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The Content Scope of Airline Sustainability Reporting According to the GRI Standards—An Assessment for Europe's Five Largest Airline Groups

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Abstract: The aviation industry is facing pressure from stakeholders to transform towards greater sustainability. From a managerial and marketing perspective, not only the actual implementation and achievements of sustainability measures, but also their communication to stakeholders is likely to be crucial—and in many cases even legally required. This research evaluates the scope of sustainability and corporate social responsibility (CSR) reporting of Europe's five largest airline groups for or from the year 2019, just prior the COVID-19 crisis. For this, dedicated sustainability reports and non-financial statements of Air France-KLM, easyJet, International Airlines Group, Lufthansa Group and Ryanair are evaluated and compared in a qualitative content analysis, using the Standards of the Global Reporting Initiative (GRI) as reference categories. The results indicate that the sustainability publications differ by airline business model, as the two low-cost carriers report less content in non-financial statements only, without publishing any standalone sustainability reports. Independent of the business model, most airlines surprisingly neglect the economic dimension of sustainability. The airline sector could improve its sustainability marketing by reporting both their economic, environmental, and social impacts and achievements.

Keywords: air transport; corporate social responsibility; Global Reporting Initiative; airline sustainability reporting; Lufthansa; IAG; Air France-KLM; easyJet; Ryanair

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1. Introduction

The air transport industry is facing increasing pressure from various stakeholders to transform towards greater sustainability and to limit its negative impacts on the environment: For example, at the legislator level, the European Commission plans to tighten the European Emission Trading Scheme (EU ETS) for aviation as part of its Fit-for-55 package (European Commission 2021); political parties and non-governmental organizations call for strong measures like the banning of short-haul flights (e.g., Greenpeace 2021); and the "flight shame" idea has become prominent at the media and general public levels (e.g., Wappelhorst 2020).

The transport system, including aviation, is a main source of man-made emissions of carbon dioxide (CO_2) and other air pollutants. More precisely, air transport contributes to global warming and climate change by emitting (or causing) not only CO_2, but also other, "non-CO_2" species like nitrogen oxides (NOx), sulfur oxides (SOx), water vapor (H_2O), aerosols, contrails and contrail cirrus deposited at high altitudes (e.g., Janić 2016). For the year 2005, Lee et al. (2009) estimated a 4.9% contribution of aviation's (CO_2 and non-CO_2) emissions to total radiative forcing, which included a 3.3% share of the so-called non-CO_2 species.

In addition, air transport is a key emitter of noise, which can affect people in the vicinity of airports (Gély and Márki 2022), while the sector also provides positive effects for societies, as it meets mobility needs in providing global connectivity (Burghouwt and

Redondi 2013), which can impact economic growth (Zhang and Graham 2020). Furthermore, the air transport sector secures a wide range of different jobs of different qualification types and (academic) levels along its direct, indirect and induced value chain(s) (ATAG–Air Transport Action Group 2020).

At different public, political and academic levels, a higher internalization of environmental costs of air transport, with a focus on CO_2, is currently discussed intensively, for example by increasing charges or taxes (e.g., Scheelhaase et al. 2020) or, in Europe, by tightening the European Emission Trading Scheme (EU ETS) for Aviation as part of the Green Deal/Fit for 55 package (a process which was still in legislative progress in November 2022) (European Commission 2021; European Parliament 2022).

Hence, airlines are facing the dilemma of being confronted with increasing requirements regarding the environmental sustainability of their businesses without having many tools at their disposal to meet those requirements and mitigate related costs by their own efforts. This is because, in contrast to other transport vehicles, electric engines or the direct use of hydrogen are unlikely to be technically feasible for large(r) commercial transport aircraft in the foreseeable future (Leipold et al. 2021).

However, airlines regularly seem to fail to place their perspectives in public discussions, and the economic and social impacts of a well-functioning aviation sector often appear to be considered less relevant, both by decision makers and the wider public. In contrast, the public attention regarding the climate impact of air transport culminates in phenomena like "flight shame" and in populist demands for, e.g., minimum fares (Ahlgren 2021), domestic or short-haul flight bans (Hametner 2021; Cunningham 2022; Chapman et al. 2021), or even prohibition of private jet flying (Charpentreau 2022).

In this context, it can be considered essential for airline managements to improve their firms'—and the whole sector's—public image by informing key stakeholders and the general public in a structured way about their achievements in the fields of sustainability and corporate social responsibility (CSR), which would also include the dimension of positive effects of the sector on societies, such as connectivity as an enabler for tourism, trade and hence economic growth (e.g., Cooper and Smith 2005).

Sustainability reports are one instrument in this context (LeBlanc et al. 2021). As with other firms, many airlines accentuate their CSR efforts and issue publications regarding their sustainability efforts. For this, the guidelines and standards of the Global Reporting Initiative (GRI) can serve as an internationally recognized framework for transparent sustainability reporting of firms (Global Reporting Initiative n.d.a).

But what does airline sustainability reporting look like, and how does it vary between different airlines?

The objective of this paper is to analyze and compare the content scope of the 2019 sustainability reports of Europe's five largest airline groups with regard to the standards provided by the GRI. The sustainability publications of the two pure low-cost carriers (LCC) easyJet and Ryanair, as well as the reporting of Air France-KLM, International Airlines Group (IAG) and Lufthansa Group as Europe's largest full service network carrier (FSNC) groups (including subsidiaries) are evaluated and compared in a qualitative content analysis in order to identify and discuss reporting gaps and deviations from the GRI framework, and to ultimately derive recommendations for airline management. These airline groups have been chosen because they all operate all over Western Europe where they achieved a combined passenger market share of 65% in 2019 (source: authors' own calculation based on segment traffic data provided by Sabre Market Intelligence; passenger volumes on flights within Western Europe). In addition, all of them are stock-listed public companies which essentially share the same reporting requirements.

For the airline sector, the literature body contains research providing a broad overview of reporting practices on a global level (Johansson 2022), as well as work focusing on reporting trends and their influencing factors (Kilic et al. 2019). However, little research is provided regarding a comparative assessment of the scope of the reported content: Yang et al. (2020), as well as Zhang (2021), conducted comparative studies between European

airlines and air carriers from the Asia-Pacific region, while there is no systematic intra-European comparison yet, which would also take a closer look at different business models and related differences in reporting behaviors.

Especially the EU has laid down particularly ambitious plans for a transformation towards a greener and more sustainable future. In the context of the European Green Deal (European Commission 2019), the Commission's Fit for 55 program is supposed to reduce GHG emissions by 55% in 2030 compared to 1990 as a first intermediate step towards climate neutrality in 2050 (European Commission 2021). CO_2 emissions from European aviation had been included in the EU ETS since 2012 (European Commission n.d.b). While European airlines are currently receiving free tradeable allowances to cover parts of their flights on a yearly basis, the Commission has proposed to phase out those free allowances and to lower the annual emissions cap faster than previously planned (European Commission 2021). While the EU ETS is currently applied to flights within the EEA only, it will be combined with ICAO's global "Carbon Offsetting and Reduction Scheme for International Aviation" (CORSIA) in the future (European Commission n.d.b). In addition, aircraft operators are required to blend an increasing percentage of "sustainable aviation fuels" (SAF) into conventional aviation fuels, whereas conventional kerosene is supposed to become subject to newly introduced fossil fuel taxes in aviation (European Commission 2021). As of November 2022, the proposals of the European Commission and even stronger amendments demanded by the European Parliament (European Parliament 2022) were still subject to "trilogue" negotiations between these two institutions and the Council. As a result, it is very likely that European airlines will have to focus more strongly on sustainability issues than their counterparts in other large markets, like the United States or China.

