# An Analysis of Airline GRI and SDG Reporting

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**Abstract.** This study aims to increase our understanding of the Global Reporting Initiative's (GRI) topic-specific disclosures and the sustainable development goals (SDGs) addressed in the global passenger airline industry's sustainability reporting (SR). Based on a quantitative content analysis of the industry's sustainability reports from the financial year 2019 (FY19), this study reveals that airlines focused more on reporting environmental issues, especially emissions, than economic or social dimensions, demonstrating this emission-intensive industry's responsiveness to stakeholders' information needs. However, a closer look at the reported impacts shows that many topic-specific disclosures and SDGs, which industry associations have not identified as relevant to the industry, were also mentioned across the reports. Moreover, the results indicated a broader use of SDGs in Asia-Pacific reports than in European. The results are expected to interest practitioners and academics in assessing and developing the industry's SR.

**Keywords:** Airline industry, GRI, SDG.

## 1 Introduction

Since its inception in 1999, the GRI has become the most widely accepted sustainability reporting (SR) framework for organizations to disclose information on their significant impacts in the three sustainability areas, i.e., economic, environmental, and social [1]. The framework has been updated numerous times, and recently, the GRI has also guided organizations to report their commitments to SDGs [2].

Nevertheless, companies may struggle to report on their sustainability performance and commitments to SDGs, partly because they have difficulties assessing what is relevant to their industry. The proof is that GRI is now developing a sector program that provides certain industries with specific disclosure standards and their correspondence to SDGs [3]. Although some high-impact sectors, such as oil and gas and coal, have been provided with sector-specific standards, there is still a long list of sectors with high impact and a long SR tradition that this program does not cover. One industry that has lacked sector-specific guidance [4] is the airlines.

Accordingly, this paper aims to analyze the GRI disclosure and SDG coverage in the global airline industry, which may help relevant stakeholders develop sector-specific SR. Considering airlines' significant impacts on all three sustainability areas, this paper focuses specifically on this industry. After all, it has a central role in enabling global tourism and trade, consequently supporting millions of jobs worldwide; however, it also

contributes over 2% to anthropogenic CO2 emissions [5]. Despite the industry's significant impacts, scholarly research on airline SR has remained very limited [4]. Although the recent literature contains global overviews and comparative assessments of the scope of GRI-specific topics covered in airlines' reports [6, 7], such analysis has not yet been performed at the exact disclosure level, and the SDGs in this connection have not been examined either. This study seeks to narrow this gap by addressing the following research questions: **RQ1:** Which GRI's topic-specific disclosures and SDGs are reported in airlines' sustainability reports, and to what extent? **RQ2:** Are there differences in the count of GRI disclosures and SDGs reported across regions?

## 2    Background of Sustainability Reporting, GRI and SDGs

Greater public demand for sustainability disclosure started emerging in the '90s, when corporations also recognized SR initiatives bringing them a competitive advantage [8]. Since then, corporate SR has proliferated. According to KPMG's [9] recent survey, the proportion of large and mid-cap firms (known as N100) practising SR increased from 24% to 80% between 1999 and 2020.

In general, SR can be defined as reporting publicly on an organization's economic, environmental and social impacts [10], often released in stand-alone reports or incorporated into annual reports. Despite this consensus, businesses may struggle to assess and demonstrate their impacts in these areas, which is also reflected in the use of numerous SR frameworks [11], of which the GRI is the most prominent [9].

**The GRI**. The GRI is an independent international organization whose initial aim was to standardize, simplify and globalize SR that lacked comparability [1]. Its GRI guidelines, developed in 1999, quickly became the most widely accepted SR framework worldwide [1], with 67% of N100 reporters using it in 2020 [9]. In 2016, the GRI transitioned from guidelines to set the first global standards for SR. These standards [12] comprise Universal and Topic-specific standards. Universal Standards specify the reporting principles and disclosures related to the organization's context that all organizations claiming compliance with GRI must follow. Organizations that claim compliance with the 2016 Standards can choose to report under the 'Core' or 'Comprehensive' option; the latter reflects a greater degree of the GRI application. The 2016 Standards also allow organizations to choose to report specific economic, environmental, and social impacts without looking to provide a full picture of their impacts using the 'GRI-referenced' claim. Topic-specific Standards, in turn, are organized into three series of disclosures: 200 (Economic topics), 300 (Environmental topics), and 400 (Social topics), from which the reporting organizations are expected to report on material topics, i.e., issues reflecting the organizations' most significant impacts. It is worth noting that GRI has offered sector-specific supplements for many industries, including airport operators [4]. However, it has not offered sector-specific supplements or standards for airlines yet.

