

**MATERIALITY ASSESSMENT IN SUSTAINABILITY  
REPORTING: CASE STUDY OF THE AIRLINE INDUSTRY**

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Of Business and Economics**

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<p>Abstract</p> <p>Materiality has been heavily emphasized in different sustainability reporting guidelines to increase the quality of the sustainability reports and report issues that are most aligned with the company's most significant economic, environmental and social issues. In this thesis materiality analysis in sustainability reporting is analyzed. Firstly, in the theoretical part, the concept of sustainability reporting and materiality is explained along with the provision of materiality in different reporting guidelines. In this research section, fifteen different airlines' sustainability reports are analyzed to find out how the materiality analysis is carried out in the airlines. The study is focused on airlines because; air transportation is one of the most energy intensive forms of transportation that has major impacts on noise, local air pollution and GHG emission.</p> <p>The thesis concludes that materiality assessment is carried out improperly by most of the airlines and the process is not transparent as very less information is given regarding the assessment process. Similarly, there is need for more inclusive stakeholder involvement in the materiality assessment process. The research findings also showed differences in the number, theme and presentation of identified material issues by the airlines in their sustainability reports. The thesis contributes to the understanding of materiality in non-financial reporting and suggests appropriate method to carry out the materiality analysis in sustainability reporting. Further, research on this topic could be conducted by focusing the materiality analysis on single company or taking the stakeholders' views on the identified material issues.</p>	
<p>Keywords</p> <p>Sustainability, Sustainability reporting, GRI, Materiality, Stakeholders, Airlines, Materiality matrix, Emission, Air transportation</p>	
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# 1. INTRODUCTION

## 1.1 Topic discussion

In the last decade, the practice of the corporate sustainability disclosure has increased dramatically. By publishing sustainability reports companies disclose their performance on social, environmental and economic performance to regulators, rating agencies, shareholders, investors, consumers, NGOs and other interested stakeholders. Reporting is a platform and opportunity for companies to show their values, actions and strategies towards the different environmental, social and economic challenges that are accelerated by the company's presence or impact of the company's operation. For stakeholders such reports provide comprehensive qualitative and quantitative data that informs them about the company's overall performance in different environmental, social and economic aspects and helps them to make informed decision (SustainAbility, 2011).

Sustainability reports enhance trust, transparency and provide useful information in managing risks. Sustainability report that include significant economic, environmental and social impacts increases the credibility and meaning of the information presented. Materiality is a commonly used term in financial accounting, which refers as a threshold for influencing the economic decisions of those using financial statements. In sustainability reporting materiality is used in border sense to consider all economic, social and environmental impacts that may cross the threshold in affecting the ability to meet the needs of present without

comprising the needs of future generations. (GRI, 2017) In the airline industry, which is focus of this thesis, the practice of sustainability reporting is growing recently. However, the quality of airlines' sustainability report is very low, the average score of airlines' sustainability report is 38 out of 100 (PricewaterhouseCoopers, 2011).

Airline sector is a truly global industry with extensive supply chain. International passenger carrying airlines have different social, environmental and economic impacts caused by their operation. It is impossible for the airlines companies to deal with all those issues at the same time. By conducting materiality assessment airlines can choose the issues that are most significant to them and their stakeholders. In this thesis, I will study the current stage of materiality assessment in the airlines and provide feedbacks based on the analysis of the current practice. For that, fifteen sustainability reports of airlines are studied. The study is focused on the materiality part of the report only. The following chapter presents the brief background on the rationale for choosing the topic and research questions that will be answered in this thesis.

## 1.2 Background

"If everything is important, then nothing is." - Patrick Lencioni

The motivation for the topic steams from the little research done in the field of materiality assessment in sustainability reporting. Although many of the sustainability reporting guidelines strongly emphasis the need for materiality assessment, many companies still face challenges to identify relevant issues for sustainability reporting and prioritize those identified issues in accordance with the stakeholder views and needs (Hsua, Leeb & Chaoc, 2013). Reporting and focusing on the issues, that matter most is the heart of problem with today's sustainability reporting (Mohin, 2017). Companies already publishing sustainability reports are struggling to focus their reporting on the impacts that matter most and the companies that have not yet started reporting are discouraged from doing so due to lack of information on the issues that they may need to report on. The current CEO of GRI, Mohin (2017) believes that when sustainability reporting is focused on impactful and relevant issues, it will create data that can help companies to contribute to sustainable development and increase their profitability.

In order to make a detail study in one particular industry about the materiality assessment process and analyze the material issues the study is narrowed to airline industry. There are three main reasons for selecting the airline industry for this research. The first reason is the author's interest about the sustainability issues in

airlines. I have been following the developments in that sector for some time. Similarly, sustainability reporting in airlines is growing recently as many airlines are aware of their impacts and growing legislation and stakeholders' pressure. Therefore, this thesis can be useful for companies and researchers who are working on the sustainability reporting in airlines. Third reason for focusing the thesis on the airline industry is the lack of research about sustainability reporting in general and materiality assessment process in the airline industry. Sustainability reporting in the airline sector is understudied and there is need to explore the different dimension of sustainability reporting in the airline industry, the current study carried out by the author on the materiality assessment process in the airlines sustainability reporting is one-step towards that direction.

### **1.3 Research aim**

The aim of the research is to describe the current practice of materiality assessment in sustainability reporting in the airline industry. The thesis results are drawn based on the materiality section of the fifteen different airlines' report. The materiality assessment part is studied in detail to find out the materiality assessment in the case companies, notable difference among the companies in the process and the identified issues. The thesis also examines how the companies have considered the role of stakeholder in the materiality assessment process. The identified practices are compared with the theory and suggestion is given for further improvement. The main research question for the thesis is:

How do airlines identify the material issues for sustainability reporting?

The sub-questions are:

1. How materiality is defined in sustainability reports?
2. How is the role of stakeholders taken into consideration?
3. What are the key material issues identified by the airlines?

The thesis will have many theoretical and empirical implications. The theory section will explore the current literature on the sustainability reporting, materiality assessment, sustainability issues in airlines and stakeholder engagement in materiality assessment. Similarly, on the empirical side, current practice of materiality assessment in different airlines will be studied in depth and suggestion will be given for further improvement. The study also provides the comparison of the studied airlines based on the materiality assessment practices, stakeholder engagement and the identified key material issues as reported in their sustainability reporting.



## **1.4 Structure of the thesis**

The thesis is divided into five main chapters. Chapter 1 introduces the thesis topic, discusses motivation behind the thesis topic and presents the research aim and research question. In the second chapter, the prior research done in the sustainability reporting and materiality is presented. Similarly, in that section materiality and stakeholder engagement in different guidelines is also explained in details. The second chapter ends with outlining the important sustainability issues in the airline industry. The methodological choices and data collection methods are explained in chapter 3. Chapter 4 presents the research findings in systematic manner. Different phenomena identified from the research can be found in this section. In the last section of the thesis, chapter 5, discussion and conclusion section is presented. This section provides conclusion on the current stage of materiality assessment in the airline industry and discusses about the possible changes needed to make improvements. This section will provide useful insight for the reporting companies and other interested stakeholders.

## 2. THEORITICAL FRAMEWORK

### 2.1 Defining sustainability

Although sustainability is a widely used term, defining it in different context is difficult. There is little agreement between the scholars about what constitutes sustainability. The dictionary definition of sustainability simply refers that a given activity or action is capable of being constant or sustained (David, 2007). The idea of sustainability ingrain into every scale from local companies, local governments to regional governments and in multinational institutions and defined in many ways depending upon the context. Similarly, 'sustainability' is used in many different concepts usually with phrases to highlight one or other aspect of the concept. 'Sustainable development', 'sustainable societies', 'sustainable communities', 'sustainable growth', and 'sustainable marketing' are some of the commonly used phrases. (Vos, 2007)

The *World Commission on the Environment and Development report* of 1987 often called as Brundtland Commission defined sustainable development as "the development that is sustainable when it meets the needs of present without compromising the development of future generations". The original definition of sustainable development referred to the environmental sustainability in particular, but over the time, the concept has taken various forms with emphasis shifted from economic to the social and environmental dimension of sustainable development (SD). The economic, social and environmental dimensions together form the three pillar of sustainable development. (Radutu & Poleanschi, 2015)

Sustainability as a concept has developed as alternatives to help to understand and minimize the current and future economic inequality, environmental degradation, and social infirmity. However, sustainability as a concept is still unfamiliar or misunderstood to many individuals and societies all over the world (Lozano, 2008). The companies referring to their social, environmental and economic impacts use Corporate Social Responsibility (CSR) and sustainability interchangeably. There is complex relationship between CSR and sustainability, although the three pillars of sustainable development are also referred as three dimensions of corporate social responsibility. CSR was established because of the changing relationship between business and the society. The concept, which started as philanthropic approach, has recently changed into strategic CSR. Whereas, sustainability is the derivation of concept of sustainable development as put forward in the Brundtland Report. (Romero & Lamadrid, 2014)

## **2.2 Sustainability reporting**

Sustainability reporting is gaining popularity in the business world; despite its widening popularity, there is no single valid definition of sustainability reporting. A report is considered sustainability report if it is public and contains qualitative and quantitative information about its social, environmental and economic improvements. Sustainability reporting can be seen as a response from the companies to meet the increasing monitoring and policing of the companies and increasing demand for more ethical behavior (Daub, 2007). Sustainability reporting has been studied in various theoretical and empirical paradigms; most of such studies are focused on external reporting context ignoring the internal reporting of sustainability information. Schaltegger (2012) claims that, depending upon the business society relationship and trust, sustainability reporting falls under different organizational approaches. According to him, depending upon the societal expectations and management's views about the stakeholder expectation, sustainability reporting can represent five business climates such as 'trust me', 'tell me', 'show me', 'prove me' and 'integrate me'.

Organizations worldwide are engaged in sustainability reporting to provide their progress and achievements in different social, environmental and economic issues, independent of their geographical location and the level of economic activity. Even though, there is observable difference in the level, quality, shape and integrity of such reports presented by the organizations, it is clear that sustainability reporting has been an important medium of stakeholder engagement and communication for organization all around the world (Junior et. al. 2014, KPMG 2015).

According to KPMG (2015) about 73 percent of largest 100 companies (N100) and 92 percent of Global Fortune 250 (G250) publish their sustainability reports. Sustainability reporting is often considered synonymous with other terms for non-financial reporting which also aim at reporting on the environmental, social and economic impacts of the business. The generally used terms that are considered close to sustainability reporting are triple bottom line reporting, corporate social responsibility reporting (CSR) reporting. Sustainability reporting is also fundamental element of integrated reporting which combines the analysis of financial and non-financial performance (GRI, 2017).

### **2.3 Value of sustainability reporting**

Historically, sustainability reporting has changed its focus in different periods. In the 1970s, sustainability reporting was a small part of traditional financial reporting, complemented by additional social reports. Then in the 1980s, the focus shifted towards environmental issues such as greenhouse gas emission and pollution. The social issues were often left out during those times. By the end of the 1990s, the modern era of sustainability reporting started, during that time companies initiated publishing separate or joint social and environmental reports alongside the tradition financial reports (Hahn & Kühnen, 2013). Sustainability reporting is one of the key elements for corporate accountability and transparency for companies. There are three generally understood drivers for publishing sustainability reporting. The first is the external driver, mainly created by the societal, institutional and stakeholder pressure that often shape the content and model of reporting. Internal factors such as resource efficiency, employees' wellbeing etc. are the second most common factor for companies to publish sustainability reports. Third driver for sustainability reporting comes from the manager's views and attitude towards sustainability (Thoradeniya, Tan, & Ferreira, 2015).