This paper is structured as follows. Section 2 presents key literature on the concepts of sustainability and corporate social responsibility, on sustainability reporting and the GRI standards, as well as on sustainability and sustainability reporting in the aviation sector. Section 3 presents our methodology to identify the content scope of airline sustainability reports from 2019. Section 4 summarizes and discusses the results. Finally, Section 5 concludes, discusses limitations and provides recommendations.

2. Literature

2.1. Sustainability and Corporate Social Responsibility

The concept of sustainability seems to be omnipresent these days. The public debate regarding sustainability was initiated by the study "The Limits to Growth", published on behalf of the think tank "The Club of Rome" in 1972, which utilized computer simulations to analyze the interdependencies between global population density, food production, industrialization, environmental pollution, and the exploitation of natural resources. The study concluded that, without a change towards more sustainability, the limits to growth on our planet will be reached before the end of the 21st century, resulting in significant economic and societal decline (Meadows et al. 1972). Another significant contribution was published by the "World Commission on Environment and Development" of the United Nations (UN) in 1987. The Commission's final report, named "Our Common Future", defines sustainable development in three dimensions–economic, social, and environmental–and described it as a development which "seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future" (World Commission on Environment and Development 1987).

Corporate social responsibility is closely connected to the concept of sustainability and can essentially be understood as a corporation's contribution to a sustainable development. The European Commission defines CSR as "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (European Commission 2006). According to the International Standard "ISO 26000", a corporation's stakeholders are more discerning and have higher expectations regarding corporate behavior than in the past, as they are often well

aware of the side aspects and external effects of corporate activities. Hence, a corporation's commitment to socially responsible behavior has become a central performance indicator, which may influence its overall reputation, its ability to attract and retain employees, clients, and investors, thereby impacting its competitive advantage (International Organization for Standardization 2010).

Freeman and Reed (1983) define stakeholders as individuals or groups who are directly or indirectly affected by a corporation's objectives and the way it carries out its business, each with their own sets of expectations and interests, which need to be addressed and managed. The analysis of stakeholder interests is a vital task in the process of strategic management. Stakeholders are often categorized according to the nature of their stake in the organization, and their power over the organization (Freeman and Reed 1983, pp. 93–94).

A corporation's CSR efforts frequently serve as signals towards its stakeholders. Signaling theory describes the reduction in information asymmetries by deliberately communicating information to convey a positive image of an organization, and to influence its customers and other stakeholders (Connelly et al. 2011). Engaging in CSR-related activities fosters trust and company identification, thereby increasing customer loyalty and supporting a company's business results (Homburg et al. 2013). A mutually beneficial relationship of CSR and business success is also reflected in the concept of "shared value" by Porter and Kramer (2011), which argues that a company's competitiveness and broader societal value can be increased simultaneously, with societal value being equally at the center of a corporation's value creation.

2.2. Sustainability Reporting

EU Directive 2014/95 requires large public-interest companies to disclose information on how they manage social and environmental issues in a non-financial report (European Commission n.d.a). There are no mandatory and legally binding standards or frameworks for sustainability reporting. However, on an international level, the reporting framework of the GRI has emerged as a quasi-standard for sustainability reporting. The GRI is an independent non-profit institution which published the first version of sustainability reporting guidelines in the year 2000. A continuously updated and expanded series of guidelines eventually evolved into the "GRI Standards" in 2016, which are recognized as the world's most comprehensive sustainability reporting standards (Global Reporting Initiative n.d.a).

The reporting process in accordance with the GRI includes an identification and assessment of an organization's relevant impacts and its material topics. Relevant information is reported according to the instructions in the respective standards. The GRI standards of 2016 are a modular system that consists of two interconnected pillars: the GRI "universal standards", and the GRI "topic standards" (Figure 1). Each standard contains mandatory disclosures, which consist of requirements and recommendations. The standards to be used depend on an organization's industry sector and its material topics, and, therefore, usually not all the GRI standards apply for reporting. A GRI "content index" that references the applied standards must be provided as part of the report. Finally, GRI must be notified of the publication (Global Reporting Initiative n.d.b). Due to their dates of publication the sustainability reports considered for this research will be analyzed according to the GRI standards of 2020, which represent the first edition of the GRI standards in 2016 with minor revisions only (Global Reporting Initiative 2020).

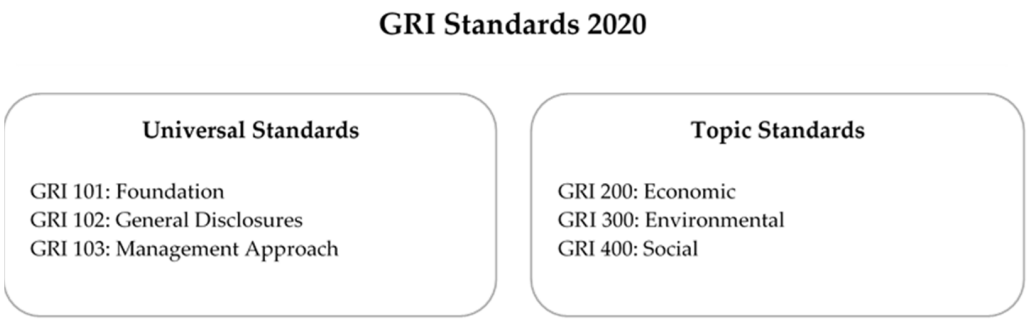

Figure 1. Overview of the GRI Standards 2020. Authors' own figure adapted from Global Reporting Initiative (2020) and Global Reporting Initiative (n.d.b).

The GRI universal standards serve as a starting point that applies to all organizations. They specify reporting principles (GRI 101) and contain general disclosures relating to details about an organization's structures and its conduct of business (GRI 102). Also, they contain steps and guidelines by which organizations can approach their stakeholders and identify their impacts and material topics. For each material topic the respective management approach must be reported (GRI 103) (Global Reporting Initiative 2020). The GRI topic standards contain disclosures and more specific reporting instructions on a variety of topics. Based on a corporation's materiality analysis, topics identified as being material are selected for the reporting (Global Reporting Initiative n.d.b). Topics are grouped in three sections—economic (GRI 200), environmental (GRI 300), and social (GRI 400)—reflecting the three dimensions of sustainability (Global Reporting Initiative 2020). Each topic consists of a variety of specific disclosures with detailed reporting instructions, which include both the management approach for the respective topic and the specific content that needs to be reported.