**SDG reporting.** SDG reporting can be defined as publicly reporting how organizations address the SDGs [10]. The SDGs were introduced as part of the 2030 Agenda for Sustainable Development in 2015 when the United Nations member states agreed to create a global agenda for sustainable development based on 169 targets grouped into 17 SDGs, tackling a range of issues relevant to sustainable development, such as ending world poverty and tackling climate change [13]. Soon after the SDGs were introduced, the GRI and UN Global Compact published several guides [2] to help organizations to integrate SDGs into their non-financial reports, especially those following the GRI Standards. According to KPMG [9], SDG reporting among the N100 reporters increased from 39% to 69% between 2017 and 2020.

**The GRI and SDG reporting in the airline industry.** In the absence of sector-specific guidance, the International Transport Association (IATA) noticed airlines' need for specific guidance on GRI reporting. As a result, IATA [14] developed an Airline Sustainability Reporting Handbook (ASRH) based on industry input through a series of surveys, workshops and background research to determine the most important topics for airlines to report on, their associated disclosures and relevant SDGs. Specific guidance is given for 4 economic, 9 environmental and 8 social GRI disclosures. ASRH also references the Air Transport Association Group's (ATAG) [15] 'Flying in Formation' report, which outlines how the industry plays a role in 15 of the 17 SDGs. The report assigns a score of 0-3 for each SDG to reflect their direct relevance to the sector. The three-bar scores are assigned to the following SDGs: 5: Gender equality,  7: Affordable and clean energy, 8: Decent work and economic growth, 9: Industry innovation and infrastructure, 10: Reduced inequalities, 12: Responsible consumption and production, 13: Climate action. Which GRI disclosures and SDGs are addressed in the global airline industry's SR and to what extent this reporting corresponds to the above-mentioned industry recommendations will be the interest of the remaining paper.

## 3    Methodology

The data used in this study were compiled from several sources. First, the initial sample comprising data about airlines' SR activity was obtained from Johansson [16]. This data contained a list of 61 global passenger airline companies, compiled from IATA's 2019 annual report and Skytrax airline ranking organization's lists, which were active in SR in FY19 before COVID-19 disrupted the industry. Based on this data, 37 companies were found to reference the GRI and 39 companies the SDGs in their SR.

Next, these companies' sustainability reports were reviewed by applying quantitative content analysis [17] to identify and measure the extent to which the airlines had reported GRI disclosures and SDGs. More specifically, each report was downloaded from the Internet and screened against a coding scheme corresponding to the topic-specific disclosures appearing in the GRI 200, GRI 300, and GRI 400 series and the 17 SDGs. It is worth noting that the GRI updates its standards continuously, and the coding scheme in this study was based on disclosures published in the GRI 2016 Standards and the updates made to them until 2019 [3, 18]. To address RQ1, all identified topic-

specific disclosures and SDGs were recorded in an Excel spreadsheet, whose frequencies and proportions of sustainability reports mentioning them were measured.

To address RQ2, each airline was assigned a categorical code based on their domicile in IATA's regional classification (i.e. Africa & Middle East, Asia Pacific, China & North Asia, Europe, the Americas) to test whether there existed differences in the count of reported GRI disclosures and SDGs across regions. The analysis was carried out using SPSS (v. 28). This study opted to test for statistically significant differences using the non-parametric Kruskal-Wallis test because unequal sample sizes across groups were considered to affect the robustness of the equal variance assumption [19].

## 4     Results

**The use of the GRI.** Thirty-seven of the 61 reporting companies used the GRI. Twenty of them claimed compliance with the GRI Standards (1 at the Comprehensive level and 19 at the Core level), and 10 made a 'GRI-referenced' claim. One of these reports had not specified the exact topic-specific disclosures and could not be taken to further analysis. The remaining seven companies had only cited the GRI without using its disclosures. Accordingly, the sample scrutinized for GRI topic-specific disclosures was 29 reports. Twenty-four of these reports also addressed SDGs.