There are both tangible and non-tangible benefits of sustainability reporting for the reporting companies. The intangible benefits such as employee motivation and loyalty, improved reputation are the benefits known for long time but latest research suggests that the value of disclosure also visible in the financial performance of the company as well. The major benefits of sustainability reporting for the companies are financial benefits, risk management, employee loyalty, reputation and consumer trust and social benefits as outlined in the report jointly prepared by Ernst and Young (EY) and Center for Corporate Citizenship, Boston College. (EY, 2016) Sustainability report also enables the companies to provide cost-effective sustainability disclosure, compare their performance with competitors, focus on the efforts to improve performance on sustainability issues

and provide assessment of possible sustainability risk and opportunities for investors. (PwC 2014; EY 2016)

There is no explicit evidence that the sustainability report will ensure balance between social, environmental and economic impacts and prioritization of stakeholder's claims, but such reports provide the basis for more tuned in decisions making process in the company. The inclusion of data on ethical, social, environmental and economic information can be great assets for decision-making process for the company. Sustainability reporting creates more improvements in sustainability performance, when such data are integrated with financial performance indicators. (Adams & Frost, 2008)

## **2.4 Standards and guidelines for sustainability reporting**

Sustainability reporting mainly is a voluntary practice but there has been an increasing number of regulatory and stakeholders' pressure to publish such reports. There are number of guidelines and standards that the company can follow while publishing sustainability reports. The choice of the guideline depends upon the sustainability approach of the company and the legal system of the country where the company is situated. Guidelines provide structure to systematically address the sustainability issues with more comprehensive coverage (Lozano & Huisinghb, 2011). Global reporting initiative (GRI), Organization for Economic Co-operation and Development (OECD), United Nations Global Compact, International Organization for Standardization (ISO 2600, International Standard for social responsibility), Sustainability Accounting Standards Board (SASB) are some of the main organization providing sustainability reporting guidelines (Global Reporting Initiative, 2017). UN Global Compact, OECD guidelines and ISO standards are used as part of sustainability reporting rather than a complete set of guidelines. In the following part, three major guidelines for sustainability reporting are presented.

### **2.4.1 Global reporting initiative (GRI)**

GRI is the most prominent and widely used sustainability reporting guidelines currently used by more than 74% of the largest 250 corporations (KPMG, 2015). GRI is an independent, non-profit organization based in the Netherlands. It was founded in 1997 by the Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environmental Program (UNEP). In 2000, the initial GRI guidelines were published for the first time; currently GRI G4

guidelines are available for use. The latest version of GRI i.e. GRI G4 was published in 2013. With its guidelines, GRI intends to support companies to create sustainability reports that integrate social, environmental and economic impacts of business. (Isaksson & Steimle, 2009 & Global Reporting Initiative, 2017).

#### **2.4.2 The International Integrated Reporting Council (IIRC)**

Currently most of the companies publish their sustainability reports without integrating with their annual financial statements. In order to make the sustainability reporting more useful for both internal and external stakeholders the concept of integrated reporting is put forward by the International Integrated Reporting Council (IIRC). Sustainability report prepared under IIRC guidelines integrate sustainability reporting with financial results. (James, 2015) Institute of Directors Southern Africa, non-profit promoting corporate governance, introduced the concept of integrated reporting in South Africa. IIRC was established at the end of 2010 to create the globally accepted integrated reporting (EY, 2014). Although the concept of integrated reporting is gaining popularity, only few companies publish their reports based on IIRC guidelines. In its survey of member companies, World Business Council for Sustainable Development (WBCSD), found that only 8% publish integrated reports, 12% combine ESG and financial information and the rest of the reports are usual sustainability reports (OECD, 2014).

#### **2.4.3 Sustainability Accounting Standards Board (SASB)**

SASB sets industry-specific standards for sustainability disclosure. The concept of SASB originated after researchers at Harvard University began researching non-financial materiality and its application at an industry level. SASB was developed and incorporated as a non-profit organization in July 2011. Currently SASB is developing sustainability accounting standards for 79 industries in 11 sectors. (SASB, 2017) SASB set of industry standards for sustainability reporting mitigate some of the reasons that firms do not engage in the sustainability reporting practice. Moreover, it also allows companies to begin their sustainability reporting without spending time and resources to collect information beyond that already reported to regulatory bodies like Securities and Exchange Commission SEC. (Schooley & English, 2015)

## 2.5 Stakeholders in sustainability reporting

R. Edward Freeman originally detailed stakeholder theory in his book *Strategic Management: A Stakeholder Approach* in 1984. Stakeholder theory has been developed to re-conceptualize the specific business-society issues such as problems of value creation and trade, the problems of the ethics of capitalism and the problems of managerial mindset. (Freeman, Harrison & Colle, 2010) Freeman has defined stakeholders as “any group or individual who can affect or is affected by the achievement of the firm’s objectives.” Stakeholder theory stresses that a major role of the management is to assess the importance of meeting stakeholder demands for achieving strategic objectives of the firm. In normal business scenario as the importance of meeting stakeholders demands increases with the increase in the level of stakeholder’s power. (Roberts, 1992)

There has been increasing level of stakeholder dialogue in sustainability reporting but the reliability and the effectiveness of such engagement is questioned by different scholars (Manetti, 2011 & Swift, 2002). Sustainability reporting has been used by organizations as a legitimating tool to affect the stakeholders’ expectations towards the firm. Although Swift (2002) declines the effect of the purpose, pointing out that stakeholder engagement in social accounting and auditing is soft form of accountability mainly because of the unequal power distribution between the organization and the stakeholders. The author explains that although stakeholder engagement in sustainability reporting has enhanced accountability and transparency; change in the status quo of the power between the organization and stakeholders is essential for true accountability.

Mutual trust, commitment and co-operation between the organization and stakeholders are important key elements in engaging stakeholders in sustainability reporting. Different scholars have put forward various methods of stakeholder engagement to enhance the stakeholder participation and quality of the sustainability report. (Stronger, Ringer & Taylor, 2001) In their study, they conclude that timely, honest and empathetic communications are the key considerations to be taken by company to satisfy different stakeholder groups simultaneously. Dialogue with stakeholders is an effective tool for engaging stakeholders. The communication between the stakeholders and the corporations should foster information, ideas sharing, and effective negotiations between the parties. Therefore, it is essential that the corporations empower stakeholders for effective dialogue in such a way that it facilitates decision making and auditing of both sustainability process and performance.

## 2.6 Stakeholder engagement in different sustainability reporting guidelines

Different reporting guidelines have suggested different ways of stakeholder engagement in sustainability reporting. Suggested ways of stakeholder engagement in three major reporting guidelines; GRI, IIRC and SASB is discussed in the following sections.

### 2.6.1 Global reporting initiative (GRI)

GRI defines stakeholders as entities or individuals that are significantly affected by the organization's activities, products, and services; and whose actions can reasonably be expected to affect the ability of the organization to successfully implement its strategies and achieve its objectives (GRI, 2013). GRI stresses the need for systematic or generally accepted approaches, methodologies, or principles for fruitful stakeholder engagement. According to GRI, such engagement with different stakeholders enhances stakeholders' receptivity and the usefulness of the report. GRI G4 has listed four different guidance for stakeholder inclusiveness in sustainability report (GRI, 2013).

<b>GRI disclosure</b>	<b>Standard</b>	<b>Guideline for stakeholder engagement in sustainability reporting</b>
G4-24		Provide the list of stakeholder groups engaged by the organization
G4-25		Report the basis for the identification and selection of stakeholders with whom to engage
G4-26		Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group and indicate if any specific engagement was carried out for the purpose of report preparation.
G4-27		Report key topics and concerns raised during stakeholder engagement and report on how the organization has responded to those topics and concerns. Report the stakeholder groups that raised each of the key topics and concerns.

Table 1: GRI guidelines for stakeholder engagement



### **2.6.2 International integrated reporting council (IIRC)**

Although IIRC reporting framework is preliminary targeted for providers of capitals, it does not imply that their interests are more important than those of other stakeholders such as employees, customers, suppliers, business partners etc. IIRC framework places a high emphasis on stakeholder interactions and support as a key element of an organization's business model and its value creation. (Soyka, 2013) By analyzing the 82 reports of IIRC adopting organizations, Fasan & Mio (2016) conclude that integrated reports through their materiality determination process provide powerful stakeholder engagement tool. IR provides fundamental models that investors and other stakeholders may use in order to assess the ability of the companies to create value.

Without giving specific guidelines like in GRI, IIRC framework stresses the need to provide insight into the nature and quality of the organization's relationships with its key stakeholders. Further, it outlines that the organization should consider how and to what extent it understands, takes into account and responds to their legitimate needs and interests. With proper stakeholder engagement, organization reporting under integrated reporting can perceive stakeholders value, identify material matters, develop and evaluate strategy and manage risks and benefit in many more ways. (IIRC, 2013)

### **2.6.3 Sustainability accounting standards board (SASB)**

SASB reports are mainly targeted for the corporations and their investors; they are the main stakeholder group in SASB framework. While setting the SASB industry specific standards for sustainability reporting corporations and their investors represent two third of the industry working group and other stakeholders such as accountants, consultants, academics and NGOs make up the remaining one third. Key outside stakeholders, such as customers, local communities, the public and the government are part of social capital dimension of SASB's five dimensions. SASB considers external stakeholders' issues important when such issues or stakeholders have economic implications. Since companies reporting under SASB report on the key industry specific issues that are already been identified by SASB, the stakeholder engagement takes place during identification of issues rather than in the reporting phase. (SASB, 2013)

## **2.7 Materiality**

Materiality is a concept originally used in financial reporting, specifically in auditing and accounting process. Materiality as a concept in financial reporting refers to accountant's ability to determine whether a misstatement or error may change the decision of the reader. It is often regarded as a threshold above which an error becomes too important to be tolerated. (Pistoni & Songini, 2015) The International Financial Reporting Standards (IFRS), which sets global standards in financial accounting in its latest working paper defined materiality as follows (IFRS, 2016) :

*"Information is material if omitting it or misstating it could influence decisions that users make on the basis of financial information about a specific reporting entity. In other words, materiality is an entity-specific aspect of relevance based on the nature and magnitude, or both, of the items to which the information relates in the context of an individual entity's financial report."*

Helping companies build trust with different stakeholders and allow them to make informed decision is one of the main purpose of the sustainability report. There are large numbers of issues for companies to manage and tackle. Reporting all those issues will lead to information overload, which will require large and increasing amount of data processing for stakeholders and on the other hand, for companies preparing uncomprehensive information is time and resource consuming. (Mio & Fasan, 2014) In simple terms, materiality analysis aims to identify the social, economic and environmental issues that present risks or opportunities to a company while considering the issues of most concern to the stakeholders (PGS, 2013). Some 80 percent of the world's largest 250 companies identify material issues in their sustainability reporting (KPMG, 2013).

Identifying material issues in non-financial reporting is much more challenging than in the financial accounting. There is little consent on the universal definition of materiality. Materiality in sustainability reporting refers to different conflicting and debated meanings (Jones & Hillier, 2015). Many reporting guidelines set out materiality process that give final authority for the reporting organization to decide whether a particular issue is material or not, against the context of overall operations and strategy that are disclosed in the sustainability report. Although the aim of materiality assessment in sustainability reporting is similar to that of financial reporting, i.e. to ensure the clarity of the report by reducing the practice of excessive detailed reporting on less important issues and bring important issues on the report. There is no clarity on who decides whether a particular issue is major or minor or from whose perspective an issue is material or immaterial (Unerman & Zappettini, 2014).

The whole purpose of materiality in non-financial reporting is to identify, select, prioritize and report aspects and indicator that are more aligned with the company's most significant economic, environmental and social issues. Generally,

materiality issues differ considerably from industry to industry and company to company. Issues can be similar among the similar industry or a sector, but material issues differ with the industry or sector depending on company size, location, time of establishment, stakeholder groups and their engagement etc. (PGS, 2013). Different sustainability reporting guidelines suggest different ways to carry out the materiality assessment. In the next section, materiality assessment will be discussed based on the different reporting guidelines.

## **2.8 Materiality under different reporting guidelines**

Materiality is highly emphasized by major reporting guidelines publishing organizations such as GRI, IIRC and SASB. Some sustainability consulting companies like AccountAbility have their own set of materiality guidelines. In the following chapters materiality assessment process of GRI, AccountAbility, SASB and IIRC is explained.

