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"INTEGRATED REPORTING AND ITS DETERMINANTS: AN EMPIRICAL ANALYSIS"

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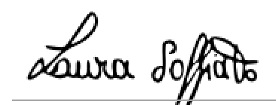

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ABSTRACT

The present study regards the Integrated Report (IR), the disclosure document which combines financial information with non-financial information. In particular, it will address, through an empirical research, the identification of the determinants in the adoption of integrated reporting and the impact they have on the probability of engaging in this accounting practice.
The topic of the analysis was chosen for the relevance it has in the debate about sustainability and corporate social responsibility (CSR), as demonstrated by several papers on the matter (see Kannenberg & Schreck, 2019; Girella, et al., 2019). Integrated reporting is one of the initiatives addressing the need of disclosing non-financial information on environmental, social and governance (ESG) performance and issues. The increasing attention of stakeholders on CSR and ESG matters has a crucial function in the development of guidelines on sustainability disclosure, among which integrated reporting (Girella, et al., 2019). Furthermore, national and international legislations underline the importance of the topic by requiring certain organizations to disclose on the subject. Nevertheless, Integrated Report remains a voluntary practice in all countries around the world, with the exception of South Africa. The situation described highlights the inadequacy of the sole financial information nowadays. Therefore, the objective is to investigate the motivations which impel organizations to conform to the <IR> Framework, the guidelines to prepare an Integrated Report. In addition, the aim is to address gaps in the study regarding integrated reporting determinants, pointed out in recent literature reviews by Vitolla, et al. (2019) and Kannenberg & Schreck (2019). Hence, the research questions are essentially two.
The first question concerns the determinants, identified in firm-specific characteristics, and the influence they may have on the adoption of integrated reporting. The second question refers to the country-related determinants, and whether they have a repercussion on the adopted voluntary disclosure method, and the magnitude of such effect. The formulated research questions are relevant in the actual business landscape. First of all, the <IR> Framework is a relatively recent initiative, with original aspects which distinguish it from the other sustainability guidelines. Moreover, integrated reporting entails a completely different and innovative approach to corporate strategy, which involves the consideration of how value is created through the six capitals (IIRC, 2020). In theory, the double focus on non-financial and financial performance should aim at sustainability. However, since it is not the only initiative on the subject, the rationale behind the choice of integrated reporting needs to be investigated. Therefore, the identification of determinants may be crucial to managers, as the latter may infer the circumstances in which issuing this document is convenient and expected by corporate

constituencies. Secondly, policy makers and standard setting bodies may be attentive to the determinants, in order to adapt guidelines and regulations to better support this reporting practice and foster the extension of its reach. In addition, the users of Integrated Report, for example shareholders, analysts and market participants, may appreciate the reasons why this disclosure document is adopted by certain organizations, for example as a legitimation strategy, or a signaling device. Lastly, this research will provide further support on the academic literature about the subject. Researchers may obtain evidence on the drivers of organizational behavior in the context of reporting decisions, and a basis for future improvements of the analysis.

The study will be structured into three chapters. The first one will explain the current situation regarding sustainability reporting. A list of reporting practices will be presented, highlighting their main characteristics. Consequently, the Integrated Report, the IIRC, and the Framework will be described in detail. Moreover, an insight on legislation about non-financial reporting will be introduced, in order to review different approaches on the topic. The cases of South-African and European legislations will be compared. The second chapter will be focused on the discussion of the main social and organizational theories, which attempt to provide an explanation for voluntary disclosure. In particular, they characterize prior research on integrated reporting. Henceforth, for each one of them a brief summary on the main concepts and applications is presented. In addition, the Hofstede's six dimensions will be introduced, as they identify national cultural traits included in the analysis. In conclusion, a brief paragraph on the implications of the literature will recall the research questions, and the relative theoretical background. The third chapter will be dedicated to the empirical analysis, which mainly refer to the paper from Girella, et al., (2019). Firstly, the research questions, previously anticipated, will be deepened in connection with the current development of integrated reporting. The following paragraph on the literature gaps will identify the motivations for the process underlying the analysis and the analysis itself. Then, the hypothesis will be formulated with reference to the literature documented in the second chapter and prior study on the subject. Subsequently, the sample composition and the variables included in the statistical models will be explained thoroughly. The sample will be analyzed further through descriptive, t-test and ANOVA statistics performed on the observations. The last investigation concerns the logistic regression models to study the relationship between the adoption of the Integrated Report and its firm and country-specific determinants, jointly and separately. Eventually, the implications of the analysis on the literature and on the constituencies, identified earlier, will be addressed, as well as the conclusions of the models in terms of hypotheses and research questions.

CHAPTER 1 : INTEGRATED REPORT

This chapter will be dedicated to a comprehensive overview about the reporting documents available to companies for sustainability purposes and, in particular, the Integrated Report.
Firstly, the concept of sustainability will be explored, together with a brief illustration of corporate social responsibility and how the two topics are related.
The increasing pressure of stakeholders on organizations about environmental, social and governance topics (ESG topics), enhanced the issuance of Frameworks on sustainability reporting. For this reason, the main initiatives on this field will be presented, describing more in details the most widespread, at a global level.
Furthermore, the Integrated Report (IR) initiative will be described, as it is one of the possibilities to disclose sustainability issues. Its peculiarity of integrating financial with non-financial information starts from integrated thinking approach, which will be explained in the second paragraph. After a brief summary on the International Integrated Reporting Council (IIRC), the developer of the Integrated Report, the <IR> Framework will be outlined in all its major components. The purpose is to provide a complete insight on this reporting mechanism and corporate process, before the analysis on the motivations for its adoption.
Eventually, three different regulations on non-financial disclosure will be introduced. The three legislations included are from: South Africa, European Union and Italy. The objective is to present these regulations for their relevance in the field of Integrated Reporting, in particular as regards the South African one, and also to compare different approaches to sustainability reporting, from a legal point of view.

1.1 – Sustainability and Reporting Initiatives

Sustainability is an increasingly debated theme, that the Integrated Report initiative attempts to address. As stated in the *IIRC Pilot Programme Yearbook* (2013), "the World's two greatest challenges" are "financial stability and sustainability" (IIRC, 2013).

First of all, the concept of sustainability needs to be defined, as it will be the underlying subject of this paper. It is, basically, the capability of meeting the current needs, without jeopardizing the possibility for future generations to meet their own (Favotto, et al., 2016).

Moreover, it is linked to the Triple Bottom Line framework, coined by Elikington in 1994, and its three components: social, economic and environmental.

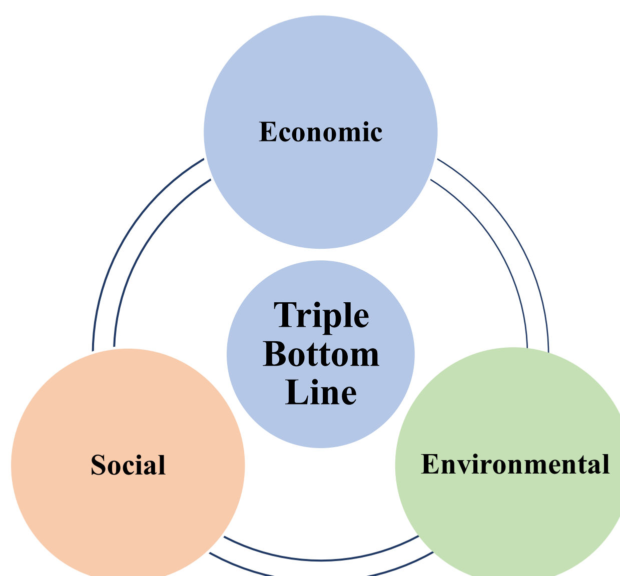

Figure 1.1: The Triple Bottom Line. Personal elaboration.

This framework aims at measuring the impact of an organization along the three lines, hence the value added; at a deeper level it should stimulate a consideration about the economy and the future, and not just being an accounting tool (Elkington, 2018).

Contributing to sustainability should be the aim of Corporate Social Responsibility (CSR), which highlights the ethical dimension of a company. In particular, according to the European Commission "enterprises should have in place a process to integrate social, environmental, ethical, human rights and consumer concerns into their business operations and core strategy in

close collaboration with their stakeholders"[1]. This entails sustainable growth, attention to social and environmental prosperity and a fair employment system (Conley & Williams, 2005).
Porter and Kramer (2006) suggest two different approaches to CSR: responsive and strategic. *Responsive CSR* is a reactive approach, as it involves good citizenship on behalf of the company and managing or anticipating the negative consequences of business and value chain activities. *Strategic CSR* overcomes the previous approach, thus establishing a sustainable competitive advantage. Indeed, there are two linkages between companies and society: inside-out, hence the effect that the company has on society; outside-in, thus the impact that external social context has on the company. These two dimensions have to be integrated and work together in order for the CSR to be strategic, creating shared value opportunities and shared benefits. Shared value is a long-term investment. According to the authors, companies need to select only social issues which consitute real opportunies for the companies to make a positive social contribution or gain competitive benefit (Porter & Kramer, 2006).
As a result, in the last two decades companies have adopted different types of corporate reporting, in order to respond to the increasing attention of stakeholders towards sustainability and CSR (Girella, et al., 2019).
Nevertheless, the first voluntary sustainability reports go back to 1970s, when there was no uniformity among them (Junior, et al., 2014).
Over the years, guidelines and standards have been developed by diverse international and national institutions to make the information comparable over time and across different companies. In the research article "*Reporting on sustainable development: A comparison of three Italian small and medium-sized enterprises*" (Girella, et al., 2019), the authors present a review of the globally relevant sustainability reporting initiatives, which will be discussed below.

1.1.1 – Global Reporting Initiative

Firstly, the most widely known and adopted guidelines are the GRI standards. The Global Reporting Initiative (GRI) is a not-for-profit organization founded in 1997, by the Coalition for Environmentally Responsible Economies (CERES), the Tellus Institute and also The United Nations Environment Programme (UNEP) (GRI, 2016).

[1] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A renewed EU strategy 2011-14 for Corporate Social Responsibility, COM(2011)681, final.

The goal of the GRI initiative is to provide standards for non-financial disclosure to a broad spectrum of companies, on the basis of the Triple Bottom Line, described above (Girella, et al., 2019).

According to a KPMG study of 2017, the corporate responsibility reporting rate of World's 250 largest companies by revenues was around 93%. Among these, 75% conform to the GRI framework. The fourth version of the framework (G4) of 2013 was the most adopted, according to the study (KPMG, 2017). However, the 2013 version was replaced in 2016 by the GRI Standards, that are continuously reviewed and updated.

GRI Standards can be parted into two macro-areas: Universal Standards and Topic Specific Standards. The Universal Standards are three, and focused on Foundation (101), General Disclosures (102) and Management Approach (103). On the other hand, Topic Specific Standards are related to Economic (201-207), Environmental (301-308) and Social (401-419) disclosures.

In order to prepare a report in accordance with GRI guidelines, the Foundation Standard firstly points out the Reporting Principles, divided into "*Reporting Principles for defining report content*" and "*Reporting Principles for defining report quality*" [2].

Reporting Principles for defining report content are:

1. Stakeholder inclusiveness;
2. Sustainability context;
3. Materiality;
4. Completeness;

Reporting Principles for defining report quality are:

1. Accuracy
2. Balance
3. Clarity
4. Comparability
5. Reliability
6. Timeliness

To enhance transparency, the companies, using GRI Standards either for their sustainability statement, or for disclosing only certain information, shall report the reference to the Standards and communicate it to the GRI[3].

[2] GRI Standard, 2016, n.101

[3] GRI Standard, 2016, n.101

As a result, the GRI provides public access to its database of sustainability reports, specifying if they are compliant with the Standards. The database contains 62,965 reports, among which 37,800 are GRI reports, from 14,858 organizations.[4]

1.1.2 – United Nations Global Compact

Another relevant initiative in the area of corporate sustainability is the United Nations Global Compact, which is based on ten principles in the areas of human rights, labour, environment and anti-corruption (Girella, et al., 2019).

The UN Global Compact identify five actions, which sustainable companies implement:

1. Principled business, which means the adoption in the organization of the ten principles;
2. Strengthening society, by pursuing also societal objectives;
3. Leadership commitment, since the participation in the initiative must involve the highest levels of a company;
4. Reporting progress, as stakeholders are increasingly requiring transparency and Environmental, Social and Governance (ESG) related disclosure;
5. Local actions, through Local Networks established by the Global Compact (UN Global Compact, 2014).

The Member States of UN have outlined a fifteen-years plan in 2015, the "Agenda 2030" for sustainable development, which entails 17 development goals (known as Sustainable Development Goals, SDGs) to be implemented globally by companies.

Figure 1.2: The UN Global Compact Sustainable Development Goals. Source: <https://www.istat.it/it/benessere-e-sostenibilit%C3%A0/obiettivi-di-sviluppo-sostenibile/quali-sono-i-17-goals> [Accessed: 11th July 2020]

[4] Data retrieved from: https://database.globalreporting.org/ [Accessed 23 July 2020].

1.1.3 – Sustainability Accounting Standard Board

The third standard setting body presented is the Sustainability Accounting Standard Board (SASB), established in 2011 (Girella, et al., 2019). The SASB Standards were published in November 2018 and are industry-specific (77 industries are present). The aim and what differentiates the Standards from the other frameworks is the communication of financially-material information on sustainability and the related metrics, which affect the investors.[5]

However, the SASB does not intend to replace other frameworks, such as GRI Standards, but rather complement them. On 13th July 2020, GRI and SASB announced a collaboration to clarify how the two standards can be jointly addressed, by providing also examples from real companies.

Furthermore, the SASB has prepared the *Materiality Map*, where for each industry is assessed the likelihood of a sustainability issue to be material for a company. Hence, it may affect its performance. The sustainability dimensions, taken into consideration, are: environment, social capital, human capital, business model & innovation, leadership & governance.[6]

Figure 1.3: Materiality Map. Source: https://www.sasb.org/standards-overview/materiality-map/ [Accessed 11 July 2020].

[5] SASB, n.d. *Working with SASB and other Frameworks.* [Online] Available at: https://www.sasb.org/standards-overview/sasb-and-others/ [Accessed 11 July 2020].

[6] The Materiality Map can be found at: <https://materiality.sasb.org/> [Accessed 11 July 2020].

1.1.4 – The Prince's Accounting for Sustainability Project

The Prince's Accounting for Sustainability Project (A4S), formed in 2004, is worth mentioning, as it is an attempt of promoting business models that are sustainable and resilient, and an integrated approach for financial decision-making. Moreover, it is one of the sponsors of the IIRC. It is not a standard-setting institution, as the previous ones, but provides guiding documents and best practices to a variety of stakeholders. For instance, the CFO Leadership Network, established by the A4S, has developed essential guides to support the accounting & finance community in the integrated approach, with examples, case studies and guidelines.

1.1.5 – The OECD Guidelines for Multinational Enterprises

The OECD Guidelines for Multinational Enterprises are standards for responsible business conduct. Governments have committed to promote the Guidelines within their territories, thus making them the only government-backed tool comprising sustainability issues. The OECD also requires Governments to establish National Contact Points for Responsible Business Conduct, dedicated to the promotion of the Guidelines and the resolution of the disputes among stakeholders and organizations, on the basis of the Guidelines (OECD, 2011).

The OECD Due Diligence Guidance for Responsible Business Conduct provides instructions and support to companies in the implementation of the Guidelines. At the same time, it identifies a due diligence process to prevent or reduce the risks and the impact on the responsible business conduct, associated with business activities (OECD, 2018). The OECD has also prepared a document, which highlights the contribution of its Guidelines to the application of the SDGs in business operations. Furthermore, the OECD Due Diligence is fundamental in assessing the impact of companies on the Sustainable Development Goals.[7]

1.1.6 – The Independent Organization for Standardization (ISO)

The ISO, Independent Organization for Standardization, has also a role in sustainable development. Indeed, ISO 26000 is concerned with social responsibility for businesses, that is assessing the impact of an organization on the environment and society and the contribution it makes on the sustainable development (ISO, 2018). The first peculiarity is that, unlike other ISO standards, it cannot be certified; hence, it does not include requirements, but guidelines.

[7] OECD, 2018. *OECD Due Diligence Guidance for Responsible Business Conduct.* [Online] Available at: <https://mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-for-Responsible-Business-Conduct.pdf> [Accessed 15 July 2020].

Secondly, it identifies seven core subjects of social responsibility, which are related to as many clauses in the standard (ISO, 2010).
The ISO has also highlighted linkages of ISO 26000 with other initiatives in its field of interest, which are listed above, for example with UN Sustainable Development Goals, GRI guidelines, OECD Guidelines for Multinational Enterprises. Interestingly, it has also provided guidance on how ISO 26000 is complementary to the Integrated Reporting Framework. Among the similarities there is the understanding of the drivers of value creation and their communication. However, while the Integrated Report is comprehensive and involves integrated thinking as well as reporting, the ISO standard is focused on the thinking aspect of social responsibility (ISO, 2016).

1.2 – The Integrated Report (IR)

The above-mentioned guidelines and frameworks are mainly related to stand-alone sustainability reports, connected to a binary distinction between "financial" and "non-financial" information on value creation. The Integrated Report tries to address this division, by harmonizing the two components (Girella, et al., 2019).
The Integrated Report (IR) can be defined as a synthetic yet comprehensive company disclosure document. It communicates how an organization is intended to create value over time, given the external and its internal environment, considering its "strategy, governance, performance and prospects" (IIRC, 2013).[8]
The International Integrated Reporting Council (IIRC), which is the developer of the IR, acknowledges it as an "evolution of corporate reporting"[9], because it entails the adoption of integrated thinking. The latter is a management approach based on six capitals which characterize the organization: financial, manufactured, intellectual, social and relationship, human, natural. The focus on this broad set of resources and relationships, which identify the drivers for value creation and the interconnections among them, are at the basis of this form of reporting. The Integrated Thinking & Strategy Group, started by IIRC and involving different organizations among which the Association of International Certified Professional Accountants, The World Bank and The Prince's Accounting for Sustainability, has developed a new model to better visualize the integrated thinking: the spring model (IIRC, 2020).

[8] IIRC, 2013. *The International <IR> Framework.* [Online] Available at: <https://integratedreporting.org/wp-content/uploads/2015/03/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf>. [Accessed 7 July 2020]
[9] <https://integratedreporting.org/what-the-tool-for-better-reporting/>. [Accessed: July 6, 2020]

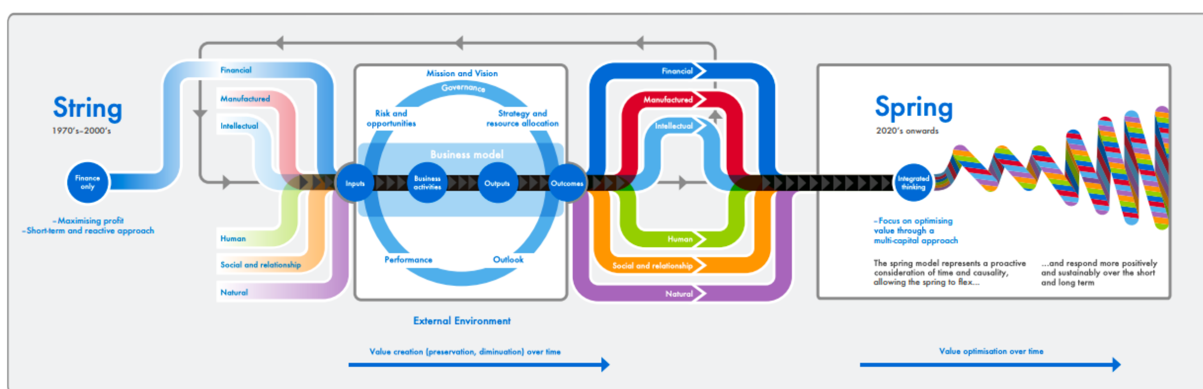

Figure 1.4: The Spring Model for Integrated Thinking. Source: IIRC, 2020. Integrated Thinking & Strategy: State of play report. [Online]. Available at:<https://integratedreporting.org/wp-content/uploads/2020/01/Integrated-Thinking-and-Strategy-State-of-Play-Report_2020.pdf>. [Accessed 6 July 2020].

As reported in the image above, the IIRC suggests an evolution from the String Model, where the value created depends exclusively on the financial capital, to the Spring Model, that consider all the six capitals, listed before, and their interrelations together over time (IIRC, 2020).

The first model can be regarded as a visual representation of Friedman's view on corporate social responsibility, that consists in the maximisation of the profit, thus shareholder's return (Friedman, 1970).

On the other hand, the multi-capital approach, suggested by the IIRC, requires a major shift in the way of conceiving the company. The organization utilise the six capitals (also called "strings") to carry out its business activities and obtain outputs, in order to create value. The value, in turn, has an impact on the strings, which have to be considered jointly, as they are causally connected over time. The result is a spring. Therefore, the business should tend to value optimisation, rather than profit maximisation, as it should manage all the capitals and their associated opportunities and risks over time (IIRC, 2020).

Nevertheless, the integrated thinking is not limited to understanding and managing the six capitals, as outlined before, but also: the ability of the company to respond to the needs of key stakeholders; the business model and the strategy adopted in relation to the external environment and its contingencies (IIRC, 2013).

The integrated thinking, according to the Council, is fundamental in the transition from multiple disclosure documents to a single integrated report, containing both financial and non-financial information (IIRC, 2013).

The preparation of this report is regulated by the <IR> Framework, issued by the IIRC in December 2013, which contains the rationale behind the IR and the guidelines about the main contents. The Framework will be deepened later in this chapter.