The basic descriptive statistics reveal that the number of topic-specific disclosures per report varied from 3 to 79, with mean and median values of 28.9 and 28. The standard deviation value, which is relatively close to the mean, highlights a high dispersion of some disclosures within the 29 reports. Indeed, out of the 89 topic-specific GRI disclosures, all were used at least once, but 25 of them were mentioned in fewer than five reports. On the other end, the most frequently used disclosures were 305-1 (Direct [Scope 1] GHG emissions) with 25 mentions out of the 29 reports and 305-4 (GHG emission intensity) with 24 mentions. The complete breakdown of the reported disclosures is provided in Tables 1-3, where disclosures in red represent topics that ASRH identifies as material for airlines. The average coverage of all IATA-recommended GRI disclosures was 38%. Details on which disclosures in each GRI series were used and to what extent they corresponded to IATA-recommended disclosures are provided below.

*The use of the GRI economic disclosures.* The number of economic disclosures per report ranged from 0 to 13, with mean and median of 4.9 and 4. As shown in Table 1, out of the 17 GRI 200 disclosures, 201-1 (Direct economic value generated and distributed) was the most used one, appearing in 79% of the reports, followed by 205-2 (Communication and training about anti-corruption policies and procedures) and 205-3 (Confirmed incidents of corruption and actions taken), with 62% and 55%, respectively. These three disclosures from the GRI 200 series were the only ones reported in more than half of the reports. The average coverage of the GRI 200 disclosures was 29%.

Regarding the IATA's four recommended disclosures in GRI 200 series, it is worth noting that only 205-3 (confirmed incidents of corruption and actions taken) was reported in over half of the reports. The average coverage of IATA-recommended GRI 200 disclosures was 30%

*The use of the GRI environmental disclosures.* The number of environmental disclosures per report ranged from 1 to 32, with mean and median of 11.62 and 12. The use of these disclosures is summarized in Table 2. Out of the GRI 300 series' 32 disclosures, 11 were reported in more than half of the reports. Two of the most frequently reported environmental disclosures, 305-1 and 305-4, were also the most reported GRI disclosures, appearing in 86% and 83% of the reports, respectively. The average coverage of the GRI 300 disclosures was 36%.

While 5 out of 9 IATA's recommended environmental disclosures were reported in over half of the reports, others had very low frequencies. For example, 308-2 (Negative environmental impacts in the supply chain and actions) was reported only in 10% of the reports, and 303-4 (Water discharge) in 7%. The average coverage of IATA-recommended GRI 300 disclosures was 44%

*The use of the GRI social disclosures.* The number of social disclosures per report ranged from 1 to 34, with mean and median of 12.38 and 11. Table 3 summarizes the use of the GRI 400 disclosures. Out of the 40 disclosures in this series, seven were reported in more than half of the reports. Overall, the average coverage of GRI 400 disclosures was 31%. The most frequently used disclosure was 405-1 (Diversity of governance bodies and employees Disclosure), with 69% of the reports mentioning it. Interestingly, IATA's ASRH does not include materiality guidance on this disclosure. While IATA-recommended 401-1 (New employee hires and employee turnover) and 403-2 (Hazard identification, risk assessment, and incident investigation) were each reported in 62% of the reports, some other IATA's recommended disclosures, like 403-10 (Work-related ill health), were reported only by 14%. The average coverage of IATA-recommended GRI 400 disclosures was 38%.

**The use of SDGs.** 39 of the 61 reporting companies claimed to have connected their business activities to the SDGs in their sustainability reports. One of them did not specify which specific SDGs it had addressed and was excluded from further analysis. The frequency of each SDG and the proportion of the remaining 38 reports mentioning them are summarized in Table 4. The scores (0-3) within the brackets indicate aviation's significance across the SDGs, as identified by ATAG [15]. Those SDGs recognized as having full relevance to the industry are also highlighted in red.

The SDGs addressed per report ranged from 2 to 17, with mean and median of 9.37 and 9. SDG13 (Climate action) was the most addressed, with 97% of the reports mentioning it. The second most frequently used SDG was SDG8 (Decent work and economic growth), with 95% of the reports mentioning it. SDG5 (Gender equality), SDG12 (Responsible consumption and production), and SDG3 (Good health and well-being) followed the other SDGs, constituting 89%, 84%, and 74% of the reports, respectively. It is worth noting that 6 out of the 7 SDGs recognized as directly relevant to the industry by ATAG were addressed in over half of the reports. Also, the only two Goals, SDG14 (Life below water) and SDG16 (Peace, Justice and Strong Institutions), which are not identified as having a direct aviation element, were among the three least addressed SDGs.

