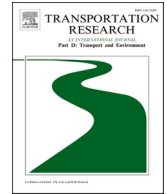




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Sustainability reporting in the airline industry: Current literature and future research avenues

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ABSTRACT

Sustainability reporting (SR) allows organisations to communicate their non-financial impacts to stakeholders. It has also become a widespread business practice in aviation, a transport sector that contributes significantly to global warming. Academia has begun to examine SR in the context of airlines surprisingly late, and no comprehensive reviews of its respective developments have been made so far. Consequently, a systematic literature review was performed with an exclusive focus on airline SR to synthesise its associated scholarly research and distinguish the common concerns and gaps that have emerged from it. The analysed publications indicate that the industry has lacked a unified policy and common understanding of how to define and measure sustainability, which has led to inconsistent SR practices. This causes ambiguity between the real actions and promotional communication through which airlines may legitimise their operations. Academia and various airline stakeholders would benefit from more in-depth studies examining the stakeholder views and quality of disclosures, helping the industry improve its SR.

1. Introduction

Corporate sustainability performance has been evaluated with regard to three main types of organisational responsibilities, namely social, environmental and economic (Zaid et al., 2020). Most stakeholders cannot directly witness companies' non-financial performance and, therefore, they must rely on corporate reporting (Illia and Stefania, 2013). Sustainability reports provide a medium through which companies can communicate their non-financial performance and impacts (positive or negative) to stakeholders in a supposedly transparent manner.

Various reporting guidelines have emerged to help companies in their sustainability reporting (hereafter SR) efforts. However, the diversity of sustainability performance indicators and their measurement disparities have created complexity and confusion amongst practitioners and academics on how to assess sustainability and how it should be reported (Antolín-López et al., 2016). SR has also been claimed to be companies' cosmetic showcasing of socio-environmental good practices (Porter and Kramer, 2006), which may constitute a type of greenwashing¹, leaving significant adverse events unreported (Boiral, 2013) or sustainability performance measuring methodologies unexplained (Talbot and Boiral, 2018). In such instances, SR is merely a marketing tool by which companies can seek a better image and legitimacy (Cerin, 2002; Cho et al., 2010).

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¹ Greenwashing "describes public relations aimed at giving the false impression that a corporation is genuinely engaged in CSR" (Illia and Stefania, 2013, p. 16)

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Considering the complexity and ambiguity involved in SR, research in this area is unquestionably needed. Indeed, academia has researched SR and synthesised its existing studies from several perspectives across various contexts (e.g., [Ceulemans et al., 2015](#); [Dienes et al., 2016](#); [Fusco and Ricci, 2019](#); [Hahn and Kühnen, 2013](#); [Lodhia and Hess, 2014](#); [Silva et al., 2019](#); [Traxler et al., 2020](#)). However, **no reviews have yet been conducted in the context of the airline industry in a systematic manner**. Considering the environmentally unsustainable nature of the industry and the issues associated with SR, **it is essential to understand how airlines implement SR and identify areas where improvement is needed**. To facilitate this understanding, examining the developments in this field and identifying the potential knowledge gaps is necessary. This can be done by analysing the studies carried out so far from the macro level and synthesising their main contributions. Consequently, **this paper aims to deliver a comprehensive review of scholarly research focusing on airline SR**. The research questions addressed by this study are reported below:

RQ1: How has the existing scholarly research approached the topic of airline sustainability reporting?

RQ2: What distinguishable concerns have emerged from this research?

This study approached its central aim and research questions by following the principles of systematic literature review (SLR), which distinguishes itself from traditional reviews by its scope and rigour in collecting and synthesising previous research ([Okoli, 2015](#)). The advantages of SLR are argued to lie in its ability to limit bias and improve the reflection of reality ([Mulrow, 1994](#)).

This paper contributes both to literature and practice by offering an understanding of airline SR practices, assessed through the lenses of academic literature. It differs from the more general reviews of SR (e.g., [Traxler et al., 2020](#)) as it has an airline industry-specific focus and contributes to its respective research in several ways. First, the paper serves academia as the first study to synthesise previous scholarly research on airline SR. It identifies its limitations and provides foundations for future research avenues. Second, the authors of this paper share the view with [Corley and Gioia \(2011\)](#) that academia should be “charged with the responsibility of fulfilling both maintenance and adaptive roles in society” (p.26). Consequently, this paper highlights the common concerns related to airline SR so that future research could generate knowledge applicable for a wider group of stakeholders, including airlines, policymakers and developers of reporting standards. Lastly, this study’s SLR procedure is replicable and can be adapted in other similar studies.

This paper continues as follows. The following section provides overviews of the airline industry, the concept of SR and its commonly associated theoretical perspectives, and previously conducted reviews in this area. The SLR procedure is outlined in section three, and the results of the review are reported in section four. The study’s descriptive and thematic analyses are further discussed in section five, and avenues for future research proposed in section six. The paper ends with concluding remarks ([Section 7](#)).

2. Literature background

This section presents the background for SR, the commonly used theoretical perspectives related to this concept, and the previous reviews of SR reporting research. It aims to prepare a broader context for the conducted SLR, being a necessary step to justify the need for the study and offer an understanding of the theoretical perspectives behind SR. First, a brief introduction to the airline industry will be provided.

2.1. Airline industry

Before the recent unprecedented disruption in global air travel, caused by COVID-19, every day, over 9 million passengers travelled on over 100,000 flights over a network of about 51,000 routes while transporting US\$17.5 billion worth of goods to industry and homes ([O’Connell, 2018](#)). In 2019, 4.5 billion passengers were carried by the world’s airlines ([ATAG, 2020](#)), amounting to the revenue of \$838 billion ([IATA, 2020a](#)). The same year, the industry employed directly about 3 million people ([IATA, 2020b](#)) while supporting nearly 88 million jobs worldwide in aviation and related tourism ([ATAG, 2020](#)).

While the airline industry has experienced rapid growth in the past and has become an increasingly significant enabler of global transport, it has also demonstrated decelerating fuel efficiency improvements, leading it to become one of the fastest-growing industries in the global economy in terms of greenhouse gas (GHG) emissions ([Kim et al., 2019](#)). Aviation is reported to account for about 2% of all human-induced carbon dioxide emissions ([ATAG, 2020](#)) and contribute 3.5% to global warming with its non-CO₂ effects taken into account ([Lee et al., 2020](#); cf. [Larsson et al., 2018](#)). At the same time, the industry has one of the largest groups of stakeholders of any sector, and the airlines should be responsive to all of them through reporting ([PwC, 2011](#)).

2.2. Sustainability reporting

Non-financial reporting has its origins in the 1970s, since when its practice has evolved from making social disclosures to producing broader social and environmental reports, which after the millennium became increasingly known as sustainability reports ([Fifka, 2013](#)). Since then, SR has become a mainstream practice for many organisations ([Kend, 2015](#)), although it is still largely a voluntary activity in different parts of the world ([D’Aquila, 2018](#); [Higgins and Coffey, 2016](#)).

Sustainability can be reported in conjunction with annual reports or stand-alone sustainability reports, which are published under various names such as ‘responsibility’, ‘corporate (social) responsibility/CSR’, and ‘accountability’ report (cf. [Roca and Searcy, 2012](#)), which is why different terms are also used interchangeably in this paper. A third type of report, an integrated report, has also emerged, combining financial and sustainability information in a single document with an emphasis on explaining the relationship between

financial and non-financial performance (Owen, 2013).

For some, any report can be identified as a sustainability report if it explains how the company meets its sustainability challenges (Schaltegger et al., 2003). Others prefer stricter definitions asserting that it must include both qualitative and quantitative data about the management of organisational impacts on economic, environmental, and social dimensions (Daub, 2007) – commonly referred to as the Triple Bottom Line (TBL) (Elkington, 1997). It is also increasingly recommended that organisations concentrate on the principle of ‘materiality’, meaning that they should report only on those issues that are significant and relevant for them and their stakeholders (GRI et al., 2015). Adopting this principle has presented challenges to organisations because there is no clear consensus on what constitutes materiality in non-financial contexts (Jones et al., 2015).

The lack of clarity on how to operationalise SR is reflected in the existence of numerous sustainability performance indicators and various ways of applying them (Antolín-López et al., 2016). Numerous frameworks have emerged to guide corporations in SR, out of which the Global Reporting Initiative (GRI) has become widely recognised as the most prominent (D’Aquila, 2018; Karagiannis et al., 2019; KPMG, 2017).

The success of GRI has been explained by its original strategy based on three revolutionary goals: 1) to form a broad collaborative coalition of various actors of the same political or policy network to discuss and create rules; 2) to build a sense of ownership of the new rules and practices amongst the collaborators, and; 3) to establish GRI as a steward of the guidelines (Brown et al., 2009). The strategy meant that GRI became an everchanging document produced not by the steering organisation but by the users for other users. Despite its success, GRI has also been criticised for being influenced by actors other than non-governmental organisations (Brown et al., 2009), raising doubts about whether its implementation actually promotes sustainability (Milne and Gray, 2013).

2.3. Commonly used theoretical perspectives on sustainability reporting

Research has postulated several theoretical perspectives to explain SR. Amongst the most common perspectives are legitimacy theory and stakeholder theory (Deegan and Blomquist, 2006; Roca and Searcy, 2012). Legitimacy theory postulates that organisations continually seek to ensure that they operate within the society’s changing bounds and norms (Brown and Deegan, 1998). The theory is based on the notion that there exists a social contract between the organisation and those affected by it, where the organisation agrees to perform various socially desired actions in return for approval of its ongoing operations (Guthrie and Parker, 1989). If the organisation deviates from societal expectations, its ability to operate may be challenged (Deegan and Rankin, 1996). Based on legitimacy theory, organisations may seek to gain approval for their operations by practising SR (Ching and Gerab, 2017). Stakeholder theory overlaps with legitimacy theory in that both see the organisation as part of a broader society within interconnected influences. However, where legitimacy theory discusses the societal expectations in general, stakeholder theory acknowledges that different stakeholders have different opinions about how the organisation should operate (Freeman, 1984), which is why there exist several contracts with various stakeholder groups rather than one with society (Deegan and Blomquist, 2006), where some groups are more powerful than others (Woodward et al., 1996). By sharing certain information with powerful stakeholder groups, organisations can gain or maintain their support or alleviate their concerns about matters such as corporate environmental sustainability (Deegan and Blomquist, 2006).