2.3. Sustainability (Reporting) and Aviation

A productive and efficient air transport system plays a decisive role in the development and integration of a global economy. In addition, the aviation industry itself is a relevant industry sector, which adds value, preserves employment, creates tax revenue, and impacts related industries (Belobaba et al. 2016). Besides these macroeconomic effects along the air transport value chains, air transport provides connectivity and thereby causes effects on and within other sectors, which may or may not directly use air transport, as it enables tourism, trade, investments, and intercultural exchange even between distant regions, which otherwise would not be possible (Janić 2016). Such effects are difficult to quantify and are often referred to as spillover (Carbo and Graham 2020) or catalytic effects (Cooper and Smith 2005). From a societal point of view, both economies and individuals benefit from increased connectivity and, due to an intense competition in the airline industry, flying has become more affordable over the past decades. According to the International Air Transport Association (IATA), a record high of city-pair routes was serviced by airlines in 2019, while inflation-adjusted transport costs had halved over the previous 20 years (IATA 2020).

According to Belobaba et al. (2016), the environmental impacts of the air transport system include various effects, such as local water quality around airports, the emission of noise, local air quality around airports, and global effects on climate, as already mentioned in the introduction. In view of the climate crisis, the term sustainability in aviation is often used in a narrow sense, mainly focusing on (noise and gas) emissions, without taking other, environmental, economic, and social aspects into account (Janić 2016). Although CO_2 and other greenhouse gases are emitted by a huge variety of human activities across different industries, GHG emissions from aviation have a very specific impact, as they are usually deposited at altitudes where their presence has a particularly harmful effect (Lee et al. 2009). Although technological innovations have helped lower the specific fuel consumption per engine and flight (Janić 2016), total emissions of the air transport system show an upward

trend, due to the overall growth of the sector. According to Graver et al. (2020), the total emissions of CO_2 increased by 30% between 2013 and 2019, which equals an average yearly increase of 4.5%. By the year 2050, global CO_2 emissions from aviation are projected to account for one quarter of total emissions from all sectors (Graver et al. 2020).

Various regulatory initiatives aim at a higher internalization of the sector's externalities, e.g., by means of taxation or emission trading and offsetting schemes (Janić 2016). From a technological perspective, the decarbonization of aviation appears to be more challenging than the transformation of road traffic. Disruptive technologies, such as electrical or hydrogen-powered propulsion systems are unlikely to become available for large(r) aircraft within the foreseeable future. According to the German Aerospace Center, even a progressive, optimistic technology scenario for aviation would not result in actual market perspectives for alternative propulsion systems before the year 2040 (Leipold et al. 2021). SAF are supposed to serve as a technology to bridge this gap as, in contrast to new propulsion systems, their use is compatible with existing engine technologies and does not require new aircraft concepts (Zhang et al. 2016). SAF may significantly reduce the carbon emissions of aviation, since the amount of CO_2 emitted by aircraft operation is neutralized in the first place during the production process (IATA n.d.). However, the production cost of SAF is considerably higher than the production cost of fossil fuels (Scheelhaase et al. 2019) and large-scale production facilities are not yet available, which results in a challenging market introduction. Enormous investments required to build the necessary production infrastructure result in the need for public funding and favorable policy frameworks on an international scale (Chiaramonti 2019).

Unlike many other corporations in different industries, airlines have a natural desire to enhance the environmental performances of their businesses, not only to avoid financial charges and reputational damage, but also because their eco-efficiency and their overall economic efficiency are closely correlated. As fuel consumption represents a major part of an airline's operating costs (Belobaba et al. 2016), lower fuel consumption results in lower operating expenses, as well as in lower consumption of non-renewable energy sources, and less GHG emissions (Janić 2016). From an airline's perspective, the ability to improve one's environmental performance also depends on technological advances provided by third parties, such as manufacturers of aircraft and engines. More rigid environmental protection requirements and additional taxes or charges may have a negative effect on the airlines' future business development and their abilities to invest in more sustainable technologies. Instead of one-sided measures and charges, airline lobbyists hence suggest a more balanced approach that includes public funding and support regarding the introduction of SAF and new technologies, as well as the optimization of airspace structures and air traffic flows (Schuurman 2021).

Against this background, airline sustainability reporting can play a pivotal role, as it may help informing the public and policymakers about airline sustainability achievements in a comprehensive way. However, actual research on airline sustainability reporting is still limited. Johansson (2022) provides a broad overview of reporting practices on a global level. The author found that about two-thirds of global airlines did not publish any sustainability report online in 2019, and most of those airlines who did made use of the GRI framework. Kilic et al. (2019) investigated reporting trends and their influencing factors for the period 2011 to 2016. Inter alia, they found that airlines from highly developed countries "are more likely to produce sustainability reports using the GRI framework". Also, little research is provided regarding a comparative assessment of the scope of the reported content. Yang et al. (2020), as well as Zhang (2021), focus on comparative studies between European airlines and air carriers from the Asia-Pacific region, while there is no systematic intra-European comparison yet, which would also take different business models into account.

3. Methodology

3.1. Research Objects

Air France-KLM (AF-KLM), easyJet (EZY), International Airlines Group (IAG), Lufthansa Group (LHG) and Ryanair (RYR) are Europe's five largest airline groups. They were chosen as research subjects because they all operate all over Western Europe where they achieved (subsidiaries included) combined market shares of 62% in terms of revenue passenger kilometers (RPK) in 2019 (Figure 2), while all of the smaller carriers have a more regional focus. In addition, all of them are stock-listed public companies which essentially share the same reporting requirements.

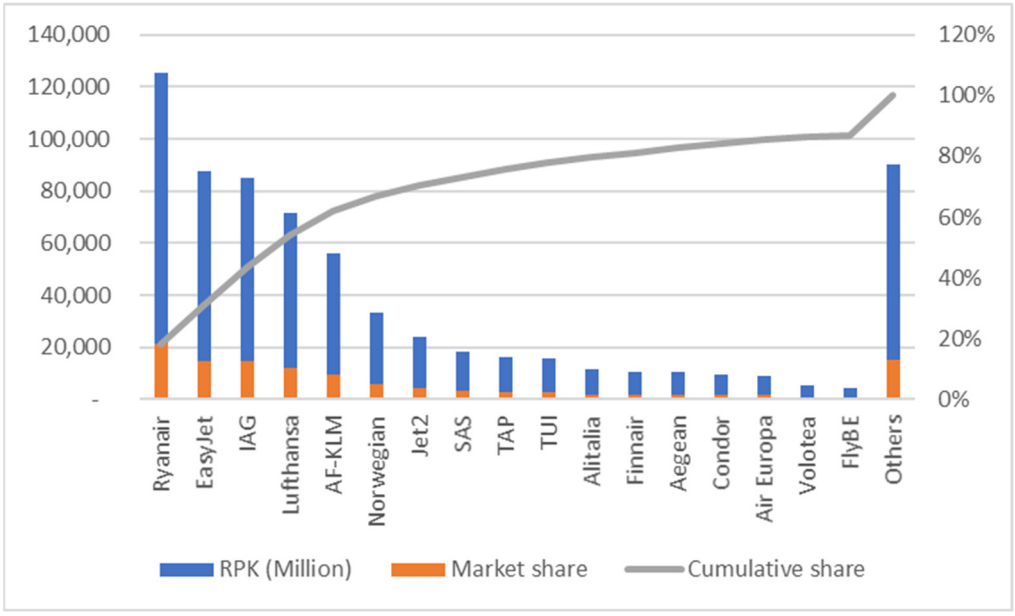

Figure 2. Western Europe's largest airlines and airline groups by intra-Western Europe traffic volume (in millions RPK) in 2019. Authors' own figure, based on Sabre Market Intelligence segment data.