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**Table 1.** Frequency of use of GRI 200 Economic Disclosures

|  |  | n | % |
|---|---|---|---|
| 201-1 | Direct economic value generated and distributed | 23 | 79% |
| 201-2 | Financial implications and other risks and opportunities due to climate change | 10 | 34% |
| 201-3 | Defined benefit plan obligations and other retirement plans | 8 | 28% |
| 201-4 | Financial assistance received from government | 5 | 17% |
| 202-1 | Ratios of standard entry level wage by gender compared to local minimum wage | 4 | 14% |
| 202-2 | Proportion of senior management hired from the local community | 5 | 17% |
| 203-1 | Infrastructure investments and services supported | 10 | 34% |
| 203-2 | Significant indirect economic impacts | 11 | 38% |
| 204-1 | Proportion of spending on local suppliers | 7 | 24% |
| 205-1 | Operations assessed for risks related to corruption | 10 | 34% |
| 205-2 | Communication and training about anti-corruption policies and procedures | 18 | 62% |
| 205-3 | Confirmed incidents of corruption and actions taken | 16 | 55% |
| 206-1 | Legal actions for anti-competitive behavior, anti-trust, and monopoly practices | 11 | 38% |
| 207-1 | Approach to tax | 1 | 3% |
| 207-2 | Tax governance, control, and risk management | 1 | 3% |
| 207-3 | Stakeholder engagement and management of concerns related to tax | 1 | 3% |
| 207-4 | Country-by-country reporting | 1 | 3% |

**Table 2.** Frequency of use of GRI 300 Environmental Disclosures

|  |  | n | % |
|---|---|---|---|
| 301-1 | Materials used by weight or volume | 9 | 31% |
| 301-2 | Recycled input materials used | 5 | 17% |
| 301-3 | Reclaimed products and their packaging materials | 3 | 10% |
| 302-1 | Energy consumption within the organization | 23 | 79% |
| 302-2 | Energy consumption outside of the organization | 9 | 31% |
| 302-3 | Energy intensity | 18 | 62% |
| 302-4 | Reduction of energy consumption | 20 | 69% |
| 302-5 | Reductions in energy requirements of products and services | 15 | 52% |
| 303-1 | Interactions with water as a shared resource Disclosure | 13 | 45% |
| 303-2 | Management of water discharge-related impacts | 4 | 14% |
| 303-3 | Water withdrawal | 7 | 24% |
| 303-4 | Water discharge | 2 | 7% |
| 303-5 | Water consumption | 4 | 14% |
| 304-1 | Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas | 2 | 7% |
| 304-2 | Significant impacts of activities, products and services on biodiversity | 5 | 17% |
| 304-3 | Habitats protected or restored | 4 | 14% |
| 304-4 | IUCN Red List species and national conservation list species with habitats in areas affected by operations | 2 | 7% |
| 305-1 | Direct (Scope 1) GHG emissions | 25 | 86% |
| 305-2 | Energy indirect (Scope 2) GHG emissions | 20 | 69% |
| 305-3 | Other indirect (Scope 3) GHG emissions | 11 | 38% |
| 305-4 | GHG emissions intensity | 24 | 83% |
| 305-5 | Reduction of GHG emissions | 21 | 72% |
| 305-6 | Emissions of ozone-depleting substances (ODS) | 6 | 21% |
| 305-7 | Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions | 15 | 52% |
| 306-1 | Water discharge by quality and destination | 8 | 28% |
| 306-2 | Waste by type and disposal method | 22 | 76% |
| 306-3 | Significant spills | 7 | 24% |
| 306-4 | Transport of hazardous waste | 4 | 14% |
| 306-5 | Water bodies affected by water discharges and/or runoff | 4 | 14% |
| 307-1 | Noncompliance with environmental laws and regulations | 16 | 55% |
| 308-1 | New suppliers that were screened using environmental criteria | 6 | 21% |
| 308-2 | Negative environmental impacts in the supply chain and actions | 3 | 10% |