There is also a growing interest in examining SR from the institutional theory perspective (Fusco and Ricci, 2019), according to which organisations are influenced by their institutional environment and try to adapt their practices to such influence (Meyer and Rowan, 1977) through the process of coercive (e.g. abiding by regulations), normative (e.g. following standards) and mimetic (e.g. copying others) isomorphic mechanisms (Scott, 2013). Some (e.g., Karaman et al., 2018; Villiers and Staden, 2010) have also explained SR practices by agency theory, according to which managers (agents) may disclose information to shareholders (principals) to mitigate agency problems. Such problems occur due to asymmetric information (agents have superior information about the company’s performance compared to the principal), for which reason the principal is unsure whether the agent acts for their interest (Eisenhardt, 1989).

Few scholars have also advocated the critical theory perspective, placing critique and scepticism on sustainability reports and investigating the truthfulness and authenticity of various accountability perspectives (Lehman and Kuruppu, 2017). Such studies have highlighted the socially constructed nature of sustainability reports and their rhetorical purposes (Livesey and Kearins, 2002) of portraying an organisation in a way that is beneficial for them (Font et al., 2017), through which they can legitimate their actions in society (Laine, 2005).

2.4. Previous literature reviews on sustainability reporting

Recent literature reviews on SR that have been conducted systematically have synthesised the existing research contributions either on a general level (e.g., Dienes et al., 2016; Hahn and Kühnen, 2013) or focused on some specific sectors. The latter segment includes reviews in areas such as the public sector (Fusco and Ricci, 2019), higher education (Ceulemans et al., 2015) and the mining industry (Lodhia and Hess, 2014). These reviews have identified the research being still in its early stages (Fusco and Ricci, 2019), in need of more in-depth studies, supplemented by empirical evidence (Ceulemans et al., 2015) or more diverse theorisation (Lodhia and Hess, 2014). Lodhia and Hess (2014), whose study reviewed the existing research on the mining industry SR, recommended future research to undertake similar studies in other environmentally sensitive industries; especially, reviewing the state of research and making recommendations for future studies. Consequently, the present study aims to address this gap by providing a comprehensive overview of scholarly research focusing on the environmentally unsustainable airline industry.

Although some previous reviews have touched upon the topic of airline SR, their scope has hitherto remained limited. For instance,

Stevenson and Marintseva (2019) conducted a brief survey of the recent literature on CSR assessment techniques, as part of which the effectiveness of CSR reporting standards in the aviation industry was discussed. Mayer (2018) has also provided a comprehensive account of the developments and research on airline sustainability and CSR activities, in which reporting standards were likewise discussed. However, no previously published reviews have appeared to synthesise the current academic research on SR in the context of airlines comprehensively following the principles of SLR. Doing such a review can identify what has been done, which can be used as

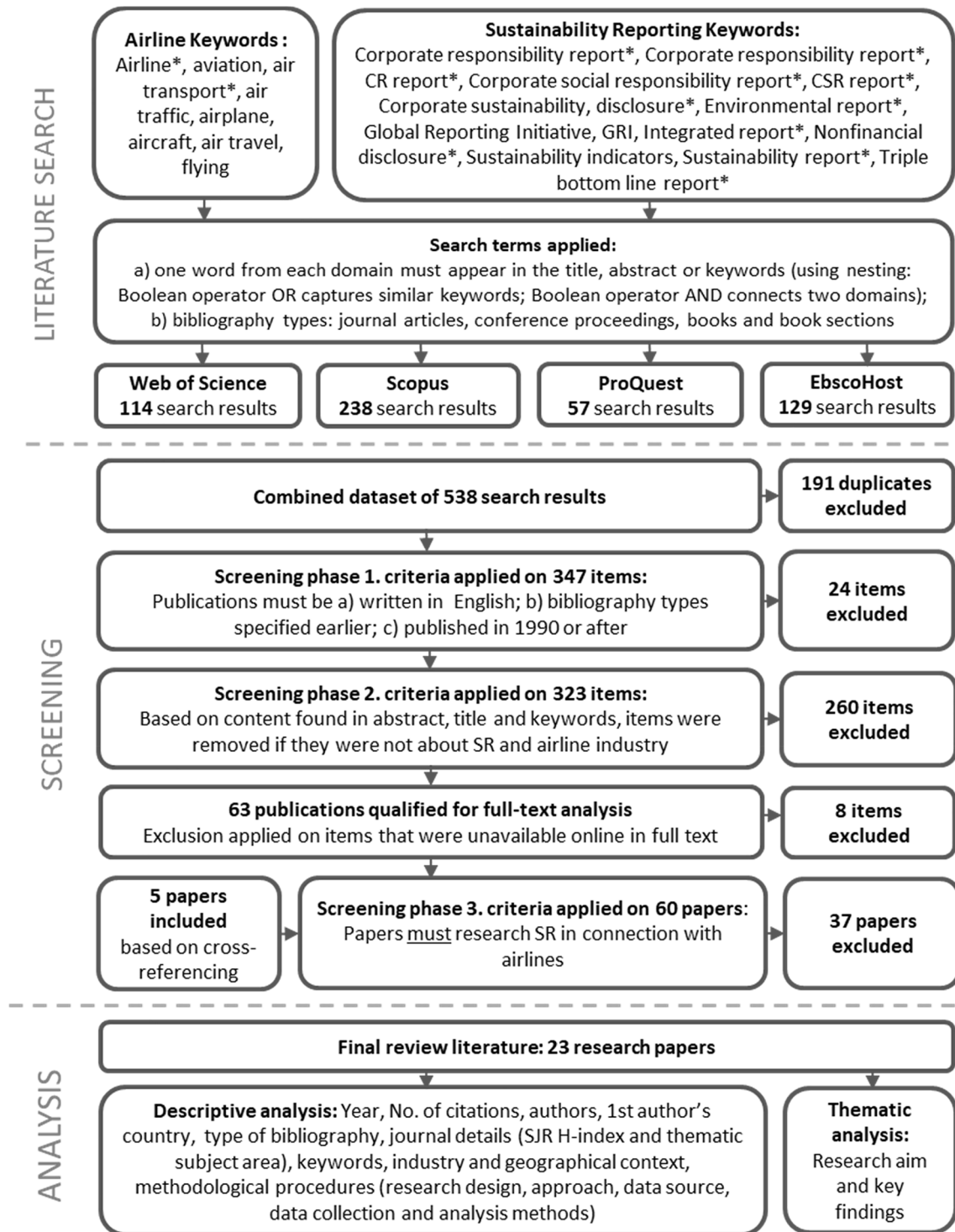


Fig. 1. The systematic literature review process.

a basis for distinguishing the areas of concern in airline SR that require our attention and further investigation. After all, as the societal concerns over flying and its environmental impact keep growing, the demand for meaningful SR is likely to increase, and research can have a role in helping the industry finding the right direction in this regard. The following review presents the first systematically conducted literature review in this context, whose procedure will be detailed next.

3. Methodology

The SLR method adopted for this study follows the steps of [Tranfield et al. \(2003\)](#), according to whom systematic review procedures within management research can be carried out in three stages: 1) Planning the review; 2) Conducting the review; and 3) Reporting. This section details how these stages were applied to this study.

3.1. Planning the review

Fundamentally, the present study can be distinguished as a 'stand-alone literature review', whose purpose is to summarise the existing evidence, identify gaps and provide directions for future research ([Okoli, 2015](#)) in a particular subject area of airline SR. After identifying that no previous review literature had synthesised the scholarly research on the same topic, as advised by [Petticrew and Roberts \(2006\)](#), a scoping study was carried out on the concept of SR in the context of airlines. Keyword combinations were entered into various databases, which, together with the snowballing method, provided an exploratory overview of relevant literature. Next, the authors drafted a review protocol to guide the review process (summarised in [Fig. 1](#)). The remaining parts of this section detail the steps taken during the process and their rationale.

3.2. Conducting the review

3.2.1. Identification of keywords and research databases

The keyword list used in this study was initially built on author-assigned keywords found in the conducted scoping study. They were categorised into the corresponding domains of interest, i.e. 'sustainability reporting' and 'airlines'. These keywords were complemented with various synonyms and associated terms to retrieve the broadest set of search results. Related words were also searched from the JEL Classification Codes Guide (Journal of Economic Literature) produced by the American Economic Association, which provides a widely used set of keywords used in social science research ([Ginieis and Campa-planas, 2012](#)). Additionally, asterisks (*) were used wherever applicable to capture all related word endings (e.g. report* = report/s/ing). The searched publications had to contain at least one keyword from both defined domains of interest in the article's title, abstract, or the keyword list of the publications searched.

Systematic searches were conducted using Scopus and Web of Science (WoS), the two largest multidisciplinary abstract and citation databases of scholarly publications, covering the major scientific journal publishers and conferences ([Franciosi et al., 2020](#)). These two databases were supplemented with EBSCOhost and ProQuest online systems, which both allow making multiple database searches simultaneously across a range of subject areas. Since the focus of this study is to review scholarly research, grey literature and trade publications were excluded from the database queries.

3.2.2. Literature search and the inclusion/exclusion criteria

The literature search was conducted on the chosen databases on Feb. 20, 2020, yielding 538 search results. The data files were uploaded to JabRef citation and reference management software, which combined the files into a single library and removed 191 duplicate files. The library was then exported to .csv format and converted into a data extraction table containing 347 bibliography items, which were further analysed with Microsoft Excel.