The purpose of the IR, ultimately, is to provide an accurate yet concise statement, to a large variety of stakeholders, on how the company is creating value over time. However, it should not be configured as a simple collection of information presented in other reporting documents. On the contrary, it should clarify the relations among different information (both financial and non-financial), in order to be valuable firstly to the providers of financial capital, and then to the remaining stakeholders. The Framework identifies the adopters as private or public for-profit organizations as well as non-profit ones (IIRC, 2013). The IIRC estimates that the guidelines for IR are currently applied by about 2000 organizations[10]. This limited number could be attributable to the voluntary nature of the report. Nevertheless, examples and best practices in the integrated reporting field are collected in a dedicated website, outcome of the collaboration between the IIRC and Black Sun plc, an agency supporting companies in their stakeholder communications. The database of case studies and <IR> reporters is publicly available through the website.[11]

According to The KPMG Survey of Corporate Responsibility Reporting (2017), 14% of the world's largest companies based on Fortune 500 ranking of 2016 have issued an "Integrated Report" and about two thirds of them referred to the IIRC's Framework. There has been an increase in the adoption, between 2015 and 2017, especially in Japan (+21%), Brazil (+16%), Mexico (+16%) and Spain (+9%). The latter data pertain to the sample identified by KPMG, which is the top 100 companies of the 49 countries taken into consideration (KPMG, 2017).

Moreover, EY, in a 2018 survey, discovered that 88% of investors find Integrated Report very useful in making investment decision, while 6% find it essential. In the 2017 EY Survey, 57% of respondents found it very useful or essential. This result indicates the relative importance of Integrating Report to investors in both years. In the comparison between the two years, caution has to be applied as the two samples have different size and composition, for example, according to their nationality, role or the institution they work for (EY, 2018).

[10] IIRC, 2020. *IIRC's 10th anniversary: Embedding progress, completing the mission and securing our legacy.* [Online] Available at: <https://integratedreporting.org/news/iircs-10th-anniversary-embedding-progress-completing-the-mission-and-securing-our-legacy/> [Accessed 7 July 2020].

[11] <http://examples.integratedreporting.org/home> [Accessed 23 July 2020]

1.2.1 – The International Integrated Reporting Council (IIRC)

In order to better understand the Integrated Reporting initiative, a brief presentation of the developer, the International Integrated Reporting Council, is introduced. The IIRC gathers different entities, among which: companies, providers of financial capital, accountants, regulators, NGOs, members of the academia. As stated in the mission of the Council, the aim is to incorporate, in the widespread business practices, integrated thinking thus reporting. The ultimate intent is to achieve, through integrated thinking and reporting methodologies, "financial prosperity and sustainable development".[12] Its formation was announced in August 2010, with a slightly different denomination (International Integrated Reporting Committee), by The Prince's Accounting for Sustainability Project (A4S) and the Global Reporting Initiative (GRI) (A4S, GRI, 2010).

It was established as a non-profit organization, responding to a Constitution, and funded by diverse constituencies.

In 2011, the IIRC launched the Pilot Programme in order to test and collect feedbacks on the draft of the <IR> Framework, applied by 140 businesses from 26 countries. After this first programme, training and business network programs have been implemented to support companies and individuals in their itinerary towards Integrated Reporting.

1.2.2 – The <IR> Framework

In order for the companies to prepare the Integrated Report, the IIRC has published in December 2013 the International Integrated Reporting Framework, result of a joint effort with the organizations participating in the Pilot Programme. As stated in the <IR> Framework (2013), the aim is to provide an explanation of essential concepts, at the basis of the Guiding Principles and Content Elements, which characterize the Integrated Report. It is principles-based, meaning that only certain provisions are mandatory for the report to be defined "Integrated" and compliant with the Framework. On the other hand, the remaining provisions are a guidance, rather than a rule, thus companies have a certain degree of flexibility in preparing the report.

Starting from the fundamental concepts chapter, the creation of value over time is the focus of the Integrated Report and how is this possible, considering the interaction of the company with the external environment and the six capitals. As a result, the organization creates (or destroys) value not only for itself, but also for other entities.

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[12] IIRC, n.d. *The IIRC.* [Online] Available at: <https://integratedreporting.org/the-iirc-2/> [Accessed 8 July 2020].

Secondly, the Framework deepens the six capitals, which are listed below.

- ***Financial Capital***: all the funds an organization can deploy in its business processes and activities, either accessed through financing, for example equity, debt, or generated through investments and operations;
- ***Manufactured Capital***: physical resources used by the organization in the course of business, for example equipment, properties, plants, infrastructures, created either by other organizations or the reporting one;
- ***Intellectual Capital***: intangible resources that are knowledge-based or organizational, for example patents, intellectual property and tacit knowledge;
- ***Human Capital***: intangible resources related to people's capabilities, competencies, experience, values, motivation paired with the contribution and value they can add to the organization and its processes;
- ***Social and Relationship Capital***: intangibles which consists in the development and maintenance of relationships with stakeholders and, in general, networks, shared values and norms, the capacity to communicate information that can be beneficial to single individuals and the society as a whole, the social value of the brand and the reputation;
- ***Natural Capital***: environmental resources which are exploited in order to support the value creation for the organization, for example water, air, vegetation, land.

Lastly, in the chapter it is explained the value creation process, which constitutes the focus of integrated thinking, discussed previously.
The third chapter of the Framework is directed at outlining the Guiding Principles, on which is based the preparation of the report.

Strategic focus and future orientation:	Explanation of the company's strategy, how it is decisive for value creation in the short, medium and long term, and the planned use of capitals and the impact on them.
Connectivity of information:	Holistic illustration of the correlations and interdependencies between the drivers of value creation.

Stakeholder relationships:	Thorough assessment on the quality and the nature of relationships with key stakeholders, and on the methods for managing and dealing with their needs and interests.
Materiality:	Disclosure of only relevant matters in the report, that influence the ability to create value over time.
Conciseness:	Brevity and clarity of information.
Reliability and completeness:	Disclosure of all material information, both positive and negative, without material misrepresentations.
Consistency and comparability:	Representation of information that is coherent over time and comparable across different organizations.

Table 1.1: Guiding Principles of the <IR> Framework. Personal Elaboration, based on: IIRC, 2013. The International <IR> Framework. [Online] Available at: https://integratedreporting.org/wp-content/uploads/2015/03/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf [Accessed 16 July 2020].

In the table reported above, the definitions of the Guiding Principles are presented, but the Framework examine more in detail each one. For example, the principle of *Materiality* consists also in the determination process and in the boundaries for the reporting.

The fourth chapter is concerned with the eight Content Elements, whose sequence in the report should reflect the interrelations among them. The following table represent a summary of the Content Elements and their meaning.

Organizational overview and external environment:	Key information about the organization's internal attributes (e.g. mission, vision, values, organizational structure, business activities and markets, competitive positioning, revenues) and external context (e.g. stakeholders, market forces, PESTLE factors).
Governance:	Information on the governance structure and how it provides support for the value creation process.

Business model:	Information on the business model adopted by the organization and critical inputs, business activities, outputs and outcomes.
Risk and Opportunities:	Information on firm-specific risks and opportunities which have an impact on the value creation, and how the organization addresses them.
Strategy and Resource Allocation:	Information on the organization's strategic objectives at different time horizons, resource allocation plans, competitive advantage drivers and tools to measure achievements.
Performance:	Information on KPIs, both quantitative and qualitative, adopted to assess performance and the impact on the capitals.
Outlook:	Information on the expected changes and challenges, related also to the external environment, the impact on the organization and the planned response.
Basis of preparation and presentation:	Information on the process to determine materiality, the boundaries adopted for the reporting and the frameworks or procedures used to report on material matters.

Table 1.2: Content Elements of the <IR> Framework. Personal Elaboration, based on IIRC, 2013. The International <IR> Framework. [Online] Available at: https://integratedreporting.org/wp-content/uploads/2015/03/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf [Accessed 16 July 2020].

Lastly, *General Reporting Guidance* is included, suggesting, across various Content Elements, some general disclosures about: material matters, capitals, time horizons, level of aggregation and disaggregation (IIRC, 2013).

1.3 – Regulatory Frameworks

The purpose of this paragraph is to present different regulatory frameworks. The first one examined is related to South Africa and concerned with the mandatory adoption of the Integrated Report, as corporate report for listed companies. Secondly, the European Legislation is discussed as a different perspective and approach from the South African one. At the end, an insight on the Italian Legislation will be added, in order to provide an example of transposition of the European Directive mentioned. The fundamental difference worth highlighting is the contraposition, in the preparation of an Integrated Report, between the obligation of the first regulatory framework and the voluntariness of the second and the third ones.

1.3.1 – South Africa

At a country level, South Africa is a pioneer in the Integrated Reporting field. Indeed, companies listed on the Johannesburg Stock Exchange (JSE) are increasingly made accountable for their non-financial conduct, through the compliance with King III.

The King Committee was mandated by the Institute of Directors in South Africa in 1992, with the aim of drafting guidelines on corporate governance for South Africa. In 1994 was issued the first King report on corporate governance (King I), followed in 2002 by the second (King II) (de Villiers, et al., 2014). According to de Villiers, Rinaldi and Unerman (2014), the development of the King reports on corporate governance derives from the social and economic context, which characterized the country after the apartheid. For this reason, King reports are particularly concerned with social and environmental governance, with respect to other contemporary international guidelines.

The third version of King report (King III), formally known as The King Code of Governance Principles, issued in 2009, is the reference for the listing requirements of the JSE. The code entails the adoption of the Integrated Report, in which should be present both sustainability and financial information and should be implemented integrated thinking. In 2009, the innovation associated with South African integrated reporting was the integration between ESG and financial disclosures (de Villiers, et al., 2014). The approach selected was “apply or explain”. According to King report on corporate governance for South Africa (2009), the directors have the duty to act in the best interest of the organization, thus they can decide not to apply the recommendations in the King III. As a result, the explanation of how the guidelines are applied, or the rationale for not conforming to them, consisted in compliance. This approach is conceptually different from the “comply or explain” one, as compliance could result in blindly adhere to rules, without a conscious conformity. Moreover, is fundamentally different from

"comply or else" regime of Sarbanes-Oxley Act, according to which companies must comply otherwise they incur in penalties.
In this context, in 2010 the Integrated Reporting Committee of South Africa was founded by the JSE and the Institute of Directors in South Africa, among the others. According to the Committee, its original objective was to provide assistance to companies on integrated reporting and to issue a Framework based on King III. For this reason, in 2011 the Committee prepared "the world's first Discussion Paper on a Framework for an integrated report".[13] In this paper is highlighted the collaboration between the South African Committee and the IIRC, as the corresponding international body (IRC of South Africa, 2011).
In 2016, the King IV Report on Corporate Governance was issued, replacing entirely King III, to provide more complete guidelines to diverse organizations, including public, small, not-for-profit ones. It also entails the "apply and explain" approach, in contrast with the previous Report. Furthermore, explicit reference is made to the International <IR> Framework as guidance to Integrated Reporting. This is the result of the endorsement by the Integrated Reporting Committee of South Africa, in 2014, of the IIRC's Framework as "guidance on good practice on how to prepare an integrated report".[14]

1.3.2 – European Union

At European level, provisions on non-financial disclosure have been included in the Directive 2014/95/EU. The latter amends the *Directive 2013/34/EU on the annual financial statements, consolidated financial statements and related reports of certain types of businesses*. The objective of the Directive 2014/95/EU is to add requirements relative to significant non-financial disclosure for large organizations, with more than 500 employees at reporting date, which are public interest entities. Public interest entities are companies listed on EU regulated markets, credit institutions, insurance companies, and organizations that are designated by the Member States as "public interest entities" for their public relevance, as they have a large number of employees or for the nature of their business.[15]

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[13] < https://integratedreportingsa.org/about/our-history/>. [Accessed 18 July 2020]

[14] IRC of South Africa, 2018. *Preparing an Integrated Report – A Starter's Guide.* [Online] Available at: <http://integratedreportingsa.org/ircsa/wp-content/uploads/2018/08/IRC_Starters_Guide_20180820_12663_LN.pdf > [Accessed 18 July 2020].

[15] Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC

The matters subject to disclosure are related to environment, society, employment, human rights, anti-corruption and bribery. The organization has to report on the activities linked to the matters cited before. Moreover, the report shall include: the business model; the policies undertaken in connection to those matters and the due diligence process; the outcome of the policies; the significant risks of business' operations on the matters, including the sources of adverse impacts and the methods to mitigate those risks; the relevant KPIs on non-financial performance. If one of the relevant areas is not covered by any policy, an explanation on the reasons shall be provided by the organization[16]. Non-financial information should be relevant to company's investors and, more in general, to stakeholders.

Furthermore, the Directive 2014/95/EU provides for the preparation of a separate document or the integration in the annual report, following frameworks, that can be national, Union-based or international, selected by the Member States. In both cases included in the Directive, the auditors shall verify if the non-financial information has been disclosed. Member States may also require the verification of such information by an independent assurance service provider. The European Commission has also issued guidelines, in 2017, on non-financial reporting: *Communication from the Commission — Guidelines on non-financial reporting (methodology for reporting non-financial information)*. In this document, the EU Commission refers to frameworks at different levels, covering diverse topics, among which the International Integrated Reporting Framework, the Global Reporting Initiative, the ISO 26000, the United Nations Global Compact, the UN Sustainable Development Goals, the OECD Guidelines for Multinational Enterprises, that have been previously listed. The guidelines are prepared in accordance with the Directive 2014/95/EU, and they are non-binding. Instead, they aim at sustaining companies in their non-financial disclosure, related to ESG matters.

First of all, information, according to the key principles of the Guidelines, shall be material. Materiality, present also in the <IR> Framework, involves the peculiarity of an information to influence users' decisions and to be fundamental in assessing the impact of business' activities, both positive and adverse.

The second key principle is the fairness, balance and understandability of the non-financial statements, meaning that it shall be unbiased, accurate, clear and understandable to users and it shall present beneficial and non-beneficial aspects.

Thirdly, the disclosed information shall be comprehensive but concise; conciseness and completeness are two Guiding Principles of the <IR> Framework.

[16] Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups

Subsequently, the report shall provide strategic and forward-looking information. The company shall disclose its strategy, how it will be implemented and the impact on different time horizons. Forward-looking information includes elements to better evaluate the sustainability of the organization in the long-term. Afterwards, the Communication highlights the importance of the stakeholder orientation as principle of the reporting process. Eventually, the EU Commission underlines the principle of consistency of non-financial information with respect to other aspects of the management report and over time, and the principle of coherence.

As regards the contents that a non-financial statement shall include, the Guidelines further analyze the contents listed in the Directive, and reported above:

- *Business model;*
- *Policies and due diligence;*
- *Outcome;*
- *Principal risks and their management;*
- *Key performance indicators.*[17]

The thematic aspects, that the company shall disclose, are presented in the following graphic representation:

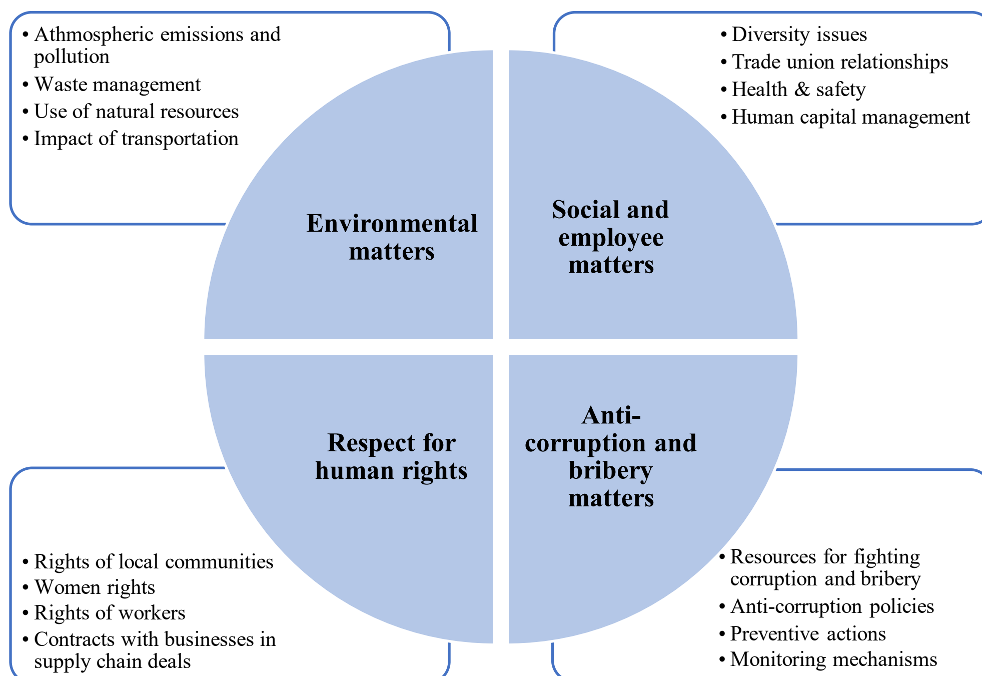

Figure 1.5: Personal elaboration based on Communication from the Commission — Guidelines on non-financial reporting (methodology for reporting non-financial information) C/2017/4234

[17] Communication from the Commission — Guidelines on non-financial reporting (methodology for reporting non-financial information) C/2017/4234

1.3.3 – Italy

The Directive 2014/95/EU has been transposed into the Italian Legislation via Legislative Decree 254/2016[18]. The Decree came into force on 25th January 2017. It reaffirms the principles and thematic areas relative to non-financial disclosure stated by the European Directive. The organizations subject to the requirements of the Decree are clearly identified: large organizations that are public interest entities which, during the financial year, have had more than 500 employees on average, and at closing date have exceeded at least one of the following limits:

1. Balance sheet total: Euro 20,000,000
2. Total net revenues: Euro 40,000,000[19]

Two ways of presenting the disclosure are covered: as part of the management report, or as a separate report. Indeed, the Decree restates the distinction identified by the Directive.

The non-financial statement shall be verified by the statutory auditor. The latter shall provide a declaration of conformity with the Decree in a dedicated separate statement.

Moreover, the legislative text includes the possibility for the companies that do not meet the requirements to issue a non-financial report on voluntary basis. The report, if prepared in accordance with the Decree, can affix the indication of conformity with it. The companies included in this case, can waive the requirements regarding the audit if:

1. It is stated in the report that the audit on non-financial disclosure was not performed;
2. They fulfill at least two of the following obligations:
    a. Number of employees lower than 250, throughout the financial year
    b. Balance sheet total lower than Euro 20,000,000
    c. Total net revenues lower than Euro 40,000,000

In this way, the legislator includes also small and medium enterprises (SMEs), which characterize the Italian economic context.

Lastly, the Legislative Decree identifies penalties for companies that do not comply or make false statements. The National commission for listed companies and the stock exchange (*Consob*) has the duty to assess and impose the penalties.

The text does not comprise a clear indication of the Frameworks to be adopted in the preparation of the non-financial report. On the contrary, the company can select, in accordance with the Directive 2014/95/EU, the preferred reporting standard, which has to be necessarily disclosed, and, where it is applicable, the changes from the previous financial year, hence the reasons.

[18] Dlgs 30 Dicembre 2016, n.254

[19] Legislative Decree 30 December 2016, n.254

1.4 – Conclusions

The increasing attention to sustainability issues on behalf of stakeholders has posed significant challenges and requirements on the companies, among which the reporting activity. In response to the increasing pressure, various initiatives have emerged to develop standards and guidelines to support companies in the sustainability reporting process. GRI Standards are the most widespread globally, but other international standard-setting bodies have issued frameworks and guidance on the matter. However, they are characterized by the intrinsic duality of financial and non-financial information. The attempt to overcome the duality and utilize Integrated Thinking process is what identifies the initiative of the IIRC (Girella, et al., 2019).
IIRC's guidelines are collected in the <IR> Framework, which is the reference point in preparing the Integrated Report, as previously presented.
Considering the information presented in this chapter, Integrated Report, by illustrating how the organization creates value over time, may be regarded as an answer to the pressure of stakeholders on the CSR topic. Indeed, as previously noted, investors consider IR as a very useful tool in the decision-making process (EY, 2018). Furthermore, it may support companies in fulfilling their legal obligations on non-financial statements, for example according to three legislations presented in this chapter.

CHAPTER 2 – LITERATURE REVIEW

In the previous chapter, the Integrated Report has been introduced as a form of corporate reporting. It may satisfy the need of investors and other stakeholders for the disclosure of value creation and sustainability related issues. The Integrated Report has been the focus of many recent papers and studies, as its nature is different from the other initiatives previously presented.
In particular, a branch of research has focused on the investigation of determinants in the voluntary adoption of the Integrated Report. Different quantitative analysis have been conducted, in order to examine the effect of the country (Jensen & Berg, 2012), of the cultural and legal system, of the organization's characteristics, for example profitability, size and sector (Frias-Aceituno, et al., 2014), and board's characteristics, for example diversity and size (Girella, et al., 2019).
According to Girella, Rossi and Zambon (2019), the voluntary disclosure of information, as voluntary is the nature of the Integrated Report, can be explained by seven theories, independently or jointly:

1. ***Stakeholder Theory***;
2. ***Agency Theory***;
3. ***Signaling Theory***;
4. ***Theory of Proprietary Costs***;
5. ***Institutional Theory***;
6. ***Theory of Political Costs***;
7. ***Theory of Cost of Capital***.

The authors also mention, in their theoretical background, the ***Legitimacy Theory***. Even if they do not describe it in detail, this chapter will include a brief description for completeness. On the other hand, the ***Theory of Cost of Capital*** will not be included, as the cost of capital will not be part of the independent variables. Nevertheless, since three independent variables are linked to Hofstede's cultural variables, a summary of the latter will be presented.
The aim of the second chapter is to thoroughly describe these theories, at the basis of the quantitative analysis on the determinants at firm- and country-level, which will be performed in the next chapter.

2.1 – Stakeholder Theory

According to Freeman (see Favotto, et al., 2016), stakeholders are individuals or groups which can have an impact on or are influenced by the achievement of business goals. In other words, stakeholders are various constituencies of a company, for example: investors, suppliers, customers, employees, communities, governments, trade unions, media, creditors, owners and managers.