### **2.8.1 Materiality assessment in GRI**

Principle for defining reporting content and principle for reporting quality are the two main principles of GRI for achieving transparency in sustainability reporting. Principle for defining report quality guides organization in ensuring the quality of the report including its presentation. Principles of reporting content on the other hand helps to identify the content of the report. GRI defines materiality as a threshold at which aspects become sufficiently important that they should be reported. Materiality, stakeholder inclusiveness, sustainability context and completeness are sub propositions of the principles for defining reporting content. GRI suggests for the consideration of internal and external factors to determine the materiality of any social, environmental and economical aspect. Organization's overall mission and strategy, stakeholders' concerns, organization's influence on the supply chain and consumption pattern are some of the factors to consider suggested by GRI. International standards and agreements signed and endorsed by the organization also should be considered in the materiality assessment. (GRI, 2013)

Materiality is not a new concept, but the concept has taken 'center stage' within the new GRI G4 guidelines. In GRI G4, some 58 general standard disclosures on the management and 91 specific indicators measure the social, environmental and economic aspects of the organization. Similarly, organizations are required to communicate its sustainability performance more broadly by reporting all the

indicators that are related to the identified material aspects. In addition, organizations are also tasked to define each material aspect and consider whether the impact falls inside or outside the organization and describe the boundary of each impact. (Jones, Comfort, & Hillier, 2015)

GRI G4 provides detail guidelines for identifying the material aspects and topics. G4 guidelines have developed four sequences of steps for planning and implementing materiality. The four steps start with identification of all the relevant topics based on the relevant economic, environmental and social impacts related to all of the organization's activities, products, services and relationship with different stakeholders. The prioritization of relevant aspects and topics take place in the second stage. In this step identified material aspects are prioritized by combining the assessment of significance of organization's economic, environmental and social impacts and the influence on stakeholder assessments and decisions. In the third step i.e. validation, the relevant internal decision makers validate the prioritized aspects. The last step of materiality process as suggested by GRI is the review; it takes place after the report has been published. Previous material aspects and stakeholder feedbacks are reviewed for preparing the materiality assessment for the next report. (GRI, 2013) The four steps guidelines as suggested by GRI are presented in the figure 1.

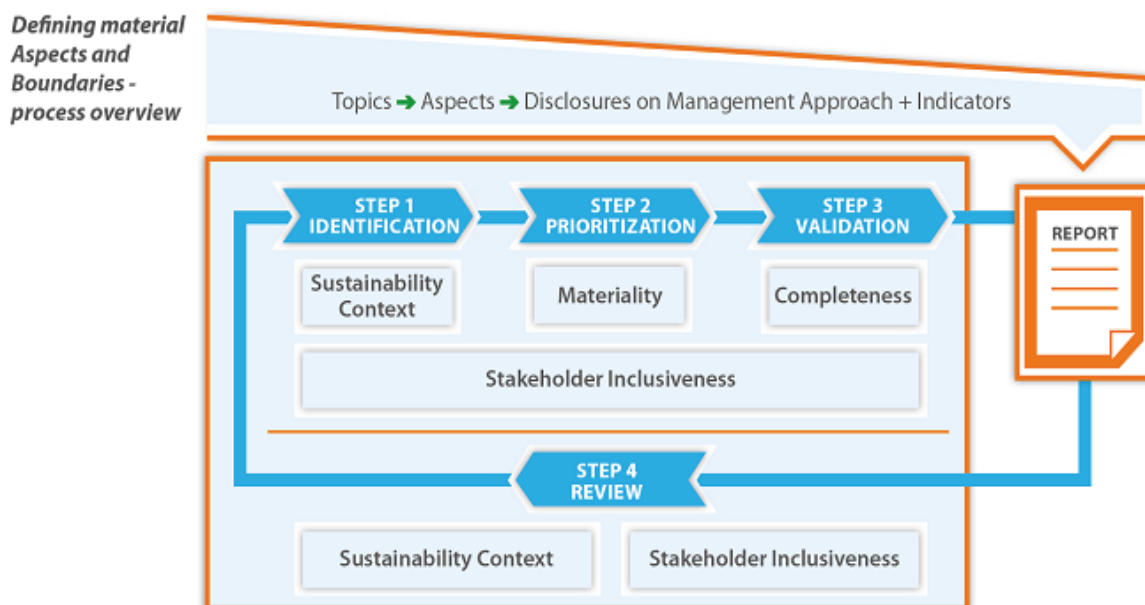


Figure 1: Four-step guide for identifying material issues suggested by GRI.

Although, the four-step guideline provides concrete path for companies to identify the material issues, the four-step phase has been used and interpreted in many

different ways. The KPMG's guide to materiality process (KPMG, 2014) outlines seven different phases for materiality process as shown in the table 2.

Phase1:	Defining the purpose and scope of materiality
Phase 2:	Identifying the potential material topics
Phase 3:	Categorizing potential material topics
Phase 4:	Gathering information about the impact and importance of topics
Phase 5:	Prioritizing material topics based on the strategic importance to the business and the stakeholders
Phase 6:	Testing the materiality result with key internal audience
Phase 7:	Seeking stakeholder's feedback on the reported material topics

Table 2: Materiality assessment process suggested by KPMG

Materiality matrix helps organization to visually present the material issues. On one axis of the matrix, issues important to the organization are presented and on the other axis material issues that are important for the stakeholders are presented. In the figure below, X-axis represents the issues significance of different issues to the company and the Y-axis for the issues important to the stakeholders. The green dots represent the materiality issues. GRI recommended sample of materiality matrix is given in figure 2.

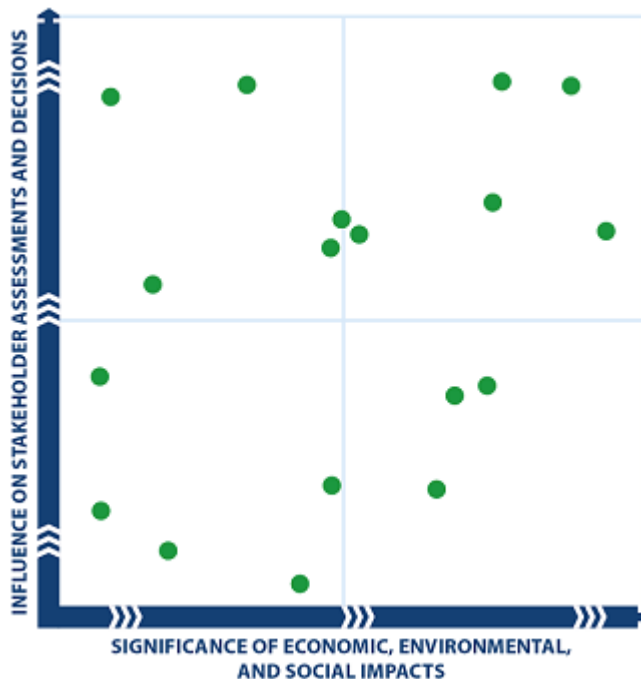


Figure 2: GRI materiality matrix

### 2.8.2 AccountAbility materiality framework

AccountAbility is a global consulting and standard firm that helps business, governments and multi-lateral organizations in sustainability management, stakeholder management, reporting and other strategic areas. It also publishes research and standards for various purposes. AccountAbility's AA1000 series of standards, which contains AA1000 AccountAbility Principles Standard (AA1000APS) 2008, The AA1000 AccountAbility Assurance Standard (AA1000AS) 2008 and AA1000 AccountAbility Stakeholder Engagement Standard (AA1000SES) 2015 are used by organizations to guide their approach to sustainability strategy, governance and operational management. The updated version of AA1000APS and AA1000AS will be available in mid-2017 and late 2017 respectively. The materiality framework is part of AA1000AS. (AccountAbility, 2016) AccountAbility defines materiality as:

*Materiality is determining the relevance and significance of an issue to an organisation and its stakeholders. A material issue is an issue that will influence the decisions, actions and performance of an organisation or its stakeholders. (AccountAbility, 2008)*

AccountAbility's Materiality Framework is based on a cycle of three broad stages, which are very similar to the GRI's materiality analysis. The three stages of materiality are issue identification, prioritization and review. AccountAbility also stresses to embed the materiality determination process with in the organization's ongoing process of strategy development, performance management, and reporting and stakeholder engagement. AccountAbility's materiality framework starts with the identification of widest possible selection of social, environmental and economic issues that are important for the company and its stakeholders. In this stage, the viewpoint of all significant stakeholders should be taken into account. The identified issues are then prioritized through a qualitative analysis and discussion or a scoring system. Similar to GRI's framework, in AccountAbility's framework materiality matrix is used to present the issues that are important for business in one axis and issues that are important for stakeholders on the other axis. In order to ensure the credibility and proper implementation the framework in its final stage suggests that the prioritized issues to be reviewed by internal and external expert advisory panels and agreed upon at the board-level. (Murningham, 2013)

### 2.8.3 SASB industry specific materiality

SASB sets industry-specific standard for sustainability reporting. For that, SASB has designed a materiality map in which the importance of different materiality issues is presented in context of seventy-nine industries. SASB materiality map is created for helping investors in making investment decision based on the sustainability issues of the industry and make comparison easier for the companies that fall in the same industry. Thirty different material issues are listed in the materiality map that is based on the five broad dimensions: environment, social capital, human capital, business model & innovation, and leadership & governance. The identified issues are subject to change with the change in the issues and priority in the industry. The material issues were selected by SASB based on the three different tests conducted by SASB. (SASB, 2017)

1. Evidence of interest: In this test a pool of material issues are collected for particular industry based on shareholder resolutions, CSR Reports, media and other industry related documents.
2. Evidence on Financial Impact: The financial impacts of the issues are identified based on the issue's impact on profitability, assets and liabilities, or cost of capital. The impact is studied based on the cost of regulatory costs, news articles and other various formal and informal sources.
3. Forward-Looking Impact: The issues are adjusted based on the impact that the future generations and stakeholders might face by management or mismanagement of the issue.

### 2.8.4 Materiality in integrated reporting

The main purpose of an integrated report that contains financial and other material information is to explain to providers of financial capital how an organization creates value over time. IIRC defines materiality as:

*A matter is material if it is of such relevance and importance that it could substantively influence the assessments of providers of financial capital with regard to the organization's ability to create value over the short, medium and long term. (IIRC, 2013)*

IIRC has identified three steps to filter key topics that are material for the organization. The process involves identifying, evaluating and prioritizing the relevant matters. The material issues are identified based on the topics or issues that affect value creation and are linked to strategy and governance. Similarly, such issues should be important for stakeholders and the management. According to IR, issues that fall under the relevant aspects may intensify or lead to opportunity loss if left unchecked. Not all the relevant matters are included in the

integrated report. To be included in the report a matter also needs to be important in terms of its known or potential effect on value creation. For that, the magnitude of effect is evaluated based on the qualitative and quantitative factors, area of effect, period and impact on the financial, operational, strategic, reputational and regulatory prospective. Figure3 presents the IIRC's approach for evaluating significant material issue.

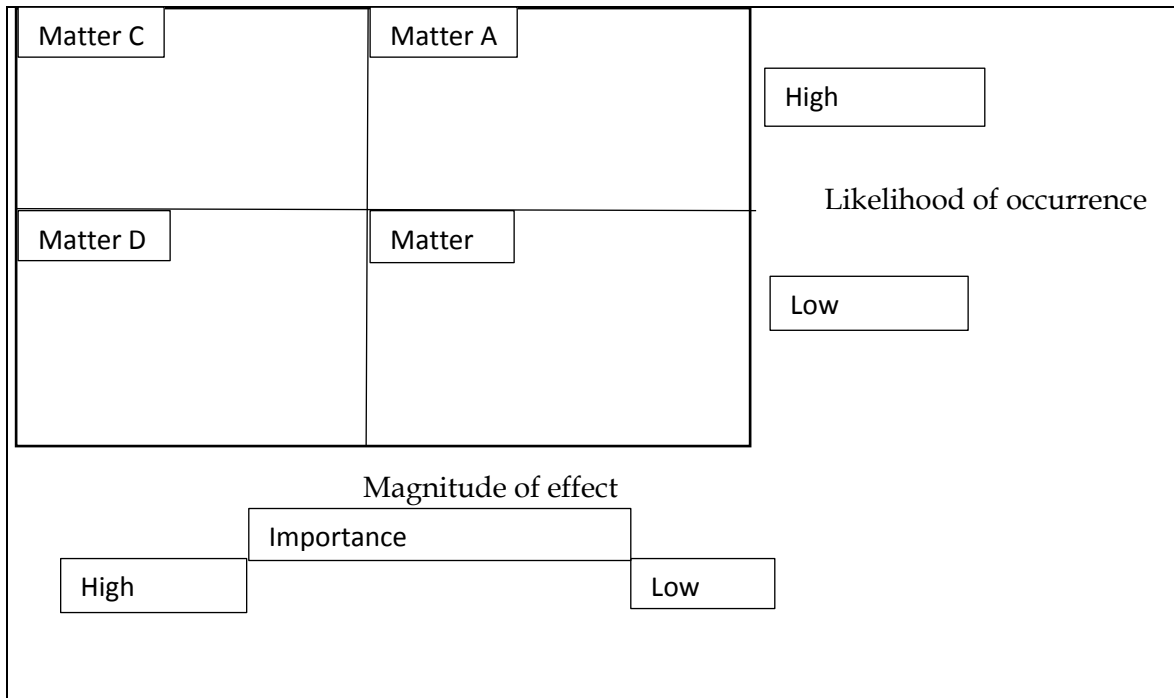


Figure 3: IIRC's illustrative example for evaluating the importance of the issues.

