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ESG mindset and self-learning skills development for sustainable development

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Abstract

As previous researches seldom covered the learning outcomes from QF levels applied into enhancing relevant skills in training related sector, the aim of this paper is to explore the learning outcomes from design thinking for improving the higher order thinking skills developed in assessing ESG reports compared to QF levels to have a new teaching pedagogy for competency at QF level. Through applying the 5 steps of design thinking into assessing ESG reports of organizations as assessments in relation to the 7 levels Qualification Framework in Hong Kong, focused on QF level 5 (degree level) to 7 (doctoral level), learners are expected to develop higher order critical and analytical thinking skills with values of global responsible citizenship for meeting the challenges in the real world).

Keywords: Assessment, Environment, Governance (ESG), Qualification framework (QF), Social.

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1. Introduction

According to Cajazeira [1] the major principles for ISO 26000 are: accountability, transparency, ethical behavior, consideration for the stakeholders, legality, international standards, and human rights. It is the responsibility of organizations to consider the needs of the stakeholders in these seven aspects when designing work processes or executing business-related activities. In fact, ISO standard 26000 conveys a message that non-economic inputs and soft side of outcomes are the trend of quality management system (QMS). Building quality into products and services for continuous improvement has been mentioned for scholars in total quality management in the past. Today, people started to explore integrating CSR and sustainability related elements into organizational strategy for sustainable business.

Besides ISO 26000 guidelines, the rapid technological advancements of Artificial Intelligent (AI), Non-fungible Token (NFT), Blockchain Technology lead to a growing emphasis on Environment, Social and Governance (ESG) compliance and implementation of UN Sustainable Development Goal (SDG) with impacts, it is time to educate the higher

education sector, students and teachers and SMEs who are interested in skills developed via analyzing ESG compliance related works, for example, a higher order of critical thinking skills and self-learning skills to perceive the overall performance of organizations, industries and the real world with social responsibility.

2. Self-Learning, Disclosure Report Analysis and Industry Visits

Programme and Course Intended Learning Outcomes (PILOs/ CILOs) achieved by learners are one of the key targets of assessments in higher education. As curriculum planners, teachers and industry trainers who are engaged in teaching corporate social responsibility (CSR), Sustainable Development Goals (SDGs), marketing and management, management accounting and economics and finance need to explore innovative teaching pedagogy to engage learners with contemporary issues, for example, understanding ESG reporting initiatives at an organisation. After analysis of ESG related compliance reports, the learners are expected to learn how to critique the sustainability initiatives that provided by ESG or SDG committed organisations. Understand sustainability reporting criteria and setting rubrics of using ESG or SDG report analysis as assessment tools is a trend to develop learners' sustainability report preparation skills via communication skills enhancement and enhance innovative thinking skills from ESG or SDG reports' analysis via research skills for innovative recommendations.

To foster higher order critical thinking skills and self-learning skill development may be interrelated with curriculum design and experiential learning with reflection. Choosing a program emphasized on self-directed learning skills with ESG and SDG industry exposure will be a practical way to improve the mindset of learners as the world keeps on changing at an unprecedented pace. Besides, analysis on ESG and SDG compliance and disclosure reports from different channels also provides a good way of upscaling the curriculum contents to develop social responsible talents with higher order thinking skills. For example, site visits and ESG report analysis provide insights into sustainable practices, ESG considerations, and innovative service delivery, aligning with the needs of the community – transparency and materiality on sustainable development performance.

The purpose of this paper is to explore the key dimensions to learn from disclosure reports of selected airline service providers, for example Cathay Pacific and Singapore Airline for developing higher order thinking skills from the perspective of sustainable development education. Through understanding the performance of selected airline service providers in this paper, new working opportunities with economic impacts of SDG#8, educating the community how to perceive organizational performance and the solutions to tackle the changes in the real world via implementing UNPRME principles (values, purpose, methods, research, dialogue and partnership) and United Nations Sustainable Development Goals (UNSDG#4.7 knowledge transfer) may be emerged.

Under ISO standard 21001:2018 Educational organizations — Management systems for educational organizations (EOM), it is expected an educational organization to demonstrate its ability to support the acquisition and development of competence through teaching, learning or research; and to enhance satisfaction of learners, other beneficiaries and staff through the effective application of its EOMS, including processes for improvement of the system and assurance of conformity to the requirements of learners and other beneficiaries. In Hong Kong, qualification framework (QF) is used as a guidance for quality of a programme at different levels for learners with intended learning outcomes of courses and programmes. However, there is a need for blended learning / self-directed learning mode under COVID-19 to motivate teachers and trainers to make good use of technology, data and pedagogy for quality self learning outcomes, for example QF credits in self study hours of analyzing ESG reports for developing a higher order thinking skill with values that the community is expected to have, for example, workplace issues for staff to enjoy human rights.

Sibbel [2] mentioned that higher education curricula needed to offer experiences to develop graduate attributes of self-efficacy, capacity for effective advocacy and interdisciplinary collaboration, as well as raise awareness of social and moral responsibilities associated with professional practice. The use of blended learning, experiemental learning and inquiry learning approach have been used to improve the teaching pedagogy via online and offline delivery mode. This is not only to create a more flexible, interactive and engaging learning environment, but extend to blended learning with digital tools for developing a higher order of thinking and learning skills, for example, analyzing digitalized Environmental, Social, and Governance (ESG) reports and assessing the nature of business operations for compliance. In 2009, Teng, et al. [3] highlight that blended learning strengthens analytical thinking, digital literacy, and strategic evaluation. Smith [4] emphasizes that blended learning effectively combines the strengths of traditional classroom learning and digital methodologies to foster self-learning. In 2017, Vohle [5] also explores how blended learning engaged students for better learning skills. Hence, flexibility, use of digital learning platform and strategic thinking of a non-traditional classroom can generate concrete learning outcomes for a complex business oepration environment. This is relevant to teachn business and finance, CSR and sustainable development related courses involved with ESG reports which contain multidisciplinary information that require logical and critical analysis beyond a traditional classroom setting. In conclusion, blended learning provides an effective way for students to develop higher level order of thinking, for example, critical and auditing skills which are needed for ESG report writer, auditor and assessor for impact measurements. In general, the above-mentioned scholars illustrate that blended learning enriches the learning and teaching processes for building institutions' organizational sustainability and governance.

Back to 2009, Kletz [6] emphasizes that social responsibility is crucial in quality management education, highlighting that management decision and strategy implementation need to be integrated with environmental and social considerations. He encourages managerial line of supervisors need to develop a deep understanding of corporate social responsibility (CSR), for example, ISO 26000 guidelines to assess the overall financial and non-financial performance of an organization. In 2010, Lopez-Fresno [7] put forward lean management to achieving organizational operational excellence. The principles

of lean management focus on efficiency, waste reduction, and continuous improvement, which align with the goals of CSR on environmental impacts, fair resources distribution and responsible business practices.

Integrating insights from Kletz [6] and Lopez-Fresno [7] with the rationale of blended learning into courses involved with understanding ESG reports and organizational performance help to make learning more meaningful.

3. Understanding the QF Levels and Their Relevance

Based on information from the Government of the Hong Kong Special Administrative Region, the Qualifications Framework (QF) has been launched since 2008 to support lifelong learning with a view to enhancing the capability and competitiveness of the workforce in the educational sector. The Education Bureau [8] mentions that qualifications recognised under QF are characterised by three key features: 1) level which reflects the depth and complexity of learning leading to the qualification; 2) award title which reflects the hierarchical level of the qualification and area of study; and 3) credit which indicates the volume or size of learning leading to the qualification. The Guidelines serve good guidelines for educational service providers and the training sector for credit assignments. (source: Hong Kong Qualifications Framework [9])

The Hong Kong QF is designed to map qualifications to levels of learning outcomes, encompassing knowledge, skills, and competencies.

- Level 1-3: Basic education and foundational skills, similar to secondary education level
- Level 4-5: Vocational training and associate degrees focusing on practical skills, similar to higher diploma, association degree and degree levels
- Level 6: Bachelor's degree, emphasizing advanced knowledge and skills, similar to master degree and professional body qualifications
- Level 7: Master's and doctoral qualifications, emphasizing research, innovation, and leadership, similar to doctoral degree level.

Traditionally, academic qualifications focus on theoretical knowledge, while vocational skills are practical and application-oriented. However, in the context of AI in the service industry, there is a pressing need to bridge these domains, ensuring that learners at all levels develop competencies aligned with AI technologies.

Based on information in Education Bureau [10] Intellectual Skills refer to how a learner acquires, uses and extends knowledge: (a) A contextual statement has been added to clarify the range of intellectual skills and the scope of their application at each level. (see below Table 1)

Table 1.
Intellectual Skills in 7 QF Levels.

QF Level 1	Use basic intellectual skills in familiar, personal and/or everyday contexts
QF Level 2	Use a range of intellectual skills in familiar, personal and/or everyday contexts
QF Level 3	Use a broad range of intellectual skills in familiar but sometimes unfamiliar contexts
QF Level 4	Use a wide range of largely routine and some specialised intellectual skills related to a subject/discipline/sector
QF Level 5	Use a wide range of specialised intellectual skills in support of established practices in a subject/discipline/sector
QF Level 6	Utilise highly specialised technical, research or scholastic skills across an area of study
QF Level 7	Make a significant and original contribution to a specialised field of inquiry, or to broader interdisciplinary relationships

Source: Generic Level Descriptors [11]

4. Issues of Learning in relation to Culture of Security

According to United Nations Educational [12]. Education for sustainability (EfS) has international priority, as emphasized by the United Nations Decade of Education for Sustainable Development (DESD 2005-2014), integration of the principles, values, and practices of sustainable development into all aspects of education and learning is needed to address the social, economic, cultural and environmental problems we face in the 21st century [12]. As innovative and proactive educational practitioners, it is believed that the adopting the concepts of WuWei, Demand Chain Management (DCM) of supply chain management (SCM) and the Four Cs of 21st Century Skills - Critical Thinker, Communicator, and Creator can help learners develop sustainable skills, including awareness of security, which correspond to the concepts of transversal (non-cognitive) competence with language proficiency, digital skills, social competence, cultural awareness and expression for engaging interconnected workforce of the future.