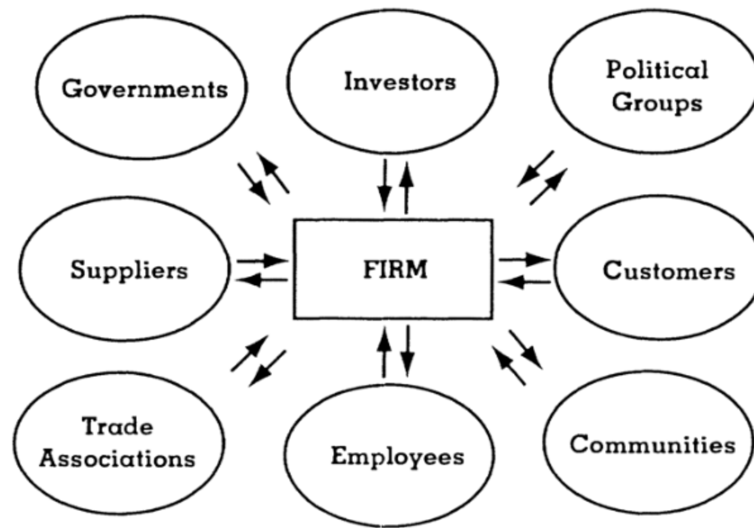

Figure 2.1: Contrasting Models of the Corporation: The Stakeholder Model. Source: Donaldson, T. & Preston, L. E., 1995. The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. Academy of Management Review, 20(1), pp. 65-91.

First of all, stakeholders can be distinguished into *primary* and *secondary* stakeholders (Clarkson, 1995). *Primary stakeholders* are those who are fundamental for the existence of the company as a going concern, meaning that the survival of the company depends on them. This group comprises employees, investors, shareholders, customers, suppliers, governments and communities. The company is highly dependent on primary stakeholders, as there is a high degree of interconnections between the two parties. According to Clarkson (1995, p.106), the organization itself can be considered as a "system of primary stakeholder groups". The role of managers is to create value, benefits or wealth for stakeholders in order to ensure their continuing participation to the going concern, hence the system. The latter is inserted in a network of relationships with secondary stakeholder groups. *Secondary stakeholders* are those who are not directly necessary to company's continuity, as they do not enter into transactions with it. For this reason, the organization does not depend on them for its functioning, but it can be seriously affected by the influence they have, both in a positive and in a negative way.

Examples of this group are media and trade unions, which have the ability to drive consensus (Clarkson, 1995).

In order to identify stakeholders and assess their relevance, Mitchell, Agle and Wood (1997) analyze stakeholder-manager relationship according to three features: power, legitimacy and urgency.

Power is derived from the access of a relationship party to resources, that are used to impose its will. According to Etzioni (see Mitchell, et al., 1997), different resources are associated to three distinct types of power: coercive, utilitarian and normative. Since the access is not stable over time, power is actually transitory. Legitimacy is the recognition of an action as socially acceptable and opportune, according to a social, normative and values context. The definition, that the authors assume, is retrieved from Suchman (see Mitchell, et al., 1997). Lastly, urgency is the attribute of stakeholder claims, which involves two separate but coexistent dimensions: time sensitivity and criticality. The first is related to the extent claims need to be addressed in a timely manner; while the second is concerned with the relevance to stakeholders of the claims. As a result, the different presence and combination of these attributes determines different classes of stakeholders, which are illustrated in Figure 2.2 (Mitchell, et al., 1997).

Figure 2.2: Stakeholder Typology: One, Two, or Three Attributes Present. Source: Mitchell, R. K., Agle, B. R. & Wood, D. J., 1997. Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. The Academy of Management Review, 22(4), pp. 853-886.

From the description reported above, it is clear that they have different objectives and interests in the company. Indeed, the stakeholder theory (Donaldson & Preston, 1995, p. 70) recognizes the company as the "organizational entity through which numerous and diverse participants accomplish multiple, and not always entirely congruent, purposes". Donaldson and Preston (1995) analyze three different approaches to stakeholder theory: *descriptive*, *instrumental* and *normative approach*.

The *descriptive approach* entails the use of the theory to specify and illustrate particular corporate actions and features. The outcomes of this approach are usually disclosure documents and statements, as sustainability reports (Favotto, et al., 2016). The *instrumental approach* uses the theory to search possible strategic linkages, if any, between stakeholder management and the attainment of financial and economic performance targets, for example profitability. Donaldson and Preston list studies that have implied a positive relationship between the adoption of stakeholder theory principles and the achievement of performance target. The *normative approach* involves the utilization of the theory to clarify the function of the organization, indicating the philosophical, moral and legal basis for the companies to operate (Donaldson & Preston, 1995).

According to the stakeholder theory, in each approach, the strategic focus are company's relations with different stakeholder groups (Favotto, et al., 2016). However, there are four different strategies, organized as a scale, to manage these linkages: *reactive*, *defensive*, *accommodative* and *proactive* (Clarkson, 1995).

The *reactive strategy* requires responses contingent and dependent on external inputs, if any. The *defensive strategy* is limited to the execution of what is required, for example, by the legislation, or transactions with stakeholders, or responsibilities and obligations, and damage control. The *accommodative strategy* entails the adherence to all the requirements, discussed above, and also the anticipation of potential conflicts to defuse them. The *proactive strategy* place at the center social objectives, which become sources of competitive advantage, thus creating value for both the company and the society (Favotto, et al., 2016; Clarkson, 1995).

In conclusion, according to stakeholder theory, an organization's operations and management are influenced by the relationships with stakeholders, which are affected in turn. Considering the role that the latter have, the increasing attention towards sustainability matters[1] may lead companies to disclose non-financial information to meet stakeholders' requests.

[1] Cf. paragraph 1.1

As a result, the preparation of voluntary disclosure documents may be supported by the descriptive approach to stakeholder theory. Indeed, the sustainability report is the frequent result of a descriptive approach. Nevertheless, the latter approach should be paired with the instrumental one, which involves the strategic use of stakeholder relationships. In this way, the company would be able to fully comply with the guidelines set out by the IIRC.

2.2 – Agency Theory

The agency theory of the firm is extensively discussed in "*Theory of the Firm: Managerial Behavior, Agency Costs and Ownership structure*" (Jensen & Meckling, 1976). The first crucial point of this theory is the agency relationship. In this paper, the authors provide the definition of agency relationship as "a contract under which one or more persons (the principal) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (Jensen & Meckling, 1976, p. 308). As a result of the delegation, the principal will be affected by the choices of the agent, which has, most of the time, divergent interests from the principal. The agent will pursue its own best interest, thus adopting an opportunistic behavior.

The agency theory is deeply related to the issue of the separation between ownership and control (Berle & Means, 1932). Berle and Means explain that in corporations are present three different situations in which control is separated from ownership: "majority control", "minority control" and "management control" (Berle & Means, 1932, p. 5). In the first case, the company's ownership is characterized by majority shareholders which also retain the control. On the other hand, there are minority shareholders which experience the separation identified by the two authors. In the case of minority control, there is no majority shareholder and the ownership is quite diffused, yet a minority interest is able to maintain control, in practical terms. In the last case, the shareholding structure is very dispersed, thus managers or directors are entitled to exert control (Berle & Means, 1932).

The relationship among shareholders and managers, described in the third case, can be regarded as an agency one. Due to the divorce, the shareholders (principal) delegate the course of business to the managers (agents), generating the so-called agency problem, that is the mismatch between divergent interests and the subsequent effort to align them (Jensen & Meckling, 1976). The agency problem results in agency costs that are borne by both parties (Girella, et al., 2019).

Agency costs emerge in any case where a cooperative effort is required and they are the total of three different components: monitoring costs, bonding costs and residual loss (Jensen & Meckling, 1976).

Monitoring costs arise when the principal attempts to supervise the agent, hence his actions and performance. On the other hand, bonding costs are incurred by the agent and consists in the resources he has employed to demonstrate that he is acting in the best interests of the principal, without causing any damage. The residual loss is the reduction of benefits borne by the principal, due to the discrepancy between agent's decisions and those which would result in the maximization of principal's welfare (Jensen & Meckling, 1976).

Jensen and Meckling (1976) identify the firm as a nexus of contracts, which are at the basis of this theory.

People, which constitute the parties of the contract, are characterized by specific assumptions: self-interest, bounded rationality and risk aversion. Self-interest was addressed above, and it implies that each individual pursues its own best interest. Thus, due to the opportunistic behavior, people try to maximize their welfare. Risk aversion is another important characteristic of economic actors, as it is the tendency to avoid risks that are unnecessary. In addition to this, individuals may have diverse attitudes towards risk, rising the contractual problem of risk sharing. The latter may lead to divergent preferences on the actions to be implemented in the scope of the contract (Eisenhardt, 1989).

Furthermore, the contract, underlying the principal-agent relationship, is incomplete by nature, also because of information asymmetries (Hart, 1995; Costa, et al., 2016). The opportunistic behavior of the parties results in the exploitation of asymmetric information, generating two issues: adverse selection and moral hazard (Costa, et al., 2016).

Adverse selection can be associated, according to Laffont and Martimort (2002, p.3), to the expression "*hidden knowledge*", as the agent withholds information from the principal or manipulates it during the negotiation and conclusion of a contract. This results in unfavorable decisions on the side of the uninformed party, for example by making contracts with riskier or less profitable market segments. Adverse selection is the focus of "The Market for Lemons: Quality Uncertainty and the Market Mechanism", a paper by the economist Akerlof (1970).

Moral hazard can be defined as an "*hidden action*", that is an action which cannot be observed by the principal. In particular, moral hazard consists in the misbehavior of the agent in the fulfillment of its contractual obligations (Laffont & Martimort, 2002, p. 3).

There is a third issue related to information asymmetry and incompleteness of contracts, which is the "*nonverifiability*" (Laffont & Martimort, 2002, p. 3).

The latter is identified in the complexity to verify an information, owned by the principal and the agent, by an external third party, for example a court of law.
In order to limit moral hazard and adverse selection, the principal incurs in monitoring costs. Nevertheless, monitoring is not always sufficient and effective, as it can be imperfect, very costly and it may imply another layer of agents. Another viable option is linking managers' pay to performance, for example by providing performance-based incentives (Costa, et al., 2016; Besanko, et al., 2012).
To conclude, voluntary disclosure may be a tool used by management to display that their performance is not detrimental to shareholders (the principal), and more in general to stakeholders. In particular, according to this view, disclosure is expected to reduce information asymmetry. Furthermore, García-Sánchez and Noguera-Gámez (see Girella, et al., 2019) have found that the Integrated Report is instrumental in mitigating agency costs and information asymmetry.

2.3 – Signaling Theory

Signaling (or signalling) theory is another framework that can be applied to explain the voluntary adoption of Integrated Report. The theory "is useful for describing behavior when two parties (individuals or organizations) have access to different information" (Connelly, et al., 2011, p. 39). The concept underlying this definition is information asymmetry. As for agency theory, one party have private information, which negatively influences the decision-making process of the other party. However, while Jensen and Meckling (1976) focus on designing incentive schemes to mitigate moral hazard (see Connelly, et al., 2011, p. 42), signaling theory is more concerned on signaling as a method to reduce information asymmetry about unobservable quality. The difference between agency and signaling theory reflects the distinction related to information, identified by Stiglitz (see Connelly, et al., 2011, p. 42). Indeed, agency theory deals with information about intent and behavior of one party in the relationship. On the other hand, signaling theory examine the asymmetry of information about one party's quality and characteristics, which are difficult to observe (Connelly, et al., 2011).
As a result, the objective of signaling theory is to determine mechanisms to mitigate information asymmetry. In that respect, Spence (1973) applies the theory to job market, where the applicants may undertake actions to mitigate information asymmetry, for example by signaling their higher education to employers. Education implies costs, defined by Spence as signaling costs, which have to be overweighed by wages.

For this reason, education is obtained to signal quality of the candidate, as applicants to whom this is costly (not only in monetary terms) are not incentivized to reach a higher education (Spence, 1973). The same concept can be applied not only to the job market, thus human resources, but also in the field of marketing, entrepreneurship, strategy and finance.
Three key elements constitute the basis of the theory: the signaler, the signal and the receiver. The signaler is an "insider"[2], thus holds private information regarding, for example an organization or an individual, which is not accessible to outsiders. Information may be positive or negative, but in both cases it would affect the decision-making process of the outsider. In other words, the signaler has a favored point of view on the unobservable quality of the organization or the individual (Connelly, et al., 2011).
The signal is defined by Spence as "those observable characteristics attached to the individual that are subject to manipulation by him" (Spence, 1973). More in general, it is the communication of an information about unobservable quality to outsider. Signaler usually communicate positive information to the external actors; this is the focus of signaling theory. On the contrary, the communication of negative information is generally a consequence of signalers' actions, with no intent of sending a signal. Effective signals have two fundamental features. The first feature, necessary but not sufficient, is "*signal observability*"[3] that implies the degree to which outsiders are able to recognize a signal. The other characteristic is "*signal cost"*[4] associated to the fact of providing the signal to outsiders. In particular, in the context of the theory, it implies that high-quality signalers are better able to sustain these costs, because benefits from the signal outweigh them. In order to preserve this mechanism and avoid false signaling by low-quality signalers, costs must have a configuration that deter misleading behavior (Connelly, et al., 2011).
Ultimately, the receiver is an "outsider"[5] requiring information about the quality or characteristics of an organization, for example. The signaling mechanism is initiated because the signaler benefits from a particular activity of the receiver, who is prompted by the signal; often, this implies the selection of the signaler over the other options. It is important to highlight that signaler and receiver do not share the same interests, but rather they are partially conflicting (Connelly, et al., 2011).

[2] Connelly, B. L., Certo, S. T., Ireland, R. D. & Reutzel, C. R., 2011. Signaling Theory: A Review and Assessment. *Journal of Management*, 37(1), p. 44.

[3] Connelly, B. L., Certo, S. T., Ireland, R. D. & Reutzel, C. R., 2011. Signaling Theory: A Review and Assessment. *Journal of Management*, 37(1), p. 44.

[4] Ibid.

[5] Ibid., p.45

The three elements described above can be associated to different moments along the signaling timeline, represented in Figure 2.3.

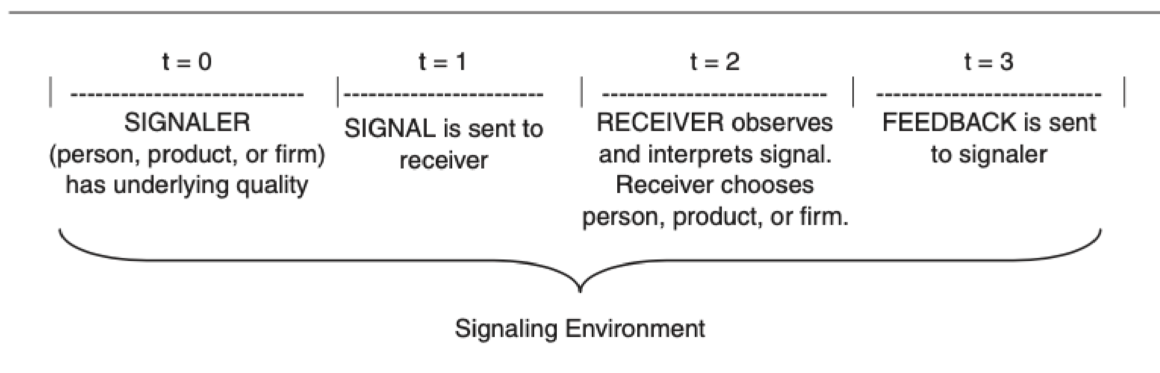

Figure 2.3: Signaling timeline. Source: Connelly, B. L., Certo, S. T., Ireland, R. D. & Reutzel, C. R., 2011. Signaling Theory: A Review and Assessment. Journal of Management, 37(1), pp. 39-67.

In conclusion, according to Eccles (see Girella, et al., 2019), the disclosure of voluntary documents could be an effective signal, used to communicate high quality to outsiders, in this case stakeholders. Prior research has discovered that signals about better quality are associated with an increase of firm's value and favorable financing costs[6]. Therefore, an Integrated Report may achieve the intent of communicating quality to a broad spectrum of stakeholders, in favor of organizations adopting it. Moreover, it has been demonstrated that agency and signaling theory are complementary in the investigation of voluntary disclosure[7]. For this reason, the theories have been presented one after another in this chapter.

2.4 – Legitimacy Theory

Dowling and Pfeffer (1975), in their paper "*Organizational Legitimacy: Social Values and Organizational Behavior*", outline the concept of organizational legitimacy and its application on the example of the American Institute of Foreign Studies. The authors recall the definition of legitimacy postulated by Parsons, that is the "appraisal of action in terms of shared or common values in the context of the involvement of the action in the social system" (see Dowling & Pfeffer, 1975).

[6] see Girella, et al., 2019

[7] Ibid.

Legitimacy theory depend on the concept of "social contract", between the organization and the society. Matthews (see Deegan, 2002, p. 292) explains that society grants companies the possibility to operate, with the expectation that costs will be offset by benefits for the whole community. As a result, this contract is breached when the society perceives that the organization is not acting in a legitimate manner. While, the contract is successful when there is a coherence between the two parties' value system. Nevertheless, the "terms" of the contract are not clearly defined; Gray et al.[8] identify explicit terms of the contract in legal obligations, and implicit terms in social expectations. Implicit terms are an issue to managers, which may have varying perceptions (Deegan, 2002).
Legitimacy is the result of an assessment along three dimensions of organizational behaviors, related to social norms, which are economic feasibility, legality and legitimacy. Economic feasibility is based on transactions between organizations, so exchange of resources. The boundaries of legality are determined by the law, that is correlated but not completely congruent with social norms and values. The latter are the basis of legitimacy. Organizations try to operate within the scope of the intersection among the three areas (Dowling & Pfeffer, 1975).
Social norms are characterized by mutability, implying that the basis to determine legitimacy changes over time. As a result, Dowling and Pfeffer (1975) define legitimacy as a "dynamic constraint"[9], which evolve as the firm adapt and as social norms vary and are, in turn, altered. Therefore, the activities, business scope, output and operation should conform to the norms and values of the community, in which the organization is included, in order to be perceived as legitimate. Thus, the firm has three possibilities to become legitimate. The first possibility concerns the opportunity for the organization to conform to social constraints. Secondly, the organization can employ communication to modify social perception of legitimacy, in order to adapt it to the firm's operations, values and goals. Thirdly, communication can be again a method to legitimate the organization, by matching it to norms and symbols which have a strong foundation of social legitimacy (Dowling & Pfeffer, 1975).
Lindblom (see Cormier & Gordon, 2001, p. 590) identifies four different strategies, that the organization can implement in the search for legitimation. The author's strategies are partially linked to Dowling and Pfeffer's three possibilities. Nevertheless, Lindblom draws a distinction between legitimacy and legitimation. The first is "a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part"[10]; the second is the process at the basis of the previous condition.

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[8] see Deegan, 2002, p. 293

[9] Dowling & Pfeffer, 1975, p. 126

[10] see Gray, et al., 1995, p. 54

According to the first strategy developed by Lindblom, the organization may inform the society about any changes in performance and activities, adopted in order to mitigate the disparity between the actual corporate performance and social value system. This strategy is related to the first action to become legitimate stated by Dowling and Pfeffer. According to the second strategy, which corresponds to the second one by Dowling and Pfeffer, the organization may attempt to alter social perceptions, without modifying its conduct, as the legitimacy gap is due to misperception. As stated in the third strategy, the organization may evoke legitimate symbols to divert social attention from an issue related to the firm, to another correlated issue. The latter approach is similar to Dowling and Pfeffer's third possibility. Lastly, as reported in the fourth strategy, the organization may modify the expectations of the society on its performance (Gray, et al., 1995). Altering or modifying the social value system is a complex process; thus, it is more probable that the organization will conform or match its features with what is considered to be legitimate (Dowling & Pfeffer, 1975).

Voluntary disclosure have an important role in legitimacy theory, as it may have different implications. Indeed, voluntary disclosure on environmental and social matters may be a system to conform with social expectations and norms (Deegan, 2002). Moreover, it may be a communication method for corporate changes and remedies to legitimacy gaps (Lai, et al., 2016). In addition, reporting on environmental and social accomplishments, strenghts or positive information may be a way to divert community's attention from negative aspects of company's performance in the same areas. In this respect, numerous studies have found evidence on the use of social and environmental reporting as a strategy to legitimise features of the organization, especially if a particular circumstance is perceived unfavorable by the management (Deegan, 2002).

2.5 – Theory of Proprietary Costs

Proprietary costs consist in the "reduction of future cash flows attributable to a disclosure" (Scott, 1994, p. 27). The consideration of these costs is related to the subsistence of proprietary information, which influences, for example, the determination of share price. This kind of information is not public, as managers are the holders, and it is their decision to reveal it to the market (Cormier & Gordon, 2001).

As stated by Verrecchia[11], investors are influenced by proprietary costs. In the event of a non-disclosure, they do not discount entirely the share price, as the missing information may be

[11] see Scott, 1994, p. 27

unfavorable, or the result of an attempt to avoid proprietary costs. Indeed, managers have to balance the previously cited costs towards the reduction of enterprise value, caused by the investors' uncertainty about the information withheld (Scott, 1994).

The non-disclosure of all information due to proprietary costs is in contrast with adverse selection argument, supported by Grossman and Milgrom[12]. According to the two authors, the seller, in this case managers, have the incentive to disclose all information, as they know that investors will discount the share price, in the case of a non disclosure. However, this argument is not verified in practice (Scott, 1994).

In reality, if companies disclose proprietary information, third parties may take advantage of sensitive information in competitive settings, giving rise to costs for the reporting firm (Cormier & Gordon, 2001).

As previously explained, the decision to disclose is determined by two contrasting factors: the positiveness of the news and the level of proprietary costs. The more positive the news, the more beneficial the impact on share price, the greater the motivation to disclose, *ceteris paribus*. Proprietary costs are inversely related to the incentive to disclose, *ceteris paribus*: the higher the proprietary costs, the larger the decrease in enterprise value and the incentive not to disclose. Scott (1994) has provided a matrix, which is reported below, to represent the two factors.