After determining the importance of relevant matter, the topics or issues should be prioritized. Matters are prioritized based on their current or future value creation for the organization. The prioritization of relevant matters helps the board and the management to understand the factors that influence value creating and encourages them to consider the probabilities, casual relationships, synergies and tradeoffs. (IFAC, 2015)

In table 3, above discussed four different materiality assessment guidelines are summarized. The summary is drawn for four different aspects of materiality. Definition, purpose, process and stakeholder engagement in different materiality assessment guidelines are compared in the table.



	GRI G4	AccountAbility	SASB	IIRC
DEFINITION	Materiality is the threshold at which Aspects become sufficiently important that they should be reported. Material issues should reflect the organization's economic, environmental and social impacts or influencing the decisions of stakeholders.	A material issue is an issue that will influence the decisions, actions and performance of an organization or its stakeholders. Materiality determines the relevance and significance of an issue to an organization or its stakeholders.	Abides by the U.S. Supreme Court's definition. Materiality is defined as the facts whose omission may alter the decision of investors. Material issues are industry specific. It should enable providers of financial capital to assess whether or not the capital adds to financial value.	A material issue can substantively affect the organization's ability to create value in the short, medium and long term.
PURPOSE	To determine the most material aspects for sustainability reporting.	To align business strategy, reporting, stakeholder engagement and performance with environmental, social and governance issues.	To determine sustainability topics that are likely to be material and have impacts on the financial condition and investment decision of investor. Also to integrate SEC filings such as the form 10-K and 20-F.	To report the significant issues in the integrated reporting in order to explain to the providers of financial capital how the organizations creates value over time.
PROCESS	Issue identification > Prioritization > Validation > Review	Issue identification > Prioritization > Review	Industry specific materiality aspects selected based on three different test conducted by SASB. Evidence of interest, evidence of financial impact and forward looking impacts.	The process of determining materiality is entity specific and based on industry and other factors, as well as multi-stakeholder perspectives. Issue identification > Prioritization > Disclosure
STAKEHOLDER ENGAGEMENT	GRI stresses the need for systematic or generally accepted approaches, methodologies, or principles for fruitful stakeholder engagement. GRI has its own set of guidelines for stakeholder engagement.	Separate set of guideline for stakeholder engagement. AA1000 SES (AccountAbility Stakeholder Engagement Standard)	Different stakeholders, which can influence the investors' and the company's decision making are engaged in the process. Does not follow specific set of guidelines for identifying and engaging stakeholders.	No specific guidelines for stakeholder engagement. Although, IIRC stresses the importance of high stakeholder engagement in materiality determination process.

Table 3: Summary of materiality assessment as per different guidelines

## 2.9 Sustainability issues and reporting practices in airlines

Air transport has been one of the world's most influential industries during the course of 20<sup>th</sup> century. Airlines are major direct and indirect employer and key facilitator of world trade and tourism. Both cargo and passenger air transportation is growing rapidly in all parts of the world; annual growth of 5 per cent is expected to continue for the next 10 to 15 years (Upham, 2003). Although the airline industry provides social and economic benefits through its leisure and business travel, job creation and the sharing of knowledge and experience, it also imposes a number of impacts on people and environment (Cowper-Smith & Grosbois, 2011). The focus of this thesis is on the passenger airlines, although freight transportation as well as military flights also falls under the aviation. Passenger transportation is the biggest sector of aviation, currently there are 275 airlines that make up 83% of the air traffic (IATA, 2017).

Air transportation is one of the most energy intensive forms of transportation that has huge environmental impacts. Emissions, aircraft noise and local air pollution are some of the major sustainability issues in the airline industry (IATA, 2017). Carbon dioxide (CO<sub>2</sub>), water vapor (H<sub>2</sub>O), nitrogen dioxide (NO<sub>2</sub>), Sulphur oxides (Sox) and soot particles are the major emission of aircraft. Although the aviation industry in total accounts for about 2-3% of emission of CO<sub>2</sub>, the impacts are much higher than the actual emissions as the aircraft emits gases and particles directly into the upper troposphere and lower stratosphere where the impact for climate change is much higher. (IPCC, 1999 & Forsyth, 2011) Due to the technical advancement, there has been significant reduction noise pollution caused by airlines. Since the airline sector is increasing rapidly, emission remains the key challenge for airlines. (Federal Aviation Administration, 2016)

International passenger aviation has increased threefold in the last two decades; it is predicated to grow in a similar pattern over the next 25 years (Walker & Cook, 2009). Increase in living standards, population and demographics, trade along with price and liberalization are some of the major factors contributing to the growth of the industry (IATA, 2017). Although, IATA has set ambitious targets of reducing the fuel efficiency of fleet by 25 percent by 2020, the more likely outcome is an increase of 140 per cent of aviation emission by 2025 (Macintosh & Wallace, 2009). Because of the deregulation of the air transport markets in Europe, North America and Australia and decreasing airfare, air travel once thought as luxury is now part of our lifestyle. Frequent trips to distant locations have become a routine in the developed and developing countries because of increased income and leisure time. Such long haul flights' emission can easily exceed an individual's annual emission's allowance (Gössling et al., 2011).

Climate change and the use of non-renewable resources are the major aspects of sustainability in airlines (Forsyth, 2011). Airlines can cut emission in many

ways. Better air traffic control along with better control of flight path is one of way of reducing the emission. Similarly, introduction of new technology also can reduce the current impact level, but it is difficult to predict the cost and availability of such measures. The problem is also added by the fact that, airline technology is locked in and airline fleets cannot be replaced fast as they have quiet long life. (Forsyth, 2011) Biofuel is one of the main alternatives for reducing the dependency on fossil fuel for aviation. However, the current development and availability of fossil fuel is not enough to support the demand. Besides that, the current production methods of biofuels are criticized for different environmental impacts and use of agricultural land for its raw materials. (Walker & Cook, 2009) Some studies conclude that, in some cases the socio-environmental impacts of burning biofuels might even be higher than those of fossil fuels (Forsyth, 2011).

The emission intensity of airlines improved by 40% over the period 1990-2005. Such improvement was possible mainly because of the beneficial changes in air traffic management, improvements in aircraft and engine design and increase in load factors. Despite the improvements in the emission intensity, total accumulated emission of aviation sector has increased considerable since the early 1990s. (Macintosh & Wallace, 2009) The Intergovernmental Panel on Climate Change (IPCC, 1999) in its broad study of aviation industry predicts that the current technological advancements are not able to compensate the growth in emission by the aviation sector. As the airline industry is slow in adapting to technological changes, improvements alone within the airplane body will not help to achieve the emission reductions required for sustainable air transportation. Apart from technological changes, (Daley, 2010) has proposed market based changes, regulatory changes and behavioral changes for reducing the environmental impact of the air travel.

Despite its growing environmental impacts, air transport is a critical part of the economy, enabling movement of people and goods throughout the world. Although, the airline industry currently is facing no restriction on the emission growth, with the increased growth of industry, media attention and growing public awareness about the environmental impacts of aviation strict regulation might be introduced in the industry. This will have adverse effect on the future growth of the industry and its related businesses. (Gössling et al., 2007) As technological solutions are not alone enough to solve the problem anymore, focus is shifted more towards market based solutions such as taxes, charges, emission trading and subsidies (Daley, 2010). More research is needed to fully understand the implication of such measures on emission reduction. Operation and regulatory changes are not popular measure for the airline operators so such measure may lack support from the industry. Pro-environmental or environment friendly behavior from the passenger themselves can play important role in reducing air emission of aviation. Baumeister & Onkila (2017) Emphasize the need for introduction of an eco-label in the airline industry leading to behavioural change among the air passengers.

PwC report on airlines sustainability reporting shows only 38 percent of top 100 airlines publish sustainability report. Although more and more airlines are publishing sustainability reports recently, the airline industry has been quite slow compared to other industry when it comes to sustainability reporting (Cowper-Smith & Grosbois, 2011 & PwC, 2011). There is very little research done on the sustainability practice and reporting in the airline industry. Although, the current state of sustainability reporting in airlines is largely unknown, the GRI database shows an increasing number of airlines publishing their sustainability reporting (Cowper-Smith & Grosbois, 2011).

SASB (2014) has identified four different topics for airlines's sustainability disclosure. Environmental footprint of fuel use, labor relations, competitive behaviour and accidents and safety management are the four identified topics in SASB's airlines sustainability accounting standard. Similarly, GRI (2013) has outlined nineteen sustainability topics that are relevant for the airlines. The topics are considered to be relevant for airlines by different stakeholder groups. The sustainability category and the selected topics are given in the table 4 below.

Sustainability category	Relevant topics recommended by stakeholders
Economic	<ul style="list-style-type: none"> <li>- Carbon offsetting</li> <li>- Economic direct and indirect benefits</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>- Materials sourcing and use</li> <li>- Renewable/alternative energy sources</li> <li>- Energy efficiency initiatives</li> <li>- Air quality</li> <li>- Emission to air</li> <li>- Emission to air-GHG emissions</li> <li>- Noise</li> </ul>
Social	<ul style="list-style-type: none"> <li>- Labor conditions</li> <li>- Labor management relations</li> <li>- Cabin personnel health and safety</li> <li>- Cabin air quality</li> <li>- Unlawful sex tourism</li> <li>- Persons' with special needs access to services and facilities</li> <li>- Emergency preparedness</li> <li>- Fleet technological improvement</li> </ul>
Other	<ul style="list-style-type: none"> <li>- Corporate governance</li> <li>- Sourcing strategy for aircrafts and components</li> </ul>

Table 4: Sustainability topics recommended by stakeholders in GRI research

### **3. RESEARCH FRAMEWORK**

This study is conducted based on the publicly available sustainability reports of the selected companies. Qualitative research method is used for analyzing the data. In this section of the thesis, reasons for choosing qualitative research method, data collection criteria, research questions and method of data analysis are explained.

#### **3.1 Qualitative research**

Qualitative research is a broad umbrella that covers a wide range of different, even conflicting techniques and philosophies. It includes varieties of techniques and philosophies that are mainly used to examine people's experience in details (Hennink, Hutter, & Baile, 2011; Silverman, 2001). Qualitative research method is inductive in nature and can be conducted by using different research methods and research strategies. Qualitative research focuses on persons' lives, behaviors, organizational functioning, social moments and other phenomena. There are many valid reasons for conducting qualitative research. According to Strauss & Corbin (1990) qualitative research method gives the ability for the writer to step back and critically analyze situations, recognize the tendency towards bias, think abstractly, provides flexibility and openness to helpful criticism, allows sensitivity to the words and actions of respondents and gives a sense of absorption and devotion to the work process.

This study is conducted by using qualitative content analysis. Qualitative content analysis is one of the numerous research methods used for analyzing

the text. The goal of the qualitative content analysis is to provide knowledge and understanding of the process under studying by analyzing the content or contextual meaning of the text. (Hsieh & Shannon, 2005) Content analysis is widely used in understanding sustainability research and for determining the extent and nature of sustainability reporting. (Fagerström, 2016; Bowam, 1982). In this study, content analysis is conducted in understanding the materiality issues as outlined in the sustainability reports of fifteen different airlines.

### **3.2 Data collection**

In order to study the current practice of materiality assessment in the airline industry and material issues identified by those airlines, fifteen different airlines reports' materiality assessment part were studied in depth. Big international passengers carrying airlines were selected in this study. Cargo and military airlines were excluded since they have slightly different material issues and have different revenue models. Most of the passenger carrying airlines publish sustainability and other reports frequently, which might not be the case in cargo and military airlines. Sustainability report based on GRI G4 guidelines were selected as it is the most used sustainability reporting guideline. The latest available sustainability reports of the airlines with materiality section were selected in this research. In conclusion, airlines were selected based on the following listed criteria:

1. The airline is a passenger-carrying airline operating in multiple countries.
2. Airline has publicly available sustainability report in PDF form.
3. Airline's report is based on GRI G4 guidelines.
4. Airline's report contain section for materiality assessment.
5. Their latest report is published in the year 2014-2016.