According to the Standing Committee Paper of United Nations High Commission for Refugees (UNHCR) on the 67th meeting on 31st August, 2016, security risk management procedures need to be in place to protect people in risks. In the paper, a concept of minimum operating security standards (MOSS), new policies on security personnel, security risk management, gender considerations in security management, partnerships and engagement for the policies in relation to humanitarian principles and training have been mentioned. Moreover, ISO 18788:2015 Management system for private security operations also provided definitions of the keywords in relation to security and risks, for example, security, security operations, and vulnerability analysis. These concepts are related to the recently launched initiative of UNSDG on 4 quality of education and 9 innovation with the following two indicators respectively: UNSDG#4- By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through

education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

4.1. UNSDG#9

- Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

Innovative strategy in teaching and research for establishing a culture of security relies on partnerships. The use of ICT and disclosure report analysis with site vists are expected to create positive self-learning outcomes in creating awareness and establishing a culture of security through disclosure analysis, stakeholder analysis, risks analysis, security policies, and impacts of contemporary issues in supply chain management (SCM) and demand chain management (DCM) with progression of higher order skills for UNSDG 4 and 9. The vision, mission, and strategic plans of an organization to establish a culture of security with intended learning outcomes of staff members need to be explored and measured. The use of ICT, innovations in sustainable mindset, applications of PDCA mindset (plan/ do/ check/ act), and the six principles of UNPRME – values, purpose, dialogue, research, method, partnership into technology-related modules with pedagogic activities and rubrics design with quality indicators can be considered for establishing a culture of security.

5. Development of 4Cs Using Authentic ESG Materials for Higher Order Thinking Skills

Our next generation is moving to seeking for instant and ready-made solutions for problems. This is a challenge for educators, especially in responsible management education, as soft skill training involved with design thinking, scenario thinking, entrepreneurial spirit, and security awareness.

Development of quality indicators on security culture with higher order skills well relies on the linkage of timely, relevant and meaningful inputs with design process control for fit-for-purpose outputs. Sibbel [2] mentioned that higher education curricula needed to offer experiences to develop graduate attributes of self-efficacy, capacity for effective advocacy and interdisciplinary collaboration, as well as raise awareness of social and moral responsibilities associated with professional practice. Back to 2005 Kitagawa [13] emphasized that the role of universities in the knowledge society was examined in light of the emergence of new research and learning systems, conditioned by forces of both globalisation and regionalization. This historic legal change affects state-university relations in a number of distinctive ways, for example, perceiving the new relationship in four principal dimensions: economy, human resources, governance and community. The impact of university-society relationship is a hot topic which needs to be further studied.

Kivunja [14] promoted the use of 4Cs (critical thinking, communicating, collaborating and creative thinking skills) in skill development. In the aspect of developing creative thinking that is in great demand under the knowledge-based economy, he invented the use 5E lenses as below:

A) In Engagement Len:
"Students engage in inquisitive activities;
Respond to 'what if" type of questions;
Come up with an answer different to the one given;
Design your own questions for the class to answer; and
Work individually or in a team and use digital tools to compose a digital story." Kivunja [14]

B) In Exploration Len:
"Take time to reflect and come up with a new idea;
Come up with a different opinion about what has been covered previously;
Use new learning resources and use them to design something new; and
Create a curriculum-specific simulation that will encourage your peers to practice critical thinking" Kivunja [14]

C) In Explanation Len:
"Link past event to new learning occurrences;
Develop a hypothesis to be tested;
Come up with a new theory to replace an existing one;
Create a glossary of terms from the topic leaarnt and explain them to the class;
Compose a narrative and explain it; and
Use digital-imaging technology to create a graphic to be used in a digital presentation." Kivunja [14]

D) In Elaboration Len:
"Design and complete a rich learning task;
Telegraph new ideas;
Develop and use new terminology;
Try new skills;
Practice injury prevention in the playground at your school by drawing up a few simple rules; and
Create a video documenting a community vent in which your class or school participated."

Kivunja [14]
E) In Evaluation Len:
"Complete a SWOT Analysis of a new proposal for changes to a unit they are about to start;
Use formative assessment to improve performance;
Create a personal portfolio and assess each others' portfolio;
Show links between unit completed and the next one;
Complete open-ended assessment tasks;
Use digital tools to analyze data and to evaluate a theory learnt; and
Design a model of legal and ethical behaviors when using the internet." (p. 235)

Kivunja [14] mentioned that the 4Cs and 5Es were a New Learning Paradigm that brought changes in learning, teaching, assessment and curriculum development to utilize skills for the 21st Century Skills, helping students develop skills for increased productivity, creativity, critical thinking, problem solving, communication and collaboration, not only while still at college but even more importantly, altering in their daily lives after graduation. (p. 235) However, the issue is how to put the 4Cs and 5Es into establishing security culture via quality indicator for community development.

All in all, ESG and SDG reports and sustainable mindset is a learning pathway for teachers to integrate contemporary issues with innovative pedagogy for a new normal of teaching for 2030 and beyond.

5.1. Research Question

What are the key dimensions to learn from disclosure reports of selected airline service providers, for example Cathay Pacific and Singapore Airline for developing higher order thinking skills from the perspective of sustainable development education?

6. Comparing LSEG ESG Score: Cathay Pacific vs Singapore Airlines

Education starts from issues appear in our daily life. After covid-19, people like to travel to enjoy their me time and family time. When we look at how airlines treat their people and communities, we perceive from two very different stories—one from consumer perspective of consuming the airline services and one from producer perspective, how they can bounce back with resilience for better services based on the drop of ESG performance. Two selected airlines service providers in methodology for analysis are Singapore Airlines (SIA) and Cathay Pacific (CX). The ESG reports are obtained from LSEG Workspace.

6.1. Methodology -LSEG ESG Score Calculation

Sharda, et al. [15] mentioned that analyzing data could be used to understand customers/ clients and business operations to sustain growth and profitability for enterprises. In fact, data can be found in various forms and fashions. Using timely data can help interpret current phenomena for decision making. They further pointed out the following ways for data mining for the benefits in business sustainability [15].

1) Association – finding commonly co-occurring grouping of things for market analysis;
2) Predictions – identifying the future occurrence of certain events based on what has happened in the past;
3) Cluster Information – seeking the nature of groups of things based on their known characteristics; and
4) Sequential Relationship - discovering time-ordered events.

Data can be verbal and non-verbal messages. It represents the ideas of people. If data can be co-ordinated, integrated, or controlled in a meaningful way, the behavior of people or an organization can be understood, predicted and controlled.

Before studying the ESG performance, it is important the understand the LSEG ESG scoring methodology with data of selected organizations. It is because different ESG rating agencies may have different ways to assess ESG performance. The LSEG ESG scoring methodology is a transparent, data-driven process that converts over 870 raw data points into a set of comparable scores. These are grouped into 10 categories that reformulate the three pillar scores and the final ESG score, which is a reflection of the company's ESG performance, commitment and effectiveness based on publicly-reported information. See Figure 1 for the details of the LSEG ESG score structure.