Table 1 provides a more detailed overview of the intra-Western European RPKs of these five airline groups in 2019, including all subsidiaries. Air France-KLM, IAG and Lufthansa Group have evolved from the former flag carriers of their respective home countries. Their business models as FSNCs mainly focus on premium and connecting services from and via their hubs, supplemented by subsidiaries like Eurowings (Europe) (formerly: Germanwings) or Edelweiss (Lufthansa Group), Vueling or Aer Lingus (IAG), and Transavia (France) or Hop! (AF-KLM) in the low-cost and/or holiday market segments. EasyJet and Ryanair are Europe's largest "pure" LCC groups, offering point-to-point connections across Europe and the Mediterranean.

Table 1. Top five European airline groups in 2019.

Airline Group	RPK *	Associated Carriers (FSNC, Regional) (RPK *)	Associated Carriers (LCC, Holiday) (RPK *)
Air France-KLM	55,808	Air France (15,051) KLM Royal Dutch Airlines (12,851) KLM Cityhopper (6469)	Transavia Airlines (12,958) HOP! (4300) Transavia France (5948) Joon (1730)
easyJet	87,347	n/a	easyJet Airline Company (87,347)
IAG	85,249	British Airways (22,033) Iberia (9723) Air Nostrum (2819) BA Cityflyer (1980) Sun Air Of Scandinavia (87)	Vueling Airlines (30,283) Aer Lingus (9898) Iberia Express (7001) Anisec (Level) (1426)
Lufthansa Group	71,605	Deutsche Lufthansa (26,086) SWISS (7626) Austrian Airlines (5910) Brussels Airlines (5890) Lufthansa CityLine (3564) Air Dolomiti (1284)	Eurowings (10,062) Germanwings (4899) Eurowings Europe (4535) Edelweiss Air (2022) SunExpress Deutschland (826)
Ryanair	125,202	n/a	Ryanair (117,824) Laudamotion (5661) Malta Air (1523) Ryanair UK (171) Ryanair Sun (23)

*: Intra-Western Europe 2019, in millions (Source: Sabre Market Intelligence).

We examine the sustainability and CSR publications of these five airline groups from the year 2019. Only publicly available data and information are considered, which are taken from the companies' annual financial reports, in particular the non-financial parts, and their stand-alone sustainability reports, if published. These are:

- (Air France-KLM 2019). Air France-KLM takes care: Sustainability Report 2018.
- (EasyJet 2019). The Warmest Welcome in the Sky: Annual Report and Accounts 2018.
- (International Airlines Group 2019). Consolidated statement of non-financial information.
- (Lufthansa Group 2019). Balance. Sustainability Report 2019.
- (Ryanair 2019). Annual Report 2019.

No other material is used. The mentioned reports are listed in the reference list and available via the investor relations webpages of the respective airline groups. Data from the reports was collected manually by the authors according to the category system of the GRI.

The year 2019 is chosen as the point in time with the latest data available prior to the onset of the COVID-19 pandemic, which seems to have disrupted not only airline business performances worldwide but also their CSR activities. For example, Lufthansa has replaced its sustainability report called Balance, which had been published on an annual basis since 2007, by a much shorter factsheet in the years 2020 and 2021.[1]

3.2. Content Analysis

To capture the key content from the above-mentioned publications, we apply a research methodology which contains key elements of the "qualitative content analysis" by psychologist Philipp Mayring (2015). A deductive category assignment is applied to categorize the publications' contents into the three dimensions of sustainability and its various subcategories, as reflected by the GRI guidelines. Figure 3 shows Mayring's general approach for a structuring analysis with a deductive category assignment.

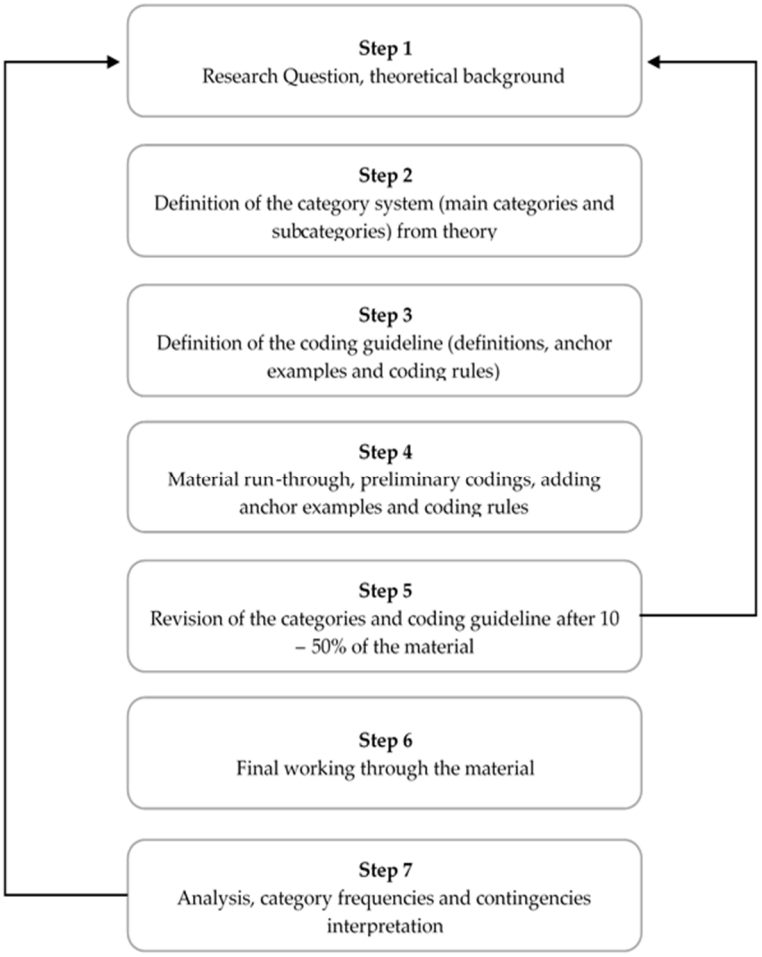

Figure 3. Exemplary steps of deductive category assignment according to Mayring (2014).