Most of the airlines were selected from the GRI database and those reports not included in the GRI database were collected by using google search. To give the geographical prospect on the materiality assessment no country was repeated. There might be many common sustainability issues faced by companies operating in the same country. Since, one of the research aim of this study was to identify the material issues of the whole airline industry; no country was repeated in the research process. In table 5 the name and country of origin of the airline is presented.

Airlines	Country
Aeromexico	Mexico
Air France-KLM	France
Cathay Pacific	Hong Kong
China Airlines	China
Delta Airlines	USA
Eva Air	Taiwan
Finnair	Finland
Korean Air	Korea
Latam Airlines	Chile
Lufthansa	Germany
SAS	Sweden, Denmark and Norway
Singapore Airlines	Singapore
Swiss Air	Switzerland
Thomas Cook Group	UK
Turkish Airlines	Turkey

Table 5: List of airlines selected for the research and their respective country of origin

### 3.3 Research questions

This study aims to answer the three major research question in order to understand the materiality assessment procedure and material issues in the airlines. The *first research question* for this study is: How is materiality assessment carried out in the airlines? The purpose of this research question is to find the overall materiality assessment process as outlined in the sustainability report of the selected report. By understanding the process, the writer aims to recommend how the process can be made more transparent and beneficial. The *second research question* is what kind of stakeholder groups and stakeholders do airlines engage in which stage of materiality assessment process. Similarly, the medium of stakeholder engagement used by airlines is also examined. The *third and final research question* is demonstrated as follows:



what are the identified material issues by airlines. This question aims to point out the major sustainability issues identified by the airlines. Here not only the similarities and differences between the issues are identified but also the groupings of issues under certain themes are presented.

### **3.4 Data analysis**

In this study, only the materiality assessment part of the report was studied. In order to understand the materiality in airlines in depth, the study was broken into many different parts. Companies update materiality in different time intervals. Some companies update annually whereas some companies update in two-three years' period. In order to understand these phenomena in the selected airline reports; time of materiality assessment, frequency of update and general definition of the materiality was analyzed firstly. GRI G4 highly recommends using materiality matrix in the materiality section, in order to find out if that recommendation is followed by the selected airlines, the materiality matrix part of the report was studied.

Stakeholders are an important part of the materiality assessment. In order to answer the second research question regarding stakeholder engagement, different stakeholder groups engaged in the process and method of communication were evaluated in this study. GRI G4 has four different steps of materiality assessment namely identification, prioritization, validation and review. Stakeholder engagement was further investigated based on which stages companies engage with their stakeholders. In the last part of analysis, identified material issues are studied and divided into different sub category and themes. In summary, the following aspects of materiality assessment were examined in this study:

1. Information regarding the time, frequency and definition of materiality assessment.
2. Use of materiality matrix.
3. Level of information given about the materiality assessment process.
4. Different stakeholder groups engaged in the materiality assessment process.
5. Stage of stakeholder engagement.
6. Method of stakeholder engagement.
7. Number of material issues outlined in the report.
8. List of major material issues.

## 4. RESEARCH FINDINGS AND ANALYSIS

### 4.1 General findings

Most of the analyzed carriers provide information about the year in which the materiality assessment was updated. Out of fifteen airlines, twelve provide such information. Only Aeromexico, Swiss Air and Turkish Airlines do not provide information regarding the time the materiality assessment was conducted or updated. Among the airlines that mention the update on date of materiality assessment, most of them updated it in the year the report was prepared i.e. 2015. Only Cathay Pacific and Singapore Airlines updated their materiality assessment in 2013/14. Eight out of the fifteen airlines present their materiality matrix in their materiality assessment, highlighting the issues that are important for the stakeholders and the issues important for the company.

Very few analyzed airlines had materiality definition in the materiality assessment. Only Cathay Pacific, Lufthansa and Swiss Air define materiality and what material issues means for the company in their materiality assessment. Cathay Pacific considers an issue to be material when it substantially affects their long-term commercial and operational viability. Whereas, Lufthansa defines material issues as the issues which the Lufthansa's business activities have a significant social impact, and which influence the stakeholders' perception towards the company. According to Lufthansa, material issues should influence the group's ability to generate financial and non-financial value over the long term. It also takes into consideration if the issues are demanded by sustainability standard and regulations. In case of

Swiss Air, an issue is considered material based on the risk imposed by the issues, stakeholder dialogue and the view of various standard setters.

## 4.2 Materiality assessment process

When it comes to disclosing the materiality assessment process, airlines provide varying degree of information. A materiality process generally should contain information regarding how the company started accessing the material issues and what issues by which process/method were selected to be the key material issues and reported. Most of the airlines provide some basic information regarding their materiality assessment process. Cathay Pacific and SAS are the only analyzed airlines that do not have any information regarding their materiality assessment process. Aeromexico, Air France, Delta, Finnair, Singapore Airlines, Thomas Cook have provided very basic level of assessment process. Whereas, China Airlines, Eva Air, Korean Air, Latam Airlines, Lufthansa, Swiss Air and Turkish Airlines have explained the materiality assessment process thoroughly by using flowchart or text explanation and in some cases both flowchart and text explanation.

GRI G4 is the most commonly used guidelines by the airlines in materiality assessment process. Only Thomas Cook, Singapore Airlines, Swiss Air and Lufthansa do not mention about the guidelines they follow for materiality assessment process while the remaining analyzed airlines conduct materiality analysis following the guidelines recommended by GRI G4. Some airlines also use other guidelines apart from GRI G4 in materiality assessment process. For example, Cathay Pacific uses AA1000APS social standard, China Airlines uses AA1000SES standard, EVA Air considered the research done by Sustainability Accounting Standards Board (SASB), The Initiative for Responsible Investment (IRI) and Governance & Accountability Institute and Korean Air followed the ISO 26000 standard. Table 6 outlines the different guidelines used by airlines in materiality assessment other than GRI G4 guidelines.

<b>Airlines</b>	<b>Guidelines and standards</b>
Cathay Pacific	AA1000APS social standard
China Airlines	AA1000SES
Eva Air	Research findings of SASB, The initiative for responsible investment and Governance and accountability standards.
Korean Air	ISO 26000

Table 6: Different guidelines and standards used by airlines in materiality assessment

### 4.3 Stakeholder engagement in materiality assessment process

Different stakeholders are engaged in the materiality assessment process, in different stages of the process in the analyzed reports. All the airlines mention about the stakeholders' engagement in the materiality assessment process. Some airlines such as Aeromexico, China Airlines, Delta, and Swiss Air provide detail information regarding the stakeholder engagement. Whereas, SAS, Singapore Airlines, and Finnair present very limited information regarding the stakeholders' representation in the materiality assessment process. In case of China Airlines, stakeholder identification was part of the materiality assessment process.

All the studied airlines engage with the stakeholders either in material issues identification or in prioritization stage. Only Korean Air engaged with its stakeholders in both issues identification and prioritization stage. Turkish Airline's materiality assessment does not indicate in which phase it engaged with its stakeholders. Aeromexico, China Airlines, Delta, Latam Airlines, Singapore Airlines, Swiss Air and SAS engaged with their stakeholders in the first phase of materiality assessment, material issues identification stage. The rest of the analyzed airlines; Air France, Cathay Pacific, Eva Air, Lufthansa and Thomas Cook engaged with the stakeholders in the second stage of materiality assessment process, which is prioritization of the important issues from the pool of identified material issues. Finnair only asked its stakeholders to review the prioritized issues. In table 7, airlines and stakeholder engagement stage is shown.

Stage of stakeholder engagement	Airlines
Identification	Aeromexico, China Airlines, Delta, Latam Airlines, Singapore Airlines, Swiss Air, SAS
Prioritization	Air France, Cathay Pacific, Eva Air, Lufthansa, Thomas Cook
Both identification and prioritization	Korean Air
Review of prioritized issues	Finnair
Not mentioned	Turkish Air

Table 7: Stage of stakeholder engagement in materiality assessment

Ten out of the fifteen analyzed airlines provide a list of stakeholders with whom they engaged during the materiality assessment process. SAS, Singapore Airlines, Finnair, Eva Air and Cathay Pacific have not mentioned about the stakeholder/stakeholder groups they have consulted for the materiality assessment process. The list of the stakeholder groups engaged in the materiality process, as stated by other ten airlines, is presented in the table 8 below.

<b>Airlines</b>	<b>Stakeholder group</b>
Aeromexico	Clients, Employees, Government authorities, Community, Civil society organizations, Chambers of industry, Partners, Suppliers, Shareholders
Air France	Employees, Customers, Corporates and NGOs
China Airlines	Employees, Customers, Investors, Government, Partners, Community and The media
Delta Airlines	Investors, Customers, Employees, Supply chain , Government, NGOs and Communities
Korean Air	Employees, Customers, Business Partners, NGOS, Academia and sustainability management experts
Latam Air	Executives, Employees, Clients, Suppliers, Market analysts and Specialist in the aviation sector
Lufthansa	Passengers, Business customers, Partners, Financial analysts, Investors, NGOs, Representative from political and regulatory bodies, Media, Sustainability experts and Employees
Swiss Air	Financial community, Clients, Employees, Political and legal entities and Civil society ( General public, Media, NGOs, Academia)
Thomas Cook Group	NGO, Staff and Industry experts
Turkish Airlines	Academic Institutions, NGOs, Customers, Employees, Investors, Financial partners, Shareholders, Government Regulators, Local authorities, Certification bodies, Communities

Table 8: Stakeholder group of different airlines

Most of the airlines report about the communication method used in materiality assessment process. Eleven airlines, except Cathay Pacific, Eva Air, Finnair and Thomas Cook have mentioned about the communication methods. Survey is the most common method of communication between the airlines and the stakeholders. Swiss Air and SAS are the only airlines using other channels except survey like conference, publication, interviews, workshops and direct dialogue. In addition to survey, Aeromexico uses social networks, telephone, mail, internal portal, newsletter, meetings etc. Delta also mentions phone call as

an engagement tool. In Latam Airlines, interviews, meetings and panel discussions are used in addition to the survey carried out by the company. Singapore Airlines mentions about feedback as an example of stakeholder dialogue tool.

#### 4.4 Material issues outlined in the reports

Companies have presented different issues as material issues in their materiality analysis. Most of the companies have grouped the identified issues under different themes such as social, environmental and economic. Only Aeromexico has not stated the material issues in its material analysis but all the other fourteen airlines have presented their material either issues in materiality matrix or just listed the issues. There is great contrast in the number of issues identified as material issues by the airlines. Singapore Airlines has the least i.e. seven identified issues whereas Eva Air, which has most identified issues. There is difference in the way the airlines list their identified material issues. Most of the airlines list the issues under certain themes and list the related issues; however Latam Airlines, Lufthansa, SAS, Singapore Airlines and Thomas Cook have listed the different material issues without any theme. In table 8, airlines and number of identified is presented.

Number of identified issues	Airlines
0	Aeromexico
1-10	Latam Air, Swiss Air, Singapore Airlines
11-20	Finnair, Lufthansa Air, Cathay Pacific, Delta Airlines, Thomas Cook
21-30	Air France, Turkish airlines, SAS
31 and above	Eva Air, China Airlines, Korean Air

Table 9: Number of identified material issues by airlines

Moreover, major material issues stated in the materiality assessment are presented in table 10. For the companies whose material issues are presented in the matrix, only the issues that are most important for the companies and stakeholders are listed in the table. For the full list of material issues, refer to the appendix no one. The material issues are further divided as environmental, social, economic issues. Governance issues are included as key material issues by Air France, Delta, Singapore Airlines, Swiss Re and Turkish Airlines. Eva Air has separate category of sustainable development issues listed in the key material issues.