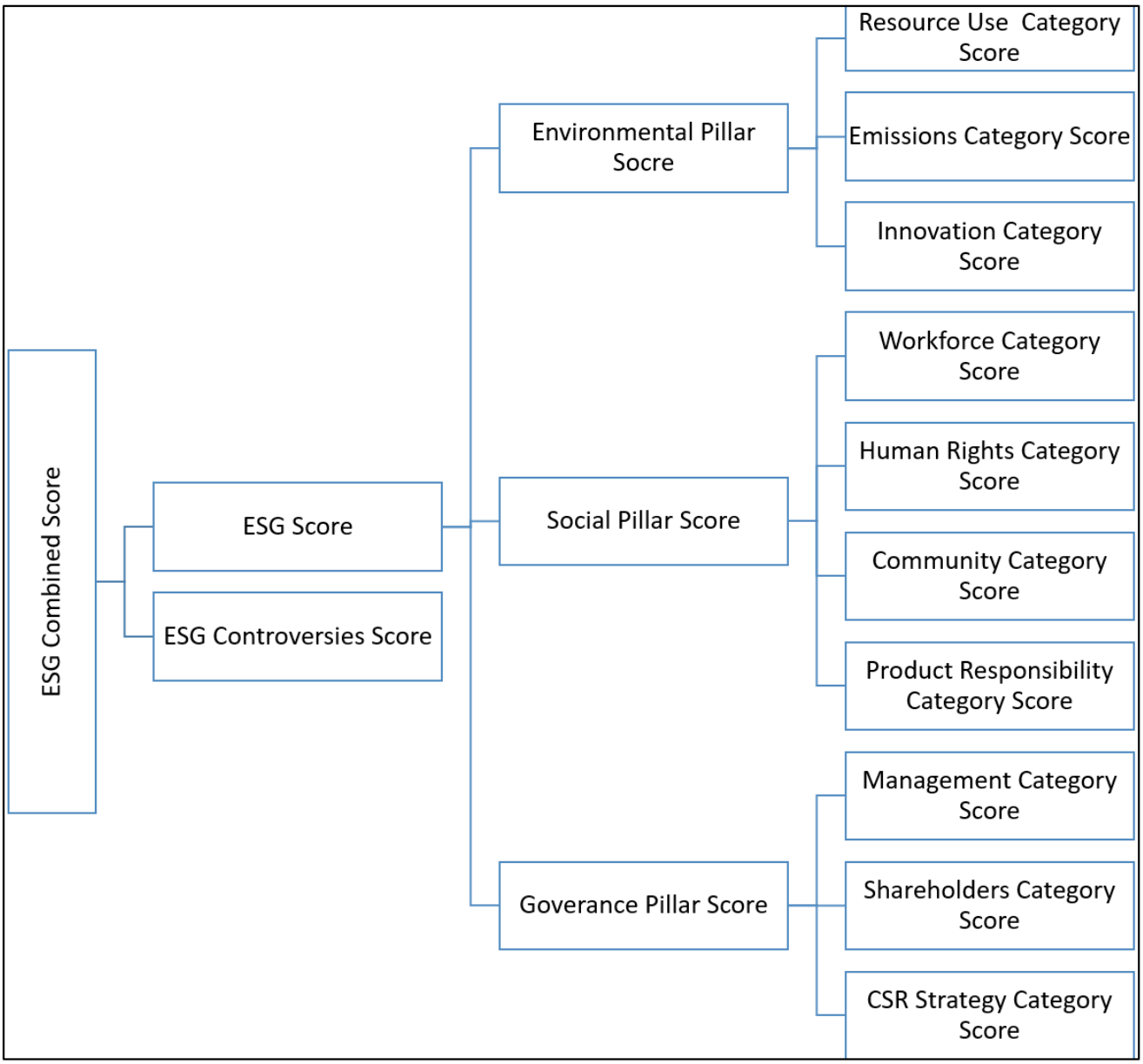

Figure 1.
The LSEG ESG Score Structure[1].

The category scores are rolled up into three pillar scores – environmental, social and corporate governance. Note that not all ESG categories are equally important for every industry. Therefore, ESG pillar score is a relative sum of the category weights, which vary per industry for the environmental and social categories. For governance, the weights remain the same across all industries. The pillar weights are normalised to percentages ranging between 0 and 100. To summarize, the ESG score can be seen as a weighted average of pillar scores or category scores as below:

$$ESG\ Score = \sum(Pillar\ Score \times Pillar\ Weight\ ) = \sum(Category\ Score \times Category\ Weight\ )$$

This is a grand weighted average of all 10 category scores, reflecting both performance and materiality.

On top of that, LSEG ESG scoring methodology also capture the controversies in the ESG controversies score. This score penalizes companies for negative ESG-related events reported in the media. It is calculated based on 23 ESG controversy topics. During the year, if a scandal occurs, the company involved is penalised and this affects their overall ESGC score and grading. As large companies tend to attract more media attention, the controversies are adjusted by company size. Companies with no controversies receive a score of 100, and the more controversies, the lower score.

Finally, the ESG combined (ESGC) score integrates a company's underlying ESG performance with its real-world conduct as reflected by controversies. The main objective of this score is to discount the ESG performance score based on negative media stories. If a company has NO controversies: ESGC Score = ESG Score; If a company HAS controversies and Controversies Score ≥ ESG Score: ESGC Score = ESG Score; If a company HAS controversies and Controversies Score < ESG Score: ESGC Score = (ESG Score + Controversies Score) / 2.

[1] LSEG (October 2024), Environmental, Social and Governance scores from LSEG. LSEG Data & Analytics.

6.2. Comparing ESG Performance: Cathay Pacific vs Singapore Airlines

6.2.1. Overall ESG Score Performance

The comparison of the ESG Combined Score reveals the most dramatic finding: a complete reversal of fortunes. See Figure 2 for details. Cathay Pacific (CX) exemplifies an "Improver" trajectory. Beginning the decade at a modest score of 44.7 in 2015, CX's score has trended consistently upward, with a notable acceleration in improvement over the last five years, culminating in a current score of 53.2 in 2024. On the other hand, Singapore Airlines (SIA) demonstrates a "Decliner" trajectory from a position of strength. After reaching a peak of 77.0 in 2020, SIA's score has fallen sharply, dropping to 51.6 in 2024. This decline has resulted in CX surpassing SIA in the most recent assessment period.

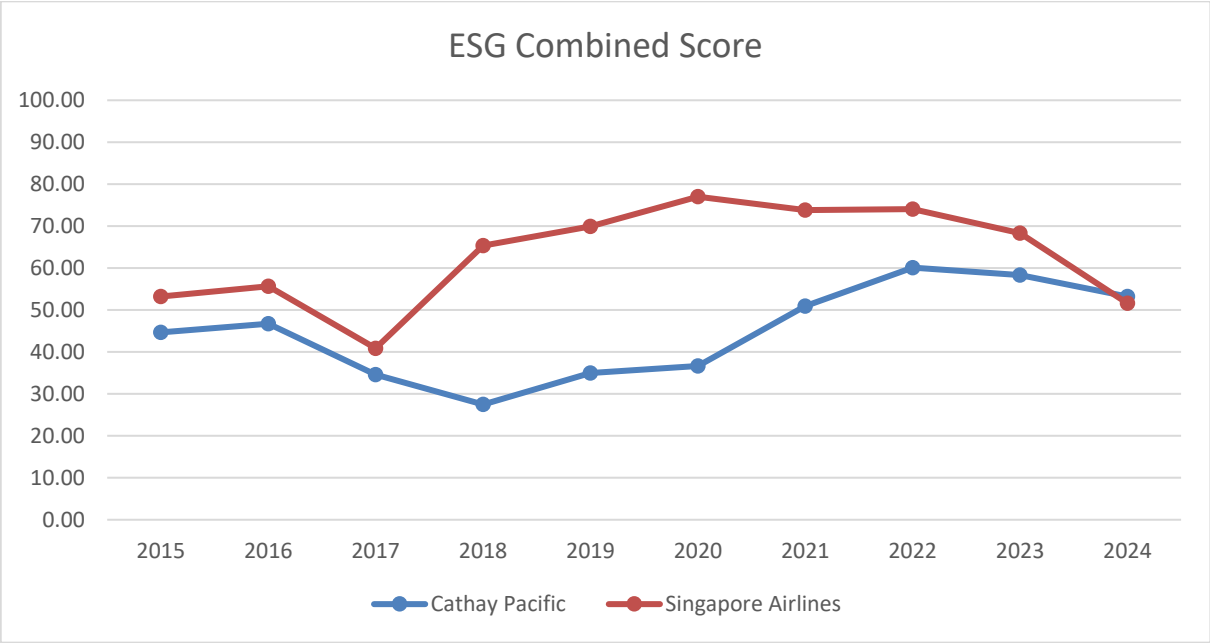

Figure 2.
ESGC Score of Cathay Pacific and Singapore Airlines 2015-2024.

When breakdown into ESG Score and ESG Controversies Score, further information can be revealed. While SIA's ESG Score is always higher than that of CX, SIA's score has shown a declining trend since 2020 and CX' score has shown an increasing trend in the same period. At the same time, SIA's ESG Controversies Score has fallen sharply, dropping to 32.1 in 2024, compared to CX's 47.6. This implies SIA has a worsen management on ESG performance and ESG related risk controversies compared to CX. These contributed to the surpassing of CX over SIA ESG Combined Score. See Figure 3 and 4 for details.

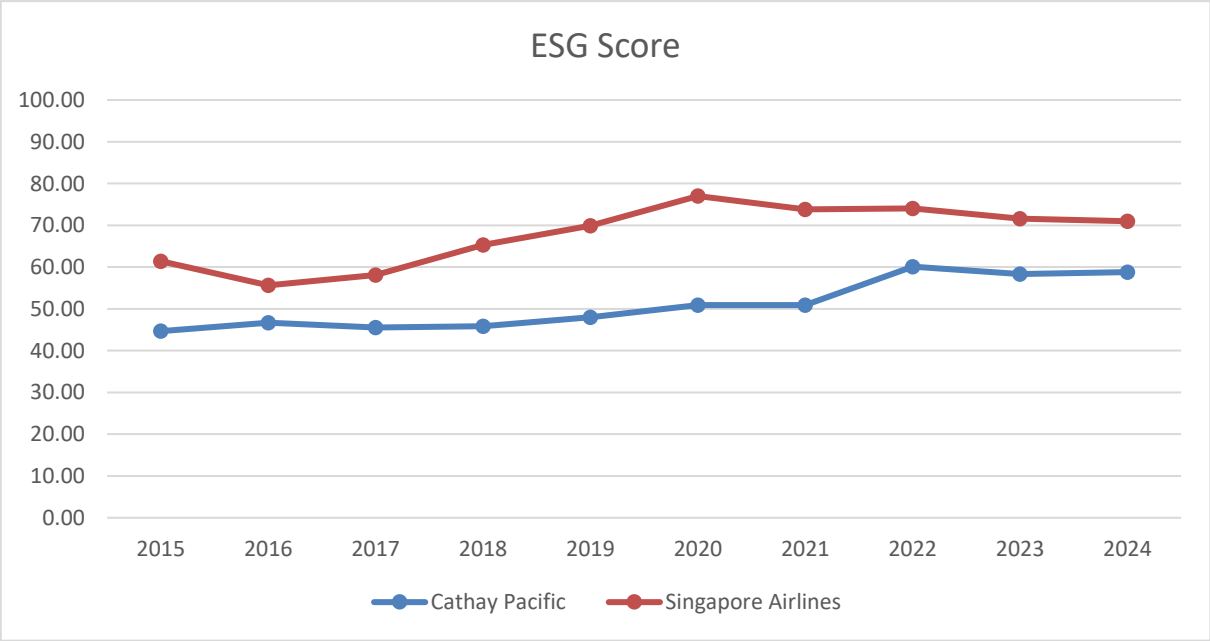

Figure 3.
ESG Score of Cathay Pacific and Singapore Airlines 2015-2024.