As a starting point, we compare the various formats of the publications and their distribution channels are analyzed as part of the context analysis. In addition, we examine whether the airline groups have documented their most relevant impacts and material topics in the first place according to the GRI universal standards (GRI 101-103). The categories to be applied for the systematic structuring of content are predefined by the GRI topic standards, which can be regarded as a best practice. Therefore, it is neither necessary nor desirable to modify, revise, or amend the category system or the coding guideline during the analysis. The fifth step of Mayring's structuring model can therefore be omitted. Since the category system is considered fixed, there is also no need to test its validity and reliability by additional analyses. The quality of the categories is considered a given, due to the fundamental research reflected in the GRI framework. Figure 4 summarizes our modifications to, and resulting application of, Mayring's basic model, which result in an adapted version of the structuring analysis for the purpose of this research:

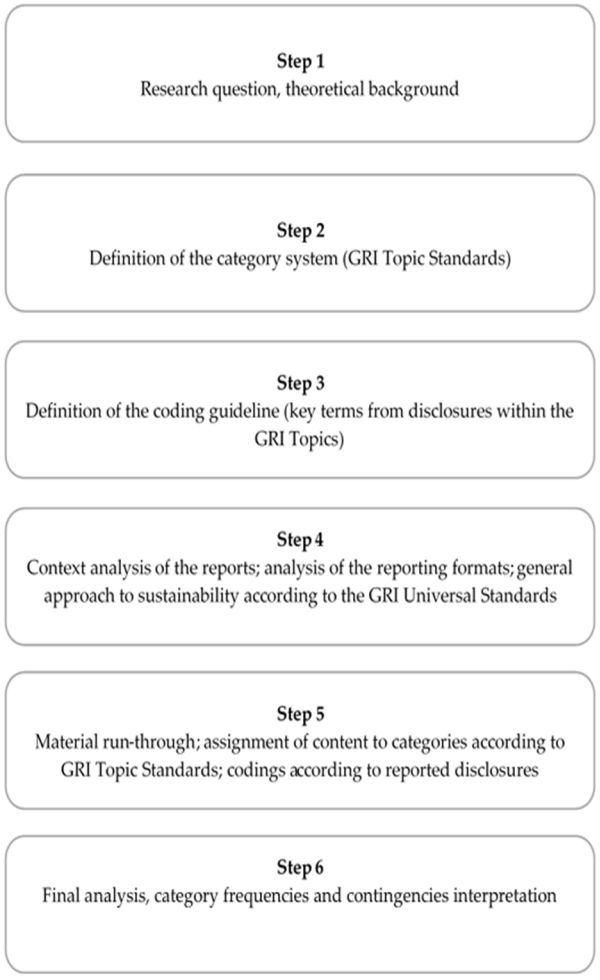

Figure 4. Structuring analysis of the content scope of airline sustainability reporting (authors' own figure).

4. Results

4.1. Reporting Approaches and Formats

The comparative analysis of the sustainability publications shows considerable differences regarding the volumes of the publications, and the depths of detail provided. One major aspect in this regard is the chosen reporting format. While Lufthansa Group and Air France-KLM have published standalone sustainability reports in 2019, the three remaining airline groups implement their CSR reporting as non-financial statements within their annual financial reports only, as required by law. The standalone sustainability reports of Air France-KLM (2019) and Lufthansa Group (2019) clearly serve a marketing purpose, given their layouts and their narrative styles, which results in considerable documents of more than 130 pages each. IAG's non-financial report (International Airlines Group 2019) consists of more than 50 pages of compressed, comprehensive, and rather analytical information. The reports of the LCCs easyJet (2019) and Ryanair (2019) are significantly shorter and less detailed, with documents of up to 10 pages only. Table 2 shows the basic differences regarding the formats and the chosen approaches to sustainability reporting.

The different approaches to sustainability reporting between FSNCs and LCCs are clearly noticeable. Not only do LCCs provide limited reporting regarding the volumes and formats of their publications, but also abstain from conducting materiality analyses and from using the GRI framework or any similarly structured approach to their reporting (GRI 102 reporting practice). The basic disclosures according to GRI 102 (organizational profile) and GRI 102 (governance) are observed by all five airline groups, as this information is also

required for financial reporting. Considerable differences can also be found when it comes to the airlines' compliance with the GRI topic standards.

Table 2. Differences in Reporting Approaches and Formats.

	LHG	IAG	AF-KLM	RYR	EZY
Standalone Sustainability Report	X	–	X	–	–
Non-Financial Statement	X	X	X	X	X
Page count of main sustainability publication	138 pages	56 pages	148 pages	7 pages	10 pages
Materiality Analysis	X	X	X	–	–
GRI Reference	X	X	X	–	–
GRI Content Index	X	X	–	–	–

Source: authors' own compilation, based on the airlines' sustainability publications for the year 2019.

4.2. GRI 200 (Economic)

All five airline groups equally report basic direct economic impact indicators (GRI 201 economic performance), such as revenue and income, as this information is readily accessible in their annual financial reports. Disclosures of indirect economic effects (GRI 203 indirect economic impacts) are mostly missing, as only Air France-KLM and Ryanair refer to infrastructure investments and indirect employment, or to connectivity effects of their networks—the original purpose of the airline product. All five airline groups, however, report on measures against bribery and other forms of corruption (GRI 205 anti-corruption). This is especially the case for Lufthansa Group and IAG, which both lay a focus on corporate compliance and anti-corruption measures. Table 3 provides an overview of the airline groups' disclosures in GRI 200 (economic).

Table 3. Reported disclosures within GRI 200 Economic.

GRI 200 ECONOMIC	LHG	AF-KLM	IAG	EZY	RYR
201 Economic Performance					
201-1 Direct economic value generated and distributed	X	X	X	X	X
201-2 Financial implications and other risks and opportunities due to climate change	X	X	X	X	
201-3 Defined benefit plan obligations and other retirement plans					
201-4 Financial assistance received from government					
202 Market Presence					
202-1 Ratios of standard entry-level wage by gender compared to local minimum wage					
202-2 Proportion of senior management hired from the local community		X			
203 Indirect Economic Impacts					
203-1 Infrastructure investments and services supported		X			
203-2 Significant indirect economic impacts		X			X
204 Procurement Practices					
204-1 Proportion of spending on local suppliers		X			

Table 3. *Cont.*

GRI 200 ECONOMIC	LHG	AF-KLM	IAG	EZY	RYR
205 Anti-corruption					
205-1 Operations assessed for risks related to corruption	X		X		
205-2 Communication and training about anti-corruption policies and procedures	X	X	X	X	X
205-3 Confirmed incidents of corruption and actions taken			X		
206 Anti-competitive Behaviour					
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices					
207 Tax					
207-1 Approach to tax		X			
207-2 Tax governance, control, and risk management		X			
207-3 Stakeholder engagement and management of concerns related to tax					
207-4 Country-by-country reporting			X		X

Source: authors' own compilation, based on the airlines' sustainability publications for the year 2019.

Only Air France-KLM covers more than 50% of all possible disclosures within GRI 200, which stems from extensive reporting regarding GRI 203 (indirect economic impacts), GRI 202 (market presence) and GRI 204 (procurement practices). The four other airline groups rank well below with coverages between less than 20 and 40%. Disclosures within GRI 202 (market presence), such as standard entry-level wages compared to local minimum wages (an issue less relevant at least for the hub carriers where most of the staff is based in the hub region) or management hires from the local communities, as well as approaches to taxes (GRI 207 tax) are mostly missing in the other airline groups' reports.

