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RESEARCH ARTICLE

Navigating the Skies: An Analysis of ESG Practices in the Airline Industry

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Abstract

The airline sector, which is a major contributor to worldwide interconnectedness and financial growth, is being subject to inspection by the Environmental, Social, and Governance (ESG) practices that are of concern to stakeholders. This article provides an overview of how ESG elements have become a necessary condition for the airline's operation and eco-friendly development, owing to the growing concern about climate change, consumers' demands, and regulators' conflicts. The environmental aspect is motivating sustainability through the creation of SAF (Sustainable aviation fuels) and innovations in waste treatment, environmental protection, and phasing out the use of fossil fuels for power generation. Employee happiness, mixing of cultures, and public safety are the primary social concerns of an airline, whereas corporate responsibility, lawfulness, and openness are examples of challenging concerns in governance. Gradually but steadily, airlines are turning their focus to ESG measures not just to comply with the demands and, consequently, win over consumers, but also to accomplish the eco-friendliness objective. Further, ESG practices help an organization cut costs and improve its brand, but they can also elevate an organization's financial performance by improving staff productivity. This review also points to the role of the IRS in enabling the airlines to go deep into the ESG, identify process optimization, and gain their market position. The study provides information about the companies' ESG commitments, and it also clarifies the industry's battle to handle both the advantages and the drawbacks. Additionally, it reveals the greater effects in the areas that are the most at risk to the changes caused by the environment and social factors.

Keywords: Navigating, Skies, ESG Practices, Airline Industry, Environmental, Social, And Governance, Sustainable Aviation Fuels.

Introduction

The most influential and significant sector of the world economy, the airline sector, is now believed to be basically monitored for its environmental, social, and governance (ESG) practices [1]. ESG factors are becoming very important to the airlines' future sustainability and development because of the growing concerns about global warming, increased consumers' demand for corporate social responsibility, and rising government conflicts. Moreover, the airline industry, on the one hand, is a major contributor to global interconnectivity and, on the other hand, is a major consumer of fossil fuel-derived products. Hence, it is vital for companies to find a way to employ their financial power without compromising their social responsibility and environmental commitment.

The airline industry has to deal with environmental issues like waste management, eco-friendliness, and fossil fuels' byproducts [2]. The petroleum dependence of the industry, its total carbon footprint, and the environmental effects of its activities have been the main reasons for the sector to adopt more eco-friendly practices, such as investing in green aircraft, creating sustainable aviation fuels (SAF), and taking part in carbon offset projects. Airlines have also considered revolutionary technologies like electric or hydrogen-powered planes to achieve the long-term emissions reduction goals.

The aviation industry equally considers social practices like community commitment, traveller safety, and community development. A responsible airline should ensure that the conditions of the workforce, which is fourth in size compared to the global labour force, are fair with respect to diversity, tolerance, and government backing [3]. Besides, airlines will include the above-mentioned good

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practices along with high safety levels and passenger rights advocacy and will be able to support local economies by connecting to the multiple networks.

It was necessary for the airline industry, from a governance perspective, to look into intricate regulatory frameworks, to provide uneven but clear instructions and to have the basic skills for the implementation of governance models that guarantee accountability and reduce risks [4]. The governance of the airlines should not only be through the practice of being compliant with the regulations on environment and aviation safety, but also through the management of ethical issues, openness in business practices and partner loyalty. Besides, the airlines will have to modify their governance structures to incorporate ESG regulations to gain the trust of investors, regulators, and the community as a whole.

The study's primary aim is to determine the extent of ESG practitioners' involvement in the operations of the leading airlines, the challenges they encounter while balancing the advantages and the burdens, and the techniques they are applying to comply with the evolving demands of regulators, consumers, and investors [5]. The study further seeks to uncover the wider implications for businesses that have a considerable impact on the environment and society.

Objectives Of The Study

- Obj 1. To analyse how existing airlines integrate Environmental, Social, and Governance (ESG) practices into their operations to address sustainability challenges.
- Obj 2. To examine governance mechanisms and ESG disclosure practices in the airline industry with reference to investor expectations, regulatory compliance, and sustainable finance initiatives.

The ESG Framework

"ESG, which stands for Environmental, Social, and Governance, is a framework for evaluating an organization's moral behavior and potential to be sustained."