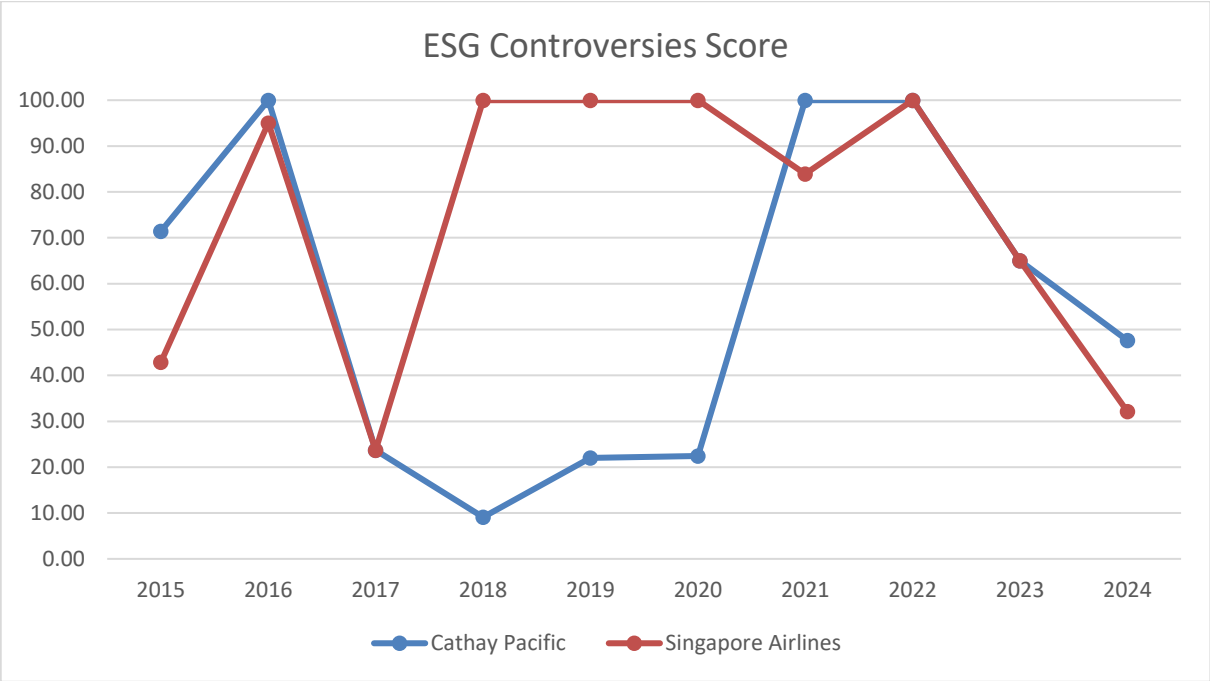

Figure 4.
ESG Controversies Score of Cathay Pacific and Singapore Airlines 2015-2024.

6.3. Pillar-Level Performance and Trends

A granular analysis of the Environmental, Social, and Governance (ESG) pillars reveals the underlying drivers of the overall score divergence and provides critical insights into each company's strategic priorities and operational challenges.

6.4. Environmental (E) Pillar: High Competition in Aviation

The Environmental Pillar, critical for the carbon-intensive aviation industry, shows a clear narrative of a legacy leader facing challenges and a determined competitor making strategic gains. See Figures 5-8 for details.

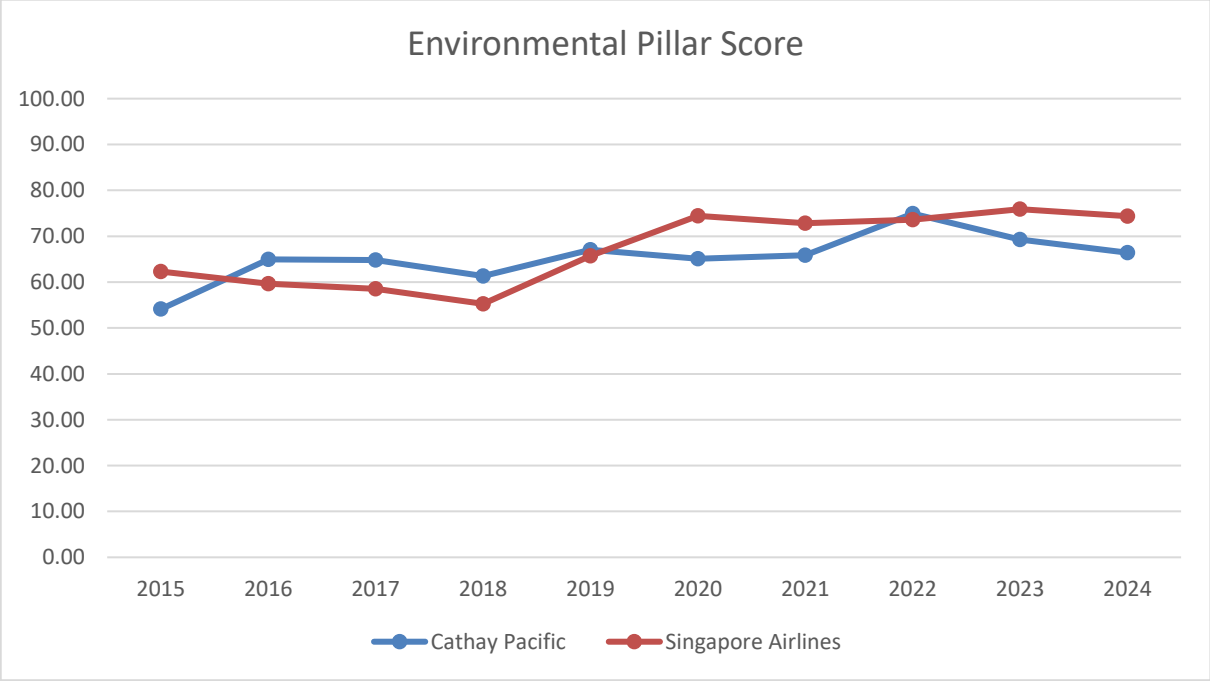

Figure 5.
Environmental Pillar Score of Cathay Pacific and Singapore Airlines 2015-2024.