4.3. GRI 300 (Environmental)

The reporting of environmental impacts strongly focuses on GRI 302 (energy) and GRI 305 (emissions), as the fuel demand for flight operations and the resulting carbon emissions are recognized as the most material impacts of flying by all airline groups. However, so-called non-CO_2 emissions like nitrogen and sulfur oxides, which can be particularly harmful if emitted at high altitudes (see Introduction), are only covered by three carriers (IAG, Air France-KLM, and Ryanair). The generation of waste (GRI 306), mainly in terms of packaging related to inflight catering, is also reported by all airline groups. This is understandable as waste from packaging is not only an environmental issue (especially in many destination regions), but also has an impact on aircraft weight and hence fuel consumption. Environmental sustainability along the supply chains (GRI 308 supplier environmental assessment) is reported on by the FSNCs only. Compliance requirements and codes of conduct regarding environmental issues are usually extended to suppliers, which are assessed on a regular basis. Violations may result in contract terminations. LCCs do not make any claims in that regard. Little to no reporting is provided for GRI 303 (water and effluents), which is sound as airline operations are much less land consuming than those of many stationary industries and ground-based transport modes, hence indicating lower interaction with (ground) water. The same applies to GRI 304 (biodiversity), which is however thematized by Air France-KLM. Table 4 gives an overview of the environmental disclosures by airline group in detail.

Table 4. Reported disclosures within GRI 300 Environmental.

GRI 300 ENVIRONMENTAL	LHG	AF-KLM	IAG	EZY	RYR
301 Materials					
301-1 Materials used by weight or volume		X	X		
301-2 Recycled input materials used					
301-3 Reclaimed products and their packaging materials					
302 Energy					
302-1 Energy consumption within the organization	X	X	X		
302-2 Energy consumption outside of the organization					
302-3 Energy intensity	X	X	X	X	
302-4 Reduction of energy consumption	X	X	X	X	X
302-5 Reductions in energy requirements of products and services	X	X	X	X	X
303 Water and Effluents					
303-1 Interactions with water as a shared resource					
303-2 Management of water discharge-related impacts	X				
303-3 Water withdrawal					
303-4 Water discharge					
303-5 Water consumption		X			
304 Biodiversity					
304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas					
304-2 Significant impacts of activities, products, and services on biodiversity		X			
304-3 Habitats protected or restored		X			
304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations					
305 Emissions					
305-1 Direct (Scope 1) GHG emissions	X	X	X	X	X
305-2 Energy indirect (Scope 2) GHG emissions	X	X	X		
305-3 Other indirect (Scope 3) GHG emissions	X	X	X		
305-4 GHG emissions intensity	X	X	X	X	X
305-5 Reduction of GHG emissions	X	X	X	X	X
305-6 Emissions of ozone-depleting substances (ODS)					
305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions		X	X		X
306 Waste					
306-1 Waste generation and significant waste-related impacts		X	X		
306-2 Management of significant waste-related impacts	X	X	X	X	X
306-3 Waste generated		X	X		
306-4 Waste diverted from disposal	X	X	X		
306-5 Waste directed to disposal					

Table 4. *Cont.*

GRI 300 ENVIRONMENTAL	LHG	AF-KLM	IAG	EZY	RYR
307 Environmental Compliance					
307-1 Non-compliance with environmental laws and regulations					
308 Supplier Environmental Assessment					
308-1 New suppliers that were screened using environmental criteria	X	X	X		
308-2 Negative environmental impacts in the supply chain and actions taken			X		

Source: authors' own compilation, based on the airlines' sustainability publications for the year 2019.

Regarding their environmental disclosures, the three FSNCs reach a significantly higher coverage than the pure LCCs, Ryanair and easyJet. The highest coverage is again achieved by Air France-KLM. It can be explained by the reported disclosures of GRI 304 (biodiversity), which include the promotion of biodiversity around airports in France and the fight against illegal trading and trafficking of protected and endangered species.

In accordance with the GRI classification, noise emissions are tackled in GRI 413 (GRI 413-2: operations with significant actual and potential negative impacts on local communities) and are hence not part of GRI 300 (environmental), which may seem a bit counterintuitive.

4.4. GRI 400 (Social)

The reporting of social impacts covers a broad variety of topics. All five airline groups consider safety as a top priority, which is expressed by disclosures of GRI 403 (occupational health and safety) and GRI 416 (customer health and safety). Regarding their attractiveness as employers, all airline groups provide disclosures of GRI 404 (training and education) and GRI 405 (diversity and equal opportunity). Impacts regarding local communities (GRI 413 local communities) are equally covered by all airline groups, while CSR efforts regarding the supply chain (GRI 414 supplier social assessment and GRI 412 human rights assessment) are more strongly considered by the FSNCs. Similar to the assessment of suppliers regarding environmental issues, FSNCs include their suppliers in their compliance requirements regarding social issues as well. Significant gaps can be found regarding GRI 408 (child labor), GRI 409 (forced or compulsory labor), and GRI 411 (rights of indigenous people), where little to no reporting is provided. The same applies to GRI 417 (marketing and labeling). Table 5 gives an overview of the social disclosures by airline group in detail.

Table 5. Reported disclosures within GRI 400 Social.

GRI 400 SOCIAL	LHG	AF-KLM	IAG	EZY	RYR
401 Employment					
401-1 New employee hires and employee turnover			X		
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees					
401-3 Parental leave	X		X		
402 Labor/Management Relations					
402-1 Minimum notice periods regarding operational changes	X				

Table 5. *Cont.*

GRI 400 SOCIAL	LHG	AF-KLM	IAG	EZY	RYR
403 Occupational Health and Safety					
403-1 Occupational health and safety management system	X	X	X	X	X
403-2 Hazard identification, risk assessment, and incident investigation				X	X
403-3 Occupational health services	X	X			
403-4 Worker participation, consultation, and communication on occupational health and safety	X	X			
403-5 Worker training on occupational health and safety	X	X		X	X
403-6 Promotion of worker health	X	X		X	X
403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships					
403-8 Workers covered by an occupational health and safety management system	X	X			X
403-9 Work-related injuries		X	X		
403-10 Work-related ill health					
404 Training and Education					
404-1 Average hours of training per year per employee		X	X		
404-2 Programs for upgrading employee skills and transition assistance programs	X	X		X	X
404-3 Percentage of employees receiving regular performance and career development reviews	X	X			
405 Diversity and Equal Opportunity					
405-1 Diversity of governance bodies and employees	X	X	X	X	X
405-2 Ratio of basic salary and remuneration of women to men	X		X	X	
406 Non-discrimination					
406-1 Incidents of discrimination and corrective actions taken					
407 Freedom of Association and Collective Bargaining					
407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	X		X		
408 Child Labor					
408-1 Operations and suppliers at significant risk for incidents of child labor					
409 Forced or Compulsory Labor					
409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor			X		
410 Security Practices					
410-1 Security personnel trained in human rights policies or procedures					
411 Rights of Indigenous People					
411-1 Incidents of violations involving rights of indigenous peoples					

Table 5. *Cont.*

GRI 400 SOCIAL	LHG	AF-KLM	IAG	EZY	RYR
412 Human Rights Assessment					
412-1 Operations that have been subject to human rights reviews or impact assessments	X	X			
412-2 Employee training on human rights policies or procedures	X	X	X	X	
412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening		X	X		
413 Local Communities					
413-1 Operations with local community engagement, impact assessments, and development programs	X	X	X	X	X
413-2 Operations with significant actual and potential negative impacts on local communities	X	X	X	X	X
414 Supplier Social Assessment					
414-1 New suppliers that were screened using social criteria	X	X	X	X	
414-2 Negative social impacts in the supply chain and actions taken		X	X		
415 Public Policy					
415-1 Political contributions		X			X
416 Customer Health and Safety					
416-1 Assessment of the health and safety impacts of product and service categories	X	X	X	X	X
416-2 Incidents of non-compliance concerning the health and safety impacts of products and services					
417 Marketing and Labeling					
417-1 Requirements for product and service information and labeling					
417-2 Incidents of non-compliance concerning product and service information and labeling					
417-3 Incidents of non-compliance concerning marketing communications					
418 Customer Privacy					
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	X				
419 Socioeconomic Compliance					
419-1 Non-compliance with laws and regulations in the social and economic area					

Source: authors' own compilation, based on the airlines' sustainability publications for the year 2019.