"The environmental point of view assesses the positive or negative impact of an association on the environment [6]. Greenhouse gas (GHG) emissions and other air pollutants, energy consumption, raw material consumption, water use and recycling, impact on biodiversity, ecosystems, and progress in environmentally friendly products and services are all sub-dimensions of the Environmental Exhibition Region. One environmental element that airlines must consider is the byproducts of aviation's fossil fuels."

The term "social point of support" refers to internal social strategies that are linked to both internal and external stakeholders. Worker privileges, child labor, restricted and necessary work, client safety and well-being in the work environment, separation, variety and orientation, equal opportunities, destitution and local area influence, store network the board, preparation and schooling, client protection, and local area influences are sub-dimensions of the Social Exhibition Region [7]. Airline social components include things like flight crew members strictly adhering to their assigned tasks and rest time restrictions.

As an example of good corporate governance, the Governance support point discusses how the President and the Board Chairman should divide up responsibilities to ensure that the company's decisions are made with the shareholders' best interests in mind [9]. "Subdimensions of the governance execution region include codes of direct and business principles, executive responsibility, disclosure and openness, leader compensation, diversity and structure of the board, payoff and defilement, shareholder rights, commitment of stakeholders, whistleblower schemes and insurance, advocacy, and political impact. One aspect of good governance for an airline is the transparency with which it manages authorities and regulators, such as the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA)." This framework is the foundation for analyzing the ways in which airlines incorporate into their operational strategies the practices related to the environment, society and governance in order to cope with sustainability challenges.

Drivers for ESG Reporting

This part of the study explores the governance mechanisms and ESG disclosure practices in the aviation sector while considering the aforementioned factors like investor expectations, regulatory compliance, and sustainable finance initiatives:

Essentially, ESG emerged as a benchmark for assessing the direct and prospective future financial performance of businesses. Among the many considerations that should go

Figure 1: Environmental, Social, and Governance (ESG) [8].

Figure 2: ESG Reporting [11].

into evaluating potential investments, the three pillars of environmental, social, and governance (ESG) are paramount [10]. As a whole, ESG has become more important for businesses as a means of communicating with stakeholders, enhancing their reputation, and gaining a competitive edge. Consequently, from 12% in 1993 to 80% in 2020, the number of the biggest multinational corporations that publish a sustainability report has increased. The incentives that encourage businesses, particularly airlines, to disclose their ESG execution are covered in this section.

Priority access to financing products

Pressure to achieve sustainability targets is mounting on governments, legislators, and regulators. As a result, financial institutions and investors are actively looking to collaborate on initiatives and organizations that promote sustainability. Investors utilize the ESG execution scores of firms, which are provided by outside companies like Bloomberg and Fitch, to evaluate the companies and inform their investment decisions. Companies that prioritize sustainability measures as determined by their ESG strategy can currently take advantage of ESG funding options from financiers and investors [12]. Companies that want to obtain these kinds of capital market support must adopt projects with a fundamental ESG drive or concentrate on sustainability in their industry. Studies have demonstrated that businesses that share ESG data more openly get better access to outside funding sources at a lower cost of obligation. The primary objective of ESG is to diminish the airline's ecological footprint by investments in more energy-efficient technologies, including aircraft that employ "sustainable aviation fuels (SAF)". Airlines may employ green funding to replenish existing fleets or purchase newer, more environmentally friendly aircraft.

Compliance with regulations

Aviation authorities on a global and national scale are placing a greater emphasis on environmental regulations. "White papers, manuals, recommendations, and green agendas have been produced by several organizations including the European Aviation Safety Agency (EASA), the European Environment Agency (EEA), the International Civil Aviation Organization (ICAO), the International Air Transportation Association (IATA), the Airport Council International (ACI), and the European Organization for the Safety of Air Route (Euro control) [13]. A greater number of ESG projects involving environmental or environmentally related aspects will be undertaken as a result of the stricter regulations. As an example, the Dutch government's planned €2-4 billion aid package for KLM, the state-owned airline, stipulates that the company must participate in noise reduction and sustainability initiatives, such as cutting back on night flights and lowering CO2 emissions to meet CORSIA standards."

Customer loyalty

Customers of airlines are becoming more aware of social and environmental issues and are choosing businesses that take sustainability seriously, as conscious shopping has become a popular trend. Consequently, an airline's ESG initiatives have an increasing impact on customers' purchase decisions [14]. According to Hagmann's research, customers will pay extra for tickets purchased from airlines that have a green image. An airline's environmental CSR, argues Han, greatly aids in the development of positive associations with the brand, which in turn fosters devotion from loyal customers.