Airlines	Social issues	Economic issues	Environmental issues	Other issues
Aeromexico	None	None	None	None
Air France	-Passenger health -Training -Health and safety at work -Customer relation	-None	-Ground energy -Fleet development -Biofuel -CO2 reduction	<i>Governance issues</i> -Risk management -Safety and security -Ethics
Cathay Pacific	-Customer safety	-Getting right when things go wrong -Increasing two way engagement with stakeholders	-CO2 emission -Climate change -Alternative fuel -Impact on biodiversity - Water/resource use -Sustainability issues in supply chain -Noise	None
China Airlines	-Occupational health and safety -Employee benefits and remuneration -Labor rights	-Flight safety -Customer service -Fleet management and planning -Risk evaluation and management	None	None
Delta Airlines	-Customer service -Customer safety and security -Community support and engagement -Supply chain management	-None	-Compliance -Climate change -Waste -Energy use	<i>Governance issues</i> -Employee satisfaction and safety -Labor relations -Financial performance
Eva Air	-Charitable activity -Remuneration, welfare and career development. -Customer privacy and confidentiality measures	-Procurement policies and practices -Financial performance	-None	<i>Sustainable development</i>  -Ethical and honest operation management -Flight safety maintenance -Labor rights

				protection
Finnair	<ul style="list-style-type: none"> <li>-Employee safety</li> <li>-Competence development</li> <li>-Wellbeing and, diversity and equality</li> <li>-Customer wellbeing and safety</li> <li>-Customer satisfaction</li> <li>-Punctuality</li> </ul>	<ul style="list-style-type: none"> <li>-Financial performance and future competitiveness</li> <li>-Local economic impacts</li> </ul>	<ul style="list-style-type: none"> <li>-Fuel efficiency</li> <li>-Energy and GHG emission</li> <li>-Environmental legislation and regulation</li> <li>-Efficient air traffic management</li> <li>-Biodiversity</li> </ul>	<ul style="list-style-type: none"> <li><i>Ethical business conduct</i></li> <li>-Code of conduct</li> <li>-Anti-corruption and anti-bribery policies</li> <li>-Human rights</li> <li>-Purchasing practices and supply chain</li> </ul>
Latam Airlines	<ul style="list-style-type: none"> <li>-Health and safety</li> <li>-Talent management-</li> <li>Controlling staff turnover</li> <li>-Government relations</li> <li>-Fair competition</li> <li>-Specific regulatory matters</li> </ul>	<ul style="list-style-type: none"> <li>-Economic and financial sustainability</li> </ul>	<ul style="list-style-type: none"> <li>-Eco-efficient management</li> <li>-Mitigating climate change</li> <li>-Noise reduction</li> </ul>	-None
Korean Air	<ul style="list-style-type: none"> <li>-Compliance with fair trade</li> <li>-Safety and security</li> <li>- Communicative corporate culture</li> <li>-Customer communication</li> <li>-Operational safety</li> </ul>	<ul style="list-style-type: none"> <li>-Enhancing brand and corporate image</li> <li>-Upgrading financial and non-financial risk management</li> <li>-Continued enhancement of profitability</li> </ul>	<ul style="list-style-type: none"> <li>-Companywide identification and management of environmental risks</li> <li>-Controlling GHG emission</li> </ul>	-None
Lufthansa Air	<ul style="list-style-type: none"> <li>-Service and customer orientation</li> </ul>	<ul style="list-style-type: none"> <li>-Sustainable innovation, research and development</li> </ul>	<ul style="list-style-type: none"> <li>-Climate protection</li> <li>-Energy and resource management</li> </ul>	-None
SAS	<ul style="list-style-type: none"> <li>-Work conditions</li> <li>-Business ethics and anti-corruption</li> <li>-Diversity and equality</li> <li>-Sustainability</li> </ul>	-None	<ul style="list-style-type: none"> <li>-Emission</li> <li>-Noise</li> <li>-Waste</li> </ul>	-None



	in supply chain			
Singapore Airlines	-Customer focus -Employees -Safety	-Shareholders -Suppliers	-Environment	-Governance
Swiss Air	-Funding longer lives -Partnering for food security - Supporting for food security -Empowering our people	-None	-Climate change -Managing sustainability risks	<i>Governance issues</i> -Ensuring good governance and compliance
Thomas Cook	-Child protections -Supply chain management -Investors -Employee welfare	-None	-Water scarcity -Aircraft emission -GHG -Energy consumption -Resource efficiency	-None
Turkish Airlines	-Safety and security -Customer expectations -Creating values for employees -Contributing for society	-Economic footprint -Contribution to economic growth -Local development at destinations	-Climate change -Fuel efficiency -GHG emissions -Fleet modernization -Sustainable biofuels -Waste -Noise -Water	<i>Governance issues</i> -Corporate governance -Ethics and good conduct -Compliance -Risk management

Table 10: List of key material issues identified by the airlines

## 4.5 Analysis of the report content

### 4.5.1 Growing but immature phenomena in airlines' sustainability reporting

The materiality assessment of the selected reports shows different pattern in the materiality assessment process and methods. Although all the selected sustainability reports were based in the GRI G4, there is noticeable differences in the way the airlines carried out their materiality assessment. Most of the analyzed reports provided the year in which the last materiality assessment was carried out but most of them did not mention about the time for the next materiality assessment or frequency of the materiality assessment carried out. Since the material issues are changing with the change in the regulation, politics, and other factors, constant update of material issue is important for both company and the stakeholders to make informed decisions.

A materiality matrix enables a company to decide which sustainability issues to report and invest in. The matrix plots the sustainability issues in two dimensions: on the X-axis issues important and attractive for the company are plotted, whereas, in the Y-axis the issues important to the stakeholders are plotted (FT Lexicon, 2017). Twelve out of fifteen airlines use GRI G4 framework for materiality analysis. Materiality matrix is an important aspect of GRI G4's framework that visually presents the issues that are important for the company and the stakeholders. Only eight airlines used materiality matrix in their sustainability reporting. Materiality matrix gives an overall snapshot of the key issues identified in the materiality assessment process. Moreover, materiality matrix reduces the time and effort needed to read the materiality assessment in the sustainability reporting. Therefore, the use of materiality matrix in the airlines sustainability reporting should be increased.

#### 4.5.2 Lack of uniformity in the materiality assessment disclosure

GRI suggests a four-step process for determining material issues; identification, prioritization, validation and review. Following each step ensures completeness and transparency in identified material issues. Less than half of the analyzed airlines' reports explain in detail about their material assessment process. Most of the companies provide either vague information or no information at all regarding the materiality assessment process. The reports prepared without detail information on the materiality assessment process lacked credibility regarding the identified materiality issues. Stakeholders also get confused if their concerns were taken into consideration when only the final issues are mentioned in the report. Moreover, combination of flowchart and text explanation provides clear overview for the reader about the materiality assessment process. Reports with such combined explanation are easy to understand and follow.

#### 4.5.3 Varying level but common method of stakeholder engagement

The airlines' report also provide varying degree of information about stakeholder engagement in materiality analysis. Only four airlines provide extensive disclosure on their stakeholder engagement process. Many airlines engage with stakeholders in the first stage of GRI's materiality assessment process. Less than half engage with stakeholders in the issue prioritization step. Finnair engaged with stakeholders for reviewing the prioritized issues. Only Korean Air engaged in both identification and prioritization steps. None of the airlines' report explains reasons for engaging with stakeholder in particular stage. Only ten airlines provided information regarding stakeholder groups that they engaged with in the materiality analysis. Data shows that most of the airlines engaged with similar kinds of stakeholder groups. Employees, customers NGOs, government and community are the most common groups of stakeholders that the companies engage with. Very few airlines engage with

stakeholders like passengers, media or academia. Here also, no explanation is provided by the airlines why particular groups of stakeholders were chosen in the materiality analysis process.

Among the eleven airlines that report on their communication method, only two airlines use other methods rather than survey. Those two airlines engage stakeholders through conference, publication, interviews, workshops and direct dialogue. Lack of such two way communication methods in most of the airlines shows that, stakeholder engagement in airlines is limited to one-way communication and lacks active participation and feedback of the stakeholders in the materiality analysis process. In the materiality matrix, the issues important to different stakeholders are presented very positively. None of the companies' report mentions about the problem in selecting the issues important to stakeholders. In reality, different groups of stakeholders have different issues that are important. In that case, proper method and procedure is needed to list the issues that are important to different stakeholders.

#### **4.6 Analysis of material issues and their presentation**

There is huge difference between the airlines when it comes to the number of identified material issues. Generally, the identified material issues are related to environmental, social and economic aspects. However, some airlines have further classified the material issues into governance issues and sustainable development issues. Among the five airlines, which have identified governance issues, there is no similarity on the identified governance issues. Air France has identified risk management, safety, security, and ethics as governance issues. Whereas, Delta Airlines lists employee satisfaction and safety, labor relations and financial performance as governance issues. Singapore airlines and Swiss Air identify governance and ensuring good governance and compliance respectively. Corporate governance, ethics and good conduct, compliance and risk management are the identified governance issues for Turkish Airlines. Although in most of the companies, the identified governance issues are related to ensuring good governance, good conduct and ethics. Some of the reports also outline risk management and labor relations, financial performance, safety and security in the governance issues. This shows that there is no uniform understanding of the governance among the different companies.

Fourteen airlines that have listed material issues in their sustainability report all have listed material issues related to environment. Environmental issues are not identified as key material issues in the materiality matrix of China Airlines and Eva Air. GHG emissions, energy efficiency and waste reduction are the most common environmental issues identified by the companies. Similarly, many companies also have listed noise reduction as a major issue. Few airlines also mention about impact on biodiversity, supply chain, environmental legislation and regulation, managing environmental risks and fleet modernization. GHG

emission, noise reduction and waste and energy reduction seem to be the key environmental concerns for the airlines.

All the fourteen airlines that have listed material issues also have listed issues related to social issues. There is considerable difference in the number and agenda of social issues identified as key sustainability issues of the companies. Passengers' and employees' health and safety are the most common social issues identified in the airlines' reports. Customer service, investor relation, community support and engagement are also mentioned in some airlines' reports. Ethics, compliance with fair trade, charity, non-discrimination, and government relations are identified as key social issues by a few airlines. Some of the airlines' social issues are similar to the governance issues of the other airlines. Moreover, Eva Air has separated ethical and honest operation management, flight safety and labor rights as sustainable development issues.

Nine airlines mention economic issues as key material issues in their report. Among four different identified themes, economic issues have the least similarity between the airlines. Financial performance, risk management, innovation and research, contribution to economic growth are some of the most common economic issues found. China Airlines and Eva Air list flight safety, customer service management, labor right protection also as economic issues, which are identified as social issues by most of the other airlines. Cathay Pacific on the other hand has mentioned very abstract issues such as *getting it right when things go wrong* and *increasing two-way engagement with stakeholders as financial issues*.

## 5. Discussion

### 5.1 Identified framework

Although the concept of materiality is increasingly seen as an important element in sustainability reporting, preliminary analysis of the sustainability reports of fifteen different airlines shows there are significant differentiation to the degree those airlines are embracing materiality in their sustainability reporting. The analysis shows that many airlines are in the initial stage of materiality and sustainability as a whole. Since, sustainability reporting itself is not mainstream phenomena in the airline industry, lack of uniformity in the materiality analysis in the airlines was found as expected. Although, all of the selected airlines followed GRI G4 guidelines, many airlines have developed their own approach within GRI G4 guidelines. The result of the analysis of materiality assessment of the airlines' report shows no evidence that the airline industry has adopted a sector specific approach to the definition and determination of materiality as proposed by Eccles et al. (2012).

Sustainability reporting in airlines is increasing recently. GRI remains the main guidelines used in sustainability reporting for airlines like in other industries. The studied conducted focusing on the materiality assessment section of the GRI reports of fifteen different airlines shows that many airlines fail to carry out the materiality assessment as recommended by the GRI G4 guidelines. Materiality is highly emphasized by GRI in its latest GRI G4 guidelines. The general process of materiality assessment process in GRI G4 guidelines follow four different steps; issue identification, prioritization, validation and review. Many airlines report do not explain each step in details, which makes the whole

materiality assessment process vague and less transparent. In order to improve the materiality assessment process, airlines need to explain sufficiently to the stakeholders all the issues and process in the report.

Similarly, the visual presentation of the materiality assessment process and the identified issues should be improved in the sustainability reports. GRI recommended materiality matrix, with the issues important for companies on X- axis and issues important for stakeholder issues in Y-axis gives clear information to the reader about the outlined issues. Moreover, grouping of the issues as *very important, important and less important* helps to categorize the material issues when the companies have large number of identified issues. Although, more than half of the analyzed companies used materiality matrix in their report, materiality matrix still has not become a mainstream practice in airlines' sustainability report. Companies have presented matrix in different formats and designs. Such lack of uniformity makes comparison between the companies difficult.