Similar to the other GRI topic standards, the FSNCs also reach a higher degree of coverage for GRI 400 (social), although the differences are not as distinct as for GRI 300 (environmental). Lufthansa is the only airline group reporting on privacy issues (GRI 418 customer privacy).

4.5. Discussion

None of the assessed airline groups reaches a share in coverage of more than 60% of the disclosures available within any of the three sections of the GRI topic standards. Nevertheless, the gaps found do not necessarily indicate a lack of compliance with the

GRI topic standards. It can be reasonably assumed that topics such as GRI 303-5 (water consumption), GRI 408 (child labor) or GRI 411 (rights of indigenous people) are hardly material and relevant for European airline groups.

Air France-KLM provides a sustainability report that does not only serve a marketing purpose, but also covers most disclosures that can be considered relevant for an airline group. By providing a standalone sustainability report (Air France-KLM 2019) of a considerable volume and of an appealing design, as well as by providing the highest coverage of available disclosures, Air France-KLM holds the leading position within the group of assessed airlines. However, the report lacks a GRI content index, although it has been created with reference to GRI guidelines.

Lufthansa Group provides a standalone sustainability report (Lufthansa Group 2019) of similar size, which seems to be designed to appeal to mostly external stakeholders, and therefore clearly serves a marketing purpose. It is compiled in accordance with GRI guidelines, and a GRI content index is provided. The number of reported disclosures, however, is lower than with Air France-KLM, especially within the category GRI 200 (economic). While Air France-KLM extensively reports on direct and indirect employment, as well as induced and catalytic impacts, Lufthansa Group does not provide any disclosures regarding their indirect economic effects (GRI 203 indirect economic impacts), their collaborations with local suppliers (GRI 204 procurement practices), their hires from local communities (GRI 202 market presence), or any other issue that would point to the group's economic significance for the wider economy. This is all the more astonishing given that the Lufthansa Group's business model, its corporate history, and its importance for the overall economy around its hub airports are very likely to be similar to Air France-KLM. Since detailed figures and indicators regarding the economic impacts of the aviation sector in Germany are made available by the German air transport industry association Bundesverband der Deutschen Luftverkehrswirtschaft (BDL 2019) and others, Lufthansa Group should be able to provide at least an approximate estimation regarding their indirect and induced effects for the metropolitan areas around their hub airports.

IAG's reporting is similar to that of the two other FSNCs, when it comes to the level of detail and the number of disclosures provided. Like Air France-KLM and Lufthansa Group, IAG adopts a structured approach to its sustainability reporting. A materiality analysis and a stakeholder dialogue, as well as a GRI content index are provided. The main difference is the chosen reporting format. Unlike the two other FSNCs, IAG does not provide a standalone sustainability report. The consolidated statement of non-financial information (International Airlines Group 2019) as part of the annual financial report is the main document regarding the group's CSR efforts. The presentation style differs significantly from the standalone sustainability reports of the other two FSNCs. Condensed information in small print, tabular displays and diagrams clearly contain a lot of information, but likely do not appeal to a target audience beyond analysts. Similar to Lufthansa Group's reporting, there are little to no disclosures regarding indirect and induced economic impacts.

Ryanair and easyJet provide limited CSR reporting only. Minor sustainability sections of up to 10 pages are embedded in the annual financial reports, as required by law. The reporting does not refer to GRI guidelines and does not follow a structured approach based on stakeholder engagement and materiality analyses. Nevertheless, the basic definitions regarding the three dimensions of sustainability are observed. The reporting focuses on environmental topics, such as GRI 302 (energy) and GRI 305 (emissions), as well as selected social topics, such as GRI 403 (occupational health and safety) and GRI 405 (diversity and equal opportunity). Only Ryanair refers to induced and catalytic effects, e.g., in highlighting the importance of LCCs for the integration of the EU. The number of reported disclosures is significantly lower, and the statements often remain vague. Small adaptations would not be sufficient to reach the level of reporting provided by the FSNCs.

The significant differences between FSNCs and LCCs raise the question of whether and how the different approaches to sustainability reporting are rooted in the different business models. The business model of LCCs is based on price leadership, which is, among other

aspects, achieved by a high degree of outsourcing, a simple point-to-point route network, low levels of inflight service, and by a low overhead in general. Part of this strategy is also a rather unambitious marketing approach, with a focus on low prices as the main advertising message. Work from Lawton (2002) or Graf (2005) deals with the key architecture of the low-cost carrier business approach. As Ryanair explicitly states in its 2019 financial report, "the success of its business model depends on its ability to control costs so as to deliver low fares while at the same time earning a profit" (Ryanair 2019, p. 61). It is therefore obvious to ask whether a more sophisticated and thereby more costly approach to sustainability marketing would make a strategic fit for an LCC. Since many LCC passengers are price-sensitive private travelers, it is questionable whether the target group would be willing to pay a higher price in exchange for enhanced CSR efforts. Passengers of LCCs are less likely to complain about service quality, which could be explained by lower price-based expectations (Wittman 2014). What applies to service quality might also be true regarding sustainability efforts. It is quite likely that the wider public expects less from Ryanair and easyJet, especially when it comes to corporate citizenship, than from former national carriers, like Air France, British Airways or Lufthansa. Regardless of the airline business model, it can be generally assumed that the private, social and economic benefits of flying are considered higher by passengers than its cost, including negative environmental and societal effects (Janić 2016). However, tightening environmental regulations and increases in resulting costs equally affect LCCs and might be even more harmful to them, given the usually greater price elasticity of private travel demand or on leisure routes (e.g., Morlotti et al. 2017) and their focus on intra-European operations, where environmental measures, like the EU ETS, are more relevant than elsewhere. From this point of view, it seems advisable also for LCCs to enhance their sustainability marketing, although they probably do not need to fully match the efforts of FSNCs.

5. Conclusions, Recommendations and Limitations

The management of sustainability can be considered a key challenge for airline managements. The aviation sector requires a transition towards more sustainability, with its decarbonization being at the forefront as the most pressing issue, while noise seems to remain another relevant topic. From an airline perspective, real progress lies in technological innovations, like new propulsion concepts or the use of SAF, which are developed by third parties, and which are not yet available at all (e.g., hydrogen-powered aircraft), or at least not at larger scales (e.g., SAF). In the meantime, airlines have to focus on the CSR efforts that are within their own control, and they should present them in a positive light from a communications and marketing perspective.