In line with [Tranfield et al. \(2003\)](#), only papers meeting the inclusion criteria specified in the review protocol were included in the review. The inclusion process consisted of three screening phases (see [Fig. 1](#)). The first phase involved quick exploration and filtering of the bibliographic data, during which items were removed based on three exclusion criteria: 1) publications in languages other than English; 2) publications other than academic journal articles, conference proceedings, books or book chapters (despite being indexed as such); 3) publications published before 1990. The year 1990 was set as the start because British Airways and Swissair 1989 corporate environmental reports can be considered the pioneers of airline nonfinancial reporting ([Hooper and Greenall, 2005](#)). Overall, 24 bibliography items were excluded at this stage.

The second screening phase consisted of reading the abstracts, titles and keywords connected to the bibliographic data and removing publications that were judged lacking relevance to the topic of airline SR. Because such judgements may remain relatively subjective, the screening was conducted independently by both authors, whose results were compared against each other (cf. [Badi and Murtagh, 2019](#); [Tranfield et al., 2003](#)). In case of inconsistency or uncertainty, a discussion was conducted, and uncertain cases were moved to the next stage. In total, 260 items were deemed to be outside the research interest and excluded from the data. After the exclusions, the authors conducted another literature search to retrieve the remaining 63 publications qualified for full-text analysis. Eight of the publications, inaccessible online for the authors in full text, were excluded from further reading.

The third screening phase consisted of a reading of 55 available full-text publications. Only those publications considered contributing to the research of airline SR were saved for final analysis. Additionally, after the analysis of references found in the full-text analysis, five additional publications were found, whose contents were also assessed. Similarly to the second screening phase, the authors conducted the full-text analysis independently on all 60 papers. The outcomes were then discussed, and as a result of the final

screening, 37 publications were removed, resulting in the final sample of 23 scholarly publications. It is important to underline that the papers qualified for the final analysis were selected strictly based on the consideration that they must represent empirical academic research on SR in connection with airlines.

3.3. Reporting

In the view of [Tranfield et al. \(2003\)](#), when conducting SLR within management research, it is relevant to follow a two-stage reporting built on descriptive and thematic analyses. Descriptive analysis in this study was achieved by examining a set of categories (see [Fig. 1](#)), with the use of the data extraction table, through which a comprehensive report could be produced, demonstrating how scholarly research has approached the topic of airline SR. Other recent SLR papers (cf. [Lupova-Henry and Dotti, 2019](#); [Munaro et al., 2020](#)) that have provided overviews of scholarly research, were used as an example when selecting the categories. The results of the descriptive analysis are reported under [Section 4.1](#).

The purpose of the thematic analysis in this study was not only to build a picture of the research areas that the existing literature has covered. More considerably, the purpose was to shed light on the study's second research question: *What distinguishable concerns have emerged from the research on airline SR?* To identify such concerns, [Braun and Clarke's \(2012\)](#) six-phase approach to thematic analysis was employed. In short, the analysis began by extracting passages from the papers relating to the research aim and primary research findings while making annotations about any relevant items of interest. Next, the passages were compiled into a word-processing file and coded inductively by identifying features of the data associated with issues of SR. As a third step, themes were constructed by identifying similarities and overlaps between the codes, followed by the fourth step, where the themes and their relationships were reviewed. Lastly, the themes were defined and named and finally reported. Based on the conducted analysis, the distinguishable concerns emerging from the existent research were clustered into five thematical areas as follows: (1) (In)consistencies in SR practices, (2) SR is a tool for airlines to legitimise and promote their business, (3) Ambiguity between discussion and real actions, (4) Factors influencing airlines' SR, and implications of such reporting, and 5) Policy context. The results of the thematical analysis are reported under [Section 4.2](#).

4. Analysis of results

4.1. Descriptive analysis

The research on SR in the context of the airline industry is relatively new. The earliest contributions found in the final sample are [Hooper and Greenall's \(2005\)](#) paper exploring the potential for environmental performance benchmarking in the airline sector, and [Chan and Mak's \(2005\)](#) study analysing the environmental reporting structures of selected European airlines. No clear growth trend can be detected (see [Fig. 2](#)) in airline SR research.

The final review literature consisted of 23 scientific publications. To measure their research impact, the number of citations were checked with Microsoft Academic (MA) and Google Scholar (GS) ([Harzing, 2020](#)). [Table 1](#) displays the number of citations retrieved from both sources (listed by the year of publication). The most cited article was [Eccles et al. \(2012\)](#), which, amongst other things, describes the definitions of non-financial materiality in annual reports. Worth noting is that the article examines five other industries in addition to airlines. [Copper-Smith and Grosbois \(2011\)](#), the second most cited article, evaluates the adoption of CSR initiatives in the airline industry.

The reviewed literature contains contributions from 48 authors. Concerning the publications' first authorship, the affiliations are mostly located in Asia. The continent accounted for almost half (48%; $n = 11$) of the research, followed by Europe (35%, $n = 9$) and

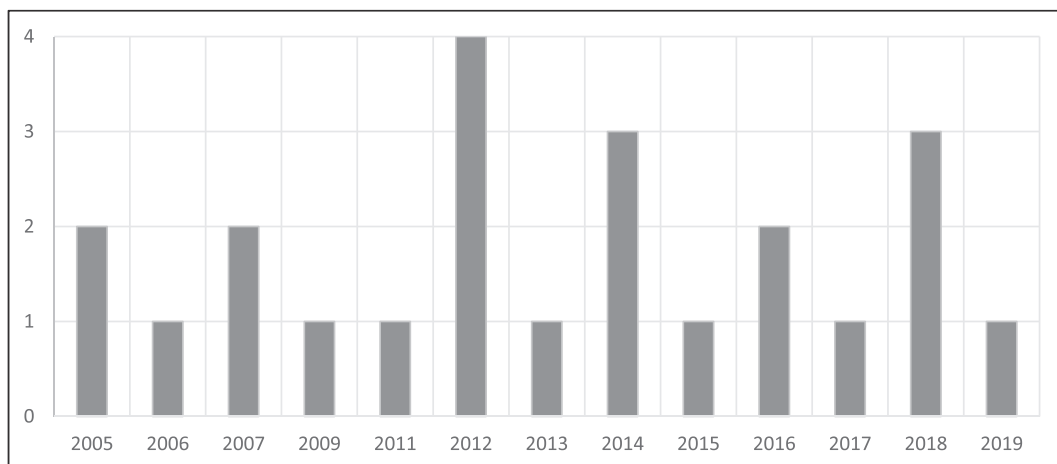


Fig. 2. Yearly publications from 2005 to 2019.

Table 1
Measurements of publications citations.

Author/s	Title	Venue of publication	MA*	GS**
Kılıç et al. (2019)	What impacts sustainability reporting in the global aviation industry? An institutional perspective	Transport Policy	11	14
Karaman et al. (2018)	Sustainability reporting in the aviation industry: worldwide evidence	Sustainability Accounting, Management and Policy Journal	19	46
Ringham and Miles (2018)	The boundary of corporate social responsibility reporting: the case of the airline industry	Journal of Sustainable Tourism	11	17
Evangelinos et al. (2018)	Occupational health and safety disclosures in sustainability reports: An overview of trends among corporate leaders	Corporate Social Responsibility and Environmental Management	5	12
Taskinsoy and Uyar (2017)	Sustainability reporting in the airline industry: The case of Turkish airlines	In: Kıymet Çalıyurt, Ü.Y. (Ed.), Sustainability and Management: An International Perspective	0	2
Vourvachis et al., (2016)	CSR disclosure in response to major airline accidents: a legitimacy-based exploration	Sustainability Accounting, Management and Policy Journal	57	56
Kuo et al. (2016)	Motivations and barriers for corporate social responsibility reporting: Evidence from the airline industry	Journal of Air Transport Management	24	49
Rudari and Johnson (2015)	Sustainability Reporting Practices of Group III U S . Air Carriers	International Journal of Aviation, Aeronautics, and Aerospace Safety Science	2	2
Koskela (2014)	Occupational health and safety in corporate social responsibility reports		70	74
Coles et al. (2014)	Corporate social responsibility reporting among European low-fares airlines: challenges for the examination and development of sustainable mobilities	Journal of Sustainable Tourism	21	38
Onkila et al. (2014)	Implications of managerial framing of stakeholders in environmental reports	Social and Environmental Accountability Journal	6	15
Paek and Chathoth (2013)	Multiple Levels of Ethics Management: A Case of Airline and Hotel Firms	Tourism Planning & Development	2	7
Eccles et al. (2012)	The Need for Sector-Specific Materiality and Sustainability Reporting Standards	Journal of Applied Corporate Finance	253	253
Bhatia (2012)	The Corporate Social Responsibility Report: The Hybridisation of a Confused" Genre (2007–2011)"	IEEE Transactions on Professional Communication	57	56
Kemp and Vinke, (2012)	CSR reporting: a review of the Pakistani aviation industry	South Asian Journal of Global Business Research	17	42
Mattera et al. (2012)	Analysing Social Responsibility as a driver of firm's Brand Awareness	Procedia - Social and Behavioral Sciences (8th Int. Strategic Management Conf)	5	30
Cowper-Smith and Grosbois (2011)	The adoption of corporate social responsibility practices in the airline industry	Journal of Sustainable Tourism	165	222
Chen and Lin (2009)	Corporate social responsibility initiatives of major Asian airlines	Proc. 9th Int. Conf. Electron. Bus.	2	4
Mak et al. (2007)	Comparative studies of stand-alone environmental reports - European and Asian airlines	Transportation Research Part D: Transport and Environment	25	32
Mak and Chan (2007)	A study of environmental reporting: International Japanese Airlines	Asia Pacific Journal of Tourism Research	15	27
Mak and Chan (2006)	Environmental reporting of airlines in the Asia Pacific Region	Journal of Sustainable Tourism	20	37
Hooper and Greenall (2005)	Exploring the potential for environmental performance benchmarking in the airline sector	Benchmarking	58	59
Chan and Mak (2005)	An analysis of the environmental reporting structures of selected European airlines	The International Journal of Tourism Research	11	26

Citation details were retrieved on Apr. 07, 2021: * Microsoft Academic ** Google Scholar.

finally North America (17%; $n = 3$).