**Table 3.** Frequency of use of GRI 400 Social Disclosures

| | | n | % |
|---|---|---|---|
| 401-1 | New employee hires and employee turnover | 18 | 62% |
| 401-2 | Benefits provided to full-time employees that are not provided to temporary or part-time employees | 12 | 41% |
| 401-3 | Parental leave | 9 | 31% |
| 402-1 | Minimum notice periods regarding operational changes | 11 | 38% |
| 403-1 | Occupational health and safety management system | 13 | 45% |
| 403-2 | Hazard identification, risk assessment, and incident investigation | 18 | 62% |
| 403-3 | Occupational health services | 12 | 41% |
| 403-4 | Worker participation, consultation, and communication on occupational health and safety | 11 | 38% |
| 403-5 | Worker training on occupational health and safety | 4 | 14% |
| 403-6 | Promotion of worker health | 4 | 14% |
| 403-7 | Prevention and mitigation of occupational health and safety impacts directly linked by business relationships | 4 | 14% |
| 403-8 | Workers covered by an occupational health and safety management system | 5 | 17% |
| 403-9 | Work-related injuries Disclosure | 6 | 21% |
| 403-10 | Work-related ill health | 4 | 14% |
| 404-1 | Average hours of training per year per employee | 18 | 62% |
| 404-2 | Programs for upgrading employee skills and transition assistance programs | 16 | 55% |
| 404-3 | Percentage of employees receiving regular performance and career development reviews | 11 | 38% |
| 405-1 | Diversity of governance bodies and employees Disclosure | 20 | 69% |
| 405-2 | Ratio of basic salary and remuneration of women to men | 10 | 34% |
| 406-1 | Incidents of discrimination and corrective actions taken | 7 | 24% |
| 407-1 | Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk | 6 | 21% |
| 408-1 | Operations and suppliers at significant risk for incidents of child labor | 6 | 21% |
| 409-1 | Operations and suppliers at significant risk for incidents of forced or compulsory labor | 7 | 24% |
| 410-1 | Security personnel trained in human rights policies or procedures | 2 | 7% |
| 411-1 | Incidents of violations involving rights of indigenous peoples | 2 | 7% |
| 412-1 | Operations that have been subject to human rights reviews or impact assessments | 4 | 14% |
| 412-2 | Employee training on human rights policies or procedures | 6 | 21% |
| 412-3 | Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening | 3 | 10% |
| 413-1 | Operations with local community engagement, impact assessments, and development programs | 10 | 34% |
| 413-2 | Operations with significant actual and potential negative impacts on local communities | 3 | 10% |
| 414-1 | New suppliers that were screened using social criteria | 8 | 28% |
| 414-2 | Negative social impacts in the supply chain and actions taken | 6 | 21% |
| 415-1 | Political contributions | 12 | 41% |
| 416-1 | Assessment of the health and safety impacts of product and service categories | 15 | 52% |
| 416-2 | Incidents of noncompliance concerning the health and safety impacts of products and services | 10 | 34% |
| 417-1 | Requirements for product and service information and labeling | 4 | 14% |
| 417-2 | Incidents of noncompliance concerning product and service information and labeling | 8 | 28% |
| 417-3 | Incidents of noncompliance concerning marketing communications | 9 | 31% |
| 418-1 | Substantiated complaints concerning breaches of customer privacy and losses of customer data | 16 | 55% |
| 419-1 | Noncompliance with laws and regulations in the social and economic area | 9 | 9% |

**Table 4.** Frequency of SDGs addressed in sustainability reports

| SDGs | | Relevance | n | % |
|---|---|---|---|---|
| 1: | End poverty in all its forms everywhere. | (1) | 14 | 37% |
| 2: | End hunger, achieve food security and improved nutrition and promote sustainable agriculture. | (1) | 7 | 18% |
| 3: | Ensure healthy lives and promote well-being for all at all ages. | (2) | 28 | 74% |
| 4: | Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. | (2) | 23 | 61% |
| 5: | Achieve gender equality and empower all women and girls. | (3) | 34 | 89% |
| 6: | Ensure availability and sustainable management of water and sanitation for all. | (2) | 12 | 32% |
| 7: | Ensure access to affordable, reliable, sustainable and modern energy for all. | (3) | 21 | 55% |
| 8: | Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. | (3) | 36 | 95% |
| 9: | Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. | (3) | 24 | 63% |
| 10: | Reduce inequality within and among countries | (3) | 18 | 47% |
| 11: | Make cities and human settlements inclusive, safe, resilient and sustainable. | (2) | 14 | 37% |
| 12: | Ensure sustainable consumption and production patterns. | (3) | 32 | 84% |
| 13: | Take urgent action to combat climate change and its impacts. | (3) | 37 | 97% |
| 14: | Conserve and sustainably use the oceans, seas and marine resources for sustainable development. | (0) | 10 | 26% |
| 15: | Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. | (1) | 16 | 42% |
| 16: | Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels. | ( 0) | 11 | 29% |
| 17: | Strengthen the means of implementation and revitalize the global partnership for sustainable development. | (2) | 19 | 50% |