Increased employee productivity

A compelling ESG offer can help businesses attract and retain top talent, boost employee motivation by giving them a feeling of direction, and increase overall productivity. Contrary to popular belief, a weaker ESG proposal can reduce productivity and lead to work stoppages, strikes, and other protests. In the aviation industry, where unfavourable working circumstances can have an impact on safety and security, human factors are especially important [15]. The airline workers' "job insecurity, low job satisfaction, stress, and conflicts" among coworkers are caused by cost-cutting measures, wage reductions, increased responsibilities and working hours, workplace flexibility, low skill enrolment, high employee turnover, accelerated career paths, and inadequate preparation, according to the Paraschi study. Human error is the leading cause of aircraft crashes, and these factors can impede coordinated efforts and communication while simultaneously elevating the probability of risky acts. Therefore, the social side of the ESG system is more of a survival issue for airlines than a perception issue.

Improved firm value and financial performance

Environmental, social, and governance (ESG) reporting has been shown to positively correlate with airline financial performance and business value, according to multiple academic investigations. What ABDI demonstrated was that ESG initiatives can significantly affect airlines' overall financial performance, even though they might negatively affect their short-term financial performance. Kuo reached the same result after devoting a great deal of time to studying 30 different airline companies. As a result, airlines that put money into ESG, especially in governance and environmental practices like resource reuse, green development, emission reduction, shareholder benefit increases, and sustainability detailing strategies, may see a rise in their market-to-book ratio and long-term productivity [16]. Costs can be significantly cut using ESG as well. Rising operational costs, such as water and natural substance use, are one of the many benefits that may be achieved via the successful implementation of ESG. Airline energy use can be decreased by the implementation of more eco-friendly aircraft innovations and the simplification of flight routes. For airlines, this is of the utmost importance because fuel makes up a significant portion of their operating expenses (25–35 percent). Reducing energy consumption immediately leads to higher profits. Furthermore, Ionescu investigated how ESG issues affected the value of businesses in the transportation and travel sector, including commercial airlines. Their findings corroborate a relationship, independent of the specific geographic area in which the chosen companies are located, between ESG scores and their market value.

Digital Strategy Roadmap in the Airline Industry

Strategic Documentation and Frameworks

The successful airline transformation has to be accompanied by a good understanding of a computerized strategy guide [21]. This part of the study provides a detailed account of the frameworks and strategic documentation that accompany these roadmaps, supported by accurate data and writing insights.

Agile Methodology and Data-Driven Decision Making

Poulaki and Katsoni [21] stress the importance of skilled procedures in the process of digital transformation, claiming that they play a key role in making the necessary changes and innovations in the tech industry. Similarly, Javornik, Nadoh, and Lange [22] underscore the importance of data-driven decision-making, maintaining that regarding "information as the new oil" will not just enhance the firm's functioning but also result in higher customer satisfaction rates through personalization.

Customer-Centric Approach and Industry 4.0 Integration

Baykov [23] mentioned that the adoption of a customer-centric model in digital resources. This method is primarily concerned with recognizing and satisfying the requirements of the online customers. Besides, Büyüközkan, Feyzioğlu, & Havle draw attention to the integration of AI, IoT, and other state-of-the-art technologies into airline operations as a significant element for the creation of a long-lasting competitive edge.

Framework Components

- "Vision and Goals: Setting attainable goals that correspond with the overall business plan of the airline."
- "Technology Assessment: Evaluating the existing technical infrastructure and identifying areas for digital enhancement."
- Stakeholder Participation: Involving various stakeholders in the digital transformation process, like partners, consumers, and employees.

Table 1: An overview of the major studies on market dynamics and ESG performance

Author Name	*Topic Covered*	*Research Study*	*Title*
Cek & Eyupoglu (2020) [17]	Economic and environmental performance	Examines how ESG performance relates to financial results, demonstrating how good ESG performance raises market value and drives company profitability.	Firm-Level Evidence of the Relationship Between ESG Performance and Economic Performance
Fatemi, Glaum, & Kaiser (2018) [18]	ESG disclosure's function, corporate value, and ESG performance	The study investigates the role of ESG disclosure as a factor that enhances the positive impacts of ESG performance on corporate value, bringing to the forefront the part that openness plays in reducing knowledge disparity.	Firm Value, ESG Performance, and the Moderating Effect of ESG Disclosure on Financial Results
Giese et al. (2019) [19]	Performance, risk, equity valuation, and ESG considerations	Explores the impact of integrating ESG factors into investment strategies by analyzing how it influences stock pricing, lowers risk, and increases risk-adjusted returns.	The Impact of ESG Factors on Performance, Risk, and Equity Valuation
Haase, Zimmermann, & Zimmermann (2019) [20]	Shocks to prices in commodities futures markets and the significance of conjecture	Differentiates between price shocks of considerable duration and those of a shorter duration in the commodities markets and analyzes the role of speculation in increasing the volatility of the short term without affecting the long-term price trends.	Commodity Market Speculation's Function: Examining Price Shocks in Futures Trading