A clear majority of the literature consisted of journal articles (87%, $n = 20$). The final reading also contained two conference proceedings and one book chapter. Table 2 displays the number of articles each journal has published, the journals' thematic subject areas and h-index (retrieved from Scimago Institution Rankings).

When analysing metadata, different types of keywords can be viewed as properties, which also establish grounds for describing themes (Lin et al., 2008). Consequently, the author-assigned keywords appearing in the review literature were analysed. Overall, 58 different keywords were found, out of which 'corporate social responsibility' had the greatest occurrence, appearing in five publications. A clear majority (83%, $n = 48$) of the keywords appeared only once, which is why they were grouped according to their similar meanings or context. Table 3 shows a summary of these groupings, their occurrence and associated keywords.

It should be noted that not all publications included in the final reading are focused exclusively on the airline industry. While 13 of the 23 publications are airline-specific, three publications have a broader focus on aviation, including other subsectors such as airports and aeronautics. This is an important remark to make since subsectors within aviation deal partly with different sustainability issues. Additionally, seven publications have examined airline SR in conjunction with multiple industries whose sustainability issues may deviate from the airline industry even to a greater extent. Table 4 summarises each publication's industrial focus and geographical context. Most reviewed literature studied SR at a global level (39%, $n = 9$) or focused on organisations operating in a single country (35%, $n = 8$). The rest of the publications had a regional (or continental) focus, or their data was derived from more than one airline based in different countries.

What research projects wish to attain, in terms of goals and conclusions, can be observed from the perspective of what type of

Table 2
Measurements of journals.

Journal name	No of articles	Journal subject area	h-index in SJR*
Safety Science	1	Engineering; Medicine; Social Sciences	100
Journal of Sustainable Tourism	4	Business, Management and Accounting; Social Sciences	93
Transportation Research Part D: Transport and Environment	1	Engineering; Environmental Science; Social Sciences	89
Transport Policy	1	Social Sciences	88
Journal of Air Transport Management	1	Business, Management and Accounting; Environmental Science; Social Sciences	67
Corporate Social Responsibility and Environmental Management	1	Business, Management and Accounting; Environmental Science; Social Sciences	66
Benchmarking	1	Business, Management and Accounting	57
International Journal of Tourism Research	1	Business, Management and Accounting; Environmental Science; Social Sciences	51
IEEE Transactions on Professional Communication	1	Business, Management and Accounting; Engineering	42
Asia Pacific Journal of Tourism Research	1	Business, Management and Accounting; Social Sciences	33
Tourism Planning & Development	1	Business, Management and Accounting; Social Sciences	27
Sustainability Accounting, Management and Policy Journal	2	Business, Management and Accounting; Energy	24
Social and Environmental Accountability Journal	1	Business, Management and Accounting	15
International Journal of Aviation, Aeronautics, and Aerospace	1	Engineering	7
Journal of Applied Corporate Finance	1	unavailable	unavailable
South Asian Journal of Global Business Research	1	unavailable	unavailable

* Data retrieved from SJR on Apr. 07 2021.

Table 3
Groupings of keywords appearing in the review bibliography.

Keyword group	Occurrence	Keywords appearing in the review bibliography
Sustainability reporting	18	Annual reports; Barriers to reporting; Corporate social responsibility reporting; CSR reporting; Disclosure; Environmental policy statement; Global reporting initiative; Global reporting initiative (GRI); GRI; GRI application level; Reporting; Sustainability report; Sustainability Reporting; Voluntary disclosure
Corporate Governance & CSR	15	Corporate governance; Corporate Social Responsibility; CSR; Environmental Management; Environmental management system; Governance Social; Occupational health; Occupational health and safety; Social responsibility of business
Aviation	12	Air Travel; Aircraft industry; Airline; Airline industry; Airlines; Aviation; Aviation industry; European Airlines; Low-fare airlines; Travel; Turkish Airlines
Performance Management & Strategic Management	12	Benchmarking; Brand Awareness; Business finance; Financial performance; Fuel Efficiency; Performance; Quality indicators; Stakeholder analysis; Strategic Management
Research methods	5	Case study; Content analysis; Genre analysis (GA)
Sustainability	4	Environmental; Sustainability; Sustainable development
Geographic	3	Asia; Asia Pacific; United Kingdom
Other	6	Industries & society; Interdiscursivity; Motivations; Solid waste; Target readers (consumers); Web sites

research design the study has adopted (Durrheim, 2006). The research design can be defined as a set of “procedures for collecting, analysing, interpreting and reporting data in research studies” (Creswell and Plano Clark, 2007, p.58). Table 5 provides an overview of the research designs (exploratory, descriptive, causal), approaches (quantitative, qualitative, mixed) and their associated data collection and analysis techniques. It must be pointed out that there was much variation in terms of how clearly the papers described their methodology.

Only four papers explicitly specified their research to be exploratory. The remaining 19 do not include such a definition. To make a distinction between the research design types for this paper, the definitions provided by several scholars in the academic branch of social sciences, and its associated areas of business and marketing research and case study research, were used as a guide to describing the research (cf. Aboujaoude et al., 2018; Durrheim, 2006; Neuman, 2014; Panda et al., 2015; Yin, 2003).

Another way to distinguish research is to do it by its approach: quantitative and qualitative (Durrheim, 2006). Such distinction may not always be clear, as researchers may combine elements and methods from both approaches. Many papers in the review did not specify or make their research approach explicit. For the purpose of this paper, the distinction was observed by the authors at the most surface level following Saunders et al. (2012), according to whom quantitative research generates and uses numerical data; qualitative research generates and uses non-numerical data and; mixed methods combines the two equally or unequally.

Except for two research papers (Coles et al., 2014; Kuo et al., 2016), the collected data was based solely on secondary data deriving from documents and records such as sustainability reports and company websites. In most cases, the data were categorised according to their relevance to the research objectives or research questions through the application of quantitative or qualitative content analysis. The literature was dominated slightly more by the quantitative approach, which was also more prominent in the mixed-

Table 4
Industry and geographical context of each review publication.

Bibliography	Context	Geographical distribution	
Hooper and Greenall (2005)	Airline(s)	Global	
Mak et al. (2007)	Airline(s)	Global	Asia, Europe
Cowper-Smith and Grosbois (2011)	Airline(s)	Global	
Paek and Chathoth (2013)	Multi industry	Global	
Kuo et al. (2016)	Airline(s)	Global	Asia, Europe, N.Am. Africa
Ringham and Miles (2018)	Airline(s)	Global	
Karaman et al. (2018)	Aviation	Global	Africa, Asia, Europe, Lat.Am & Caribbean, N.Am. Oceania
Evangelinos et al. (2018)	Multi industry	Global	
Kılıç et al. (2019)	Aviation	Global	Africa, Asia, Europe, Lat.Am & Caribbean, N.Am. Oceania
Chan and Mak (2005)	Airline(s)	Regional	Europe
Mak and Chan (2006)	Airline(s)	Regional	Asia Pacific
Chen, F.-Y.; Lin, Y.-S.	Airline(s)	Regional	Asia
Coles et al. (2014)	Airline(s)	Regional	Europe
Mak and Chan (2007)	Airline(s)	Single-country	Japan
Eccles et al. (2012)	Multi industry	Single-country	USA
Kemp and Vinke (2012)	Aviation	Single-country	Pakistan
Mattera et al. (2012)	Multi industry	Single-country	Spain
Koskela (2014)	Multi industry	Single-country	Finland
Onkila et al. (2014)	Multi industry	Single-country	Finland
Rudari and Johnson (2015)	Airline(s)	Single-country	USA
Taskinsoy and Uyar (2017)	Airline(s)	Single-country	Turkey
Bhatia (2012)	Multi industry	Multi-country	Comparison of two countries (USA & China)
Vourvachis et al. (2016)	Airline(s)	Multi-country	Accidents associated with Air France, Scandinavian Airlines (SAS) and Singapore Airlines

method studies.

4.2. Thematic analysis

At an abstract level, the research contributions can be divided into two periods: the early studies before the year 2010 and the period after it. The analysis suggested that early research focused more generally on exploring the practice of SR in terms of mapping its status and progress with an emphasis on examining environmental disclosures. After 2010, the research became more diversified, taking an interest in areas such as occupational health and safety (OH&S) disclosures, motivations and barriers to reporting sustainability, matters associated with materiality and boundary concepts, and external guidance providers, namely the GRI. A summary of the research focus and key findings of the reviewed literature synthesis is enclosed in Appendix.

As mentioned earlier, the purpose of the thematic analysis in this paper was not to describe what areas the existing research has covered in the area of airline SR. Instead, the primary purpose was to shed light on what distinguishable concerns have emerged from the research on airline SR. The analysis of the key findings taken from the reviewed papers points to five thematic areas of concern presented below.

4.2.1. (In)consistencies in SR practices

A common concern brought to attention throughout the reviewed literature was the inconsistency involved in SR practices. Variations were found, for example, in the way how sustainability indicators were defined (Hooper and Greenall, 2005) and measured (Chen and Lin, 2009), such as those of fuel efficiency (Chan and Mak, 2005; Mak and Chan, 2007), which makes the sector benchmarking difficult. Similarly, Eccles et al. (2012) indicated how climate change-related material information in the US-based annual reports lacked comparability and called for the need to define materiality on a sector-specific basis. Moreover, differences in SR practices were noticed between different regions (Mak et al., 2007) and specific nations (Kemp and Vinke, 2012; Mak and Chan, 2007), even between carrier groups (Rudari and Johnson, 2015) and within the groups such as low-fare airlines (LFAs) (Coles et al., 2014).