## 5.2 Materiality assessment process

Sustainability reporting is one of the key elements for corporate accountability and transparency for companies. Therefore, explaining the materiality assessment process in detail is not only important for the materiality assessment part but to increase the accountability and transparency of the whole report. From the analyzed reports, it can be found that most of the airlines are doing some level of reporting on their materiality assessment but there is plenty of room to improve in this part. Making materiality assessment process transparent is not only beneficial for readers and stakeholders but reporting companies can use the materiality assessment process to improve their sustainability reporting in future by pointing out the flaws in the process. Among the 250 largest companies in the world that define material topics in sustainability report, 41 percent do not explain the process used in identifying the material issues (KPMG, 2014). In this research, also less than half the airlines provide specific information about their materiality assessment process.

Most of the companies conduct materiality analysis based on GRI G4 guidelines only; using guidelines other than GRI G4 can be beneficial for the reporting companies in many ways. Although, using different guidelines is time and resource consuming, it can give broader views on the subject matter and make the whole process easier. Only China Airlines, Cathay Pacific and EVA Air use other guidelines along with GRI G4. However, those companies do not clarify the reason for having extra guidelines other than GRI G4. Many international organizations now provide the possibility to use different guidelines together for the reporting company. GRI and ISO, GRI and UN global compact are some examples of such. Airlines can benefit by using such conjunction service provided by different organizations.

Identification, prioritization, validation and review are the four major steps outlined in the GRI G4 guidelines and other guidelines such as IR. These four steps can be broken down into sub-steps as per the need of the company. KPMG (2014) suggests seven phase guideline that is based on the GRI G4 four step guidelines. Phase 1 of the guidelines, defining purpose and scope of the materiality seems to be the common problem for the most of the analyzed airlines. Many of the airlines' report fail to align the materiality assessment process with sustainability strategy and wider business strategy. In order to successfully carry out the materiality assessment, the airlines should start by defining what materiality means to their organization, which should answer the importance of topic to stakeholders and social, economic, or environmental impact in the value chain among other things. Similarly, the airlines' report is also missing organizational scope of material topics. It is recommended to consider regions or countries of operations to be assessed in the materiality process, define the business unit involved in the assessment, define the boundary of material assessment by considering the material topics across the entire value chain.

### **5.3 Identified material issues**

The difference in the number of identified material issues shows that airlines' approach to materiality is not uniform. The number of identified issues can vary between the airlines by many factors including their area of operation, process of materiality assessment or stakeholder groups involved in the process. Some airlines have identified a framework to distinguish between the material issues and key material issues; this makes it easier for the reader to understand the airline's approach to materiality. Similarly, the grouping of issues under different themes such as environmental, social and economic themes makes it easier for the outsider to understand the material issues. Although, grouping of issues is highly recommended for airlines having large number of material issues, airlines should group the issues based on theme irrespective of number of issues.

As outlined in the finding section, common environment related topics are outlined in the report. Most of the issues outlined are related to reducing emission, waste and noise. These issues are similar to the issues found in the study of Cowper-Smith & Grosbois (2011). Based on the similarity it can be argued that, airlines' materiality assessment has been successful in identifying the issues that matter the most. More study and research is needed to prove this similarity in general. In case of social issues, the identified materials resemble similarities in some common issues but there are also notable differences among those identified issues.

Labor and customer issues are common issues outlined in the social issues. Charitable activities, fair competition, supply chain management child

protection, food security are some of the social issues outlined in different airlines' report. Such differentiation might have been caused by their geographical area of operation and stakeholders' concern. In contrast to GRI (2013) recommended economic topics for airlines such as carbon offsetting and economic direct and indirect benefits, pure economic issues have not found place in the key material issues identified by the airlines. Since most of the airlines have separate reports or sections on financial performance, those issues could have been given less priority in the materiality analysis.

#### 5.4 Best practice in the companies

Materiality part of the airlines' report differs significantly in different ways, as mentioned earlier. Although, the writer could not choose one airline's report as outstanding report based materiality assessment, some airlines materiality assessment part were more clear and detail than the others. Although there are many flaws and lacking, China airlines, Eva air and Lufthansa air have better materiality section compared to other analyzed airlines' report. The materiality section of their report, explain in details the materiality analysis process, list the stakeholders involved in the process and present the material issues in materiality matrix, which make their materiality process better than other analyzed reports. In table 11, best practices of analyzed airlines are mentioned.

<b>Information on different section</b>	<b>Airlines</b>
Materiality definition	Cathay Pacific, Lufthansa and Swiss Air
Materiality assessment process	China Airlines, Eva Air, Korean Air, Latam Airlines, Lufthansa, Swiss Air and Turkish Airlines
Use of different guidelines	Cathay Pacific, China Airlines, Eva Air and Korean Air
Stakeholder engagement	Aeromexico, China Airlines, Delta Airlines and Swiss Air.
Presentation of material issues ( Materiality matrix and themes)	Korean Air, Air France, China Airlines, Eva Air

Table 11: Airlines and their strong aspects on materiality disclosure

#### 5.5 Contribution, limitation and future research

This study is one of the few studies done in materiality assessment in sustainability reporting. As the importance of materiality is highly highlighted in different reporting guidelines and frameworks, the findings of this research will be highly valuable to the persons or organizations interested in sustainability reporting. Since the study is based on airlines' sustainability



reports, undoubtedly airlines will find this study helpful in updating their materiality part in upcoming years. The literature part of the study presents recent research on sustainability reporting, materiality, materiality assessment in different guidelines. This part will be useful for anyone who is interested in understanding the materiality in sustainability reporting.

As with any research, this research has many limitations. Firstly, only fifteen airlines were chosen for this study. The chosen airlines may not represent the exact state of sustainability reporting and materiality assessment for the whole airline sector. Similarly, only GRI G4 materiality reports were selected in this research, the inclusion of reports based on other guidelines such as SASB, IIRC would have expanded the scope of this study. Although, airlines from different geographical locations were selected for this study, no comparison based on the geographical region was made in this study.

Very little research has been done regarding materiality in sustainability reporting. Therefore, there are many research areas that can be explored in this research area. The present condition of materiality assessment of airlines or other industry based on different sustainability reporting guidelines is one area of future research. Moreover, study materiality assessment process in one company, following all the steps from the beginning to end could provide interesting insights about the materiality assessment process. Since stakeholders are crucial part of materiality assessment, separate research could be conducted focusing on the stakeholders' views about the process. Similar kind of research can be done in small and medium sized companies to find out how they respond the particular phenomena.

## 6. CONCLUSION

As more and more companies are publishing their sustainability report, it is important to consider that such reports fulfill the overall aim of reducing the environmental, social and economic impacts of their actions and policies. The aim of this thesis was to study the materiality analysis conducted in airlines' sustainability reports, to find the existing patterns of materiality assessment. Materiality analysis process and stakeholders' involvement in materiality analysis were the focus of this thesis. For that purpose, fifteen airlines' sustainability reports based on GRI G4 were selected and materiality parts of those reports were studied in depth.

Materiality is a relatively new practice in non-financial reporting, but its importance in sustainability reporting is ever increasing. Both the theoretical and empirical research shows that, materiality can significantly increase the quality of the sustainability reporting. When incorporated effectively materiality can be a great tool to manage stakeholders' concern and define the reporting scope, focus area and overall sustainability strategy. The airline industry is set to grow rapidly for next coming decades. The growing industry also needs to effectively response the sustainability issues it is facing now and in future. This thesis has given some suggestions, which the airlines can use to improve sustainability reporting and make their sustainability actions and strategy more effective.

This study has shown different patterns in materiality analysis of the selected reports. Airlines' report lack transparency in materiality analysis. Most of the reports also fail to define materiality and convey readers why they are carrying

out materiality analysis. Although, the reports are based on the same guideline and have similar business operations, there is noticeable difference on the process, stakeholder engagement in materiality analysis. Having said that, many airlines reports have some good section of materiality analysis that other airlines can study to improve their own report on that section. Making all the process transparent, strictly following the reporting guidelines, engaging stakeholders in different phase of materiality analysis and learning from each other can significantly improve the materiality analysis of the airlines.

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# APPENDICES

## Appendix 1: Materiality issues outlined in the report

Air France



Cathay Pacific

Tier 3	Tier 2	Tier 1	ECONOMIC
		●	Customer safety
		●	Getting it right when things go wrong
	●	●	Embedding sustainability in the business/risk management
	●	●	Increasing 2-way engagement with stakeholders
Tier 3	Tier 2	Tier 1	ENVIRONMENTAL
		●	CO <sub>2</sub> emissions/climate change/alternative fuel (Targets, IATA, AGD, EU ETS, Fly greener)
	●		Impact on biodiversity
		●	Waste/resource use
	●		Sustainability issues in supply chain
	●	●	Air quality
	●		Noise
Tier 3	Tier 2	Tier 1	SOCIAL
		●	Staff OHS
●	●		Community work/employee involvement
	●	●	Staff issues – benefits, training, retainment

● CX and Stakeholder views coincide   
 ● CX view only   
 ● Stakeholder view

## China Airlines

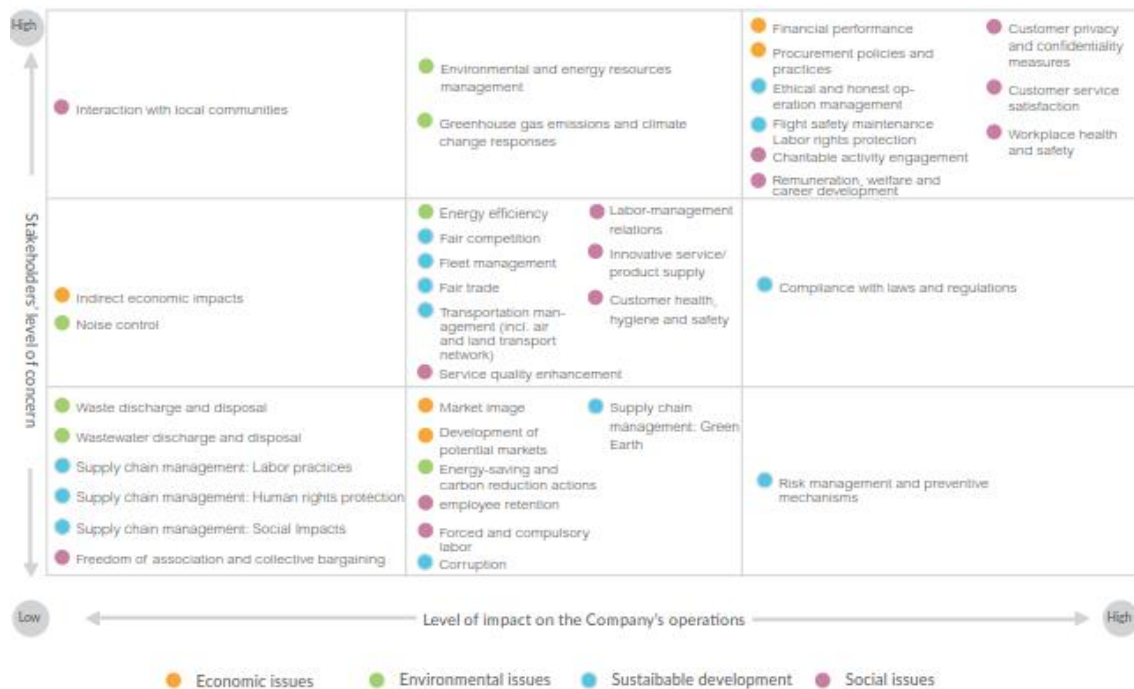
### Materiality Matrix



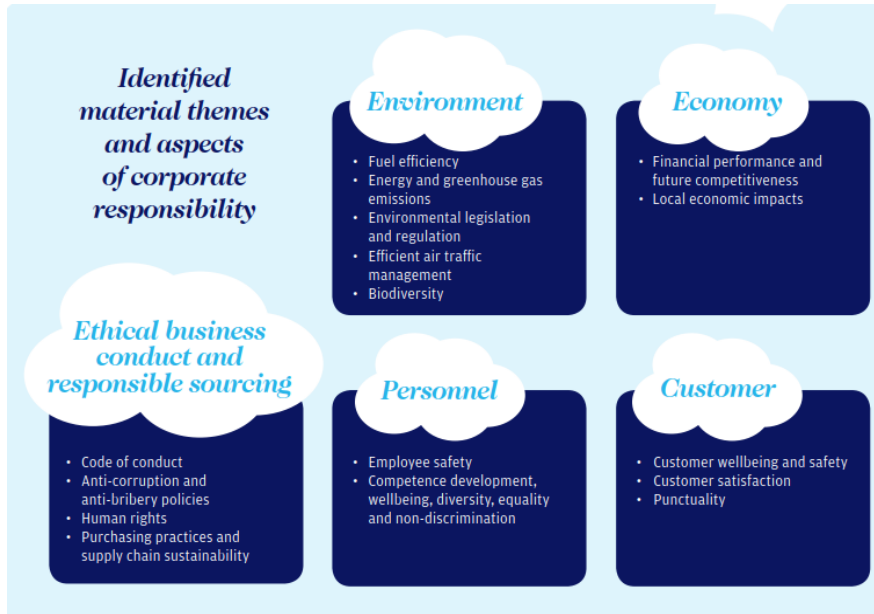
## Delta Airlines

2015 KPI MATERIAL ASPECTS	
<b>ENVIRONMENTAL KPIs</b>	
<ul style="list-style-type: none"> <li>Compliance</li> <li>Greenhouse Gas Emissions/Climate Change</li> <li>Waste</li> <li>Energy Use</li> </ul>	
<b>SOCIAL KPIs</b>	
<ul style="list-style-type: none"> <li>Customer Service</li> <li>Customer Safety and Security</li> <li>Community Support and Engagement</li> <li>Supply Chain Management</li> </ul>	
<b>GOVERNANCE KPIs</b>	
<ul style="list-style-type: none"> <li>Employee Satisfaction and Safety</li> <li>Labor Relations</li> <li>Financial Performance</li> </ul>	

