.92	48.30
112	Dominican Republic	47.20	51.88	52.60
113	Tunisia	47.01	44.13	41.71
114	Armenia	46.75	46.75	45.25
115	Peru	46.10	41.89	39.23
116	Argentina	46.02	43.54	42.86

117	Colombia	45.30	44.05	46.16
118	Saudi Arabia	45.18	48.61	51.25
119	Maldives	44.30	49.03	47.39
120	Thailand	44.25	44.55	46.55
121	Suriname	43.87	44.00	41.46
122	Belize	43.63	44.01	45.86
123	China	43.46	44.57	42.71
124	Brazil	43.42	42.15	41.28
125	Vietnam	42.55	42.60	42.82
126	Guyana	42.42	44.67	45.59
127	Morocco	42.22	41.35	43.06
128	Sao Tome and Principe	41.75	42.59	43.81
129	Kazakhstan	41.60	42.86	42.77
130	El Salvador	41.19	38.32	35.03
131	Philippines	39.91	39.09	41.56
132	Paraguay	39.88	37.09	37.27
133	Kosovo	39.22	44.40	43.11
134	Benin	39.16	38.98	40.48
135	Moldova	39.16	43.59	43.79
136	Cuba	37.15	36.16	35.58
137	Malawi	37.03	39.24	36.14
138	Gambia, The	36.91	37.24	39.45
139	Turkiye	36.54	35.77	33.75
140	Lesotho	36.47	35.45	37.03
141	Timor-Leste	36.15	39.33	41.15
142	Mexico	35.20	32.68	32.94
143	Ecuador	34.28	39.33	37.84
144	Burkina Faso	33.58	33.36	30.04
145	Bosnia and Herzegovina	33.37	33.72	33.33
146	Eswatini	33.21	28.07	27.46
147	Ukraine	32.79	32.71	29.86
148	Nepal	31.91	33.55	34.17
149	Niue	31.77	32.44	71.27
150	Zambia	30.50	32.70	37.98
151	Cote d'Ivoire	30.47	34.14	38.44
152	Tanzania	29.78	33.61	36.71
153	Kenya	29.49	32.51	34.31
154	Cook Islands	29.40	30.87	62.55
155	Papua New Guinea	29.26	27.60	29.54
156	Uganda	29.15	28.54	28.16
157	West Bank and Gaza	29.06	26.74	26.35
158	Sierra Leone	28.74	29.94	28.79

159	Russian Federation	28.71	27.12	17.46
160	Guatemala	27.67	26.65	26.07
161	Kyrgyz Republic	27.35	24.43	21.42
162	Honduras	26.77	24.19	25.51
163	Egypt, Arab Rep.	26.02	28.01	25.97
164	Togo	25.81	27.71	28.49
165	Lao PDR	25.75	28.24	29.05
166	Ethiopia	25.65	23.46	22.36
167	Niger	25.60	28.66	28.20
168	Azerbaijan	25.51	32.19	28.82
169	Gabon	25.10	26.93	27.90
170	Cambodia	24.92	25.01	25.99
171	Bolivia	24.04	25.10	25.53
172	Madagascar	23.14	23.70	23.41
173	Liberia	22.98	24.45	25.23
174	Mauritania	22.87	23.77	24.91
175	Pakistan	22.57	24.53	22.22
176	Belarus	22.03	21.42	16.28
177	Algeria	21.81	21.88	23.91
178	Bangladesh	21.58	23.62	21.98
179	Mozambique	21.52	22.24	22.24
180	Djibouti	20.71	20.36	20.71
181	Nicaragua	20.49	16.83	16.15
182	Myanmar	19.79	8.79	6.67
183	Angola	19.70	22.62	23.93
184	Mali	19.58	18.88	17.90
185	Uzbekistan	18.82	28.23	29.00
186	Lebanon	18.20	16.08	15.33
187	Guinea	18.07	16.62	17.23
188	Comoros	16.67	16.68	17.01
189	Nigeria	16.49	17.40	17.37
190	Congo, Rep.	15.25	15.99	17.71
191	Cameroon	14.82	14.98	16.41
192	Guinea-Bissau	14.44	17.86	17.22
193	Tajikistan	13.87	14.67	13.27
194	Haiti	12.72	9.98	8.44
195	Equatorial Guinea	12.54	12.59	12.54
196	Turkmenistan	11.89	11.20	11.87
197	Iran, Islamic Rep.	11.88	12.09	12.31
198	Zimbabwe	11.00	12.34	12.52
199	Iraq	9.07	9.83	10.33
200	Chad	9.03	8.88	8.81

201	Sudan	8.22	7.74	6.70
202	Burundi	8.05	9.70	11.26
203	Korea, Dem. People's Rep.	7.91	7.26	7.64
204	Afghanistan	6.96	6.26	5.38
205	Central African Republic	6.86	7.75	7.38
206	Eritrea	5.99	5.73	5.37
207	Congo, Dem. Rep.	5.96	7.26	6.82
208	Libya	3.85	4.37	4.27
209	Venezuela, RB	3.66	3.45	4.99
210	Yemen, Rep.	2.37	1.90	2.46
211	South Sudan	1.71	1.64	1.56
212	Somalia	1.63	1.40	1.56
213	Syrian Arab Republic	1.55	1.73	1.63