Despite the identified differences, some commonalities were also found. For instance, global airlines reported CSR more regularly in comparison to global hotel chains and showed stronger practices in structured compliance, such as auditing and higher external recognition of activities (Paek and Chathoth, 2013).

Table 5

Overview of the research designs, approaches and methods included in the review bibliography.

Author(s)	Research Design	Research Approach	Data Source	Data collection method	Data Analysis
Hooper and Greenall (2005)	Exploratory*	Qualitative*	Secondary	Documents	Content analysis
Chan and Mak (2005)	Exploratory	Mixed*	Secondary	Documents	Content analysis*
Mak and Chan (2006)	Descriptive*	Mixed*	Secondary	Documents	Content analysis*
Mak and Chan (2007)	Descriptive*	Mixed*	Secondary	Documents	Content analysis*
Mak et al. (2007)	Descriptive*	Mixed*	Secondary	Documents	Content analysis*
Chen and Lin (2009)	Exploratory	Qualitative*	Secondary	Documents	Content analysis*
Cowper-Smith and Grosbois (2011)	Exploratory	Qualitative	Secondary	Documents	Content analysis
Eccles et al. (2012)	Descriptive*	Quantitative*	Secondary	Documents	Content analysis*
Bhatia (2012)	Exploratory*	Qualitative	Secondary	Documents	Discourse analysis
Kemp and Vinke (2012)	Exploratory*	Qualitative	Secondary	Documents	Content analysis
Mattera et al. (2012)	Causal*	Quantitative	Secondary	Documents	Inferential statistics
Paek and Chathoth (2013)	Descriptive*	Quantitative	Secondary	Documents	Content analysis
Koskela (2014)	Descriptive*	Quantitative	Secondary	Documents	Content analysis
Onkila et al. (2014)	Exploratory*	Mixed	Secondary	Documents	Content analysis
Coles et al. (2014)	Exploratory*	Mixed	Mixed	Documents; Interview	Content analysis; grounded theory
Rudari and Johnson (2015)	Exploratory	Quantitative*	Secondary	Documents	Content analysis*
Kuo et al. (2016)	Causal*	Quantitative	Primary	Questionnaire; confirmatory interviews	Inferential statistics
Vourvachis et al. (2016)	Descriptive*	Quantitative	Secondary	Documents	Content analysis
Taskinsky and Uyar (2017)	Exploratory*	Qualitative*	Secondary	Documents	Content analysis
Ringham and Miles (2018)	Exploratory	Mixed	Secondary	Documents	Content analysis; inferential statistics
Karaman et al. (2018)	Causal*	Quantitative	Secondary	Documents	Inferential statistics
Evangelinos et al. (2018)	Descriptive*	Quantitative	Secondary	Documents	Content analysis
Kılıç et al. (2019)	Causal*	Quantitative	Secondary	Documents	Inferential statistics

* Design, approach or method is not explicitly stated or clearly described in the text.

4.2.2. (Mis)using SR as a tool to promote and legitimise business

After the early studies, the research findings started slowly providing more indications of the industry using SR as a promotional tool and as a tool of gaining legitimacy. For example, the intended purpose and function of CSR reports taken from three different industries (incl. airlines) in the US and China were investigated by Bhatia (2012). This analysis suggested that the reports were hybridity of factual reporting with promotional discourse using three different ‘interdiscourses’: the discourse of promotion, goodwill, and self-justification. However, the factual and promotional discourse seemed to be combined in a way that suits the company’s interests, which makes SR appear “more of a case of window-dressing, a public-relations exercise, rather than an accounting of company practice in transparent manner” (p. 235). The promotional aspect also came up in Kuo et al. (2016), whose study indicated that the major motivations to report sustainability in the airline industry are reputation and brand value. According to Onkila et al. (2014), the purpose of building reputation is connected with constructing legitimacy for corporate actions, which can be pursued through promotional notions where stakeholders are framed as recipients of pro-environmental contributions.

Furthermore, concerning the legitimacy aspect, Vourvachis et al. (2016) identified airlines attempting to respond to potential legitimacy threats after major accidents by devoting more space in their reports to health and safety disclosures and exhibiting more disclosure of a positive nature. Moreover, it was found that companies across four industries (incl. airlines) seek assurance from externally developed management standards that they subscribe to, support, or have adopted (Evangelinos et al., 2018). This outcome, similar to the findings of Onkila et al. (2014), may be interpreted as indications of legitimacy seeking, where commitment to some external authority is framed as a source of legitimacy. Notable here is that companies may leave the implementation of the commitment undescribed and only express their commitment (Onkila et al., 2014). In other words, there exists a potential risk that positive words and commitments mentioned in reports do not always translate into real actions, which is yet another concern.

4.2.3. Ambiguity between discussion and real actions

The reviewed literature indicates that there exists much ambiguity between the words and actions in airline sustainability reports. According to the analysis performed by Onkila et al. (2014), a considerable number of environmental disclosures expressed commitment without describing the actual implementation. Similarly, Eccles et al. (2012) categorised most disclosure made by seven US airlines on climate change/carbon regulations being boilerplate statements, encompassing a generic language rather than industry-specific substance. In the context of OH&S disclosures, it was found that four different industries fell short in reporting quantitative and qualitative information beyond the ‘conventional’ metrics (Evangelinos et al., 2018). In another study, Coles et al. (2014) “discovered evidence that LFAs were aware of the need to act more responsibly but how far intentions resulted in action was difficult to establish” (p. 70). It can be concluded that the overall CSR disclosure within the airline sector is weak and based on narrow focus and cherry-picked content (Ringham and Miles, 2018).

4.2.4. Factors influencing airlines' SR, and implications of such reporting

Although the number of aviation companies practising SR has increased, recent research shows that almost half of the companies are still not publishing sustainability reports (Karaman et al., 2018). The main identified barriers to reporting from an airline manager's perspective include the effort put into collecting credible data and the resources needed for producing the report (Kuo et al., 2016). Allocating adequate resources was also mentioned in Coles et al. (2014) as a reason for airlines failing to audit their CSR activities thoroughly.

Arguably, the emergence of external guidelines has facilitated the process of producing sustainability reports. GRI has grown to become the most widely accepted framework to report sustainability in the aviation sector, with 85 per cent of stand-alone sustainability reports complying with it (Karaman et al., 2018). The proliferation of GRI adoption may also explain why recent studies have increasingly started to use GRI-based reports as a source to examine airline SR.

Amongst the most recent studies on GRI-based SR, statistical analyses have yielded interesting findings, indicating that firm size and leverage are positively correlated with the implementation of GRI (Karaman et al., 2018) and that companies based in countries with a strong governance structure and high social and environmental standards are more likely to engage in such reporting (Kılıç et al., 2019). On the other hand, SR does not seem to impact aviation companies' financial performance (Karaman et al., 2018; see also Kuo et al., 2021 for more recent comparison), which raises the question of whether such reporting is of any interest to shareholders. Nevertheless, airline representatives see their shareholders together with the government and customers as the target readers of CSR reports, which may influence how airlines seek to respond to the stakeholder pressure by practising SR (Kuo et al., 2016).

The previous research has indicated that practising SR with the GRI framework can positively influence the company's brand awareness in the service sector (Mattera et al., 2012). Most importantly, GRI has ensured better comparability across sustainability reports (Karaman et al., 2018). The positive impacts of GRI may, however, come with a trade-off. Contrary to what one might presume, it was found that the airlines that claim compliance to GRI select narrower boundaries than those of non-signatories, meaning that they define their overall influence and control over significant sustainability issues in shorter scope (Ringham and Miles, 2018). This might be influenced by the lack of focus on indirect impacts by the guidance provider, although most guidance is established to promote transparency and best practice.

4.2.5. Policy context

Early studies already noted an urgent need for developing an industry-wide model for airline SR, which would allow better inter-airline comparisons by various stakeholders, including governments and other policymakers (Mak and Chan, 2006). While such authorities have been identified having an interest in reading sustainability reports (Kuo et al., 2016), existent research has also called for regulators to take a more significant role as catalysts (Mak and Chan, 2007) for facilitating the practice of airline SR and proposing legal requirements in this regard (Karaman et al., 2018). Nevertheless, the practice of SR has remained voluntary in large part of the world, although some jurisdictions mandate it (Karaman et al., 2018) by local regulations and levels of compliance, which may differ across countries (Chan and Mak, 2005; Paek and Chathoth, 2013; cf. Coles et al., 2014), making the global regulatory landscape for airline SR seem like a patchwork.

Although some regions (e.g. the EU) have begun to demonstrate intensified policy developments toward mandatory SR (Evan-gelinos et al., 2018), the political stance in some other regions (e.g. the US) encourages companies for voluntary disclosure only (Bhatia, 2012). Legal SR frameworks may also remain unfollowed in regions where the public interest in monitoring is low (Kemp and Vinke, 2012). On the other hand, airlines based in countries where governance and corporate transparency are valued are likely to engage in SR voluntarily (Kılıç et al., 2019). Airlines may also collect a significant amount of data for various other regulatory reasons without disclosing this information in their reports (Coles et al., 2014; see also Chen and Lin, 2009). In some cases, this may relate to the question of whether to report actions and initiatives that exceed the spirit of the law. For instance, Cowper-Smith et al. (2011) noticed some airlines deciding not to disclose certain company actions if they viewed them reflecting compliance with regulatory requirements only and, thus, being something outside the scope of the company's CSR. They speculated that this issue might become even more complicated if some actions are regulated in one jurisdiction but considered voluntary in another.