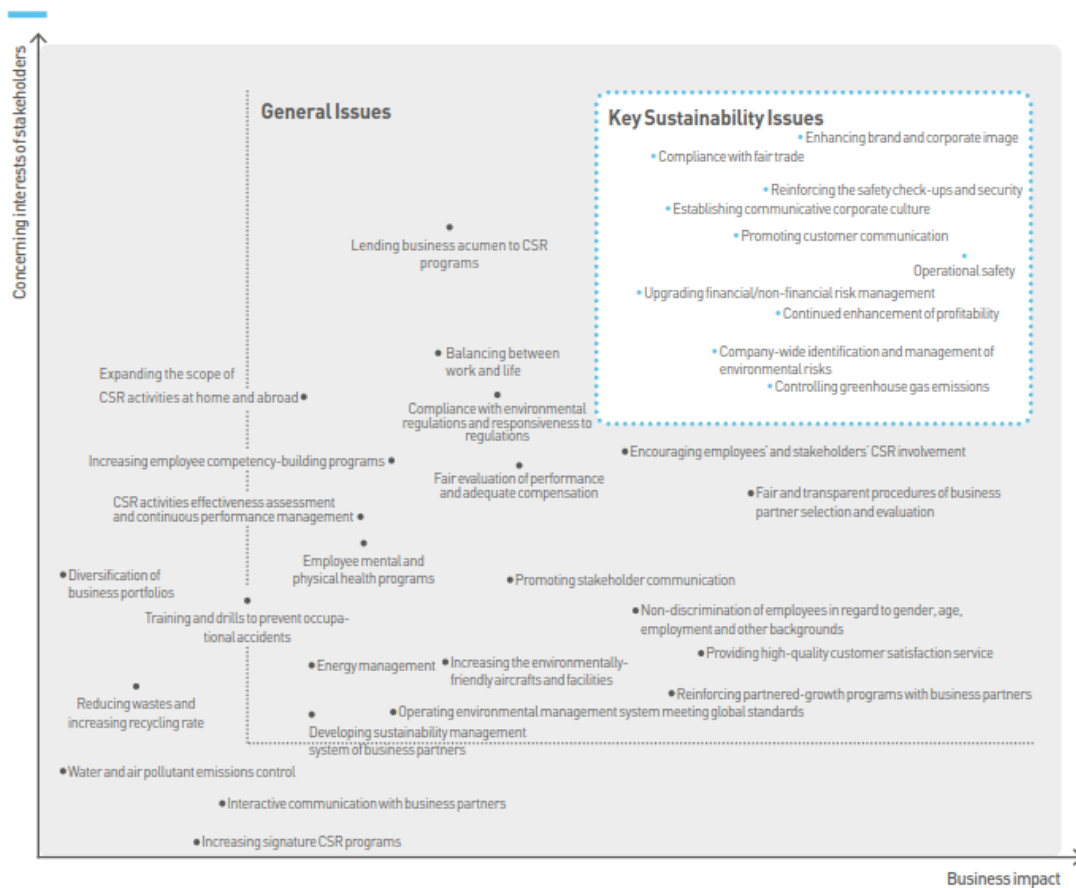
### Eva Air



### Finnair



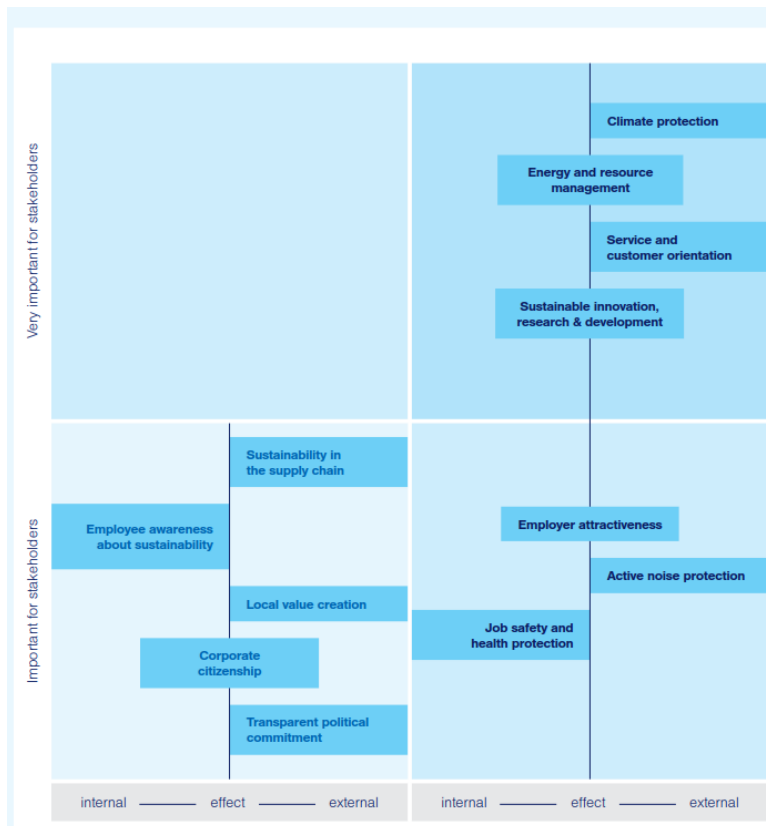
Korean Air



Latam Airlines

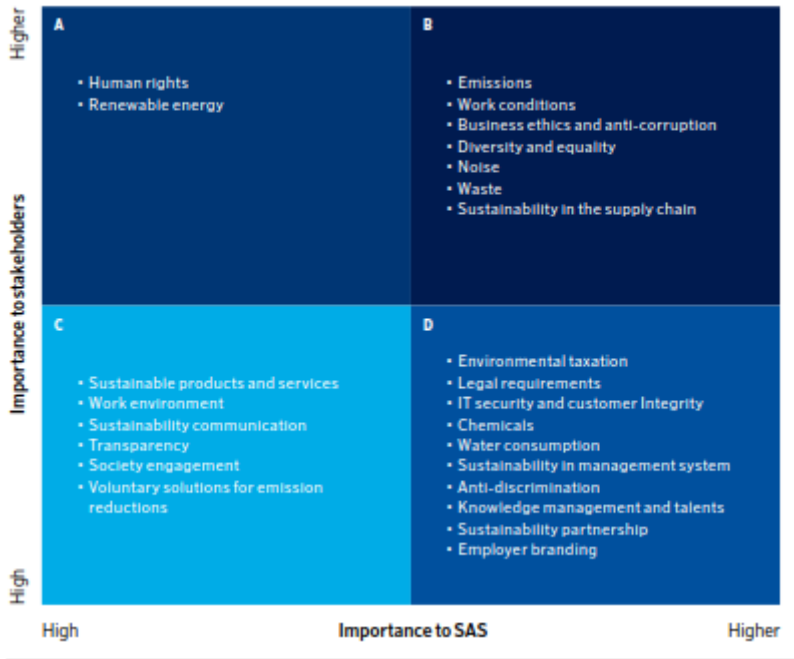
MATERIAL TOPIC	G.R.I ASPECT	LIMITS		INDICATOR <sup>1</sup>	CHAPTER <sup>2</sup>
		In the aspect material inside the organization?	In the aspect material outside the organization?		
Client connectivity and relations	Marketing communications	Yes	Yes (clients)	PR5	Clients
	Product and service labeling	Yes	Yes (clients)	PR7	
Health and safety in the air and on the ground	Occupational health and safety	Yes	Yes (clients and society)	LA6	People Safety
Talent management and controlling staff turnover	Employment	Yes	No	LA1	People
	Training and education	Yes	No	LA9	
Eco-efficient management	Energy	Yes	Yes	EN3 EN6	Environment
	Effluents and waste	Yes	Yes	EN23	
Climate change mitigation	Emissions	Yes	Yes	EN5 EN6 EN7 EN8 EN9 EN20 EN21	Environment
Noise reduction <sup>3</sup>	There is no related GRI aspect	-	-	-	Environment
Government relations, fair competition and specific regulatory matters	Anti-corruption	Yes	No	SO4 SO5	The Company
	Anti-competitive behavior	Yes	Yes (regulatory and government authorities)	SO7	
Economic-financial sustainability	Economic performance	Yes	Yes (investors)	EC1 EC2	Strategy
	Indirect economic impacts	Yes	Yes (suppliers, communities)	EC7 ECB	
Value chain	Supplier assessment for labor practices	Yes	Yes (suppliers)	LA15	The Company Environment
	Supplier human rights assessment	Yes	Yes (suppliers)	HR1	
	Supplier environmental assessment	Yes	Yes (suppliers)	EN33	

### Lufthansa



SAS

### SAS MATERIALITY ANALYSIS



Singapore Airlines

### Material Aspects of Singapore Airlines

 <p><b>Customer Focus</b> We are committed to offering our customers the best travel experience through product and service innovation, our modern fleet and extensive network</p>	 <p><b>Employees</b> We value our employees and care for their well-being and development</p>	 <p><b>Safety</b> Safety is an essential part of our operations and we constantly strive to improve our safety practices</p>	 <p><b>Environment</b> We are committed to environmental sustainability and ensure that our operations are carried out in a responsible manner</p>
 <p><b>Governance</b> We are committed to continually maintaining high standards of corporate governance, professionalism, integrity and commitment at all levels, underpinned by strong internal controls and risk management systems</p>	 <p><b>Shareholders</b> We maximise returns for long-term profitability, with the aim of creating sustainable shareholder value</p>	 <p><b>Suppliers</b> We treat our suppliers with respect and emphasise fairness in our relationships with them</p>	

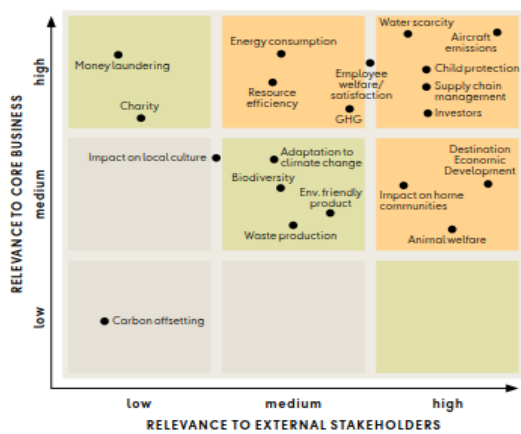
Swiss Air

### Key material issues

Based on the insights gained through this process, we currently consider the following sustainability or ESG topics as the most material in the context of our own business:

- Climate change:
  - Managing climate and natural disaster risk
  - Advancing sustainable energy solutions
- Funding longer lives
- Partnering for food security
- Supporting financial resilience
- Managing sustainability risks
- Empowering our people
- Ensuring good governance and compliance

### Thomas Cook Group



### Turkish Airlines