Table 2: Descriptive Evidence of ESG Integration in Airline Operations (Secondary Studies)

Study	*Airline context*	*ESG dimension covered*	*Operational ESG Practices Identified*	*Key descriptive insight*
Dimitrokalli (2025) [24]	Aegean Airlines and Ryanair	Environmental, Social, Governance	Fleet modernization, carbon reduction programmes, employee welfare initiatives, and governance transparency	ESG practices are operationally integrated and aligned with different airline business models.
D'Silva (2025) [25]	Major global airlines	Environmental, Governance	Carbon management, alternative fuels, and transparency in sustainability reporting	ESG initiatives are embedded in routine operational decision-making rather than treated as peripheral.
Liao (2025) [26]	Asia-Pacific airlines	Environmental, Digital ESG	GHG emission reduction, biofuel adoption, and digitalization for customer engagement	ESG integration is used as a strategic operational response to sustainability challenges.

Table 3: Descriptive Evidence on Governance Mechanisms and ESG Disclosure in the Airline Industry

Study	*Industry context*	*Governance disclosure focus*	*Stakeholder dimension addressed*	*Key descriptive insight*
Abdi et al. (2022a) [27] airline industry study	Global airline industry	Governance initiatives, ESG disclosure	Investor expectations	Transparent governance-related ESG initiatives are positively associated with firm valuation, indicating a favourable investor response.
Abdi et al.(2022b) [28] -sustainability disclosure study	Cross-industry sustainability context	ESG disclosure as a governance and information tool	Regulatory compliance, institutional credibility	ESG disclosure reduces information asymmetry, supports regulatory alignment, and enhances institutional credibility
Itan et al. (2025) [29]	Publicly listed firms (emerging market context)	ESG disclosure quality and transparency	Investor confidence, market reactions	Comprehensive ESG disclosures generate positive market reactions, reinforcing transparency as a signalling mechanism.

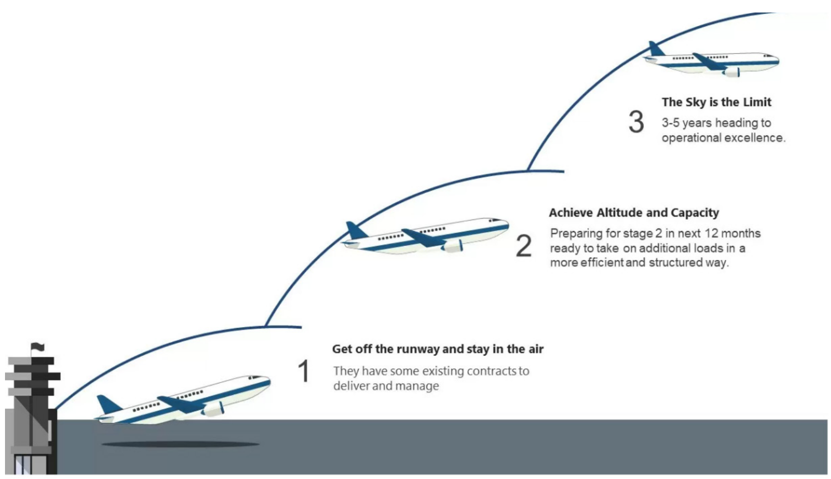

Figure 3: Roadmap in the airline industry [31]

- Implementation Strategy: Gradual implementation of technology to ensure minimal disruption to operations while applying it.

Empirical Data Analysis

The Environmental, Social, and Governance (ESG) practices that are presented in the case of Table 2 have become part of the airlines' operational frameworks. The airlines are adopting certain measures like replacing old planes with new ones, reducing carbon emissions, performing activities related to staff, and managing with transparency. To be more specific, the results of the secondary empirical research strengthen that the integration of ESG is strongly present in routine operational decision-making.