All in all, the global regulatory environment for airline SR appears to be quite fragmented. Countries and regions seem to have a significant impact on the norms and regulations, which influence the practice of SR (Paek and Chathoth, 2013), and not all airlines are exposed to social and regulatory pressure forcing them to embrace the practice. Indeed, policy-led pressure could have the potential to lead airlines to achieve better performance and transparency in their SR efforts (Hooper and Greenall, 2005). Yet, the previous research indicates that the regulatory pressure on airlines might be insufficient in some countries (Rudari and Johnson, 2015), and non-consensus to international regulatory mechanisms serves as a primary inhibitor to the universal approach to airline SR practices (Kemp and Vinke, 2012).

5. Discussion

The following discussion is divided into two parts. The first part (Section 5.1) discusses the current research on airline SR in the light of the descriptive analysis results. The second part (Section 5.2) continues the discussion of the issues associated with airline SR within the scope of commonly used theoretical perspectives.

5.1. Descriptive analysis discussion

The results of the descriptive analysis indicate that the research on airline SR is still in its infancy. The fact that the earliest relevant

papers were published in 2005 and that most research was identified as exploratory supports this argument. Considering that the first airline environmental reports were published in 1990 and given that it took 15 years before any research was published on airline SR (see Hooper and Greenall, 2005), it must be concluded that academia has begun examining this field of study relatively late. The developments in this field appear not to have been very dynamic. A rather low number ($n = 23$) of relevant scholarly papers were published between 2005 and 2019 without any apparent exponential growth seen.

Most of the reviewed research papers, both quantitative and qualitative, seemed essentially addressing 'what' SR is in connection with airlines. Such research has mainly relied on document surveys, with almost all studies applying content analysis to examine sustainability reports, which generally appears to be the predominant research procedure in other SR research, too (Dienes et al., 2016). The quantitative methods demonstrated in many of this study's reviewed papers were not highly advanced and were mostly based on counting the frequency of certain elements found in sustainability reports. Only five articles included inferential statistics in their analysis to indicate any significant differences in their sample or test relationships between variables. Worth noting is also that most of the qualitative research papers provided overviews of what SR entails in aviation in a rather general manner or described the status of reporting in a non-numerical form. Thus, the existing research on airline SR appears to lack more in-depth latent analysis, which would extend the analysis to underlying meanings of the text (Berg, 2001). The only credible exception to this was Bhatia's (2012) study using discourse analysis, which investigated and compared the discursive characteristics used in the US and China-based CSR reports in three different industries, one of which was the airlines.

It should be highlighted that in the present SLR, only 13 research papers out of 23 were identified examining SR in the context of airlines exclusively. The rest of the studies had compiled their samples also from other aviation subsectors, such as airport operators or other industries, whose sustainability issues may differ from that of the airlines. The specific research attention on airline SR is, therefore, very limited.

The analysis of the keywords indicated that the existing research is strongly management-oriented and focused on evaluating the performance of the application of SR. Accordingly, most of the research articles have been published in journals connected with the thematic subject areas of business, management and accounting, and social sciences. Worth noting is that the articles are scattered across journals of varying prestige.

The geographical distribution of the published papers demonstrates that the existing research on airline SR has a strong focus on Europe, Asia-Pacific and North America. This is not surprising, given that the first authors associated with the reviewed literature have affiliations to these regions. On the other hand, attention to these parts of the world is also expected because they constitute the most important aviation markets (ACI, 2018; Biesslich and Liebhardt, 2013; Hoffer Gittell et al., 2009).

5.2. Linking the concerns of airline SR to legitimacy, institutional, and stakeholder theories

The thematic analysis provided insights into the common concerns that characterise airlines' SR practices. While organised into five thematic clusters under Section 4.2, these concerns should be seen as coexistent and related. Some of the commonly used theoretical perspectives (presented in Section 2.3) could further explain the findings associated with the common concerns. However, most of the reviewed papers were either missing or only making rudimentary references to any theories, which appears to be the case also in other SR research (Hahn and Kühnen, 2013; Lodhia and Hess, 2014). For instance, in their review, Hahn and Kühnen (2013) observed many SR research papers referring to *stakeholders* in general without explicitly referring to *stakeholder theory*. Similar observations can be made about this study's papers, which also make references to *legitimacy* without referring to *legitimacy theory*. Be that as it may, such perspectives are likely to provide theoretical underpinnings to explain airlines' SR. It should also be noted that these perspectives should not be seen competing for but rather complementing each other (Gray et al., 1995).

Indeed, several scholars have recognised overlaps between legitimacy and stakeholder theories (Gray et al., 1995), which are also argued to share common characteristics with institutional theory (Chen and Roberts, 2010). For example, in the view of Chen and Roberts (2010), all these theories seek to explain how organisations pursue their survival and growth, and all of them centre around the notion of legitimacy. They further argue that drawing upon these different perspectives, it is possible to reach compatible interpretations of social and environmental accounting, and the application of the theories depends on the focus of the inquiry.

Following this line of thought, legitimacy theory provides the broadest societal-level view, according to which no organisation has an intrinsic right to operate without being subject to approval by their respective society (Hahn and Kühnen, 2013). In this context, 'legitimacy' can be understood as a condition where the values of an organisation are in congruence with society's values, and 'legitimation' can be understood as the process through which this condition is pursued (Lindblom, 1994). As such, legitimacy theory provides a foundation for understanding SR as an act of legitimation (Chen and Roberts, 2010), which is especially relevant for the airline industry. After all, the industry has been at the centre of various sustainability debates due to its contribution to the growth and environmental impact, making it no surprise that the industry's key actors seek to take a proactive stance by publishing sustainability reports (Hooper and Greenall, 2005).

Though legitimacy theory seems to be capable of explaining the function of SR as a legitimisation tool to promote and reconcile the company's values with those held by society at large, the theory may not be sufficient alone to explain how the congruency is achieved or why certain concerns occur in this type of legitimation practice. Consequently, Chen and Roberts (2010) propose two different views to understand how the congruency is reached: 1) institutional legitimacy, which relates to institutional theory, and 2) strategic legitimacy, which relates to the concepts of stakeholder theory.

From the institutional theory's perspective, societal legitimacy can be obtained through corporate activities that demonstrate conformity to institutionalised regulative, normative and cultural-cognitive patterns (Scott, 2013). Indeed, this perspective is likely to explain some of the concerns associated with airline SR. For instance, the (in)consistent levels of SR adoption by airlines across

different geographies is likely to be explained by the discrepancies in the global policy context, where some regulatory regimes (e.g. EU) pose direct pressure on companies to conduct SR, and some other only endorse voluntary disclosure – thus, posing less pressure for conformity. On the other hand, normative pressures can also explain regional reporting discrepancies in voluntary disclosure. Evidence of this was observed in [Kılıç et al. \(2019\)](#), which, grounded in institutional theory, postulated that airlines are likely to engage in voluntary SR in countries where governance and corporate transparency are valued. Whereas local pressures are likely to shape airlines' SR practices in different directions, it is worth noting that international airline companies also face peer pressure from their global competitors. Comparing with the competitors pushes the airlines to mimetic processes, such as adopting globally recognised standards their peers use. Indeed, the increasing use of the GRI guidelines indicates developments about the global institutionalisation of SR practices. Airlines may follow the GRI because they believe it is 'the right thing to do' or simply because they do not know what to disclose ([De Villiers and Alexander, 2014](#)). Despite helping describe the prevailing conditions of legitimacy, institutional theory may come short in explaining some of the dynamics associated with SR ([Chen and Roberts, 2010](#)), such as why some airlines obfuscate their disclosure. On that note, stakeholder theory may supplement our understanding of such issues.

While the underlying premises of stakeholder theory assume that corporations have moral accountability to various stakeholder groups ([Strand et al., 2015](#)), the 'managerial branch' of the theory typically views the world from the perspective of the corporate management, who are concerned strategically with the success of the company ([Gray et al., 1995](#)). Ascribing to this strategic view, organisations are often seen to pursue legitimacy through various strategies, as part of which they may instrumentally manage and deploy suggestive symbols to gain acceptance and support ([Chen and Roberts, 2010](#)). This view may indeed explain why there exists much ambiguity between the words and actions in airline SR. Although the representation by which firms present their actions to others is a necessary part of sustainability reports; firms may also prefer to report only symbolic assurances since it usually preserves their flexibility and resources ([Ashforth and Gibbs, 1990](#)). In other words, "[r]ather than actually change its ways, the organisation might simply portray-or symbolically manage-them so as to appear consistent with social values and expectations" ([Ashforth and Gibbs, 1990, p. 180](#)). Symbols, in this case, can be used to obfuscate or even change the meanings of the firm's real activities ([Bansal and Kistruck, 2006](#)), which as a practice is arguably an example of how any company may misuse the function of SR.