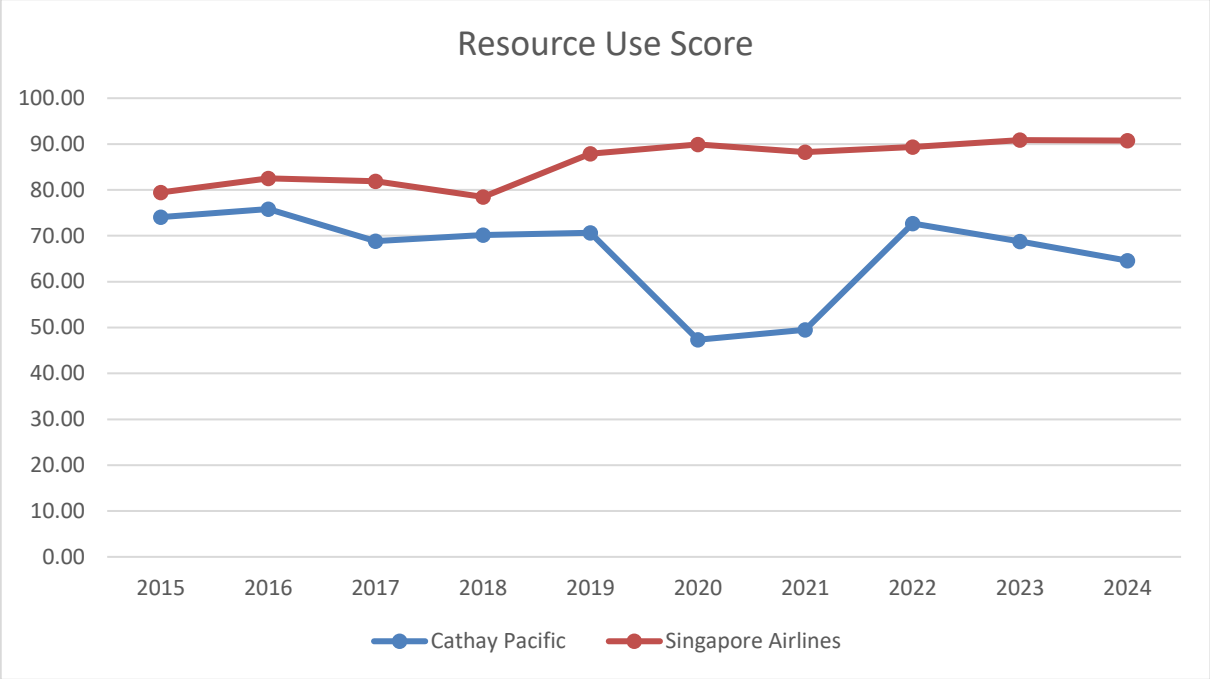

Figure 6.
Resource Use Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

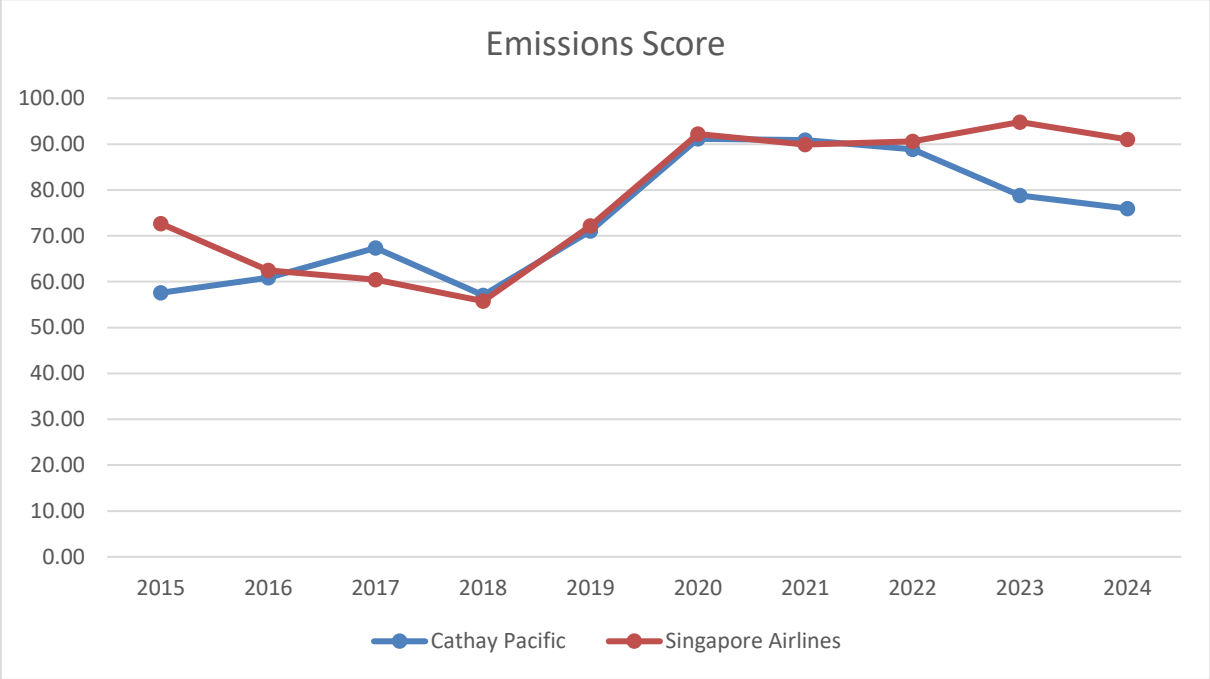

Figure 7.
Emissions Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

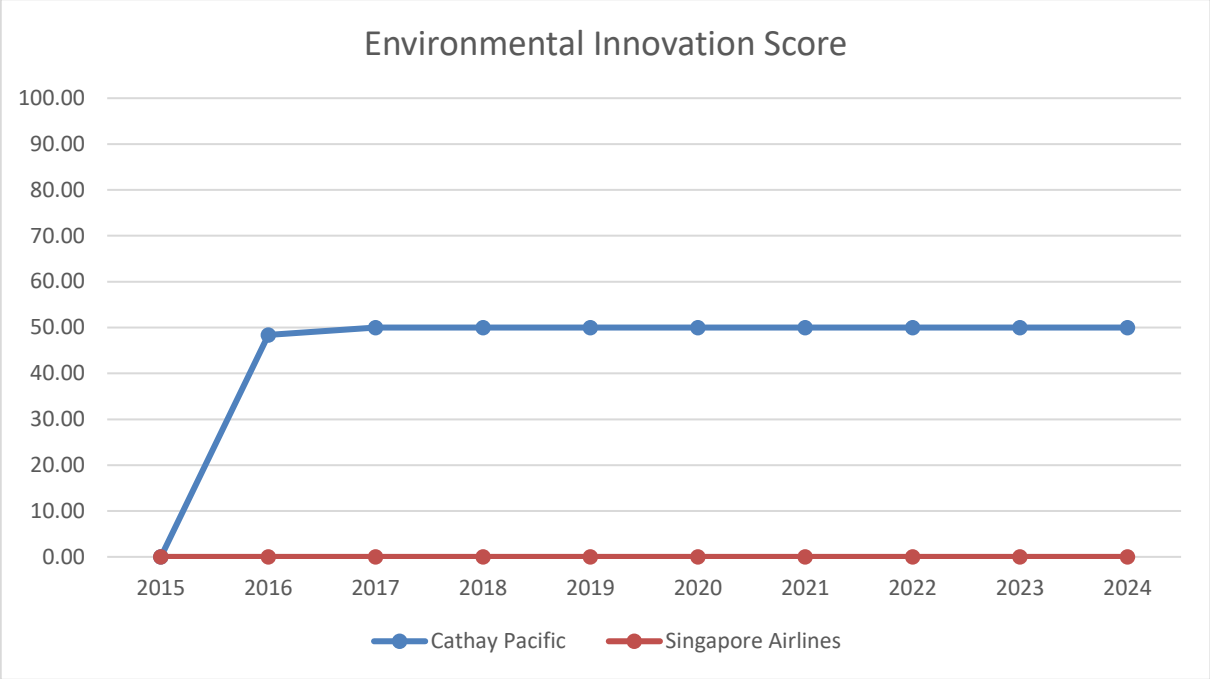

Figure 8.
Environmental Innovation Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

6.5. SIA: The Improver with Less Innovation

SIA began the decade with a commanding environmental lead, a position it maintained strongly since 2019. This excellence was underpinned by truly exceptional performance in two key sub-scores:

Emissions Category Score: SIA's score was ranged below 73 from 2015 to 2019 and improved to over 90 from 2020 to 2025 indicating world-class management of its direct and indirect carbon footprint.

Resource Use Category Score: Similarly, SIA scored below 82 from 2015 to 2018 and improved to over 87 from 2019 to 2025, reflecting significant commitment in efficient resource usage.

However, it is also noted that SIA's overall Environmental score is hindered by an extremely low Environmental Innovation Category Score (0). This suggests that while its foundational processes may be strong, it may not be able to keep pace with the accelerating environmental standards expected by raters in the future.

6.6. CX: The Determined Improver

In contrast, CX's environmental journey is one of clear and steady progress. Starting from a modest 54.1 in 2015, its Environmental Pillar score has climbed to 66.4 in 2024.

Emissions Category Score: CX demonstrated a remarkable upward trajectory, improving from 57.5 in 2015 to 76.0 in 2024. This indicates a successful, multi-year focus on fleet modernization, operational efficiency, and carbon management.

Resource Use Category Score: CX resource use declined from 72.8 in 2016 to 47.3 in 2020. However, it is improved to 64.6 in 2024, reflecting CX's ability to recover in efficient resource usage.

Environmental Innovation Category Score: CX also showed consistence commitment to funding and developing long-term environmental solutions, maintaining a modest score in the assessment period.

While CX's sub-scores have not yet hit the peak levels SIA once achieved, its consistent positive trend indicates a deeply embedded and effective environmental strategy that is delivering tangible results.

6.7. Social (S) Pillar: A Reversed Situation

The Social Pillar has become the primary area of recent vulnerability for SIA, while CX has managed to build a stable, if not spectacular, social foundation. See Figures 9-13 for details.

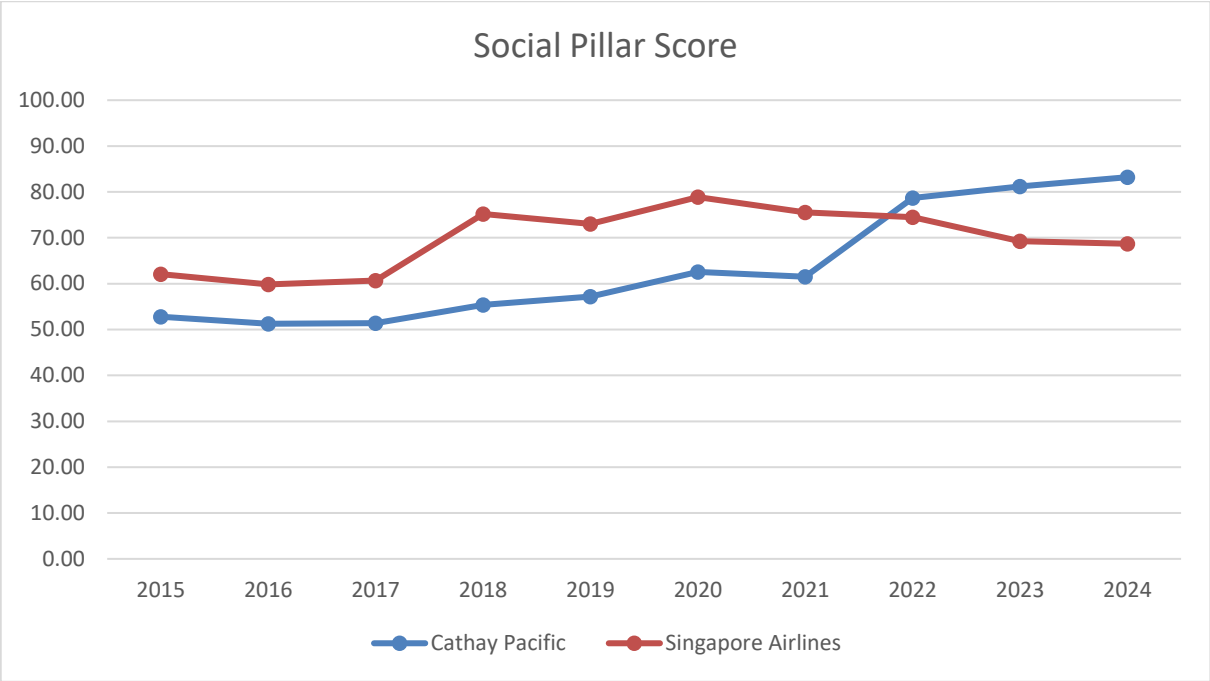

Figure 9.
Social Pillar Score of Cathay Pacific and Singapore Airlines 2015-2024.