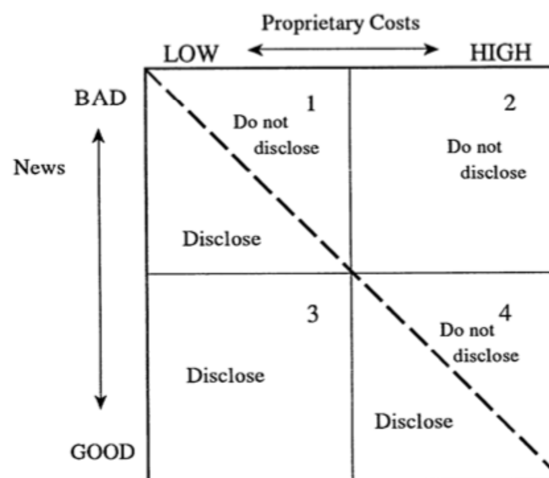

Figure 2.4: Proprietary Costs, the Favorableness of News, and Disclosures. Source: Scott, T. W., 1994. Incentives and Disincentives for Financial Disclosure: Voluntary Disclosure of Defined Benefit Pension Plan Information by Canadian Firms. The Accounting Review, 69(1), pp. 26-43.

[12] see Scott, 1994, p. 27

According to the matrix, as proprietary costs rise, only positive information is likely to be reported, and investors will value less negatively the company, due to uncertainty about the reasons for non-disclosure. Moreover, on the diagonal lie the organizations whose reduction in share price would not vary, in the event of investors' discount either for the disclosure or non-disclosure. Therefore, they are indifferent between disclosing or not. Organizations that are located in the area below the diagonal disclose, since the positiveness of the news more than offset the proprietary costs; while, organizations above the diagonal decide not to disclose, for their proprietary costs exceed the favorableness of information (Scott, 1994).
Diamond (see Scott, 1994; Cormier & Gordon, 2001) points out that in the case of non-disclosure, investors will attempt to gather news on their own, to reduce uncertainty. This is socially inefficient as the individual cost to produce the same information is repeated by all the investors. For this reason, voluntary disclosure is a Pareto improvement, as it allows to collect information at once. Furthermore, it has benefits also for the organization, because it will mitigate the risk associated to the company in the capital markets; thus, this reduces the cost of capital (Cormier & Gordon, 2001).
Environmental and social reporting represent proprietary information, which result in proprietary costs for the organization. If the costs associated with the disclosure are particularly high, managers will attempt to avoid reporting. If the amount of costs is not significant, a late disclosure of an unfavorable news is detrimental for the organization, especially in terms of reputation. In addition, the high pressure to report information from stakeholders leads to the expectation that public companies are more likely to disclose, with respect to private ones (Cormier & Gordon, 2001).
In conclusion, voluntary disclosure implies proprietary costs for the company. On the other hand, companies may deem it convenient to report on voluntary matters, in order to mitigate the pressure from stakeholders and prevent negative repercussions from late communication.

2.6 – Institutional Theory

The organization is immersed in an intricate system of institutions concerned with different matters, for example politics, finance, culture and economics, which exert pressure in order for the company to conform to prevailing norms and rules. This concept underlies the institutional theory (Girella, et al., 2019; Jensen & Berg, 2012). The above-mentioned pressure results in behavior homogeneity, which is referred to as institutional isomorphism (Frias-Aceituno, et al., 2013a). Hawley (see DiMaggio & Powell, 2000) define isomorphism as the restraining process

in which an individual is forced to conform to other individuals, that experience the same environment or contextual factors.
DiMaggio and Powell (2000) recognize competitive and institutional isomorphism. Competitive isomorphism is at the heart of Hannan and Freeman's research (see DiMaggio & Powell, 2000), which emphasize the role of market competition as a source of pressure towards homogeneity. On the other hand, DiMaggio and Powell (2000) discuss institutional isomorphism, firstly introduced by Kanter in 1972. The two authors point out that companies compete not only for resources and customers, as suggested by competitive isomorphism, but also "for political power and institutional legitimacy, for social as well as economic fitness" (DiMaggio & Powell, 2000, p. 147).
Matten and Moon (2008) argue that institutionalized organizational processes are firstly legitimate processes. As a result, the achievement of legitimacy depends on three mechanisms, identified by DiMaggio and Powell (2000) and associated with institutional isomorphism: coercive, mimetic and normative isomorphism.
The first mechanism is the consequence of the influence that other related organizations and, in general, the surrounding society has on a specific company. In particular, it results from the pressure to comply with explicit or implicit requirements introduced by third external parties. Mimetic isomorphism occurs when the organization, in a situation of uncertainty or ambiguity, emulate other organizations considered as models. The latter may be unwilling or unaware to be imitated. Frequently, managers adopt best practices from other companies. Furthermore, newly established organizations are not immune to homogeneity, as they are affected by existing business models. The last mechanism is caused by the standards applied to a profession, to achieve legitimate organizational practices and a specified cognitive base, in a process called "professionalization"[13]. Organizational norms and the cognitive base, that characterize professionalization and are developed by educational institutions, are one source of isomorphism. The other feature of professionalization is the expansion of professional network, through which innovation is spread. Moreover, companies, in order to attract professionals, may seek to offer services and benefits, which are the same as competitors, leading to homogeneity (DiMaggio & Powell, 2000).
As an example of application of institutional theory, the study of Frías-Aceituno et al. (2013a) explores the impact of the legal system on the determinants to the integrated reporting practice. As highlighted in the analysis of the two authors, the legal system, as part of the institutional context in which the organization operates, has been found to be related with the tendency to

[13] DiMaggio & Powell, 2000, p. 151

issue information not already included in the financial statements. Countries characterized by civil law legal system are more attentive to stakeholder rights, as they consider the company as collection of constituencies, all aiming at the persistence of the entity. The latter is also entitled with social responsibilities to implement. As a result, organizations will communicate additional information to comply with constraints regarding stakeholder protection. Thus, Integrated Report may be a solution to provide a more complete disclosure. On the contrary, countries characterized by common law legal system aim at protecting the interests of shareholders, because of their tradition in assuring ownership rights. Indeed, companies are first of all vehicles to deliver shareholder value. For this reason, financial statements are crucial, while sustainability and integrated information is less fundamental, as it consider matters relevant to other stakeholders. The distinction among civil and common law countries is found to be reflected also in the quality of ESG reports, which is higher for the civil law ones (Frias-Aceituno, et al., 2013a).

Moreover, Jensen and Berg (2012) have adopted institutional theory to describe the determinants of integrated reporting in contrast to traditional sustainability reporting. This research is broader in scope than the one reported previously. In particular, the authors have relied on the framework provided by Matten and Moon (2008), which explores the impact of political, financial, cultural, economic, educational and labor systems.

From the reported analyses, the institutional theory is evidently valuable in identifying the factors which contribute to explaining the voluntary disclosure of information, that is relevant to different stakeholders.

2.7 – Theory of Political Costs

The argument of political costs is adopted by Girella et al. (2019) to support their empirical analysis. However, the theory, as originally conceived, is not completely coherent with application in the empirical analysis reported in the following chapters.

First of all, the theory of political costs has to be defined, also in relation to the positive theory of accounting. Watts and Zimmerman (1978) are widely recognized as the developers of the latter theory. They analyze the determinants of management welfare, which have an impact on the accounting standard-setting process. Those determinants are tax and regulatory factors, political costs, information production costs, management compensation plans. Political costs arise from the company's attempt to avoid the intrusion of government in the business and adverse political actions. The magnitude of those costs is, according to the authors, dependent on the size of the company, that is the amount of reported profits; the higher the profits, the

higher the expected political costs. For this reason, management will try to reduce reported earnings; thus, it will choose accounting standards to achieve its objective and also attempt government lobbying (Watts & Zimmerman, 1978).

After the brief summary on the original formulation of the political costs and their implications, this paragraph will present the critical approach of Milne (2002) on the literature about the theory. Indeed, the research following the work of Watts and Zimmerman (1978) is focused on the application of the theory of political costs to explain the reasons behind the adoption of voluntary social disclosure.

Milne (2002) highlights the aspects of the theory that are frequently misrepresented. Firstly, the author points out the concept of high profits, which are linked to the monopoly power in Watts and Zimmerman. As a result, companies with large profits will try to reduce them to divert political attention. The association with exploitation of environmental, human and other resources as a cause of political pressure is not mentioned by the two authors.

Furthermore, political costs theory is difficult to test without considering the hypotheses other than size from Watts and Zimmerman, like, for example, management compensation plans. Size is a fundamental variable in testing also other theories, i.e. stakeholder and legitimacy theory. In order to fully support the argument from the two authors, Milne argue that all three predictors of lobbying activity and accounting standards choice, that are bonus plan, debt/equity and political costs, must be included in the analysis.

In addition, the author analyzes other studies that consider voluntary disclosure as a management behavior. Nonetheless, he underlines the absence of a direct relationship between the disclosures and the theorized reduction in reported profits, and also the lack of evidence in the exploitation of disclosures as a lobbying instrument. In fact, Milne consider the "social responsibility campaigns in the media"[14], otherwise defined as "advocacy advertising"[15], more influential on politics than social responsibility reports.

Considering all the arguments provided by Milne and the scope of the empirical analysis that will be presented in the following chapters, it appears that the adoption of the theory of political costs, to motivate the choice of the size variable in the statistical model, is not entirely coherent. Indeed, in Watts and Zimmerman's (1978) formulation, the other predictors cited before are a fundamental element. Nevertheless, political costs theory could be the explanation of the relationship between size and disclosure behavior, but cannot be clearly distinguished from other arguments, like legitimacy theory. This observation has been reported by Lemon and

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[14] Watts & Zimmerman, 1978, p. 115

[15] Milne, 2002, p. 386

Cahan (see Milne, 2002, p. 383), who specify the consistency between legitimacy and political cost theory. Jantadej and Kent (see Milne, 2002, p. 383) even state that legitimacy theory is an extension of the theory of political costs. If this were the case, legitimacy theory would be sufficient in explaining the determinants of voluntary disclosure. For this reason, the research questions, originating the empirical analysis, will not be based on this theory.

2.8 – Hofstede's six dimensions

In order to better understand the research questions presented in the following chapter, this paragraph will be dedicated to Hofstede's six cultural dimensions.
The framework proposed by Hofstede to study national culture is the most universally applied. It consists in six dimensions for making cross-cultural comparisons (Soares, et al., 2007). For this reason, it will be useful to connect differentiating traits of the countries to voluntary disclosure.
The six dimensions, that will be analyzed separately, are:

1. Power Distance;
2. Uncertainty Avoidance;
3. Individualism vs. Collectivism;
4. Masculinity vs. Femininity;
5. Long-Term vs Short-Term Orientation;
6. Indulgence vs Restraint[16].

2.8.1 – Power Distance

Power distance reflects the unequal distribution of power and authority, accepted by both leaders and followers. Power is a fundamental element in a society as well as inequality, and the two characteristics are present in each society. Nevertheless, there are cultures which are less unequal than others. Hofstede (2011) differentiates between small and large power distance, by listing typical traits of both categories. In small power distance societies, firstly, power needs to be considered as legitimate. Secondly, hierarchies are created for convenience, because they assume unequal roles. There is no prevailing corruption and income distribution is rather balanced.

[16] (Hofstede, 2011)

On the other hand, large power distance societies are characterized by hierarchies which are inherently unequal, since power legitimacy is irrelevant. Corruption is persistent and scandals are kept as secret as possible. Lastly, income is distributed unevenly in the society.
As emphasized by the author, these are extreme situations and real countries are usually located in between (Hofstede, 2011).

2.8.2 – Uncertainty avoidance

Uncertainty avoidance dimension refers to the degree of society's ability to deal with unknown situations characterized by ambiguity, uncertainty and novelty. Strong uncertainty avoidance societies attempt to mitigate the ambiguity. As a consequence, the emphasis of culture is on rules, codes of conduct and laws. Therefore, opinions and ideas which are contrary to the status quo are criticized.
On the contrary, weak uncertainty avoidance societies have accepted the inherent unpredictability of life, in general, and they are comfortable with it. Moreover, laws are fewer and new different ideas are accepted.
As for the previous dimension, these are the two extremes, but in reality, cultures are less polarized (Hofstede, 2011).

2.8.3 – Individualism vs. Collectivism

As defined by Hofstede (2011), the two dimensions identify "the degree to which people in a society are integrated into groups". As a result, societies which can be described as individualistic are more focused on the single person, which has to take care of himself. The individual dimension is at the center, and so is privacy and personal opinions. Furthermore, the violation of rules is associated with a sense of guilt.
Instead, a collectivist culture is focused on the group dimension. The group protects each member in exchange for loyalty. Thereby, harmony must be ensured and opinions are established as a community, not as an individual. Lastly, the guilt in violate rules is replaced by feelings of shame, induced by the importance of relationships (Hofstede, 2011).

2.8.4 – Masculinity vs. Femininity

Masculinity and femininity refer to the prevalent values of the society as a whole, considering both men and women. Hofstede (2011) has noted that, in masculine countries, important values are ambition, success, competition and strength. Also, the material rewards play an important role and social gender gap is maximum.

Conversely, in feminine countries both men and women are caring, modest and concerned about quality of life and cooperation. Subsequently, there is minimum gap between the genders.
The author has interestingly reported that the masculinity index, in 2010, was high in Japan, Germany, and some Latin countries, among which Italy and Mexico (Hofstede, 2011).

2.8.5 – Long-Term vs. Short-Term Orientation

The fifth dimension involves the priority that society assign to the past as opposed to the future challenges. Long-term orientation entails that individuals are more prone to making investments and saving for the future. It also implies that traditions, people and behaviors may change according to actual circumstances.
Instead, a culture based on short-term orientation is more attached to traditions and, in general, the past, so any innovation or transformation is regarded as questionable. Individuals strive to achieve stability, constancy and perseverance. This type of orientation is associated by Hofstede with countries characterized by slow or no economic growth (Hofstede, 2011).

2.8.6 – Indulgence vs. Restraint

Indulgence and its opposite, restraint, are the last dimension of Hofstede's framework, added in 2010. The former consists in endorsing the fulfillment of "basic and natural human desires related to enjoying life and having fun"[17]. This involves freedom of speech, importance of happiness and spare time, and, consequently, more personal oversight on one's life. Restrained society relies on social norms and rules to control the accomplishment of needs. Hence, individuals may experience a sense of being powerless and unhappy. The author explicitly relates this dimension to the literature on "happiness research". He also reports a weakly negative relation of indulgence or restraint with long-term or short-term orientation; thus, the two dimensions are quite complementary (Hofstede, 2011).

2.9 – Implications of the theoretical background

The organizational and social theories, presented in this chapter, are the underlying fundament for the formulation of the research questions. From the summary presented, two major areas of analysis can be identified: the study of determinants of voluntary reporting related to the firm attributes and to the cultural and country-specific attributes. The two components will be central in the empirical analysis, illustrated in the following chapter, as they identify the research

[17] Hofstede, 2011

questions. The latter are the starting point of the statistical investigation on the adoption of Integrated Report. The first research question, that this study intends to respond, regards the identification of the firm determinants relevant in the choice of adopting the Integrated Report, and the impact they have on its probability. The second question is concerned with the recognition and the influence of significant country-related determinants on the integrated reporting practice. Ideally, stakeholder, agency, signaling, proprietary costs and legitimacy theories will be mainly linked to firm-specific determinants; while institutional theory and Hofstede's six cultural dimensions will be primarily connected to country-related and national cultural determinants. These two research questions are relevant, first of all, in academic research, as integrated reporting is a rather innovative accounting practice, with limited evidence and research associated to it. Furthermore, the recent development of Integrated Report determines an adoption confined to a restricted number of companies worldwide. As a result, research questions will be important also to organizations and in particular managers, to learn which are the firm discriminants in the adoption of Integrated Report. Therefore, managers could compare the situation of their company and assess the convenience of issuing the mentioned disclosure document. Lastly, standard setting bodies and policy makers could benefit from the identification of determinants as they may adjust guidelines to encourage this practice. Indeed, establishing the corporate rationale behind integrated reporting is a crucial step in assessing the method to improve and support the Integrated Report.
Eventually, the objective of this paragraph was to outline in general terms and introduce the topic. A more detailed explanation of the determination and relevance of the research questions will be presented in paragraph 3.1, in the context of the empirical analysis.

2.10 – Conclusions

The aim of this chapter was to provide the theoretical background for the empirical analysis, that will be discussed afterwards. For this reason, different theories have been presented in order to address the research questions on the determinants of the Integrated Report, both at corporate level and at country level. Indeed, this work may be included in the strand of analysis that attempt to determine the factors relevant in the voluntary disclosure, as is the Integrated Report. Another study has already analyzed country and firm determinants of the Integrated Report (see Girella et al., 2019), yet, as the authors point out, there are inherent limitations regarding the methodology of the research and the theoretical background. The latter element will constitute the original attribute of this study, as the legitimacy theory has been considered. Therefore, an additional variable related to this theory has been included in the analysis: the

ESG disclosure rating. The ESG score was tested in only one previous research in relation to firm-specific determinants, not country specific ones (see Lai, et al., 2016).
Hence, country determinants will be tested jointly and separately with respect to firm ones. The Hofstede's framework[18] was included to highlight cultural traits, that will be relevant thereafter in the investigation of the impact that national culture has on the adoption of integrated reporting.
As regards the research questions, at the basis of the identification of the determinants, they are widely discussed across the literature, as will be explored in the third chapter. Nonetheless, they generally arise from the economic and social theories listed above: stakeholder, agency, signaling, legitimacy and institutional theory, theory of proprietary costs and political costs.

[18] Hofstede, 2011

CHAPTER 3 – EMPIRICAL ANALYSIS

The literature review and the overview on sustainability initiatives and legislations, presented in the previous chapters, constitute the foundations on which the empirical analysis will be developed. In particular, this chapter will describe in detail the process underlying the analysis and the conclusions that can be derived from the results of the statistical procedure.
Therefore, the research questions will be the focus of the first paragraph, presented more in detail than in the second chapter, where they were outlined in general terms. The identified gaps in the existing literature will be the object of the reasoning that has led to the model presented later in this chapter. The aim is to close the gaps through the development of this study.
Secondly, the hypotheses, another important element of the analysis, will be explained, also in relation with previous research on the topic. As a result, each hypothesis will have a dual connection, both with the literature and the empirical research this paper assumes as a reference. The numerous organizational and social theories mentioned in the previous chapter are functional, at this point, in explaining the rationale behind the formulation of the investigation. In this context, the model, prepared to answer to the research questions and verify the hypotheses mentioned, will be illustrated in its variables and components.
Subsequently, there will be a thorough description of how the sample has been retrieved and assembled in order to perform the planned statistical investigation. In this regard, basic descriptive statistics will be presented in tables and interpreted. These results will be integrated and deepened by the t-test and ANOVA statistics performed with the software R.
After the introductive descriptive analysis, four logistic regression models will be reported and compared. The outputs will be interpreted to draw conclusions on the hypotheses and on the relationship of the empirical study and the existing literature.
Throughout the chapter, will be confirmed the affiliation of this work with the previous research, which addresses the identification of the determinants in preparing and issuing the Integrated Report on a voluntary basis. Currently, South Africa is the only country where it is mandatory (Wahl, et al., 2020). The determinants mentioned are related to the country where the organization is incorporated, to the industry it belongs to, and, lastly, to firm itself.
At the end, the conclusive paragraphs will summarize the results obtained, will present final considerations and limitations of the analysis, and general implications for managers, policy makers and standard setting bodies.

3.1 – Research Questions

The adoption of voluntary disclosure on CSR and sustainability topics has been, over the years, one matter of interest for accounting and organizational literature. Organizational theories have been developed in order to explain and justify the publication of additional reports and documents on the mentioned topics. In particular, stakeholder theory and agency theory are the most commonly used in the attempt of providing a rationale, thus motivations, related directly to company's course of business. On the contrary, institutional theory tries to identify, in the cultural context, the reasons for voluntary disclosure. Nevertheless, the other theories mentioned in the previous chapter (signaling and legitimacy theories, theories of proprietary costs and political costs) are utilized by authors to support their empirical findings.

On the other hand, regulatory bodies and accounting standards setters have developed and modified guidelines. The common objective is to accommodate the increasing demand for transparency on different matters, on behalf of stakeholders who are increasingly concerned, for example, on sustainability issues regarding organizations (Girella, et al., 2019).

The Integrated Report has emerged as a response to these needs, and consequently, for the companies to communicate their non-exclusively financial performance to stakeholders (Girella, et al., 2019). The <IR> Framework is the result of the attempt to provide a baseline for the organizations committed to prepare the report. The IIRC has highlighted the benefits of integrated reporting and integrated thinking, as, in its words, they are "the evolution of corporate reporting"[1]. Nevertheless, the Integrated Report, as theorized by the IIRC, is voluntary for the majority of the organizations, while it is mandatory for one country only[2]. For this reason, besides the exception of South-African firms, there should be motivations, which are behind the adoption of Integrated Report. Indeed, in order to prepare this report, companies have to commit time and resources to conform to the Framework and achieve integrated thinking across the whole organization, as intended by the IIRC.

As a result, these reasons may depend on companies' internal attributes or performances. The first research question addresses the cause relation between the publication of Integrated Report and the characteristics of the adopter organization, including the related industry. In other words, it explores the impact of firm's features on the likelihood of issuing this peculiar type of corporate reporting.

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[1] <https://integratedreporting.org/what-the-tool-for-better-reporting/>. [Accessed: July 6, 2020]

[2] Cf. introduction to chapter 3

Furthermore, the factors that are relevant in selecting the Integrated Report, as a disclosure document, may not be limited to the firm itself, but also to the national and cultural context in which the company is incorporated. The second question is concerned with the latter connection, hence between the organization and the peculiarities of their related countries. It refers to the assessment of the impact of relevant attributes on the likelihood of adopting this corporate reporting instrument.