### 4.1 Comparison between regions in the airline GRI and SDG reporting

Kruskal-Wallis tests were performed to test whether significant differences existed in the extent of the reported GRI disclosure and SDGs across the regions classified by IATA. Due to a small number of cases (fewer than 5 observations), the group comprising Africa and the Middle East was excluded from the sample. Accordingly, the groups included in the tests were Asia Pacific, China and North Asia, the Americas, and Europe. Regarding the GRI disclosure, the tests revealed no significant difference in the total count of the GRI indicators, $\chi2$ (3, n =28) 3.635, p = 0.30, or in the use of GRI 200, $\chi2$ (3, n =28) 3.365, p = 0.34, GRI 300, $\chi2$ (3, n =28) 5.306, p = 0.15, or GRI 400 disclosures, $\chi2$ (3, n =28) 3.620, p = 0.31. Regarding the SDGs, the results revealed a statistically significant difference, $\chi2$ (3, N =35) 8.19, p = 0.04. A closer look at the data showed that the Asia Pacific region (n=10) recorded a higher median score (Md = 12) in comparison to China & North Asia (n=6, Md=9.5), the Americas (n=8, Md=8.5) and Europe (n=11, Md = 7). Dunn's pairwise tests were carried out to compare all pairs of groups, showing evidence (p = .043, adjusted using the Bonferroni correction) of a significant difference between the European and Asia Pacific airlines' SDG reporting. However, no evidence of a difference between the other pairs was detected.

# 5    Discussion and conclusion

Using quantitative content analysis to review 61 airlines' FY19 sustainability reports, this study identified 29 companies reporting GRI topic-specific disclosures and 38 addressing SDGs in their reports. The analysis of these companies' reports revealed what topic-specific disclosures and SDGs were reported and to what extent.

The results showed that airlines focused more strongly on reporting environmental issues, especially GHG emissions, than economic or social dimensions [cf. 7]. This is expected, given that GRI Standards instruct reporters to focus on material topics. After all, airlines are big emitters and have been at the center of climate change debate in recent years. This issue also appears to resonate with the industry's SDG reporting, as the study found airlines most often stating their commitment to SDG13 (climate action).

Aside from the emissions, the overall topic-specific disclosure in reports showed limited alignment with the topics IATA [14] has identified as material for the industry. This is reflected in the fact that the average frequency of all IATA-recommended topic-specific disclosures in the reports was only 38%. Also, the array of disclosed information seemed highly dispersed across the reports, with numerous disclosures mentioned in low frequencies. On the one hand, this is expected as not all indicators are relevant to airlines. However, this raises the question of why some of these disclosures are reported. Although many reasons could exist, a reasonable explanation could be that some airlines cannot properly assess what issues are material with limited sector-specific guidance. Indeed, the past literature has suggested that the wide latitude provided by the GRI may lead to inconsistencies in the indicator disclosure [20]. Similarly, while most observed reports indicated companies' commitment to SDGs that are identified as fully relevant to the industry [15], many also claimed commitment to SDGs that have very little or no industry relevance.

Despite the above inconsistencies, the results indicate that the extent of GRI topic-specific disclosure is similar worldwide. This deviates from previous research [7], which has found differences between European and Asia-Pacific airlines. On the one hand, the sample size and the year of the reports could explain these deviating results. On the other hand, the results may also suggest a global institutionalization of airline SR, meaning that companies' sustainability reports start gradually looking similar in the same industry [21]. However, Asia-Pacific airlines were detected reporting more SDGs in their reports than their European counterparts. Although explanations for this could be sought from firm-specific [22] and institutional [10] factors, recent research [7] has indicated that the Asia-Pacific region is generally quick in adopting new CSR practices, which may explain the difference in the early stages of SDG reporting.

This study provided one of the broadest snapshots of what GRI's topic-specific disclosures are included in airlines' sustainability reports. Assumably, this is also the first academic paper to provide an overview of the SDGs in such reports. All in all, these results contribute to our understanding of the current state of the industry's SR practices, which can help airlines and stakeholders benchmark the industry's SR and academia and NGOs in their research that can positively influence the development of sector-specific guidance. In this regard, further scholarly research could also explore relevant stakeholders' views on these reports, which was outside the scope of this study.

It is also worth noting that while this paper revealed the GRI disclosures used, the actual disclosure may show noncompliance with the GRI Standards and limited substantiation of the SDGs. Thus, further research is needed to examine the quality of airline SR.

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