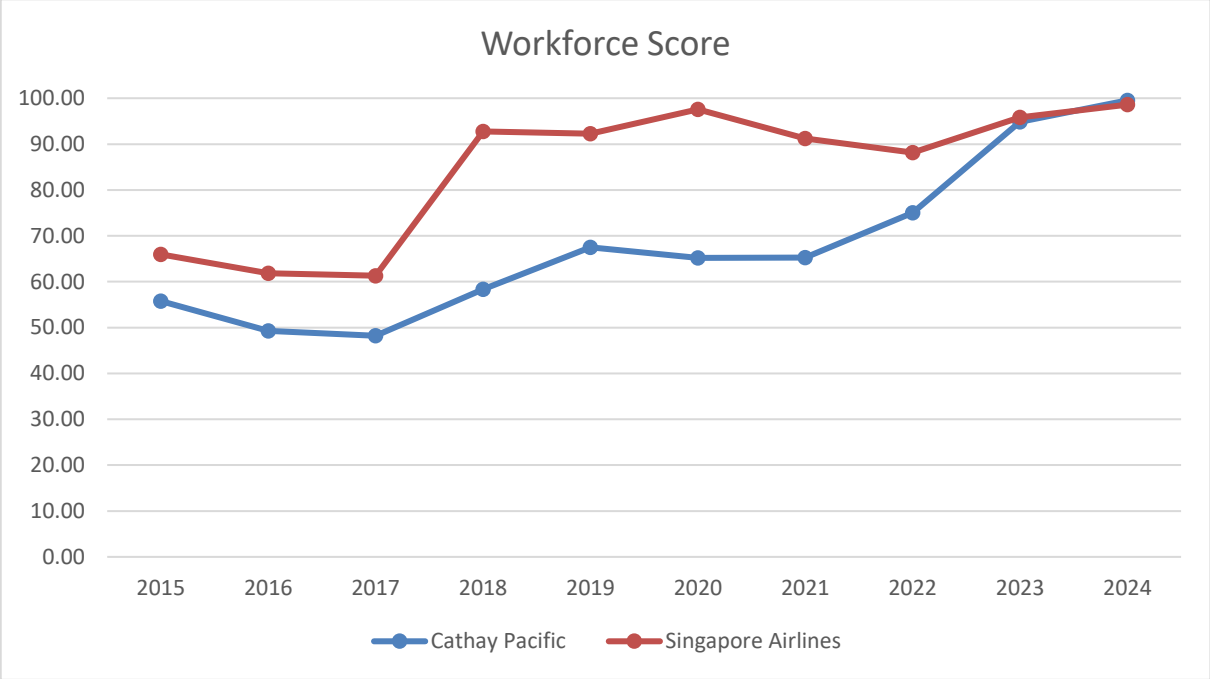

Figure 10.
Workforce Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

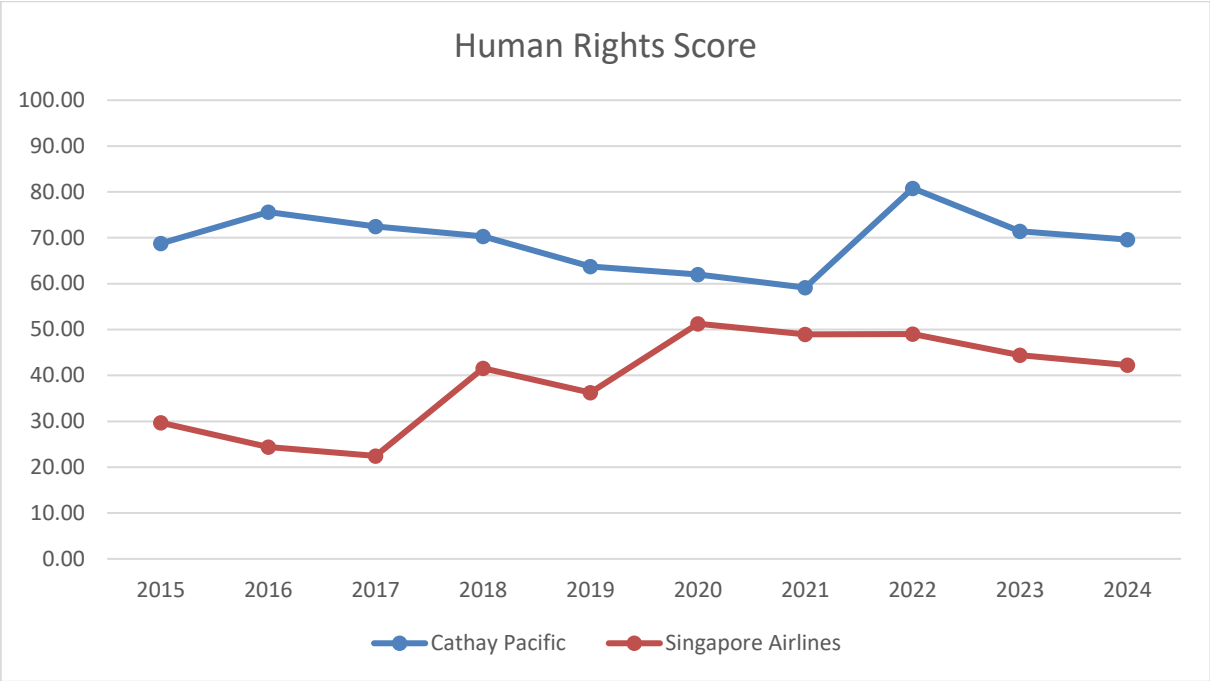

Figure 11.
Human Rights Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

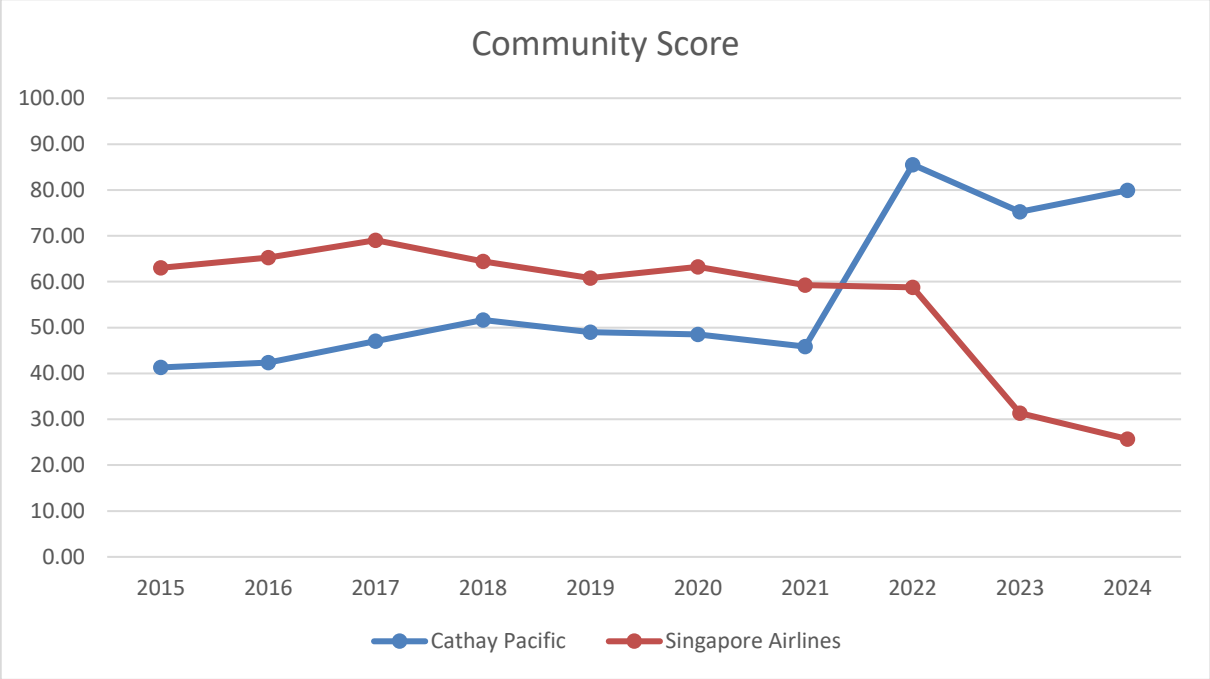

Figure 12.
Community Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

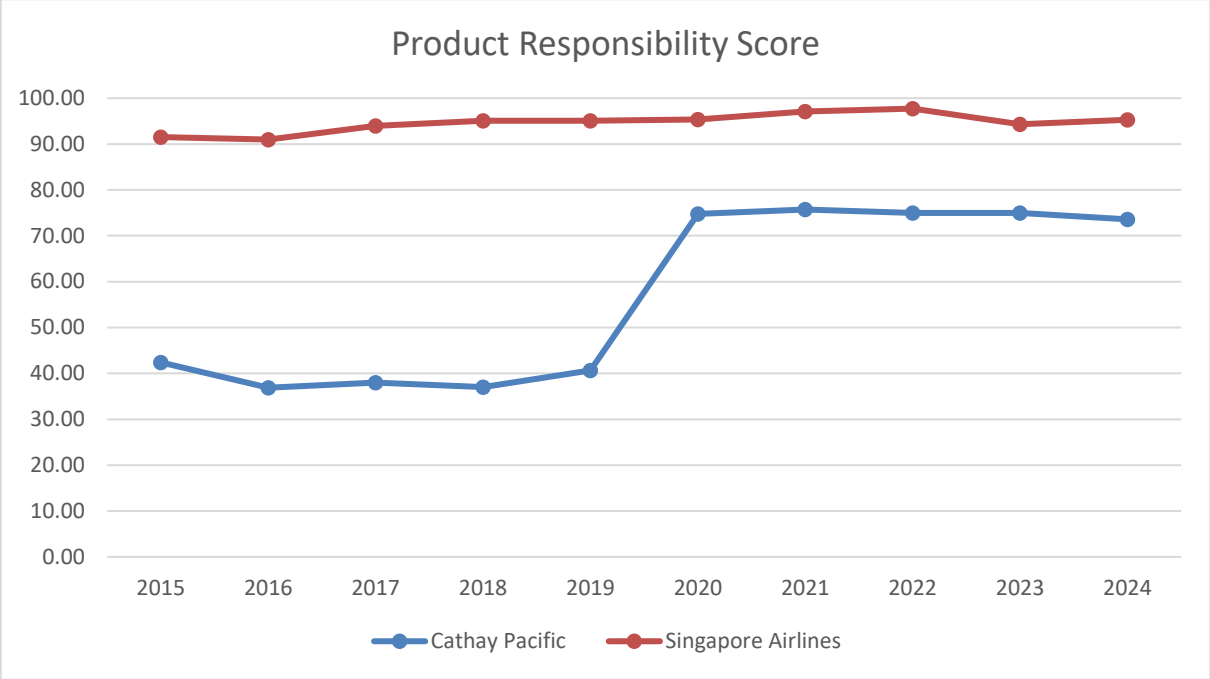

Figure 13.
Product Responsibility Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

6.8. SIA: Systemic Deterioration

SIA's social performance has undergone a severe and broad-based decline, falling from a high of 78.9 (2020) to 68.7 (2024). This collapse is evident some key social sub-dimensions:

Workforce and Product Responsibility Category Score: SIA's scores in these two categories maintained strong, with a score of over 90 in the recent assessment period.

Human Rights Category Score: However, one of the weak points of SIA is an exceptional low score in human rights. Although improved from 22.5 in 2017 to 49.0 in 2021, it is declined to 42.3 in 2024, suggests significant controversies or identified weaknesses in its supply chain management, oversight of subcontractors, or adherence to international human rights standards.

Community Category Score: Also declined substantially from 69.1 in 2017to 25.7 in 2024, indicating a potential reduction in community engagement, social investment, or negative local impacts.