The two research questions will be covered both jointly and separately to better understand the importance of these two contexts in the empirical analysis.

The scope of the research questions is relevant, firstly, for managers, as the investigation will highlight variables that are significant or not in adopting this practice. In addition, it will connect the significant characteristics to aspects defining the theories previously cited. For example, the significance of some factors may be associated with the pressure that certain groups of stakeholders exert on the organization, as postulated by the stakeholder theory. In general, it will provide useful insights on the type of companies which have decided to implement integrated reporting in their normal course of business.

On the other hand, the empirical analysis will contribute to the strand of literature regarding the determinants of voluntary disclosure and, more specifically, of the integrated reporting. Since it is a relatively recent initiative, papers on the subject are often focused on a small sample of early IR adopters, as will be discussed in the next paragraph.

Moreover, understanding the reasons and the factors that orientate companies towards the preparation of this document may help, first of all, in adjusting the guidelines, in order to tailor the content of future Integrated Reports, by responding to companies' and stakeholders' needs. Secondly, the study of country determinants may be useful, for national policy makers, in understanding the influence that the culture has on the adoption of sustainability accounting practices. Thus, it allows to enact specific regulations, that promote the implementation of such practices.

In conclusion, to summarize the aforementioned concepts, the research questions may be formulated as follows:

- R.1: What are the determinants, related to firm attributes and performance, in adopting the Integrated Report, as a voluntary form of disclosure? What is the impact of these factors on the likelihood of issuing the IR?
- R.2: Do national characteristics, related to the country where the company is incorporated, have an influence on the adoption of the Integrated Report?

3.2 – Literature Gaps

Since the publication of the Framework, in December 2013, the Integrated Report has constituted the object of academic research and, more recently, reviews on the findings of empirical research.

In particular, publications on the topic are focused on different aspects of the preparation and issuance of this peculiar type of corporate disclosure.

In this regard, Vitolla, et al. (2019) have identified four different strands of literature concerning: appreciations, by pointing out potential benefits of integrated reporting; criticisms, that refer to the problematic aspects of this form of disclosure; determinants, which highlight the motivations and the aspects guiding the choice of this report; effects, that are caused by the decision to prepare an Integrated Report or the quality of it. Moreover, Kannenberg and Schreck (2019) have adopted a partially similar distinction to categorize empirical studies on the subject, as they analyze papers on determinants and on external and internal implications of the Integrated Report. In both reviews are highlighted gaps in the integrated reporting literature. The research deficiencies concern, for example, the focus of the empirical studies on analyzing samples of firms from only one country (Vitolla, et al., 2019, p. 526), and the weak or mixed relationships found in the determinants research strand (Kannenberg & Schreck, 2019, pp. 557-558).

Furthermore, the empirical analyses, considered as a starting point for the investigation presented in this chapter, are mainly focused on samples of companies and data related to the IIRC Pilot Programme (in 2011) and to the earlier years of integrated reporting. Since then, regulations have been modified and developed, as was the European legislation, discussed in the first chapter.

As a consequence, the scope of the empirical analysis is, firstly, to provide a sample of companies not confined to one country, but involving different situations, in order to analyze the contrasts and the relevance of national characteristics. In addition, the year taken as a reference for the sample is 2018, allowing for an updated analysis and an improved availability of data of IR adopters, as this practice has started to expand worldwide.

Secondly, the aim is to add further evidence on the literature strand about determinants, to address the weak and mixed evidence obtained until recently. This result will be achieved by utilizing models with diverse variables, concerned with both the organization and the country, jointly and independently. Indeed, with respect to the study conducted by Girella et al. (2019), which combine firm and country determinants, the empirical research, presented in this chapter, will also compare the model characterized by all the variables, with the models specific for the

two dimensions. This comparison will address a methodological gap in prior studies, regarding the goodness of fit of the complete model with respect to the separate models. The intention is to understand whether a regression with two sets of heterogeneous variables, considered jointly, fits significantly better than two different nested models, one firm-related and the other country-related.

Lastly, the empirical model will include a variable, the ESG score, that have been investigated in exclusively one previous study by Lai et al. (2016), which analyze only firm-related variables. The ESG score, as will be explained more in detail afterwards, is a variable that will be devoted to verifying one particular theory aforementioned: the legitimacy theory. However, Lai et al. (2016) did not analyze simultaneously, in the same model, ESG score with country-specific variables. On the contrary, the empirical analysis, in the following paragraphs, will examine this sustainability index and verify the theoretical assumptions connected to it.

In conclusion, the empirical research, reported in this chapter, will attempt to close all these gaps identified in the review of the literature, conferring relevance to the analysis conducted. The increasing implementation and interest on this peculiar methodology of corporate reporting has also a determining role on the importance of the topic to be analyzed.

3.3 – Hypotheses relative to the model

The research questions explained previously have been the first fundamental step in the development of the empirical analysis. The second step is the formulation of exhaustive and comprehensive hypotheses, which will be crucial in the subsequent design of the logistic regression model. Indeed, the latter statistical model and, in particular, variables are linked to the assumptions defined in this paragraph.

Hypotheses have been prepared by taking into consideration precedent empirical research, and also the organizational theories explained in the previous chapter. For this reason, for each assumption, a dedicated paragraph will explain the rationale behind the formulation and the connection of the hypotheses with the existing studies and literature.

A distinction can be identified between firm- and country-specific hypotheses. In particular, the first six assumptions can be comprised in the former group, while the last two belong to the latter. Both the sets of hypotheses, that this analysis attempts to address, are related to the likelihood, for companies, of voluntarily preparing and publishing an Integrated Report.

3.3.1 – Firm size

The first hypothesis involves an attribute of the firm, which can be regarded as a common feature in the confirmation of different theories about voluntary disclosure: the firm size. Therefore, this paragraph will discuss each argument supporting the inclusion of this variable in the analysis.

Firstly, stakeholder theory can be linked to firm size, as larger firms may be characterized by a wider range of different stakeholders, which could be both primary and secondary[3]. As a result, these firms often have to face a large number of constituencies, which are affected and, in turn, affect them. For example, they may have more employees, or suppliers, or customers to manage, or more investors to respond to. Consequently, organizations may voluntarily decide to issue an Integrated Report, which combines financial and non-financial information, to meet the requirements of these various stakeholders at once, in order to decrease their pressure (Girella, et al., 2019).

Moreover, large-sized companies may have a greater public visibility, than small-medium enterprises (Lai, et al., 2016). According to legitimacy theory, social legitimation is fundamental for the company to operate[4]. Thus, in order to communicate positive social actions and conform to norms and expectations, companies may consider publishing an Integrated Report convenient.

Furthermore, the greater public visibility may be related to a desire of demonstrating better quality of the company to outside constituencies. In this context, according to signaling theory, voluntary disclosure may become a signal for outside stakeholders. According to Girella, et al. (2019), the theory of proprietary costs can be adapted to explain the relationship between the firm size and the choice of adopting the Integrated Report. The authors highlight how large organizations may have access to more substantial resources. In this way, the costs of disclosing proprietary information in the integrated reporting format may be less impactful.

As regards prior research on the subject, results are not consistent across the papers considered. Indeed, the majority of the studies analyzed (Girella, et al. 2019, Frias-Aceituno, et al. 2013b, 2014) found a positive relation between the size of the firm and the adoption of the Integrated Report. On the contrary, Lai, et al. (2016) and Vaz, et al. (2016) found no significant relation between the two variables.

[3] Cf. paragraph 2.1

[4] Cf. paragraph 2.4

Nevertheless, since the prevalent result and the literature seem to support the assumption of a positive relation, the first hypothesis will be formulated as follows:

H_1. The publication of the Integrated Report is positively related to firm size.

3.3.2 – Profitability

The theoretical explanation, behind the inclusion of profitability as a determinant variable in the decision of adopting integrated reporting practices, involves stakeholder, proprietary costs and signaling theories.

As regards the first theory, companies which are particularly profitable may deserve exclusive attention from many stakeholders. The latter may be interested in assessing the sources of firms' performance, through more detailed disclosures on value creation. For this reason, the publication of an Integrated Report may be determined by a high pressure from stakeholders towards companies, that perform notably well. Stakeholder theory has been the basis, adopted by Girella, et al. (2019) and Frias-Aceituno, et al. (2013b), for the exploitation of profitability as a variable for the analysis.

With respect to the theory of proprietary costs, the high profitability may reduce the impact that proprietary costs have on firms, encouraging them to report on non-financial matters (Girella, et al., 2019). This motivation, which is similar to the one adduced for the firm size, leads to consider a positive influence of profitability on the likelihood of publishing an Integrated Report.

The decision for highly profitable firm to voluntarily disclose additional information may also be explained by signaling theory. Indeed, those companies may want to signal positive performance, because it may be regarded as an attribute of high quality by the receiver. Hence, according to this theory, a positive relation can be hypothesized. This interpretation is in line with the previously mentioned theories.

The second hypothesis presented concerns an important aspect in evaluating companies, which is profitability. Consequently, many researchers have tried to detect the relation of this variable with the likelihood of adopting an Integrated Report. However, the results are non-homogeneous across the studies analyzed. On one hand, Lai, et al. (2016) and Frias-Aceituno, et al. (2013b) have found a non-significant relation; on the other, Girella, et al. (2019), and Frias-Aceituno, et al. (2014) have obtained a positive relation. In conclusion, further investigation on the variable seems to be necessary to study the determinants.

Therefore, the following statement has been formulated to include the profitability as a variable for the statistical model:

H_2. The publication of the Integrated Report is positively related to firm profitability.

3.3.3 – Growth opportunity

As reported in the <IR> Framework document, opportunities, together with risks, are one of the content elements, which characterize the preparation of the report. Growth opportunities are crucial in the definition of value creation and they certainly affect it, as demonstrated by the inclusion in the Framework. Therefore, the proxy selected to represent this important factor is market-to-book ratio (MTB)[5]. This choice recalls the research conducted by Girella, et al. (2019) and Frias-Aceituno, et al. (2013b, 2014). As reported by Frias-Aceituno, et al. (2014), agency theory plays an important role in the investigation of the connection between the voluntary disclosure and growth opportunities. Indeed, the information asymmetry and agency costs may be mitigated by voluntary reporting, when the company has high growth opportunities. Thus, the firm could benefit from disclosure of its future plans, by obtaining a lower cost of financing. However, the authors underline the double nature of disclosure implications: if on the one hand, the company obtains funds to further enhance its growth, on the other hand competitors may take advantage of sensitive information.

Another element which may suggest a negative impact of market-to-book ratio is related to the content of the Integrated Report. Voluntary disclosure may be utilized by companies to emphasize the importance and the extent of intangibles, such as suppliers and customers relationships and intellectual capital, illustrated among the six capitals in the first chapter. Therefore, managers may provide motivations for a higher valuation, than the current one, on behalf of market analysts. Henceforth, a lower market-to-book ratio may be correlated to a greater tendency to report on voluntary topics, in order to improve the valuation, thus the firm ratio, by highlighting the six capitals related to intangibles.

Nevertheless, as prior research found a positive significant relation (see Girella, et al. 2019; Frias-Aceituno, et al. 2013b), the third hypothesis is defined as follows:

H_3. The publication of the Integrated Report is positively related to market-to-book ratio.

[5] Cf. Chen & Zhao, 2006, p.256

3.3.4 – Industry

As Watts and Zimmerman observed (see Frias-Aceituno, et al. 2013b, p. 60), organizations in the same sector are usually expected to adopt similar disclosure methods, and if they are not, investors may interpret it as a negative sign. This tendency may be considered mimetic isomorphism, as firms are inclined to emulate other firms' practices. Institutionalist principles, in this case may be applied to sectors to investigate the difference in reporting customs (Kannenberg & Schreck, 2019). As a result, the industry in which the company operates shapes its reporting practices, especially its voluntary ones, as found in the manufacturing industry. The latter is considered a high-risk industry for its strong impact, for example, on the environment, or on the employees (see Girella, et al., 2019, p. 1327). As a consequence, the pressure from stakeholders to disclose on non-financial matters may be decisive in the enactment of disclosure mechanisms, that allow for a mitigation of demands.

This situation of influence on behalf of stakeholders can be paired to the need for the company to obtain legitimation from society. The high-risk imply sustainability issues and liabilities that an organization needs to face and manage, because they have a reflection on society. In order to accomplish this need, maintining legitimacy, and sometimes diverting people's attention, firms report on sustainability initiatives and performance. In contrast, industries such as the service one should not be equally influenced by legitimation and stakeholders' needs, as they should not experience the same threats and exposures.

The relevance of industry attribute has been tested by authors with rather consistent results: Lai, et al. (2016) and Garcia-Sánchez, et al. (2013) have found a positive impact, even if limited to certain industries; Girella, et al. (2019) found that companies in manufacturing industry are more likely to adopt IR, with respect to service industry.

Consequently, business sector has to be included, as a variable, in the model for its significant association with IR publication. Henceforth, the hypothesis has been developed as follows:

H_4. The publication of the Integrated Report is positively related to the affiliation to manufacturing industry.

3.3.5 – Board size

The board of directors has a mediation role in the agency relationship between shareholders and managers. It is elected by shareholders in order to monitor management, ensure the accomplishment of their interests, and, at the same time, reduce information asymmetries between the parties. In the board are usually present both inside and outside directors: the former has specialized knowledge regarding the business; while, the latter are considered to be

independent, so they provide an impartial point of view on matters raised. Shareholders can decide the number of directors, since it is not fixed or mandatory by law. A small board of directors may be more efficient, in the sense that the decision-making process may be leaner and quicker. On the contrary, a larger board of directors may be characterized by greater diversity and different backgrounds and experiences. In the latter case, Garcia-Sánchez, et al. (see Frias-Aceituno, et al., 2013b) point out the linkage among the size of the board and the volume of information disclosed. The authors argue that the larger is the board, the better it conducts its monitoring role, as the workload could be shared among more supervisors. Therefore, directors disclose a greater amount of corporate information. In addition, Frias-Aceituno, et al. (2013b) observe that preparing an Integrated Report requires a vast expertise in different areas (environment, finance, accounting, corporate law, etc.), which could be more easily covered by a larger number of directors.

The evidence on the relevance of this variable, in the context of integrated reporting practices, is limited, as there are two studies analyzed that examine the topic. Both Girella, et al. (2019) and Frias-Aceituno, et al. (2013b) report a positive and significant influence of the board size on the adoption of Integrated Report: the larger is the board, the higher is the likelihood of integrated reporting. The findings are in line with the assumptions derived from agency theory. Considering the discussion presented above, the hypothesis will be expressed in the following manner:

H_5. The publication of the Integrated Report is positively related to board of directors' size.

3.3.6 – ESG score

In the first chapter, the increasing relevance of ESG topics disclosure has been identified as the explanation of the development of guidelines and frameworks, to regulate and enhance comparability between non-financial corporate reports. As a consequence, analysts have started, in parallel, to develop ESG disclosure ratings, in order to provide the investors, and, more in general, markets with assessments about companies' sustainability approach (Porter & Kramer, 2006). Investors can choose between different rating systems: Bloomberg's ESG disclosure scores, MSCI ESG indexes, Sustainalytics' ESG risk ratings and Refinitive ESG scores.

Such ratings are assigned independently to the willingness of the companies to be evaluated. For this reason, low ESG ratings, which are associated to an organization, pose a threat to its legitimacy. The management may try to mitigate the negative impact of such scores, and also to divert public attention from the poor ESG performance. Voluntary disclosure, in this case

Integrated Report, represents a method to accomplish this effort and manage the effect of adverse information. In this way, managers may obtain the legitimation, they had previously lost (Lai, et al., 2016).
Notwithstanding the increasing attention and development of this type of scores, only one research includes the ESG disclosure ratings as a determinant for Integrated Report issuance. Indeed, Lai, et al. (2016) focus their investigation primarily on this variable, to test the consistency of legitimation theory. The authors reject the hypothesis that companies with lower ratings are more inclined to prepare an Integrated Report, meaning that it is not used as a repair mechanism.
In order to further investigate the connection and verify whether the interpretation of the literature corresponds to the real reporting practices, the following hypothesis has been included to the analysis:

H_6. The publication of the Integrated Report is negatively related to ESG score.

3.3.7 – Cultural Dimensions

One of the research questions is related to the influence that the national culture has on voluntary reporting mechanisms. In order to assess the impact, previous studies investigate cultural variables, which are based on the research of Hofstede (2011), briefly illustrated in the second chapter of this paper.
The first dimension considered for the analysis is **individualism**. As previously discussed,[6] countries characterized by an individualistic culture are focused on the single person, its values and its rights. Society is not a fundamental part in the actions of the individual, and, consequently collective interest is less important. This may have a reflection on the reporting practices. Voluntary disclosure, such as ESG reporting, may be motivated by the need for the company to fulfill their social contract, and, in these circumstances, gain legitimation from society. This mechanism is crucial in the collectivist culture, while less important in the individualistic one. This interpretation recalls concepts from legitimacy theory.
Furthermore, companies, located in countries characterized by collectivism, may be interested in providing additional information to stakeholders. The latter are part of the society towards which organizations are committed. For individualistic cultures, the opposite may be verified.

[6] Cf. paragraph 2.8.3

To summarize, companies incorporated in individualistic countries should be, in theory, less prone to disclose more than what is required, also as a consequence of the importance that privacy assumes.
Previous research on the matter has demonstrated that collectivist culture has a positive influence on the adoption of Integrated Report (Girella, et al., 2019; Garcia-Sánchez, et al., 2013; Vaz, et al., 2016). Since individualism variable was found to be significant in the analysis of country determinants, it has been also included in the form of the following hypothesis:

$H_{7.1}$. The publication of an Integrated Report is negatively related to the prevalence of individualistic traits in the national culture.

The other variable considered as a country determinant is **masculinity**. Masculine traits in national culture are identified with the orientation towards material results, for example earnings, and towards economic growth. Competition is a distinctive attribute of this type of national culture. On the opposite, countries characterized by feminine traits are more concerned on the quality of life, environment preservation and cooperation (Hofstede, 2011). According to this interpretation, companies incorporated in feminine countries may be more inclined to report on sustainability matters for reasons similar to collectivist countries, namely concerns for legitimation and stakeholders.
Vaz, et al. (2016) rejected the hypothesis that femininity has a positive influence on the adoption of Integrated Report. On the other hand, the studies by Girella, et al. (2019) and Garcia-Sánchez, et al. (2013), both found a positive relation among feminine traits and integrated reporting. In particular, the second paper highlighted a even more significant relation with femininity variable than individualism one.
In conclusion, considering the relevance of the attribute in the analysis on integrated reporting practices, the hypothesis below has been included:

$H_{7.2}$. The publication of an Integrated Report is negatively related to the prevalence of masculine traits in the national culture.

Long-term orientation is the final cultural dimension considered in the analysis. As previously discussed,[7] this characteristic concerns societies that act by assuming a perspective focused on the future. This attitude can be transferred also to companies, which are, accordingly, oriented

[7] Cf. paragraph 2.8.5

to the long-term, also in business and stakeholder relationships. In particular, to maintain a durable connection with stakeholders, companies may need to reduce information asymmetries through information disclosure (Girella, et al., 2019). In this way, organizations can build a long-lasting trust with their constituencies.

Furthermore, short-term oriented countries are very respectful of traditions. This assertion could be adapted to organizations, which will report using traditional financial statements, the customary method of communicating performance (Garcia-Sánchez, et al., 2013).

There are mixed results on the hypothesis of a positive influence from long-term orientation. Girella, et al. (2019) supports the mentioned hypothesis; while Garcia-Sánchez, et al. (2013) failed in finding evidence to endorse this assumption. As a result, this cultural variable needs to be investigated further.

According to the discussion above and the only significant result, the hypothesis below has been included:

$H_{7.3}$. The publication of an Integrated Report is positively related to the prevalence of long-term orientation traits in the national culture.

3.3.8 – Corruption Perception Index

The last hypothesis regards an aspect of countries, the Corruption Perception Index (CPI), that has been tested in relation to integrated reporting in exclusively one previous research (see Girella, et al., 2019). CPI measures, in a scale from 0 to 100, the level of perceived corruption in the country's public sector, where a country with a score of 0 is perceived as very corrupt, while 100 is essentially incorrupt[8]. CPI score is commonly used as a proxy for corruption assessment. Countries characterized by a high CPI score have a low corruption level, and are usually more concerned on aspects different than mere economic growth, such as sustainability. According to the greater focus on sustainability matters, institutions may exert pressure on companies in order to allign their interests to national ones (Girella, et al., 2019). Sustainability reporting, and particularly integrated reporting, may be the natural consequence of this attention and concern. Hence, institutional theory may explain the relation between corruption and integrated reporting.

At the same time, companies in highly corrupt countries may be less incentivized to voluntarily disclose, as their practices may not be entirely clear or they may represent an unnecessary effort, since institutions are not very interested on sustainability (Girella, et al., 2019).

[8] < https://www.transparency.org/en/cpi >. [Accessed 29 September 2020]

The research conducted by Girella, et al. (2019) seems to confirm these assumptions and the tendency to disclose more voluntary information for companies located in countries with a high CPI score. Nevertheless, the evidence on the matter is still scarce, so the CPI has been included as an hypothesis to be verified in this study:

H_8. The publication of an Integrated Report is positively related to CPI value.

3.4 – Sample Identification and Composition

The first step, in the construction of the sample to be analyzed in this research, has been the identification of organizations which prepare the Integrated Report. In order to accomplish this objective, a list of companies was retrieved from the IIRC Examples Database[9]. The entire list comprised 499 existing companies as of 16th April 2020, which publish an integrated report or participate in the <IR> Networks. For each company, some parameters were checked to select the most suitable organizations for the analysis.

The first parameter was the verification on whether the company had published the Integrated Report according to the principles of the <IR> Framework, as one of the requirements is the statement of compliance with it[10].