Governance mechanisms and ESG disclosure practices are of paramount importance, and this is clearly depicted in

Table 3 as it shows the alignment of airlines with investors' expectations, regulatory requirements, and sustainable finance considerations. The secondary empirical evidence supports the argument that transparency and systematic ESG reporting are being employed as strategic governance tools.

Functional performance measurements that have been changed by technology show almost the same improvements in resource efficiency, cost savings, and on-time execution.[30]. The airlines' concentration on digital customer experiences is clearly reflected in the customer satisfaction ratings that indicate greater customer contentment.

The digital strategy guide is the overall framework that underpins the airlines in their ambitious transformation project. It demonstrates the benefits and the sensible usage of these strategies by connecting the strategy text with research data and real-life examples. If the airlines master the application of these blueprints, they will be able to achieve an increase in operational efficiency, an improvement in customer experiences, and a more considerable global market presence than ever before.

Conclusion

The airline industry is one of the sectors that must weigh economic development against social responsibility, good environmental practices, and proper management of the company. As a result, the pollution caused by fossil fuels and the quest for ecological sustainability have made the airlines spend a lot of money on new and green technologies like electric planes and the use of sustainable aviation fuels. From the social point of view, the airlines should take care of the employees first and then the government should help with safety and diversity. In addition, they are required to follow the rules laid down by the government and be transparent in their governance. ESG practices are the way companies can secure the trust of their customers, gain operational efficiency, improve their financial performance, and have stable management. A computerized plan is one of the means that helps the company to be efficient and to compete. Nevertheless, the airlines that will set the boundary between ESG and state-of-the-art technologies are the ones that will reap the fruits of not only higher output but also long-term sustainability in the shifting landscape of the aviation industry. Further, the study reveals that airlines progressively insert ESG practices into their operational strategies as a means of confronting sustainability problems. In addition, the management systems and ESG reporting practices are aligned with the expectations of investors, the requirements of regulatory compliance, and the goals of sustainable finance initiatives.

References

Li, T. T., Wang, K., Sueyoshi, T., & Wang, D. D. (2021). ESG: Research progress and prospects. *Sustainability, 13(21), 11663*. https://doi.org/10.3390/su132111663

Kuo, T. C., Chen, H. M., & Meng, H. M. (2021). Do corporate social responsibility practices improve financial performance? A case study of airline companies. *Journal of Cleaner Production, 310, 127380*. https://doi.org/10.1016/j.jclepro.2021.127380

Howard-Grenville, J. (2021). ESG Impact Is Hard to Measure — But It's Not Impossible. *Harvard Business Review. 22 January 2021*. Available online at: https://hbr.org/2021/01/esgimpact-is-hard-to-measure-but-its-not-impossible

Abdi, H., & Omri, M. A. B. (2020). Web-based disclosure and the cost of debt: Evidence from MENA countries. *Journal of Financial Reporting and Accounting, 18(3), 533-561*. http://dx.doi.org/10.1108/JFRA-07-2019-0088

Raimo, N., Caragnano, A., Zito, M., Vitolla, F., & Mariani, M. (2021). Extending the benefits of ESG disclosure: The effect on the cost of debt financing. *Corporate Social Responsibility and Environmental Management, 28(4), 1412-1421*. https://doi.org/10.1002/csr.2134

Eliwa, Y., Aboud, A., & Saleh, A. (2021). ESG practices and the cost of debt: Evidence from EU countries. *Critical Perspectives on Accounting, 79, 102097*. https://doi.org/10.1016/j.cpa.2019.102097

Paraschi, E. P., Poulaki, I., & Papageorgiou, A. (2022b). From Environmental Management Systems to Airport Environmental Performance: A Model Assessment. *Journal of Environmental Management & Tourism, 13(3), 831-852*. https://doi.org/10.14505/jemt.v13.3(59).22

Watts, R. (2021). The rise of ESG in aviation financing transactions. ACC aviation. 20/01/4/2021. Available online at: https://www.accaviation.com/the-rise-of-esg-in-aviation-financing-transactions/

Hagmann, C., Semeijn, J., & Vellenga, D. B. (2015). Exploring the green image of airlines: Passenger perceptions and airline choice. *Journal of Air Transport Management, 43, 37-45*. https://doi.org/10.1016/j.jairtraman.2015.01.003

Han, H., Yu, J., & Kim, W. (2019). Environmental corporate social responsibility and the strategy to boost the airline's image and customer loyalty intentions. *Journal of Travel & Tourism Marketing, 36(3), 371-383*. https://doi.org/10.1080/10548408.2018.1557580