6.9. CX: Stable Improvement

CX's social performance tells a different story. While it has not been immune to challenges, its overall Social Pillar score has improved from 51.3 in 2016 to 83.2 in 2024, surpassing SIA in recent assessment period.

kforce, Community and Product Responsibility Category Score: CX showed great improvement in these three categories. For instance. CX surpassed SIA in Workforce and Community Category in 2024. This indicates that despite other challenges, CX has successfully fostered a stable and satisfactory relationship with its workforce and community, a significant competitive advantage in the service-oriented airline industry.

Human Rights Category Score: CX's score in this area is more volatile, but it is able to recover after its decline in 2021. This suggests CX's social risks are more contained.

6.10. Governance (G) Pillar: The Strategic Core of ESG Transformation

The Governance Pillar reveals the most profound divergence and is likely the linchpin for the overall ESG reversal. Strong governance provides the framework for managing environmental and social performance.

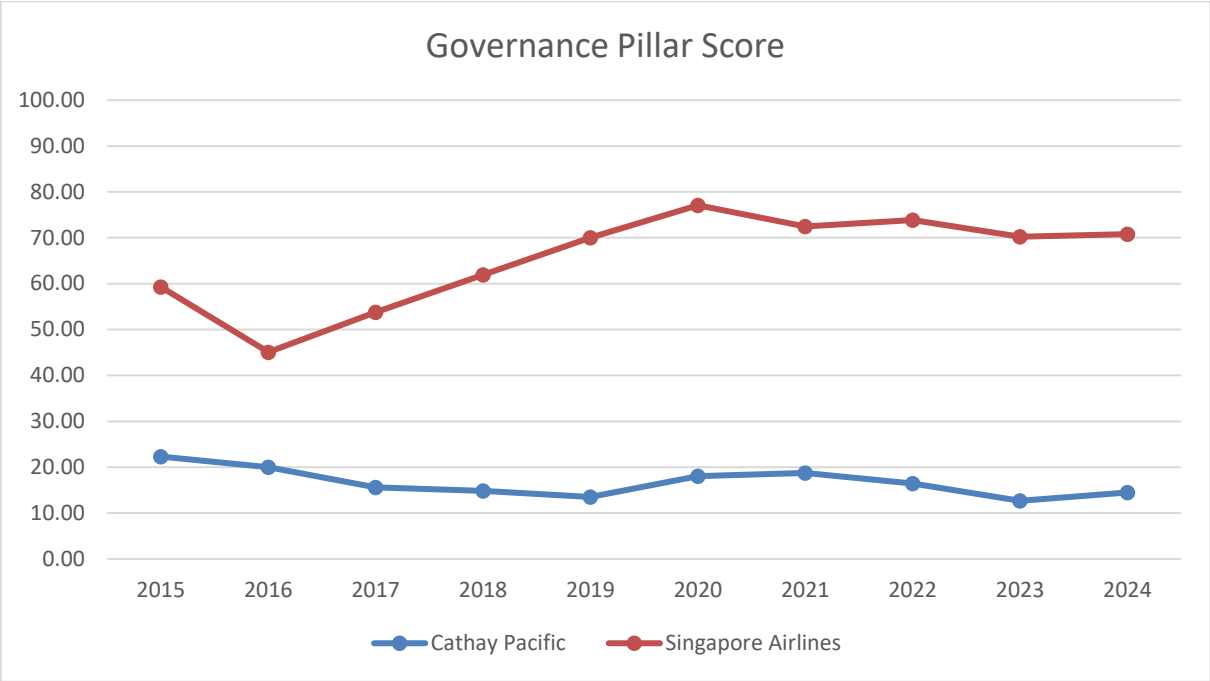

Figure 14.
Governance Pillar Score of Cathay Pacific and Singapore Airlines 2015-2024.