Secondly, the year of publication was checked to include only companies that had prepared for the year 2018 an Integrated Report. 2018 was selected for two main reasons. First of all, it was found to be the year with the largest number of reporters, as of April 2020. In order to assess the amount of IR adopters, it was checked, for each company in the list, on which year (from 2014, after the publication of the Framework, to 2019) it had issued an Integrated Report. The second motivation is that many companies had not published the 2019 annual report yet[11].

Thirdly, companies that are not listed on a stock exchange were left out. The rationale is that one of the hypotheses requires to test the association with the market-to-book ratio, which is calculated starting from market capitalization. At this point, the number of remaining firms was equal to 310.

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[9] Available at: <http://examples.integratedreporting.org/reporters?start=A&page=1>. [Accessed 29 September 2020]

[10] Cf. page 9 of: IIRC, 2013. *The International <IR> Framework.* [Online]. Available at: <https://integratedreporting.org/wp-content/uploads/2015/03/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf > [Accessed 7 July 2020].

[11] As of 16th April 2020

Subsequently, the South-African companies were excluded because, as mentioned in the first chapter and in the introduction of the third, South-Africa is, at the moment, the only country where listed companies are mandated to publish, every year, the Integrated Report. Interestingly, one third of the 310 firms reported before, was from South-Africa.
Then, the SIC code was retrieved for each company. The SIC code is a number associated to a particular industry, available by looking for the company name in the Statista Company Database[12]. Only the companies affiliated to manufacturing (first two digits of the SIC code from 20 to 39) and service (from 70 to 89) industries were chosen. The aim of this selection was to underline the contrast between high and low risk industries, as it was explained in paragraph 3.3.4, and verify whether the hypothesis is supported by the model. Moreover, this choice recalls the study by Girella, et al., (2019), the sole previous research on both firm and country determinants.
Lastly, it was checked for each organization the presence, in the Eikon database, of its Refinitiv ESG score, as it is one of the variables of the statistical model.
The list obtained from the IIRC Examples Database was integrated with five additional companies responding to the parameters, that are not present in the Database, but issue an Integrated Report with a written reference to the <IR> Framework. As stated in the website of the Examples Database[13], the companies listed are suggested by the two entities managing the database (namely IIRC and Black Sun PLC) and other supporters of integrated reporting initiative. As a consequence, the companies excluded from the Database list, were identified through a Google research for Integrated Report.
Eventually, the definitive IR adopters' database comprises 50 organizations. The list of integrated reporting firms is reported in Appendix A. Each one of them has been matched with as many non-adopter companies, through the Nexis Uni database, according to two criteria:

- The revenues of the matched company should not be higher or lower than 30% of the revenues of the IR adopter;
- The first two digits of the SIC code must be equal for the two companies.

The final sample comprises 100 organizations (50 IR adopters and 50 non-adopters). The 50 non-adopters constitute the control sample in the analysis. The financial data for both groups were retrieved from the company profiles and reports included in the Nexis Uni database.

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[12] Available at: < https://www.statista.com/companydb/search >. [Accessed 29 September 2020]

[13] <http://examples.integratedreporting.org/about>. [Accessed 29 September 2020]

The geographical distribution of companies is reported in Table 3.1 and Figure 3.1. Organizations are gathered according to major areas rather than countries.

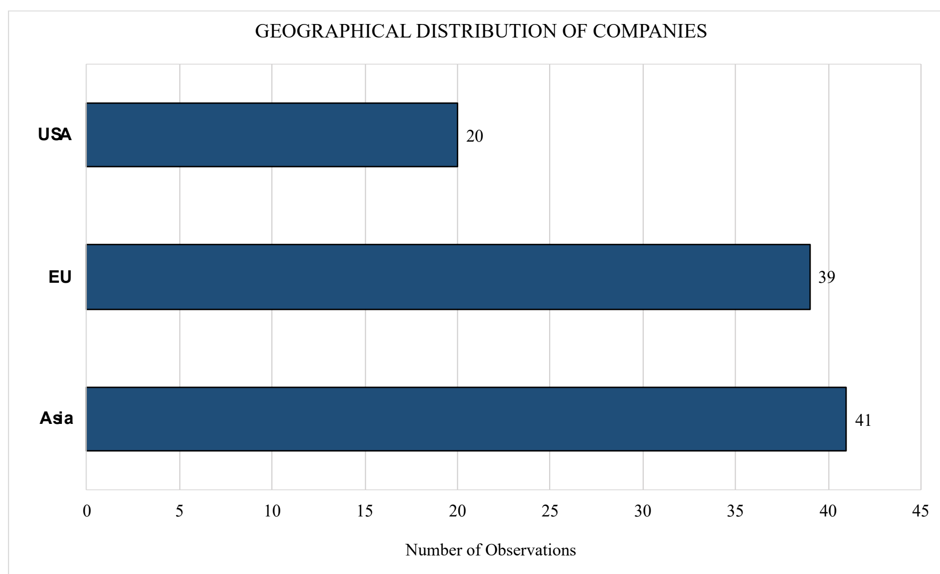

Figure 3.1: Geographical distribution of companies. Elaborated with Excel.

Geographic Area	Obs.	Percentage
Asia	41	41%
Europe	39	39%
USA	20	20%
Total	100	100%

Table 3.1: Sample distribution by area. Personal elaboration.

As it can be noticed from Table 3.1 and Figure 3.1, the organizations included in the sample are incorporated in three major areas: Asia, Europe and USA. As regards Asia, Japan is the country with the highest number of IR adopters: 27 companies, 90% of Asian adopters and 54% of the whole sample of IR adopters. As regards Europe, Switzerland and Netherlands have the same highest percentage of integrated reporting firms in Europe: 20% of European adopters, or 8% of the total IR sample. USA is present only in the matching sample, as the American companies in the IIRC database do not respond to the parameters listed above. It is interesting to underline that American companies are generally not inclined to prepare this kind of report, but they normally prefer separate reports for sustainability matters.

The sample has been also classified according to affiliated industry, and broke down, according to the presence of Integrated Report, in Table 3.2.

Industry	IR	NoIR	Obs.
Manufacturing	40	40	80
Service	10	10	20
Total	50	50	100

Table 3.2:Sample distribution by industry. Personal elaboration

By looking at Table 3.2, it's evident that manufacturing industry has the highest number of observation (80% of the total). IR adopters and non-adopters are equally distributed due to the matching criteria adopted and mentioned above.
The objective of the sample composition was to obtain as much comparability as possible, across the companies selected, in terms of business scope and volume. Indeed, the matched companies are, in the majority of cases, direct competitors with comparable revenues.

3.5 – Variables

In this paragraph, the variables included to conduct the empirical analysis, which are one dependent, ten independent and three control variables, will be explained in detail. Therefore, the process to retrieve them and how they have been calculated will be the focus of the following subparagraphs. The variables are referred to an analytical model, formulated as a logistic regression, which will be presented afterwards.

3.5.1 – Dependent Variable

The dependent variable selected for the model is a binary variable, which assumes the value 1 if the considered company is an IR adopter, 0 otherwise. The determination on whether organizations belong to one group or the other has been explained in paragraph 3.4. Since the dependent variable has a binary nature, the empirical model is a logistic one. Furthermore, logistic regression is the preferred method of analysis in previous research on the determinants of integrated reporting (Girella, et al., 2019; Lai, et al., 2016; Garcia-Sánchez, et al., 2013).

3.5.2 – Independent Variables

The independent variables included in the model refer to the hypotheses listed in paragraph 3.3. Indeed, the objective of the analysis is to test existing assumptions to assess which one of them is verified in practice.

The first independent variable is **SIZE**, that corresponds to H_1. It is measured as the natural logarithm of a company's total assets, a proxy for the firm size. The value of total assets, at the end of year 2018, has been retrieved from the International Institutional Database, a resource that can be found in the Nexis Uni Database. The calculation of size is consistent with prior research analyzed (Girella, et al., 2019; Frias-Aceituno, et al., 2013a; Garcia-Sánchez, et al., 2013).

ROA is the independent variable associated to firm profitability. It is measured as the ratio between earnings before interest and taxes (EBIT) and total assets. The database utilized to obtain values, for year 2018, is again the International Institutional Database; it was accessed also for the next variables, unless otherwise stated. ROA is a proxy for profitability included by different authors (Girella, et al., 2019; Lai, et al., 2016; Frias-Aceituno, et al., 2014, 2013b).

As regards growth opportunities hypothesis, it is verified through **MTB** variable (see Girella, et al., 2019; Frias-Aceituno, et al., 2014, 2013b; Garcia-Sánchez, et al., 2013) . The reason for this choice has been previously discussed[14]. It is calculated as the market capitalization on the book value of equity. It represents, for a company, the value it has on the market with respect to the historic cost.

INDUSTRY is a dummy variable which takes the value 1 if the company belongs to manufacturing industry, 0 if it belongs to service industry, as it was already anticipated in paragraphs 3.3.4 and 3.4, respectively on the hypothesis and the sample composition.

The **BOARD SIZE** variable involves the actual number of directors elected in the board, at the end of 2018. The data was retrieved from the annual reports of each company. By including the size of the board of directors in the analysis, the influence of corporate governance characteristics has been taken into account.

The last firm-related variable is the **ESGSCORE**, which is the ESG disclosure rating obtained from Eikon database. The Refinitive ESG Score is calculated on the basis of ESG measures and initiatives reported publicly by organizations. In particular, the ESG Combined score was selected for the analysis, in order to provide a more comprehensive measure. Indeed, it adjusts the traditional ESG score for the public ESG controversies, that the company faces; it is the result of the weighted average between the two components (Refinitive, 2020).

[14] CF. paragraph 3.3.3

As regards country-specific variables, in the model are considered the three Hofstede's cultural dimensions listed in paragraph 3.3.7. The values for each country's cultural dimension can be obtained directly from the "Dimension Data Matrix"[15].

INDIVIDUALISM is a dummy variable that takes the value 1 when the individualism score for the country exceeds the average of all countries considered in the sample, 0 otherwise.

MASCULINITY is a dummy variable. The value 1 is assigned when the masculinity level of a country exceeds the average level of all countries analysed, 0 otherwise.

LONG-TERM is another binary variable, where 1 is associated to countries with a long-term orientation value higher than the average level, considering all the countries, and 0 otherwise.

The last independent variable included is **CPI**, which corresponds to the value of the Corruption Perception Index. This numeric variable could assume finite values from 0 to 100, where the lowest score indicates that a country is highly corrupted and viceversa. The data, retrived from the website of Transparency International[16], are referred to 2018.

3.5.3 – Control Variables

The model comprises three control variables, in order to prevent biases in the analysis, namely: leverage, turnover and legal system.

LEVERAGE measures the ratio between a firm's total debt and its total assets. The inclusion in the model of the variable is based on a theoretical rationale.

Agency theory can be exploited to investigate the connection between leverage and the preparation of the Integrated Report. Between bondholders and managers there is a relationship which has the characteristics of a principal-agent one. Bondholders are the principals who lend funds to managers, the agents, with the expectation that the loan will be repaid. In order to reduce information asymmetry and monitoring from lenders, managers may decide to use bonding mechanisms, that are, in this context, voluntary disclosure through integrated reporting. Consequently, companies with higher leverage will be more incentivized to adopt the mentioned reporting practice.

However, another explanation of the connection derives from stakeholder theory. As lenders are also stakeholders of the company, their pressure may result in additional information disclosed by the organizations, for example, on value creation, central element of integrated reporting (Girella, et al., 2019).

[15] Available at: <https://geerthofstede.com/research-and-vsm/dimension-data-matrix/>. [Accessed 30 September 2020] and in Hofstede, G., Hofstede, G. J. & Minkov, M., 2010. *Cultures and Organizations: Software of the Mind.* 3 ed. New York: McGraw Hill Professional.

[16] Available at: <https://www.transparency.org/en/cpi>. [Accessed 29 September 2020]

Lastly, the results from two prior studies that consider leverage as an independent variable showed a non-significant relation with the likelihood of issuing an Integrated Report (see Girella, et al., 2019; Lai, et al., 2016), but considering its connection with the existing literature, it has been included as a control variable.

The second control variable included is **TURNOVER**, as a proxy for efficiency (Girella, et al., 2019). The variable is calculated as total revenues on the average assets. It is comprised among the control variables, as the study by Girella, et al. (2019) did not underline a significant impact of the variable, but it has possible theoretical implications on the adoption of the Integrated Report.

Companies that are more efficient, so with a higher asset turnover, may be more inclined to report voluntarily. A first explanation can be derived from proprietary costs theory. Organizations may sustain more easily the expenses related to the preparation and publication of an Integrated Report, thus proprietary costs (Girella, et al., 2019). Furthermore, disclosing a high efficiency may be a way to mitigate pressure from stakeholders, according to stakeholder theory. As a result, the model includes the variable to avoid any possible issue, due to its exclusion.

The last determinant analyzed is the country's legal system, through the **CIVIL** control variable. CIVIL is a dummy variable which assumes the value 1 if the country is characterized by a civil law system, while 0 is associated to a common law system. As discussed in the paragraph about legitimacy theory, companies in civil law countries are expected to be more attentive to stakeholders' rights. Thus, they should be more focused on reporting practices aimed at satisfying the needs of different constituencies. For this reason, Integrated Report may be suitable as it responds to the needs of multiple stakeholders, by disclosing a wide variety of information. On the other hand, companies in common law system countries are expected to create value firstly for shareholders. Hence, traditional financial statements are preferred over reports which are more comprehensive, but less focused on the financial value creation[17].

Prior studies have investigated the impact of the legal system on the adoption of integrated reporting, finding mixed results. Frias-Aceituno, et al. (2013a) obtained supporting evidence on the positive impact of civil law system; while, Girella, et al. (2019) and Vaz, et al. (2016) reported a non-significant relation. Considering the mixed results and the theoretical implications, the model includes CIVIL variable.

[17] Cf. paragraph 2.6

3.6 – Descriptive statistics

This paragraph is dedicated to the presentation of basic descriptive statistics, to provide a clear picture of the numeric data utilized. The table reported will serve as an introduction for the subsequent statistical analysis. In order to obtain the mean, standard deviation, maximum and minimum values presented in Table 3.3, I have employed the *R Studio* statistical software. The output values are referred to the complete sample of observations.

Variables	Mean	Std deviation	Min	Max
SIZE	9.529	0.912	7.463	11.703
ROA	0.093	0.064	0.009	0.431
MTB	3.195	3.921	0.356	25.271
BOARD SIZE	10.830	2.704	6.000	21.000
CPI	72.510	10.082	41.000	88.000
ESGSCORE	64.430	14.240	15.850	92.750
TURNOVER	0.820	0.357	0.180	2.434
LEVERAGE	0.230	0.145	0.0002	0.640

Table 3.3: Descriptive statistics from R Studio. Personal elaboration.

In the table above are included two sets of measures: the mean, a measure of central tendency; the standard deviation, a measure of dispersion. In this case, the values are presented in aggregated terms, without distinguishing IR adopters from non-adopters, as anticipated above. The aim was to provide a general overlook on the data. However, it is more convenient for the analysis to draw a distinction among the two groups, identified by the dependent variable IR. Consequently, Table 3.4 reports the same descriptive statistics divided by groups.

Variables	Mean	Std deviation	Min	Max
		IR adopters		
SIZE	9.500	0.901	7.830	11.369
ROA	0.087	0.071	0.009	0.431
MTB	2.253	2.363	0.356	13.905
BOARD SIZE	10.520	2.565	6.000	18.000
CPI	72.660	10.071	41.000	88.000
ESGSCORE	67.150	13.496	32.090	90.730
TURNOVER	0.827	0.315	0.180	2.347
LEVERAGE	0.208	0.126	0.0002	0.495
		Non-adopters		
SIZE	9.557	0.932	7.463	11.703
ROA	0.099	0.058	0.009	0.242
MTB	4.136	4.865	0.420	25.271
BOARD SIZE	11.140	2.828	7.000	21.000
CPI	72.360	10.193	41.000	88.000
ESGSCORE	61.710	14.575	15.850	92.750
TURNOVER	0.812	0.398	0.289	2.434
LEVERAGE	0.251	0.160	0.003	0.640

Table 3.4: Descriptive statistics by group from R Studio. Personal elaboration.

By comparing the two groups from Table 3.4, MTB appears to be the variable with a value which differs greatly between adopters and non-adopters. In particular, IR adopters result to have an average MTB value, equal to 2.253, that is lower than the other group. ESGSCORE is on average higher for the first group presented. This is consistent with the result found by Lai, et al. (2016) in their descriptive statistics. BOARD SIZE and ROA appear to be higher for non-adopters, while the other variables have similar means.

The last elaboration presented in this paragraph is the Pearson correlation matrix, illustrated in the following figure.

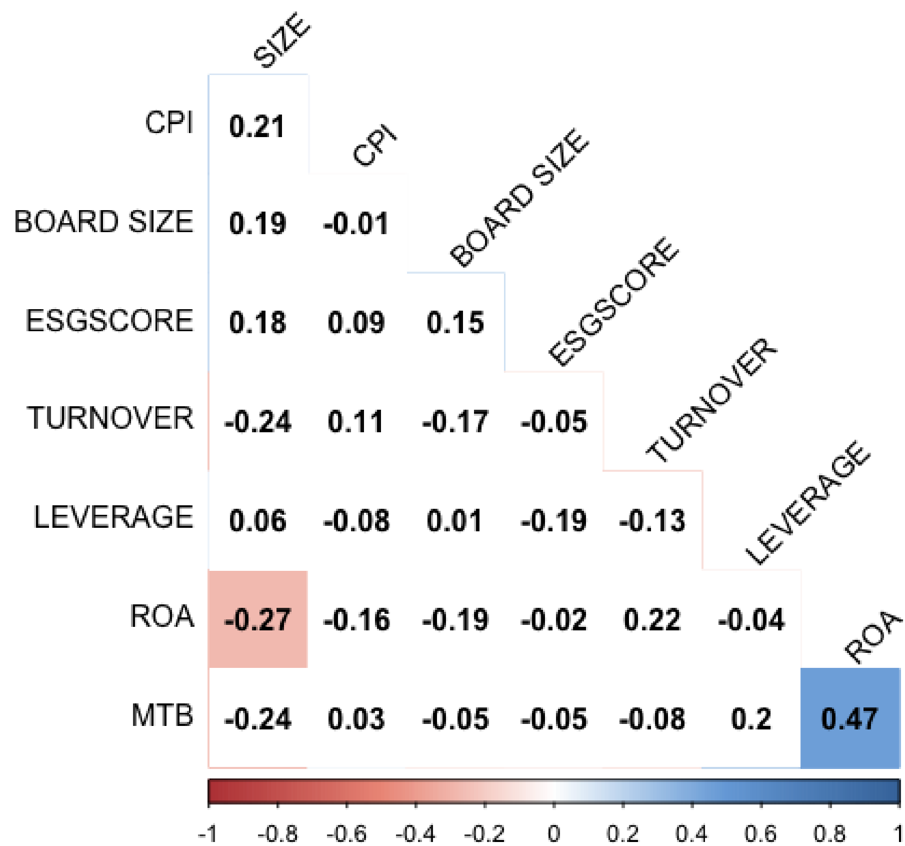

Figure 3.2: Correlation matrix. Elaborated with R Studio.

The correlation coefficients reported in Figure 3.2, included in a colored square, are significant, indicating correlation between the two variables. However, correlation between ROA and SIZE have a value which is rather negligible, which may be due to the construction of the two variables, as SIZE is the logarithm of total assets and the denominator of ROA consists in the total assets. On the other hand, the correlation between MTB and ROA is not negligible but it is quite low. As regards the other variables, no correlation effect is detected.

Nevertheless, further investigation is necessary as descriptive statistics alone are not enough to draw conclusions on the sample. For this reason, in the following paragraph, the results relative to the t-test and the ANOVA statistics are presented.

3.7 – T-test and ANOVA statistics

The aim of this paragraph is to present the results of t-test and ANOVA statistics and draw some preliminary conclusions.

First of all, I have conducted a t-test, using *R Studio* software, to verify if the difference between the mean of the two groups (IR adopters and non-adopters) is equal to zero, which is the null hypothesis (H_0). The hypothesis can be rejected or accepted by looking at the p-value. The level of statistical significance is arbitrarily set at 5%. If the p-value is lower than 0.05, the null hypothesis will be rejected. Thus, it can be affirmed that there is an actual disparity between the two groups with respect to the selected variable.

In Table 3.5 are reported the mean and t-test values, regarding independent and control variables, related to the group of IR adopters and the non-adopters.

Variables	Mean IR adopters	Mean not IR adopters	t-test	p-value (H_1: diff≠0)
SIZE	9.5003	9.5572	0.3107	0.7567
ROA	0.0866	0.0991	0.9664	0.1105
MTB	2.2528	4.1362	2.4627	0.0162
BOARD SIZE	10.5200	11.1400	1.1481	0.2537
CPI	72.6600	72.3600	-0.1480	0.8826
ESGSCORE	67.1544	61.7088	-1.9385	0.0554
TURNOVER	0.8273	0.8121	-0.2128	0.8319
LEVERAGE	0.2084	0.2513	1.4895	0.1396

Table 3.5: T-test statistic results for IR adopters and non-adopters. Personal elaboration

The first observation, which can be derived by analyzing Table 3.5, is that the two groups are significatively different in terms of MTB values, at 5% level. This is coherent with the results from descriptive statistics. The peculiarity of the finding is that average MTB value is higher for non-adopter, suggesting a different interpretation with respect to H_3. The latter hypothesis assumed a positive relation between the MTB variable and the issuance of Integrated Report, meaning that on average IR adopters should be characterized by a higher market-to-book ratio. Actually, this assumption is not supported for the sample selected. Nevertheless, the hypothesis needs further investigation with the logistic regression model. As regards the other numeric variables, the t-test shows no significance in the difference between the two groups.

In other words, IR adopters and non-adopters are not significatively different with regard to size, profitability, board size, ESG score, CPI, turnover and leverage.

In order to further analyze the database, I have performed another t-test on the difference in mean between the two industries, manufacturing and service, within the subset of IR adopters. The aim of this additional analysis is to identify what are the variables in which the two groups differ.