Paraschi, E. P., Georgopoulos, A., & Papanikou, M. (2022a). Safety and security implications of crisis-driven austerity HRM practices in commercial aviation: a structural equation modelling approach. *Safety Science, 147, 105570*. https://doi.org/10.1016/j.ssci.2021.105570

Abdi, Y., Li, X., & Càmara-Turull, X. (2022). Exploring the impact of sustainability (ESG) disclosure on firm value and financial performance (FP) in the airline industry: the moderating role of size and age. *Environment, Development, and Sustainability, 24(4), 5052-5079.* https://link.springer.com/article/10.1007/s10668-021-01649-w

Yan, W., Cui, Z., & Gil, M. J. Á. (2016). Assessing the impact of environmental innovation in the airline industry: An empirical study of emerging market economies. *Environmental Innovation and Societal Transitions, 21, 80-94*. https://doi.org/10.1016/j.eist.2016.04.001

Ionescu, G. H., Firoiu, D., Pirvu, R., & Vilag, R. D. (2019). The impact of ESG factors on the market value of companies from the travel and tourism industry. *Technological and Economic Development of Economy, 25(5), 820-849*. https://doi.org/10.3846/tede.2019.10294

Mukanjari, S., & Sterner, T. (2020). Charting a "green path" for recovery from COVID-19. *Environmental and Resource Economics, 76(4), 825- 853*. https://doi.org/10.1007/s10640-020-00479-0

Su, C. H. J., & Chen, C. D. (2020). Does the sustainability index matter to the hospitality industry? Tourism Management, 81, 104158. https://doi.org/10.1016/j.tourman.2020.104158

Cek K., Eyupoglu S. Does environmental, social and governance performance influence economic performance? J. Bus. Econ. Manag. 2020;21(4):1165–1184.

Fatemi A., Glaum M., Kaiser S. ESG performance and firm value: the moderating role of disclosure. *Global Finance J. 2018; 38:45–64*.

Giese G., Lee L.E., Melas D., Nagy Z., Nishikawa L. Foundations of ESG investing: how ESG affects equity valuation, risk, and performance. J. Portfolio Manag. 2019;45(5):69–83.

Haase M., Zimmermann Y.S., Zimmermann H. Permanent and transitory price shocks in commodity futures markets and their relation to speculation. Empir. Econ. 2019; 56:1359–1382.

Poulaki, I., & Katsoni, V. (2020). Current Trends in Air Services Distribution Channel Strategy: Evolution Through Digital Transformation.

Baykov, F. (2020). Digital transformation of the world market of aviation services. E-Management.

Javornik, M., Nadoh, N., & Lange, D. (2018). Data Is the New Oil. In Towards User-Centric Transport in Europe.

Dimitrokalli, E. (2025). ESG and Financial Performance in the Aviation Sector: A comparative analysis between Aegean Airlines and Ryanair.

D'Silva, M. N. (2025). Towards Net-Zero: Analyzing Sustainability Reports of Global Airlines. *International Journal of Environmental Sciences, 11(5s), 781-813*. https://doi.org/10.64252/e8t51d12

Liao, Y. J. (2025). Important Factors To Be A Successful Esg Company: Case Study of Asian Pacific Airline (Doctoral dissertation, Waseda University).

Abdi, Y., Li, X., & Càmara-Turull, X. (2022a). Exploring the impact of sustainability (ESG) disclosure on firm value and financial performance (FP) in airline industry: the moderating role of size and age. *Environment, Development and Sustainability, 24(4), 5052-5079*. https://doi.org/10.1007/s10668-021-01649-w

Abdi, Y., Li, X., & Càmara-Turull, X. (2022b). How financial performance influences investment in sustainable development initiatives in the airline industry: The moderation role of state-ownership. *Sustainable Development, 30(5), 1252-1267*. https://doi.org/10.1002/sd.2314

Itan, I., Sylvia, S., Septiany, S., & Chen, R. (2025). The influence of environmental, social, and governance disclosure on market reaction: evidence from emerging markets. *Discover Sustainability, 6(1), 347*. https://doi.org/10.1007/s43621-025-01085-0

Büyüközkan, G., Feyzioğlu, O., & Havle, C. A. (2019). Analysis of Success Factors in Aviation 4.0 Using Integrated Intuitionistic Fuzzy MCDM Methods. In Intelligent and Fuzzy Techniques in Big Data Analytics and Decision Making.

Molchanova, K. (2021). Organization of Aviation Enterprises' Interaction Based on the Digital Platform.