Although the three above-described theories, i.e. legitimacy, institutional and (the managerial branch of) stakeholder theory, are discussed here at an abstract level, and more in-depth theoretical reflection would be outside the scope of this review paper, each theory seems to be appropriate for developing our understanding of airlines' SR from the perspective of legitimacy maintenance. Paradoxically, this notion of maintenance appears to be at odds with the fundamental purpose of SR, which, in general, is to report on the company's impacts on the TBL dimensions and how the sustainability challenges in this regard are met. Legitimacy maintenance, in contrast, seems to focus on how management can lessen various pressures on corporations, which leaves unsustainability undiscussed. In agreement with [Onkila et al. \(2014\)](#), shifting the focus from stressing positive disclosure to reporting conflicting situations with sustainability necessitates us to moving towards critical theory approach, which, as a perspective, advocates the exposure and disclosure of the basic contradictions with the environment ([Brown and Fraser, 2006](#)). In the context of airline SR, this would entail, for instance, even more transparent reporting on how airlines contribute to environmental issues such as climate change instead of only reporting on the environmental improvements made. The move in this direction could even be interpreted as an opportunity to raise stakeholders' consciousness of environmental issues, which could serve companies with an opportunity to lead society toward a more

Table 6
Proposed research avenues

Type of study	Proposed future research directions
Reviews/mapping studies	<ul style="list-style-type: none"> • Expansion of reviews into the analysis of trade publications to provide more practical insights from the field; • Understanding the (dis)similarities in sustainability issues across different aviation sectors and other industries to emphasise the need for sector-specific reporting guidance; • Examination of the reporting differences in sector-specific context devoted to unifying the sector-specific reporting guidance.
Observational studies	<ul style="list-style-type: none"> • Comparison of reports across different regulatory landscapes and countries, parties and other signatories of various conventions to understand their role in how airlines disclose sustainability information; • Comparison of reports that follow different reporting standards and frameworks to understand their role in how airlines disclose sustainability information; • Longitudinal studies to detect developments and changes in reporting and to understand how the shifting global regulatory landscape from voluntary to mandatory reporting changes the practice; • Examination of airline industry sustainability reporting in the COVID-19 pandemic and post-pandemic world.
Modelling studies	<ul style="list-style-type: none"> • Identification of unobserved determinants of reporting (e.g. ISO certifications, media exposure, ownership and board structures, sustainability rankings, and disclosure requirements).
Evaluation studies	<ul style="list-style-type: none"> • Assessment of how accountable the airline industry is for disclosing its sustainability information in terms of what is (un)disclosed; • Evaluation of how compliant airlines are in following the reporting standards; • Evaluation of the quality of sustainability reports in terms of how airlines define the boundaries used and identify materiality, but also to what extent these definitions and the reporting practices are in line with various stakeholders' views.
Communication studies	<ul style="list-style-type: none"> • Discourse analytic methods to understand how environmentally unsustainable industry constructs its sustainability discourse in corporate reporting.

ideal world (Zinkhan and Carlson, 1995), or at least maintain stakeholders' approval of the trustworthiness of non-financial disclosure. After all, previous research has postulated that excessive legitimation through positive disclosure may backfire on the legitimating organisation. As Ashforth and Gibbs (1990) highlighted, businesses that attempt to increase legitimacy through symbolic means may result in stakeholders becoming sceptical about the company's actions, which, in turn, may motivate companies for subsequent symbolic practices, causing further scepticism and ultimately decreasing legitimacy.

6. Limitations and proposed future research avenues

This SLR does not assert to be exempt from any limitations or to be exhaustive either. Firstly, this review focused on providing a synthesis of scholarly research on airline SR. It did not cover, for example, trade publications, which do not stand for a reliable resource of peer-reviewed academic knowledge, even if they may keep the industry well-informed about this area's developments. Secondly, the study's review protocol followed a rigorous screening process, eliminating all articles that focused on industries other than the airlines or other aviation subsectors (i.e. airports, aerospace manufacturers). This criterion was considered necessary to provide an industry-specific overview of its respective research and issues. The findings are, thus, limited to the airline industry only. Even the subsectors within aviation differ from one another to a great extent. For example, airports, which provide critical nodes in the transport system, and infrastructure for airlines, have evolved to include shopping malls, hotel complexes, and industrial zones, whose sustainability issues relate increasingly to biodiversity and land use (Ferrulli, 2016). Arguably, these differences may also translate to different SR challenges, which leads us to the proposed future research avenues discussed below and summarised in Table 6.

First, very little is known about how airline SR and its associated issues differ from other industries or other aviation subsectors. Concerning this, it is worth noting that while GRI offers sector-specific supplements for many industries, including airport operators, it does not offer a similar airline-specific supplement. Further studies could examine the reporting differences in this regard and highlight the need for better sector-specific SR guidance.

Second, GRI-based reports have undoubtedly provided convenient data for researchers to measure statistically the extent to which aviation companies report their sustainability. The analysis has become more advanced in recent years and turned to investigate what factors affect reporting. Such research has recommended future research to incorporate variables such as ISO certifications, media exposure, ownership, and board structures into statistical models to explain better GRI adoption (Karaman et al., 2018). These variables could also be complemented with factors relating to varying disclosure requirements.

Third, while SR has largely remained voluntary activity in most parts of the world, recent research indicates a growing prominence of mandatory disclosure requirements introduced by (self-)regulatory actors (Van der Lugt et al., 2020). Therefore, future research on airline SR should consider the changing trends in requirements set by individual countries and supranational organisations. One such agreement is CORSIA, the Carbon Offsetting and Reduction Scheme for International Aviation. CORSIA was accepted by the International Civil Aviation Organization (ICAO) and put into force in 2019, binding all its 193 member states complying with the scheme, as part of which, all operators with annual emissions greater than 10,000 tonnes of CO₂ must annually report emissions deriving from international flights to their State (IATA, 2019). Whether such coercive activity has any effect on public disclosure is worth examining. On that note, despite being the industry's response to CO₂ emissions, CORSIA has been criticised for not covering the non-CO₂-effects, such as nitrogen oxides, contrails, and aviation-induced cirrus clouds (Larsson et al., 2019). With this being said, it is worth recommending that future research pays attention to what is (in)voluntarily disclosed and what remains undisclosed.

Fourth, more research is needed to assess how accountable the airline industry is for disclosing corporate information on its material aspects (Karagiannis et al. 2019). On that matter, further examination is needed for the guidance providers' indicators, as some may be irrelevant to the airline industry. While airlines may claim compliance with GRI, the framework allows cherry-picking indicators to reports depending on the adopted adherence level. Yet, little attempt is being made to evaluate the differences between airlines being genuinely transparent about their sustainability impacts and the possible box-ticking approach to such issues. This is undoubtedly a difficult task, requiring examining what is (un)disclosed but also how compliant airlines are with the reporting standards, and how the sustainability claims are constructed and communicated to stakeholders.

Fifth, more research is needed to evaluate the quality of airline SR in terms of how airlines define the boundaries used and identify materiality, but also to what extent these definitions are in line with various stakeholders' views. The stakeholder perspective on airline SR is largely unexplored and worth researching. Addressing this limitation would help the industry better align its SR with societal expectations. Stepping into this area would also help shift the research from numerous document surveys to more diverse research strategies (e.g. interviews and focus groups).

Sixth, the existing research contains very little theorisation. Though some (in)direct references have been made mainly to legitimacy, stakeholder, and institutional theories, the existing body of knowledge could be further supplemented with perspectives from the critical paradigm. On that note, it should be acknowledged that the term sustainability connotes different meanings to different people in different contexts (Lélé, 1991). It would be worth investigating how the environmentally sensitive industry of airlines interprets and asserts this vague term to stakeholders, through which it may legitimise its actions. Discourse studies are instrumental in deducing how social construction leads to the creation of meanings that bring advantage to some actors (Phillips and Hardy, 2002). Although discourse studies are often seen as critical towards businesses, their agenda can also be positive, through which best practices and perspectives of SR can be identified and shared (Higgins and Coffey, 2016).

Finally, this SLR analysed papers from the pre-COVID-19 era. The industry is likely to shift its focus from environmental disclosures to health and safety measures. The question is, how the industry will report its role in the global pandemic? Will airlines portray themselves as the victims of the crisis to appeal to their owners and governments in hopes of financial relief, or will they indicate their accountability to all stakeholders for spreading pathogens globally (see Gössling et al., 2021)? It should be stressed that any shifting

focus on health and safety should not come at the expense of losing focus on environmental disclosures. Airlines may, for example, feel reluctant to increase awareness of the environmental harms of flying at the same time when they are exploring ways to support post-COVID-19 growth (Dodd and Yengin, 2021). Examining airline sustainability reports from the year 2020 onwards will be essential and helpful in understanding the shifts in SR.

7. Conclusions and implications for research and practice

This paper has systematically presented the state of scholarly research on airline SR and distinguished concerns that have emerged from this research. It has, therefore, addressed its two research questions, namely: 1) How has the existing scholarly research approached the topic of airline sustainability reporting? And; 2) What distinguishable concerns have emerged from this research?

As far as the first question is concerned, only 23 relevant scholarly publications were identified between 2005 and 2019, out of which 13 examined SR of airlines exclusively, and the rest in conjunction with other industries or other aviation subsectors. The scope of airline-specific SR research is, thus, very limited. The existing research resides mostly in management and social-sciences-related journals of varying prestige and is concentrated geographically on the major airline markets of Europe, Asia-Pacific and North America. While the early studies explored airline SR with an emphasis on environmental disclosures, the studies after 2010 expanded to cover topics such as OH&S disclosures, motivations and barriers to reporting, aspects related to materiality and boundary concept, and GRI. However, existing research has not been very versatile in terms of the methods used. The research data has been mainly collected from documents and records, and the data analysis has relied heavily on content analysis. While recent interest in examining the determinants of airline SR can be noticed, the research landscape has been much dominated by various exploratory investigations or overviews of SR, which have been performed either by counting frequencies of disclosures or by describing their content in a non-numerical form. The results of the performed analysis indicated that this field of study is indeed relatively new without any considerable growth seen in the number of studies.

As far as the second question is concerned, a closer look at the key findings from each published paper points to common areas of concern characterising the airline SR. The industry has lacked a unified policy and common understanding of how to define and measure sustainability, which has led to inconsistent SR practices. Though external guidance providers, notably GRI, have increasingly facilitated businesses to improve SR, there remains much flexibility in interpretations of how SR should be operationalised by the airlines. This has raised questions about the extent to which SR can be used as a tool to promote and legitimise business-as-usual operations in an environmentally sensitive industry. In attempts to present business in a favourable light, airlines may, for example, be selective with indicators used and report sustainability in ways, which may not be entirely coherent with the real actions or even be relevant to the industry.