IR adopters				
Variables	Mean Manufacturing	Mean Service	t-test	p-value (H1: diff≠0)
SIZE	9.5769	9.1938	-1.2090	0.2326
ROA	0.0839	0.0974	0.5370	0.5938
MTB	2.0853	2.9225	1.0022	0.3213
BOARD SIZE	10.55	10.4000	-0.1637	0.8706
CPI	73.1000	70.9000	-0.6065	0.5470
ESGSCORE	68.7553	60.7510	-1.7101	0.0937
TURNOVER	0.7868	0.9896	1.8668	0.0680
LEVERAGE	0.1986	0.2473	1.0947	0.2791

Table 3.6: T-test statistic results for IR adopters between manufacturing and service industries. Personal elaboration

The result of the t-test statistic, reported in Table 3.6, highlights that there is no significative difference between the two industries with respect to the listed variables, for IR adopters. The associated implication may be that, among the IR adopters, the attributes described by the variables (for example size, profitability, etc.) do not differ substantially across industries. This interpretation may suggest a homogeneity among manufacturing and service companies which adopt integrated reporting.

Furthermore, I have performed a last test on the difference in mean for the selected geographic areas. In this case, as geographic areas constitute three groups (Asia, Europe and USA), the test utilized was a one-way ANOVA. The results obtained are presented in Table 3.7. The null hypothesis is that all means are equal, while the alternative hypothesis is that not all of them are equal, meaning that at least one is different.

Variables	F-value	p-value
SIZE	0.6820	0.5080
ROA	3.0220	0.0533
MTB	8.7130	0.0003
BOARD SIZE	3.4820	0.0346
CPI	10.6600	6.51E-05
ESGSCORE	8.6790	0.0003
TURNOVER	0.6440	0.5270
LEVERAGE	5.0250	0.0084

Table 3.7: ANOVA results. Personal elaboration

The null hypothesis is not verified for MTB, BOARD SIZE, CPI, ESG SCORE and LEVERAGE variables, meaning that at least one mean value related to an area is different from the remaining means. However, the results are not exhaustive, as the ANOVA does not identify the level of the independent variable which differ from the others. For this reason, I have performed an additional test with *R Studio*, the Tukey Honestly Significant Difference (HSD) test. Table 3.8 reports the obtained values.

Variables	EU-Asia	p-value	USA-Asia	p-value	USA-EU	p-value
SIZE	0.2377	0.4793	0.1446	0.8315	-0.0931	0.9275
ROA	0.0065	0.8908	0.0413	0.0480	0.0348	0.1165
MTB	1.4611	0.1779	4.1499	0.0002	2.6888	0.0233
BOARD SIZE	1.5447	0.0276	0.5281	0.7442	-1.0167	0.3446
CPI	9.3752	0.0000	2.6829	0.5370	-6.6923	0.0260
ESGSCORE	2.7014	0.6344	-12.1488	0.0032	-14.8502	0.0003
TURNOVER	-0.0206	0.9645	-0.1092	0.5067	-0.0886	0.6427
LEVERAGE	0.0702	0.0675	0.1119	0.0118	0.0417	0.5238

Table 3.8: Tukey's HSD results. Personal elaboration.

In order to facilitate the analysis, the significant differences in mean have been highlighted. First of all, in the comparison between Europe and Asia, European board of directors on average have about 2 components more than Asian ones, and in Europe on average CPI is about 9 points higher. The latter result is mainly due to the fact that seven out of the first ten countries in the CPI ranking are European, and five of them are represented in the sample.

Considering the contrast between USA and Asia, the American companies have on average a higher ROA (4% higher), market-to-book ratio (about 4 points higher) and leverage (11% higher). On the contrary, the ESG score is about 12 points higher for Asian companies. An explanation of this result may be that American firms tend to be less attentive on sustainability disclosure, as integrated reporting is not widely adopted, and they are a common law country[18]. The latter assumption still needs to be verified with the empirical analysis.
As regards the USA and Europe contraposition, only market-to-book ratio on average is significantly higher (almost 3 points) for American corporations with respect to European ones. On the other hand, European companies have an ESG score almost 15 points higher, as was for Asian companies, and a higher CPI score on average, for the same reason as before.
In conclusion, the Tukey's HSD test has allowed to examine the result of the ANOVA testing which had a rather general interpretation.

3.8 – Logistics Regression Model

The previous paragraphs presented a preliminary analysis, through descriptive statistics, t-tests and ANOVA testing, and the variables, crucial in the preliminary analysis as well as in the regression model. The objective of this paragraph is, first of all, to report the logistic regression models exploited to verify the assumed hypotheses. Secondly, the aim is to present the results obtained, through the software *R Studio*, and interpret the outcomes on the basis of the hypotheses and the existing literature.
Firstly, I have developed a general logistic regression model, which includes all the variables listed, and where p is the Prob (IR=1).

$$\begin{aligned}\operatorname{logit}(p) = \beta_0 &+ \beta_1 SIZE + \beta_2 ROA + \beta_3 MTB + \beta_4 INDUSTRY + \beta_5 BOARD\ SIZE \\ &+ \beta_6 ESGSCORE + \beta_7 INDIVIDUALISM + \beta_8 MASCULINITY \\ &+ \beta_9 LONGTERM + \beta_{10} CPI + \beta_{11} CIVIL + \beta_{12} TURNOVER \\ &+ \beta_{13} LEVERAGE + e_i\end{aligned}$$

As the dependent variable is a binary variable, the logistic regression is the most suitable model. Furthermore, prior research, on the determinants of integrated reporting, adopted logistic regression as well (Girella, et al., 2019; Lai, et al., 2016; Frias-Aceituno, et al., 2013a).

[18] Cf. paragraph 3.5.3

Table 3.9 presents a summary of the variables, both dependent and independent, already explained in paragraph 3.5, to recall their basic meaning.

Dependent Variable
IR: dummy variable, where 1 = IR adopter, 0 = non-adopter
Independent Variables
SIZE: natural logarithm of firm's total assets
ROA: ratio between EBIT and total assets
MTB: market-to-book ratio, market capitalization divided by book value of equity
INDUSTRY: dummy variable, where 1 = manufacturing industry, 0 = service industry
BOARD SIZE: number of directors in the board
ESGSCORE: Refinitive ESG disclosure ratings
INDIVIDUALISM: dummy variable, where 1 = individualism, 0 = collectivism
MASCULINITY: dummy variable, where 1 = masculinity, 0 = femininity
LONGTERM: dummy variable, where 1=long-term orientation, 0=short-term orientation
CPI: Corruption Perception Index
CIVIL: dummy variable, where 1 = civil law system, 0 = common law system
TURNOVER: total revenues on average assets
LEVERAGE: ratio between total debt and total assets

Table 3.9: Variables included in the logistic regression model. Personal elaboration.

The variables listed in Table 3.9 are included in the complete model reported above, as well as partially in the following models.
Subsequently, I employed the software *R Studio* to calculate a logistic regression on the IR adopter and non-adopter database. The output of the statistical calculation is reported in Table 3.10. The latter presents the variables included, the coefficients of the regression, their standard errors, the values of the z-statistic and p-values. At the lower part of the table are located the number of observations in the sample, the null and residual deviance, the Akaike's Information Criterion (AIC) and the p-value of the overall model. The latter is obtained through a test statistic, with a chi-squared distribution, calculated as the difference between the null deviance and the residual deviance. The degrees of freedom are equal to the difference between the ones related to the previous deviances. The AIC value, instead, will be useful in the comparison with the other similar models.

Variables	Coeff.	Std. Err.	z-value	p-value
Intercept	-1.1122	4.5043	-0.2470	0.8050
SIZE	-0.2262	0.3851	-0.5870	0.5569
ROA	0.2618	0.0977	2.6790	0.0074***
MTB	-0.5439	0.2667	-2.0400	0.0414**
INDUSTRY	-1.8185	1.0518	-1.7290	0.0838*
BOARD SIZE	-0.1666	0.1257	-1.3250	0.1853
ESGSCORE	0.0265	0.0242	1.0970	0.2728
INDIVIDUALISM	-1.0351	0.9089	-1.1390	0.2548
MASCULINITY	0.4177	0.8247	0.5060	0.6125
LONGTERM	1.0536	1.3337	0.7900	0.4296
CPI	0.0085	0.0472	0.1800	0.8574
CIVIL	4.3633	1.9585	2.2280	0.0259**
LEVERAGE	3.4136	2.3715	1.4390	0.1500
TURNOVER	-1.8002	0.9684	-1.8590	0.0630*
Observations	100	AIC	111.88	
Null deviance	138.629	LR χ^2	54.748	
Residual deviance	83.881	p-value LR	4.47E-07	

*** *statistical significance level 1%*
** *statistical significance level 5%*
* *statistical significance level 10%*

Table 3.10: Logistic regression output from R Studio. Personal elaboration.

The variables which resulted to be significant at 5% level, from the logistical regression, are ROA, MTB and CIVIL. Considering the variable ROA, the coefficient has a positive sign, suggesting a positive relationship between ROA and the dependent variable. Therefore, the hypothesis H_2 is accepted, considering the low p-value associated to the coefficient. The quantitative interpretation of the relation is complicated to perform with the value of the coefficient. Nevertheless, in the following reported regression, a graphic representation will support the visualization and quantification of the relationship.

MTB has a coefficient equal to -0.5439, indicating a negative relationship between the dependent and this explanatory variable. It is difficult to interpret the coefficient as is, because the logistic regression implies a logit transformation. However, the sign of the coefficient can be interpreted, identifying the type of relation. In other words, companies with a high market-to-book ratio are less inclined to adopt integrated reporting. This result is in contrast with H_3, which assumed a positive relationship, leading to its rejection. An explanation of this phenomenon may be that managers are not inclined to disclose more information on future opportunities, to maintain their knowledge private, or information hidden, to reference agency theory. The reason may be that competitors could use that information against the organization. This double side effect has been already mentioned in the formulation of the hypothesis; the empirical result supports the negative effect of growth opportunities. This result is in line with Garcia-Sánchez, et al. (2013), but it is in contrast with Girella, et al. (2019) and Frias-Aceituno, et al. (2013b).

The control variable CIVIL is significant in determining the likelihood of integrated reporting adoption, as the p-value (0.03) is lower than 0.05. The coefficient is positive supporting a positive relationship with the dependent variable. This result supports the assumption that organizations in civil law countries are more attentive to stakeholders' needs, so they voluntarily disclose more information. Furthermore, this outcome may be determined by the fact that in the USA, a common law country, this reporting practice is, actually, not widely spread. The conclusion of a positive relation is also supported by Frias-Aceituno, et al. (2013a).

As regards the other explanatory variables, no significant effect has been observed. According to the empirical analysis, leverage, masculinity and long-term orientation determinants are not significant in explaining the adoption of integrated reporting. Nevertheless, the analysis of the coefficients reports a positive yet non-significant relationship between the dependent variable and MASCULINITY, LONGTERM and LEVERAGE. Leverage and long-term orientation were supposed to have a positive impact, while for masculinity the assumption was contrary to what has been verified in practice. Hypotheses $H_{7.2}$ and $H_{7.3}$ are rejected, since the relation is not significant. The implication for the control variable is that higher levels of leverage are not associated with an increased pressure from lenders to report on additional information. Moreover, for long-termism and masculinity, the conclusion is that companies are not greatly influenced by those cultural dimensions in their reporting practices.

ESGSCORE and CPI present positive coefficients (respectively 0.0265 and 0.0085), suggesting that there is a weakly positive yet non-significant relationship. The positive impact was expected for CPI; while, the ESG score was expected to be negatively related with the

dependent variable. Nevertheless, the hypotheses H_6 and H_8 are rejected, because of their high p-value (>0.05).
As regards the remaining variables, SIZE and BOARD SIZE have a weakly negative impact on the dependent variable; while INDUSTRY, INDIVIDUALISM and TURNOVER have a stronger negative impact. However, these results are not significant, even if, in the case individualism, they are in line with the hypothesis. For this reason, hypotheses H_1, H_4, H_5, $H_{7.1}$ are rejected. In practical terms, the outcome obtained suggests that companies' size, board size and turnover are not significant determinants in the preparation of integrated reporting, as are the affiliated industry and national cultural traits concerning individualism.
In general, the logistic model adopted is significative according to the p-value of the chi-squared test (χ^2 = 54.748, p-value = 4.47E-07). Furthermore, the residual deviance has a lower value than the null deviance, indicating a better fit of the model with respect to an empty one, in line with the previous conclusion.
In order to further investigate the logistic regression model adopted for the analysis, I have developed a simplified regression with the explanatory variables resulted significant in the complete model, namely ROA, MTB and CIVIL. The comparison between the restricted or nested model (i.e. with less variables) and the complex one will be crucial in the determination of the goodness of fit of the two models. In other words, the aim is to establish if the complex regression presents a significantly better fit than the nested one.
First of all, the restricted model is defined as the logistic regression reported, where p is again the Prob (IR=1):

$$\text{logit}(p) = \beta_0 + \beta_1 ROA + \beta_2 MTB + \beta_3 CIVIL + e_i$$

The results obtained with *R Studio* are reported in Table 3.11, including the same elements as the previous table.

Variables	Coeff.	Std. Err.	z-value	p-value
Intercept	-4.0177	1.3152	-3.0550	0.0023***
MTB	-0.3329	0.1634	-2.0370	0.0417**
ROA	0.1876	0.0733	2.5580	0.0105**
CIVIL	4.1483	1.0634	3.9010	0.0001***
Observations	100	AIC	106.81	
Null deviance	138.629	LR χ^2	39.822	
Residual deviance	98.808	p-value LR	1.16e-08	

****statistical significance level 1%*

*** statistical significance level 5%*

** statistical significance level 10%*

Table 3.11: Logistic regression output from R Studio. Personal elaboration.

In this restricted model, all the explanatory variables are significant (p-value < 0.05). ROA has a positive coefficient (equal to 0.1876), as the previous regression, indicating a positive impact. MTB has a negative impact on the dependent variable, while, CIVIL has a strong positive impact. The conclusions on the hypotheses are the same as for the complete model. However, some observations need to be added on the goodness of fit of the two regressions.

First of all, the analysis of the likelihood ratio test reveals that the logistic regression model is significative (χ^2 = 39.822, p-value = 1.16e-08). The likelihood ratio test, in this case and in the previous, is performed comparing the log likelihood of the models concerned and the empty version. Nevertheless, the likelihood ratio test is performed also to compare the goodness of fit of two models, a complex one and a nested one. The test has been applied to the first and the second regressions, obtaining χ^2 = 14.927, p-value = 0.1348. This result indicates that the complete model does not fit significantly better than the restricted one. The same conclusion can be drawn from the comparison between the two AIC. The model with three variables has an AIC value (AIC = 106.81) lower than the other with thirteen variables (AIC = 111.88).

To conclude, the second logistic regression has a better goodness of fit, with respect to the previous one. On the other hand, the conclusions on the explanatory variables are fundamentally consistent, across the two analysis.

Considering the significantly better fit and the reduced number of variables, I have elaborated plots, with *R Studio*, illustrating the relationship between the dependent variable and each explanatory variable of the nested model.

On the y-axis is represented the probability of being an IR adopter, while, on the x-axis, the values for the independent variables. The relationship illustrated is a representation of a company profile. The latter is characterized by two independent variables equal to their median, if they are numeric, or to the value with the highest frequency, if one of them is a binary variable; while the remaining independent variable, assumes different values. Thereby, the relationship will be visualized through the graphics reported.

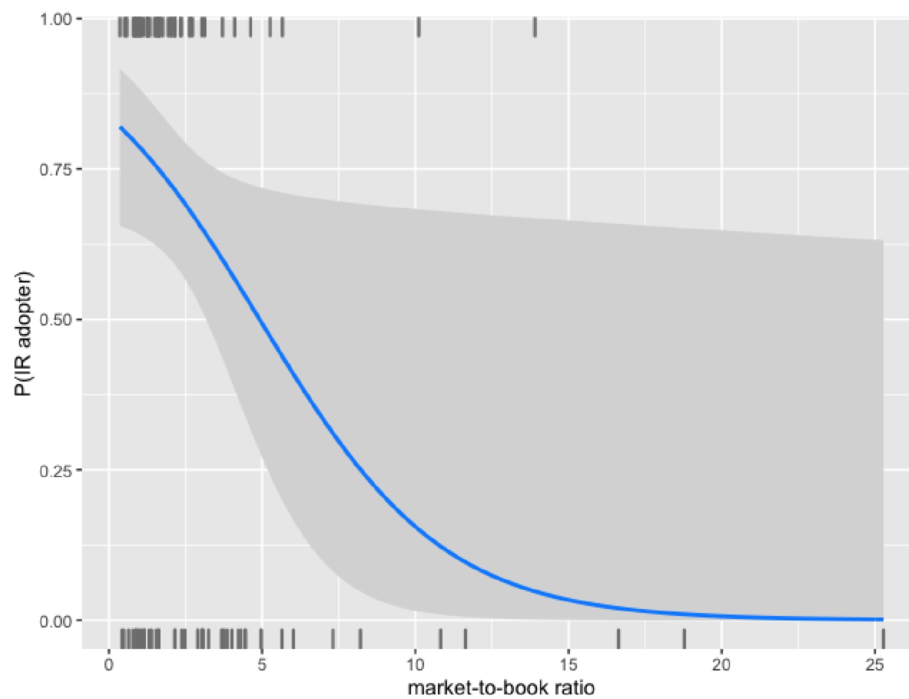

Figure 3.3: Relationship of MTB and IR, controlling for ROA and CIVIL. Elaborated with R Studio.

Figure 3.3 illustrates the relationship between the probability of being an IR adopter and the market-to-book ratio. In this line chart, the ROA is equal to its median, which is 8%, and the variable CIVIL assumes value 1, meaning that the country has a civil law system. The gray area is a confidence interval for the expected values. The two variables are negatively related; when the ratio is close to 0 the probability of being an IR adopter is about 80%, while decreases to 0 with MTB higher than 20. The graphic is in line with the results displayed in Table 3.11. Until the value of 5, the relationship appears to be a linear one, yet by looking at the overall outcome, it is not.

The second graphic displays the relationship between ROA and the dependent variable.

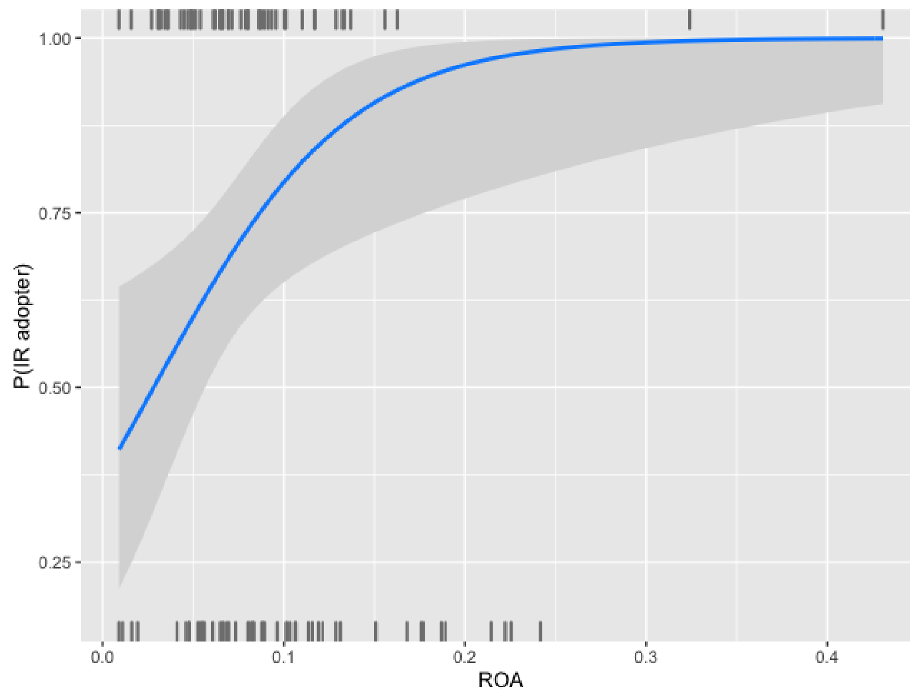

Figure 3.4:Relationship of ROA and IR, controlling for MTB and CIVIL. Elaborated with R Studio.

Figure 3.4 shows a positive relationship between ROA and the probability of adopting an Integrated Report, as previously discussed. The chart illustrates a particular company profile, characterized by a market-to-book ratio equal to 1.9795 and incorporated in a civil law country. In particular, in the first part of the graphic, until 0.1, the relationship resembles a linear relationship, with a steep inclination. As a result, a slight increase in the ROA, entails a high increase in the probability of adopting an Integrated Report. Nevertheless, the curve flattens in the second part of the line chart, displaying a non-linear relationship with the dependent variable.

The last graphic presented is concerned with the control variable CIVIL.

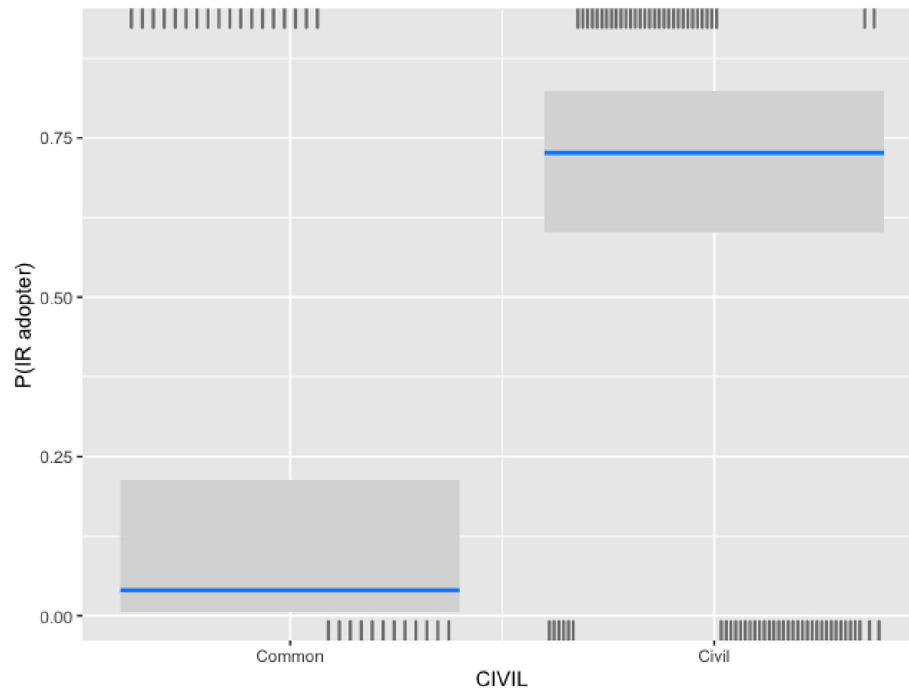

Figure 3.5:Relationship of CIVIL and IR, controlling for MTB and ROA. Elaborated with R Studio.