In this paper, we assessed the content scope of the sustainability reporting of the five largest European airline groups for the year 2019, which account for more than 60% of revenue passenger kilometers within Western Europe. These include both airline groups like Air France-KLM, IAG and Lufthansa with a focus on hub and spoke operations by network carriers, supplemented by subsidiaries in the low-cost segment, and pure low-cost airline groups, namely easyJet and Ryanair. Through a qualitative content analysis and using the Global Reporting Initiative (GRI) standards as reference categories, we compared the actual scope of disclosures made by these airline groups within the universal and thematic GRI standards.

Our analysis results in a rather inconsistent picture as airline groups dominated by FSNCs seek to provide a more comprehensive reporting than their counterparts that focus purely on LCC operations. In general, FSNCs cover more topics and provide more disclosures. Also, they seem to tackle the topics with an increased level of detail. A similar observation could be made with regard to the reporting format: Two out of the three FSNCs provide standalone sustainability reports of considerable page counts of up to 150 pages, which clearly fulfill a marketing role, given their narrative style and their appealing design. By contrast, the LCCs Ryanair and easyJet provide limited reporting only, which does not

seem to exceed their legal obligations according to Directive 2014/95/EU on non-financial reporting within the annual financial reports.

Regarding the compliance with the GRI framework, it can be stated that all three FSNCs appear to report their CSR efforts in accordance with or with reference to the GRI. The LCCs, in contrast, do not seem to refer to the GRI. Consequently, their amount of GRI topics and disclosures provided is significantly smaller. Nevertheless, their CSR reporting follows the most basic definitions of sustainability and can therefore be evaluated according to the GRI structure, even though there is no GRI reference in the original documents.

When it comes to the compliance with the GRI topic standards, all five airline groups equally report on GRI 300 (environmental), with a focus on GRI 302 (energy) and GRI 305 (emissions), which clearly reflects the airlines' contribution to climate change. When it comes to GRI 400 (social), the FSNCs provide more disclosures than the LCCs, by not only focusing on GRI 403 (occupational health and safety), GRI 405 (diversity and equal opportunity), and GRI 413 (local communities), but also on GRI 412 (human rights assessment) and GRI 414 (supplier social assessment). It can be stated that the FSNCs put greater effort into managing their social impacts, with a special focus on the monitoring of their supply chains. The LCCs provide no comparable infrastructure in that matter. The most obvious deviation from the GRI framework can be found with regard to GRI 200 (economic). Irrespective of the business model, there is a general lack of reporting when it comes to indirect, induced, and catalytic effects of business, with little to no disclosures in GRI 202 (market presence), GRI 203 (indirect economic impacts), and GRI 204 (procurement practices). This is surprising because such effects are usually considered a positive impact of the air transport sector.

Regarding the FSNCs, we recommend Air France-KLM to add a GRI content index to round off a comprehensive report according to the GRI standards. IAG is recommended to review its approach to sustainability reporting, both with regard to the chosen reporting format, and regarding the possible disclosures within GRI 200 (economic). A standalone sustainability report with an increased focus on positive economic impacts should be considered. Lufthansa Group should also place greater value on its indirect economic impacts, and its importance for local markets and communities

Given the challenging regulatory environment and the negative public connotation of flying, failing to emphasize an airline group's economic importance could be a missed opportunity.

It is difficult to determine whether the different business model of LCCs requires comprehensive sustainability reporting at all. A lower administrative overhead and a stronger focus on costs speak against costly CSR efforts. On the other hand, LCCs operate in the same legislative environments as other carriers, and legislative actions resulting in higher airfares are disproportionally affecting their business model. Therefore, it is concluded that a compromise is advisable, which provides a more enhanced sustainability reporting to meet stakeholder expectations, and which at the same time does not dilute their overall cost bases. Regarding customer expectations, one could assume that sustainability-related efforts are of less relevance for price-sensitive passengers, and hence for LCCs; future research is recommended here.

Given the disproportionate public attention on the climate impact of flying, airline managers must have a paramount interest in improving their sustainability marketing. This research provides a contribution to balanced and optimized sustainability marketing from an airline perspective, by pointing out the gaps and shortcomings that can be found in the latest pre-COVID-19 sustainability publications.

Irrespective of their business model, airlines are advised to publish standalone sustainability reports, which are suitable to appeal to the general public, and which go beyond legal reporting requirements. Since airlines are already reporting their environmental and social impacts, it is important to focus on their economic impacts as well. The GRI framework explicitly includes economic disclosures into a holistic approach to corporate citizenship. The airlines are therefore advised to not just apply a defense strategy by

following the one-sided concepts of the wider public, but to offensively highlight their overall economic and societal importance instead.

There are some key limitations to this study. First, the analysis of the scope of content was carried out from a bird's eye view, as we did not consider the technical quality or completeness of each disclosure. In other words, our results indicate the (quantitative) extent to which airlines report on their CSR efforts, but we did not assess the quality (e.g., honesty) or completeness of reporting for each disclosure. In addition, various other channels and formats of communication with stakeholders may exist, which may complement or even go beyond the scope of the examined reports, and which were not taken into account for this research. Thus, an analysis of the airlines' dedicated sustainability publications alone may not be sufficient to assess whether their engagements with stakeholders are truly effective and successful.

Further limitations for this research lie in the very dynamic business environment of the previous years. Since the COVID-19 downturn, the airlines' CSR efforts have been disrupted as well, with significantly less funding for sustainability publications as part of the overall cost-saving measures to survive the crisis. At the same time, the increasing overall importance of sustainability across economic sectors and entire societies is putting an increasing pressure on organizations. This is reflected by the proposed legislation of the EU's "Fit for 55" package, which was introduced amid the COVID-19 crisis. Airlines are increasingly aware of the likely future challenges and are enhancing their sustainability marketing in the aftermath of the crisis. Therefore, the results of this research paper and the insights gained are based on data that are likely to be outdated in the near future, and some of the recommendations may be under implementation already. The decision to focus on the reporting period of 2019 to analyze data unaffected by the crisis unfortunately results in the latest developments of 2020–2022 not being considered. Also, this study does not contribute to the question of the extent to which enhanced sustainability marketing—including in-detail sustainability reporting—would affect relevant stakeholder groups at all. Further research in this area could therefore assess the perceptions and the resulting behaviors of customers, legislators or other relevant stakeholders, regarding the CSR and other sustainability-related efforts of the aviation sector.

Also, the financial impacts of stakeholder management are not quantified in this research. Necessary expenditures for a successful stakeholder engagement are not contrasted with the financial gains (e.g., increased revenue and/or income) that may, or may not, come along with it. Finally, our study only covered the five largest airline groups, including all their subsidiaries, while the large group of smaller airlines–which still account for close to 40% of RPKs within Western Europe–has not been considered.

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Note

[1] See https://www.lufthansagroup.com/de/verantwortung/berichte.html (accessed on 25 December 2022).

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