This paper's main contribution is its exclusive focus on analysing what has already been researched in the area of airline SR. The results of the presented analysis can be of high importance for both academia and business. As far as academia is concerned, the paper develops the current body of knowledge on SR by analysing the academic papers from this field. It also offers insights for researchers dealing with the airline industry on how this part of the transport sector tries to cope with various stakeholders' expectations concerning sustainability. The paper can serve scientists examining the issues of SR and the airline industry as a starting point for further research. Its detailed analysis has allowed proposing a plethora of future research avenues, which is a valuable input for academia. Considering that SR in the airline industry is such an underexplored topic, researchers are highly encouraged to perform studies related to its various aspects.

Practitioners can also benefit from this paper's results. The airline industry makes a significant impact on the environment, and it is necessary to help the industry become more responsible and accountable within the existing possibilities. In this regard, this paper has identified the common concerns related to SR and can, thus, help managers avoid potential traps in this area and improve their reporting practices. Identifying such concerns and avoiding them can also serve as a guideline in comparing with the competitors. Managers should also consider the potential benefits of having an open dialogue with their stakeholders regarding how they perceive the reporting aligning with their expectations. While responding to any societal pressure imposed on the industry by demonstrating sustainability in reporting, airlines should remember not to deviate from the basic principles of SR, which is to provide transparent accounts of non-financial impacts. Therefore, besides improving procedural sides of reporting, managers should also pay attention to communication, which should not obfuscate (un)sustainability.

Additionally, the proposed future research avenues are not only significant for academia but could also be of interest to institutions developing reporting standards, for the airline companies practising SR and for governments and other policymakers that possess the power to regulate and promote transparent corporate reporting. It can be clearly stated that SR is becoming increasingly important for companies and their stakeholders. As such, this area is definitely worth further research.

To sum up, the major contributions of this paper are as follows:

1. It synthesises the state of the current scholarly research on airline SR and proposes future research avenues.
2. It presents a scrupulous way of conducting a systematic literature review, with a clearly explained review protocol that can be adapted to other studies.
3. It offers an understanding of airline SR practices, assessed through the lenses of academic literature to both academia and business representatives.
4. It sheds light on distinguishable concerns associated with airline SR, which can help the industry actors to improve reporting practices and future research to generate knowledge applicable to understanding and tackling such issues.
5. It contributes to a better understanding of sustainability reporting by observing the practice from different theoretical perspectives.

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CRedit authorship contribution statement

Malgorzata Zieba: Conceptualization, Methodology, Investigation, Writing – review & editing, Supervision, Funding acquisition.
Eljas Johansson: Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Funding acquisition.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Summary of the research focus and key findings of the review literature

Author(s)	Research focus	Key findings
Hooper and Greenall (2005)	Presented findings of an investigation into environmental reporting practices in the airline sector	The information shown in environmental reports did not allow accurate benchmarking. Inconsistencies in the way how indicators were defined and used.
Chan and Mak (2005)	Illustrated the status and progress of environmental reporting in the European airline industry	Eight studied airlines had published environmental reports with some salient features. Inconsistencies were found in the way how airlines reported their data on fuel efficiency and waste indicators.
Mak and Chan (2006)	Investigated the environmental reporting in the Asia-Pacific airline sector	Only five airlines in developed regions had published stand-alone environmental reports. Airlines in more developed countries seemed more environmentally conscious and invested heavily in environmental policies.
Mak et al. (2007)	Mapped the status and progress of environmental reporting of a sample of airlines in Europe and the Asia-Pacific region	Only eight European and five Asia-Pacific airlines had devoted varying degrees of effort to produce stand-alone environmental reports continuously. European reports seemed to be richer in their content.
Mak and Chan (2007)	Examined the content of environmental reporting of three Japan-based airlines	All airlines showed varying degrees of effort in producing reports but could still set an example for airlines in less developed countries. Inconsistent ways to define fuel efficiency made benchmarking problematic.
Chen and Lin (2009)	Presented an exploration of the CSR issues addressed and reported by 12 major Asian airlines	Most airlines demonstrated their commitment to CSR in different ways of reporting. Variation was observed both in content and extent. Inconsistent measurements made the comparison of performance difficult.
Cowper-Smith and Grosbois (2011)	Aimed at creating a framework, which allows a better comparison of the adoption of CSR initiatives across airlines	Airlines focused more intensely on reporting environmental issues than social or economic dimensions, with emission reduction predominating the content. Inconsistency in reporting practices made comparison difficult.
Bhatia (2012)	Investigated the intended purpose and function of CSR reports from three industries (incl. airlines) in the US and China, and how and to what extent these reports may meet the expectations of the international discourse community	The chosen reports were deemed to be illustrating a type of “generic integrity”, a hybridization, which combines factual reporting with promotional discourse. The analysis revealed three types of “interdiscourses” in CSR reports: 1) the discourse of promotion, 2) goodwill, and 3) self-justification.
Eccles et al. (2012)	Called attention to the issue that materiality should be defined on a sector-specific basis by performing an analysis of how the US-based companies in six different industries communicated their climate change-related disclosures	Companies were found to disclose material information in incomparable ways. Most airline climate change-related disclosures represented boilerplate statements encompassing generic language, with only some being industry-specific.
Kemp and Vinke, (2012)	Investigated the extent to which the Pakistani Aviation industry reported CSR activities on corporate websites and annual reports	The study found Pakistani aviation largely lacking application and disclosure of CSR. No evidence was found of reporting under recognized frameworks. Pakistani aviation reported more on social and economic dimensions than the environment.
Mattera et al. (2012)	Explored the effect of CSR reporting on customer’s perception and awareness of a company’s brand	The findings indicated that association with ISO 26,000 and GRI positively impacts the firm’s brand awareness in the service sector.
Paek and Chathoth (2013)	Attempted to suggest a multi-level ethics management model built on existing literature	The study verified five levels in the ethics management model within the Spanish hospitality and tourism context. Compared to hotels, airlines reported more regularly and showed more robust practices in structured compliance such as auditing and higher external recognition of activities.
Koskela (2014)	Analysed occupational health and safety (OH&S) in CSR reports by examining three Finnish companies (inc. 1 airline)	Conversely to previous literature indications, the case companies demonstrated reporting OH&S broadly and in a surprisingly similar manner.

Author(s)	Research focus	Key findings
Onkila et al. (2014)	Aimed at gaining better understanding of the environmental reporting practices, and how managerial framing manifests itself in such reports by examining three Finnish companies (incl. 1 airline)	10 main stakeholder groups were identified in the reports: customers, suppliers and business partners, employees, local community and society, the business sector, authorities, international guidelines, NGOs, external auditors and the media. Five frames were formed for stakeholders: promotion, commitment, demanding, donating and preventing. The most dominant way of framing stakeholders was management-oriented, which manifests itself as "promotion and commitment, through which stakeholders are primarily framed as sources of legitimacy and as ways for companies to demonstrate [their] positive impact on society" (p. 151)
Coles et al. (2014)	Examined CSR practices among European low-fares airlines (LFAs) by analysing airline representatives' views in juxtaposition against reporting texts	The paper demonstrated "that CSR texts produced by LFAs are highly fragmented, lacking in detail and often selective in their coverage based on their intended audiences" (p. 85). Very few LFAs had audited their CSR activities due to a lack of adequate resources. The study indicated that the US aviation sector lagged behind other sectors in SR, and that the legacy carriers participated in SR more than national carriers or cargo carriers.
Rudari and Johnson (2015)	Explored SR practices of US passenger and cargo airlines	The results indicated that airline representatives believe the government is the most important CSR reports reader, followed by owners and customers. The major motivations for reporting were reputation and brand value. Time was considered being the biggest constraint of reporting.
Kuo et al. (2016)	Investigated the factors that motivate airlines to practice CSR reporting, as well as the barriers to reporting from airline managers' perspective	Airlines after three accidents changed their CSR disclosure to become more positive and allocated more space related to health and safety – "The findings demonstrated the use of annual report as a legitimization tool" (p.26).
Vourvachis et al. (2016)	Examined annual report CSR disclosures of three airlines after four accidents to investigate how companies react to legitimacy threats	While some sustainability dimensions (incl. economic indicators) were reported every year regularly, other critically important dimensions (incl. environmental indicators, OH&S, charity activities) began to be reported only in recent years' reports. The paper indicated a "lack of conceptual clarification of boundary both between guidance provisions and within practice." (p. 17). The airline sector's overall CSR disclosure was deemed to be weak based on narrow focus and cherry-picked content.
Taskinsky and Uyar (2017)	Looked into sustainability reporting of Turkish Airlines between the years 2002 and 2011	The analysis indicated that firm size and leverage are positively associated with sustainability reporting (thus, in line with legitimacy theory) while, contrary to expectations, ownership diffusion was negatively associated, and cash flow per share, growth and profitability did not have significant effects on SR. The authors also concluded that SR does not significantly enhance a firm's performance.
Ringham and Miles (2018)	Analysed the boundary concept of CSR reporting first from the perspective of CSR reporting guidance providers and then how it has been interpreted in practice by airlines	The study indicated that companies fall short in reporting quantitative and qualitative information beyond the 'conventional' metrics of occupational injury rates. In contrast, companies seemed to seek assurance from externally developed management standards that they subscribe to, support, or adopt.
Karaman et al. (2018)	Investigated what affects GRI-based sustainability reporting and its relationships with performance in the aviation industry between 2006 and 2015	The authors found that governance quality has a significant positive impact on SR. Socio-environmental performance of a country appeared to influence aviation firms to undertake SR. Also, aviation companies operating in major economies were found to be more likely to issue stand-alone reports. The results lent support to institutional theory.
Evangelinos et al., (2018)	Assessed the comprehensiveness of voluntary OH&S disclosures of large business entities across four industries (incl. the airlines)	
Kılıç et al. (2019)	Tested the link between sustainability performance and SR over the period of 2011 and 2016 to examine whether GRI adoption within aviation is impacted by the governance structure and social and environmental development of their domicile	

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