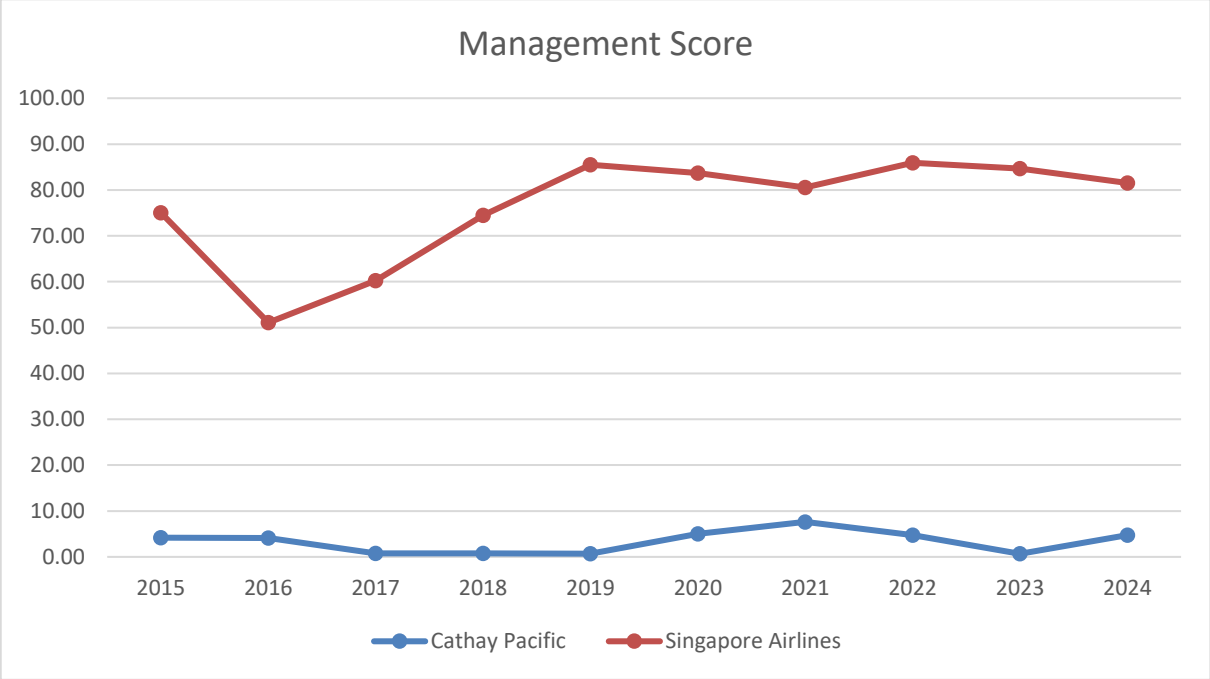

Figure 15.
Management Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

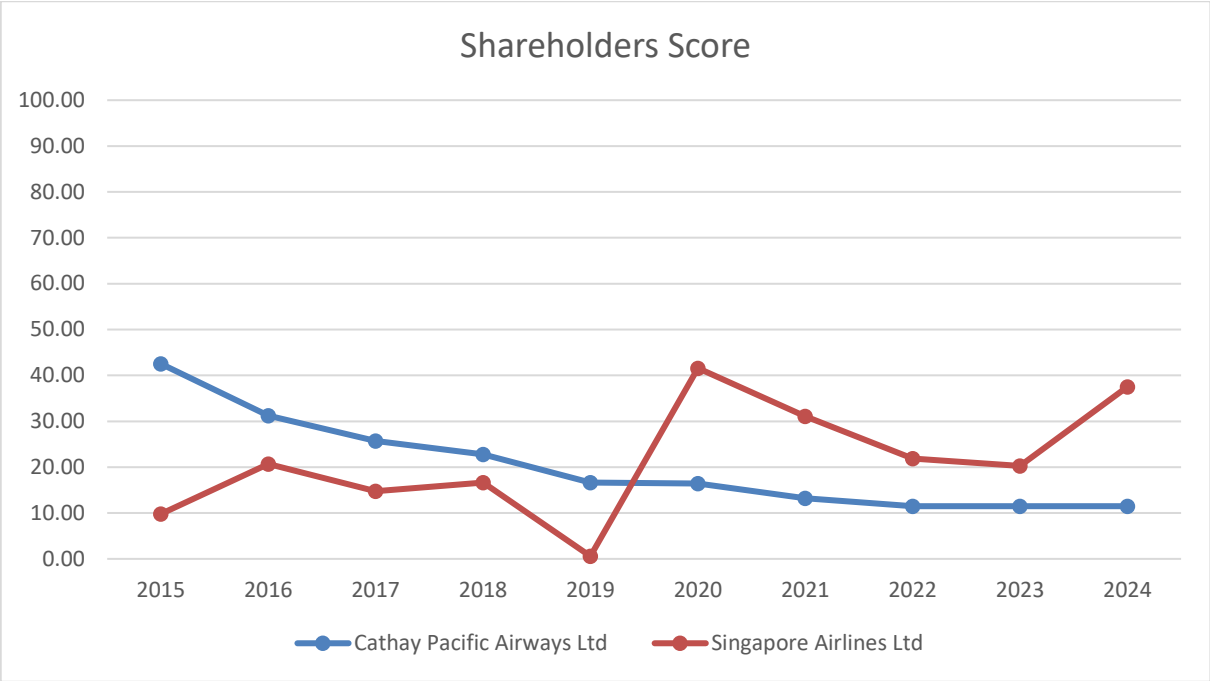

Figure 16.
Shareholders Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

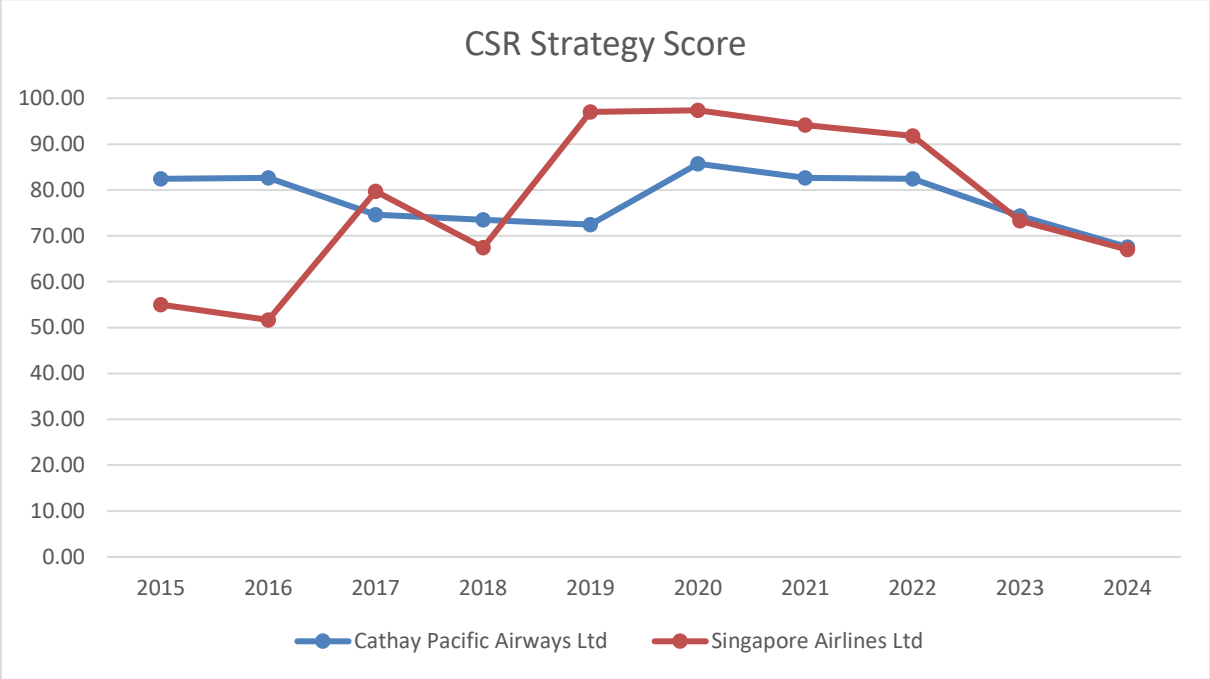

Figure 17.
CSR Strategy Category Score of Cathay Pacific and Singapore Airlines 2015-2024.

6.11. SIA: A Stable Governance

SIA's governance score has improved from 45.1 in 2016 to 77.1 in 2020 and remain relatively stable in recent years.

CSR Strategy Category Score: While improved from 51.7 in 2016 to 97.4 in 2020, it has declined to 67.0 in 2024, suggesting that its sustainability strategy has become disconnected, under-resourced, or is no longer credible to raters.

Management Category Score: Improved from 51.1 in 2016 to 85.9 in 2022 and remain relatively stable in recent years. It scores is a strong indicator of board effectiveness, executive leadership, or business ethics.

Shareholders Category Score: Improved from 0.6 in 2019 to 37.5 in 2024, but it remains a weakness of SIA in governance.

6.12. CX: The Weakest Aspect

Governance is a weak point of CX. Starting with a low score of 22.3 in 2015, it has further dropped to 12.7 in 2023. This decline is driven by the following key sub-scores:

CSR Strategy Category Score: Declined from 85.7 in 2020 to 67.6 in 2024. CSR Strategy is already to best sub-score in governance.

Shareholders Category Score: CX's score declined from 42.5 in 2015 to 11.5 in 2024. reflecting a worsen shareholders relationship and rights.

Management Category Score: CX's weakest category with a score never higher than 7.6 in the whole assessment period.

CX's simultaneous collapse across all governance sub-scores is a strong indicator of fundamental issues in board effectiveness, executive leadership, shareholder rights, or business ethics that have severely damaged rater confidence.

7. Conclusion and Discussion

This case is intended for discussion in the degree (QF Level 5) and graduate-level programmes (QF Level 6) in strategy, general management, sustainability management, environmental management and environmental economics. The analysis adopted of perceiving ESG performance of selected airlines may be used for higher education curriculum planners and industry trainers in developing rubrics to assess learning outcomes of learners.

The comparison highlights two airlines' social performance: Singapore Airlines (SIA), which has experienced decline across human rights, community engagement, and ESG controversies emphasizing the need for higher-level thinking and sustainable, innovative solutions; and Cathay Pacific (CX), which has maintained stable, strong relationships with its employees and managed social risks effectively. For example, Cathay Pacific (CX) exemplifies an "Improver" trajectory. Beginning the decade at a modest 44.7 in 2015, CX's score has trended consistently upward, with a notable acceleration in improvement over the last five years, culminating in a current score of 53.2 in 2024. Singapore Airlines (SIA) demonstrates a "Decliner" trajectory from a position of strength. After reaching a peak of 77.0 in 2020, SIA's score has fallen sharply, dropping to 51.6 in 2024. This decline has resulted in CX surpassing SIA in the most recent assessment period.

The Table 2 on selected QF Levels 5-7 for ESG Report Analysis for Skills Development provide an overview on the analysis on disclosure reports of selected airline service providers for developing higher order thinking skills from the perspective of sustainable development education.

Table 2.
Selected QF Levels 5-7 for ESG Report Analysis for Skills Development.

QF Level	Description	Typical Qualification	Skills Developed from ESG Report Analysis
5	Associate degree / Diploma	Diplomas, Advanced Certificates	Broader skills of understanding SDG and ESG implementation in selected industries Develop a certain level of leadership skill to guide teammates (learners) to use metrics or analytical framework to perceive performance from a practical angle
6	Bachelor's degree	Undergraduate degrees	Advanced knowledge of critical thinking when analyzing the ways of implementing SDG and ESG implementation in selected industries Develop a higher level of leadership skill to motivate teammates (learners) to use well established metrics and/ or worldwide standard in relation to ESG to perceive performance with recommendations to improve performance for a sustainable responsible organization Innovative problem-solving generated with values of sustainable development, economic harmony will be generated
7	Master's / Doctorate	Master's, PhD	Research, innovation, sustainable leadership skills of applying and re-design projects of SDG and ESG implementation in selected industries will be developed Develop a pioneer and sustainable leadership skill to facilitate teammates (learners) to design metrics or analytical framework to perceive performance from a new perspective

The above recommended rubrics of QF levels and SDG reporting analysis leverage self-learning, industry visits, and innovative teaching pedagogy in teaching CSR, SDG, marketing and management, and economics and finance in higher education. By integrating sustainable practices with industry ESG report analysis into QF Level 5-7 programmes, the programmes may help to develop talented and responsible learners for meeting the challenges under a trend of socially responsible future.

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