CIVIL is a dummy variable; thus, x-axis will be characterized by two categories: common and civil. When the company is located in a civil country and has a market-to-book ratio equal to 1.9795 and a ROA equal to 8%, the probability of being an IR adopter is close to 75%. The probabilities associated to the two categories can be distinguished clearly. Therefore, organizations in common law countries with the same ROA and MTB have a probability close to 0.

In order to complete the analysis on the determinants of integrated reporting, I have investigated firm and country-specific variables separately. The aim of the separate analysis is to understand whether the fit of the two specific models is significantly better than the generalized model (i.e. including all the explanatory variables).

The first logistic regression presented includes firm-specific variables, where p is again the Prob (IR=1):

$$\text{logit}(p) = \beta_0 + \beta_1 SIZE + \beta_2 ROA + \beta_3 MTB + \beta_4 INDUSTRY + \beta_5 BOARD\ SIZE + \beta_6 ESGSCORE + \beta_7 TURNOVER + \beta_8 LEVERAGE + e_i$$

The outcome of the logistic regression obtained with the software *R Studio* is reported in the following table.

Variables	Coeff.	Std. Err.	z-value	p-value
Intercept	3.7980	3.0052	1.2640	0.2063
SIZE	-0.3220	0.2688	-1.1980	0.2310
ROA	0.0011	0.0486	0.0230	0.9818
MTB	-0.2584	0.1219	-2.1200	0.0340**
INDUSTRY	-0.7374	0.6372	-1.1570	0.2471
BOARD SIZE	-0.1244	0.0866	-1.4370	0.1508
ESGSCORE	0.0389	0.0170	2.2840	0.0224**
TURNOVER	-0.4668	0.6665	-0.7000	0.4837
LEVERAGE	-0.8195	1.6871	-0.4860	0.6271
Observations	100	AIC	139.74	
Null deviance	138.629	LR χ^2	16.893	
Residual deviance	121.740	p-value LR	0.0312	

*** *statistical significance level 1%*

** *statistical significance level 5%*

* *statistical significance level 10%*

Table 3.12: Logistic regression output from R Studio. Personal elaboration.

The third logistic regression, reported above, presents two statistically significant explanatory variables, MTB and ESGSCORE. This result partially differs from the previous conclusions, yet the goodness of fit of the model has not improved. Indeed, another likelihood ratio test has been performed to compare this model to the first one. The value found for the chi-squared distribution is equal to 37.855 and the p-value is 4.035e-07, meaning that the complex model has a significantly better fit than the firm-specific one. The higher AIC value for the third model (AIC = 139.74) further supports the result.

The significance of ESGSCORE may be related to the contextual attributes, meaning country-related factors. Indeed, the explanatory variable may have incorporated the effect of the latter factors, which are resulted relevant in explaining the relationship. Another element, which may support this conclusion, is the fact that, according to Tukey's HSD test, ESGSCORE significantly differ in mean between USA and Asia, and between USA and Europe.

Besides the regression being significant, conclusions on the hypotheses cannot be formulated on its basis. For this reason, the complete model is preferred to the third one, in the assessment of the validity of the assumptions.

The fourth logistic regression analyzed regards country-specific variables. Henceforth, it includes exclusively the three cultural dimensions, the CPI and the dummy variable regarding the national legal system. The formulation of the regression is as follows:

$$\text{logit}(p) = \beta_0 + \beta_1 INDIVIDUALISM + \beta_2 MASCULINITY + \beta_3 LONGTERM + \beta_4 CPI + \beta_5 CIVIL + e_i$$

The output of *R Studio*, related to the regression above, is summarized in Table 3.13.

Variables	Coeff.	Std. Err.	z-value	p-value
Intercept	0.1131	1.9556	0.0580	0.9540
INDIVIDUALISM	-1.0968	0.7086	-1.5480	0.1220
MASCULINITY	-0.1237	0.6928	-0.1790	0.8580
LONGTERM	0.9515	1.0322	0.9220	0.3570
CPI	-0.0220	0.0348	-0.6340	0.5260
CIVIL	2.0065	1.3616	1.4740	0.1410
Observations	100	AIC	111.4	
Null deviance	138.629	LR χ^2	39.226	
Residual deviance	99.403	p-value LR	2.14e-07	

*** *statistical significance level 1%*
** *statistical significance level 5%*
* *statistical significance level 10%*

Table 3.13: Logistic regression output from R Studio. Personal elaboration.

According to the output presented in Table 3.13, none of the explanatory variables is significant, although the regression is significant, as noted by the p-value of the chi-squared distribution, which is lower than 0.05. The non-significance of independent variables may be related to the fact that they are on a different level with respect to the dependent one. Indeed, the former are concerned with a country-level analysis, while the latter is relative to a firm-level analysis, as it represents the adoption of the IR. Furthermore, an additional investigation on *R Studio*

software highlighted a strong correlation between CIVIL and LONGTERM. Consequently, it may have affected the standard error and p-value measures, causing the non-significance of the control variable CIVIL. As already performed in the third regression, a likelihood ratio test has been adopted to compare the complex and the simplified models.
The result of the test statistic renewed the conclusion on the better fit of the regression with thirteen explanatory variables ($\chi^2 = 15.522$, p-value = 0.0498), with a 5% level of significance. In accordance with the outcome, the last model is not considered in the acceptance or rejection of the hypotheses.

3.9 – Implications for the analysis

The empirical analysis presented in the previous paragraph has some important implications on existing literature, that prior research has addressed to identify the determinants of integrated reporting.
First of all, evidence has been obtained to affirm that a logistic regression model with both firm and country attributes, jointly, fits significantly better than two separate models for the two sets of features. However, the restricted model characterized by exclusively significant variables, related both to the firm and the country, has a better fit than the complex one. As regards the explanatory variables, ROA, MTB and CIVIL have resulted to be significant in the first two models. Hypothesis H_2, on the positive relation between IR adoption and ROA is accepted. This result further supports the findings of Girella, et al. (2019), and Frias-Aceituno et al. (2014). MTB has a significant yet negative relationship with the dependent variable. For this reason, hypothesis H_3 is rejected, contrary to Girella, et al. (2019) and Frias-Aceituno, et al. (2013b). According to these outcomes, more than one theory is resulted to be critical in explaining integrated reporting. The acceptance of hypothesis H_2 has verified the relevance of stakeholder theory, signaling theory and the theory of proprietary costs, with respect to the organizations' profitability. As a result, the positive relation with ROA has confirmed that companies with a high profitability are inclined to report on additional information, due to a combination of the three theories. Indeed, a high profitability may cause stakeholders to request a complete overview on value creation from companies, exerting a pressure on the organization. At the same time, the organization itself may consider the voluntary disclosure convenient for two reasons. Firstly, proprietary costs may be mitigated by the availability of additional financial resources. Secondly, the Integrated Report may be a peculiar and more effective accounting practice to signal quality due to high profitability.

As concerns market-to-book ratio, in the formulation of the hypothesis, the eventuality of a negative relationship was provided. Companies with lower market-to-book ratio resulted to be more prone on disclosing information on the six capitals, as required by the <IR> Framework. The rationale of this behavior may be found in the need to communicate about intangibles, in order to obtain a higher market valuation. This may be particularly true for first time reporters, which have never utilized integrated reporting and may exploit this instrument, for the first time, to increase their market value. Another motivation may be the beneficial effect for competitors related to the disclosure of sensitive information, about value creation and competitive advantage.

On the other hand, the rejection of the remaining hypotheses raises certain observations to be discussed.

First of all, the theoretical assumptions to identify the determinants, resulted not significant, probably have a weak impact on the preparation of integrated reporting.

Secondly, over the years, this reporting practice has widely spread. Indeed, the total sample of integrated reporters and participants of <IR> networks has increased since the Pilot Programme. Consequently, companies issuing an Integrated Report may be more diverse with respect to the beginning. Hence, it may be more difficult to detect actual attributes which would encourage the adoption, as this accounting practice has become more spread, thus more common. The motivation behind the increasingly wide endorsement of Integrated Report may be identified in the <IR> Framework. Indeed, the contents of Integrated Report and integrated thinking, in general, may appeal a broad spectrum of organizations, without specific legitimation needs. From the analysis, it has emerged that companies are not attempting to gain legitimacy for being in a high-risk industry (H_4), or after a low ESG score (H_6). On the contrary, firms may voluntarily select integrated reporting for profitability or market reasons, considering the significative impact of these two variables. The rejection of hypothesis H_4 is not in line with the study of Girella, et al. (2019), which considered the same two industries; while the rejection of H_6 is consistent with Lai, et al. (2016).

Moreover, organizations with larger boards of directors have not a higher probability to adopt Integrated Report (H_5), in contrast with the result of Girella, et al. (2019) and Frias-Aceituno, et al. (2013b). As a result, the greater diversity of the board is not related to a higher volume of disclosed information and to a better monitoring role as hypothesized. Hence, agency theory does not influence the decision to adopt this particular report. Stakeholder, signaling and proprietary costs theories are partially proven to be irrelevant, as regards the effect of size (H_1) on the dependent variable. The rejection of hypothesis H_1 is coherent with previous evidence from Lai, et al. (2016) and Vaz, et al. (2016).

The subsequent observation is that country-specific independent variables are emerged to be non-significant. This indicates that companies voluntarily disclose through an Integrated Report, regardless cultural traits included and the Corruption Perception Index ($H_{7.1}$, $H_{7.2}$, $H_{7.3}$, H_8). The conclusion for hypothesis $H_{7.1}$ is opposed to prior results from Girella, et al. (2019), Garcia-Sánchez, et al. (2013) and Vaz, et al. (2016), while hypothesis $H_{7.2}$ is consistent with Vaz, et al. (2016). The outcome for hypothesis $H_{7.3}$ is concordant with Garcia-Sánchez, et al. (2013); whereas, hypothesis H_8 has been rejected, contrarily to Girella, et al. (2019).
Furthermore, the harmonization effort, to ensure the international application of the <IR> Framework, may have been crucial in the irrelevance of the country-specific determinants considered. Thus, this may suggest a worldwide applicability of the Framework to voluntary disclosure.
However, integrated reporting is still an unusual practice, as IR adopters are a minority when compared to the totality of companies spread across the continents. Policy makers have a role in encouraging the adoption.
With respect to the control variables, CIVIL has demonstrated a significant and positive relation with the dependent variable, in line with Frias-Aceituno, et al. (2013a). As previously discussed, the theoretical implication is that civil law systems exert an institutional pressure towards the protection of stakeholders' rights. Institutional theory is confirmed to be relevant in the identification of integrated reporting determinants. The pressure exercised by institutions may be utilized to promote sustainability practices, such as Integrated Report, in an effort to enhance an approach based on value optimization, together with the consideration of the six capitals. The importance of the legal system suggests that the context is not totally irrelevant in the decision about accounting and disclosure practices.

3.10 – Limitations of the analysis

Throughout the analysis, I have identified some limitations worth mentioning to complement the empirical study.
First of all, the sample of organizations selected for the analysis might have been different. For example, all the companies issuing an Integrated Report may have been included, without considering the expressed reference to the <IR> Framework. The sample would have been larger, but it would have ignored a requirement stated in the Framework. The involvement of the ESG variable implied the exclusion from the sample of some IR adopters. However, the aim of the research was to include this variable, to verify the impact. As a result, the sample size is quite reduced.

Furthermore, the criteria to select the matched sample are arbitrary. For this reason, different criteria would have identified a dissimilar control sample, with a distinct outcome. A possible criterion may have been the total assets of the company, as adopted by Lai, et al. 2016. Nonetheless, the aim was to allow for a higher level of comparability. As previously explained, the matched company is, in most cases, a competitor with similar revenues, as postulated by the first criterion. This situation allows for a greater comparability between the two samples (IR adopters and matched sample). Moreover, revenues are not directly included as variable in the model, so the choice of this criterion have not affected greatly the results, as total assets would have.

Thirdly, the literature background applied in the formulation of the hypotheses and to explain the phenomenon, may have considered other organizational theories. The majority of the theories included in this case resulted weakly correlated to the adoption of the Integrated Report, as discussed in paragraph 3.9. Other theories implying not included variables, may have resulted more significant.

Lastly, a model considering more than one year, thus a longitudinal analysis, may have been more complete. Notwithstanding the relevance of the time component, the sample of IR adopters would have been diminished with respect to the current. Three organizations are first-time adopters, for five companies the 2018 Integrated Report was the second one. Therefore, the analysis may be limited also in this case, considering the further reduced number of IR adopters.

Nevertheless, the recognition of these issues in the analysis is a fundamental step in the formulation of the conclusions and in the analytical process adopted.

3.11 – Conclusions

The final considerations on the analysis, developed throughout the chapter, consist in the value of this study and the limitations, detected during the process.

The first consideration regards the research questions, at the basis of the entire empirical process. The four logistic regressions are crucial in the response. The first model includes all the variables identified previously, jointly verifying the effect of firm and country-specific determinants. The second model includes only the explanatory variables resulted significant in the first model, namely MTB, ROA and CIVIL. The third and the fourth models analyze the firm determinants separately from the country related ones. With regards to the research questions, the firm-specific determinants of integrated reporting adoption are firm's growth opportunities (MTB), which has a negative impact on the probability of being an integrated

reporter, and profitability (ROA), which, on the contrary, has a positive influence. As concerns national characteristics, the only attribute resulted to be relevant is the country's legal system (CIVIL).

The second consideration concerns the possible implications of the analysis on managers, policy makers and standard setting bodies, anticipated in the previous paragraph. Managers should be aware that, in case of high profitability, it is convenient for them to report additional information, and, moreover, stakeholders probably expect an Integrated Report. The empirical study highlights that market-to-book ratio is a crucial element in the selection of integrated reporting as voluntary disclosure method. Indeed, a higher ratio is associated with a tendency to maintain information asymmetry, to protect proprietary information. Therefore, managers should evaluate whether reporting on their value creation and growth opportunities would be a competitive disadvantage rather than an advantage, as proprietary costs associated may be consistent. The importance of profitability and market-to-book ratio should also concern the standard setting bodies, in this context the IIRC. For example, companies with a lower profitability, which are less willing to voluntarily report, should be assisted in the integrated reporting journey, by simplifying and exemplifying the required content of the report and providing direct support to the integrated thinking phase. This would allow to diminish time, for the preparation, and costs, which would be valuable for less profitable firm. From the negative relation between the adoption of Integrated Report and growth opportunities, the IIRC may identify a need to protect the firm's competitive advantage. Hence, the IIRC could focus on requiring a homogeneous set of less sensitive information to disclose. Companies would understand that integrated reporting, in fact, does not request a full disclosure of value creation and, at the same time, it would allow for a greater comparability among reporters and information published. The relevance of the variable related to the country's legal system underlines the coercive isomorphism mechanism on a company, to use the term by DiMaggio and Powell (2000). Policy makers attentive and supportive towards integrated thinking and reporting should consider the national legal system. Companies in civil law countries may be more inclined in adopting this practice, while organizations in common law countries may refrain from it.

However, this research is influenced by certain limitations, which have emerged during the elaboration of the analysis. These issues were already discussed in the previous paragraph, but they are summarized below to provide a complete conclusion of the chapter.

Firstly, results may be biased by the selected sample of organizations, both in terms of quantity and composition. A larger or differently assembled sample might have implied dissimilar

results. Furthermore, ESG scores are not available for all listed corporations, and the number of IR adopters, as previously underlined[19], is still minimal.
Secondly, the matching criteria utilized to associate non-adopters may have been different, as it is an arbitrary decision.
Thirdly, a longitudinal analysis (i.e. with observations from different time periods) may have been more complete. Nevertheless, considering the relatively recent development of this accounting practice, a portion of the reporters were first-time adopters or have been implementing this method for few years. As a result, the sample would have been further reduced.
Although the limitations encountered, the objectives underlying the empirical analysis have been accomplished. Eventually, the study managed to close the predetermined gaps, mentioned in paragraph 3.2, respond to the research questions and, more specifically, verify the hypotheses.

[19] Cf. paragraph 3.9

CONCLUSION

The main objective of the study was to investigate integrated reporting practice, its determinants and the impact they have on the probability of its adoption. The starting point of the analysis consisted in the two research questions, which had been crucial throughout the investigation. The first one aims at establishing the firm-specific determinants about the adoption of integrated reporting, and the type of impact they have. The second one is equivalent to the former, but focused on country-related determinants. The theoretical background has been particularly valuable in the formulation of the hypotheses. In this study, the objective was to verify ten hypotheses, six of them related to the first research question. They explore the relationship of integrated reporting adoption with firm size, profitability, growth opportunities, industry, board size and ESG disclosure score. On the contrary, the remaining four hypotheses are concerned with the second question. They investigate the impact of Hofstede's cultural dimensions, namely individualism, masculinity and long-term orientation (Hofstede, 2011), and the Corruption Perception Index (CPI). The empirical research is at the center of the entire study. The reference for the analysis is the paper by Girella, et al. (2019). The selected sample is composed by 100 organizations, of which 50 IR adopters and 50 non-adopters. The latter were matched according to the industry code and the amount of revenues. The industries considered were manufacturing and service, to recall the methodology of Girella, et al. (2019), comparing, respectively, a high risk industry and a low risk one. The entire sample was also classified into three regions: Europe, Asia and USA.

Different statistical tests were conducted in order to comprehend more deeply the relation between the variables: t-tests, ANOVA test, Tukey's HSD test and logistic regression models. In this study, a total of four logistic regressions, the focal point of the research, were performed. The first main outcome from the statistical analysis performed is that three variables, among the included ones, are determinants in the adoption of Integrated Report: growth opportunities, i.e. market-to-book ratio, profitability, i.e. ROA, and country's legal system.

As concerns the first determinant, the relationship indicates that as the market-to-book ratio, or the growth opportunities, increases, the probability of adopting IR decreases. In particular, when the organization is located in a civil law country, has a ROA equal to 8%, and a market-to-book ratio near to 0, the probability of integrated reporting is close to 80%. Companies with a low market-to-book value may have an incentive to disclose information according to the six capitals, especially intangibles ones. In this way, they may influence analysts' valuation and increase their ratio. Moreover, organizations with high growth opportunities may be reluctant to disclose their value creation and potential to grow, as competitors may take advantage of

private knowledge. The trade-off, emerged from the analysis, emphasizes the role of managers, who need to evaluate benefits of integrated reporting against the disadvantage mentioned.

Profitability has a positive impact on the probability of issuing an Integrated Report. Organizations with higher levels of ROA emerged to be keener on integrated reporting. This inclination may be explained by the possibility for the companies to better cope with proprietary costs, associated to the disclosure, and signal their higher profitability. Moreover, the internal motivations may be complemented by external pressures from stakeholders, to provide supplementary information on the superior performance.

The last determinant underlines the importance of the context in the analysis of Integrated Report. The country's legal system is traditionally related to different perspectives on organizations. As demonstrated by the empirical analysis, civil law system is correlated to the preparation of said disclosure document. Organizations may be encouraged or even forced by institutions to consider the needs of external stakeholders, accomplishing the interest of other constituencies in the society. Policy makers encouraging integrated reporting, should weigh the legal system, since civil law countries may be more prone to accept said practice, while common law countries may need ad hoc requirements.

As regards organizational decisions, the main suggestion, related to the first two determinants, is to consider low market capitalization and high profitability as decisive and critical factors, which should prompt the adoption of Integrated Report. In the first case, special emphasis should be devoted to intangibles, in order to enhance analysts' valuation. In the second case, particular attention should be dedicated to value creation, to signal and motivate better performance. The importance of the two firm-specific determinants suggests an active role of the IIRC. Consequently, the Council may directly support least profitable firms with workshops, and simplify the guidelines, allowing to limit costs. Moreover, it may extend the minimum requirements to additional provisions on less sensitive matters. The latter recommendation aims at providing clear guidance on the content, improve comparability among Integrated Reports from different companies, and, above all, set impartial foundations for the disclosure. On one hand, the minimum content will fulfill the needs of stakeholders to obtain additional information and compare the non-financial performance with other organizations. On the other hand, companies with high market-to-book ratio or low profitability will not be penalized.

This study was a first approach on the joint and separate analysis of integrated reporting determinants, combining original elements with components mainly from the research by Girella, et al. (2019) and Lai, et al. (2016). The original aspects regard the methodology and the sample, since the data refer to the year 2018, and only companies with an explicit mention

to the <IR> Framework are included. Considering the methodology, unlike former research on the topic, the complete model is compared to the two simplified firm- and country-specific models, to assess which one has a better fit. The outcome confirmed the preference of the complete model, over two separate regressions. As a result, future research should combine independent variables related to the firm and the external context. Furthermore, the ESG rating is included in the complete model, differently from Girella, et al. (2019), the only other study with a combination of firm and country levels. Eventually, a quantification of the relation between the dependent and explanatory variables was performed through line charts, with the exploitation of an ideal corporate profile. The latter elaboration, which was not included in preceeding studies, aimed at a further practical comprehension of the output. The results of the analysis are not completely in line with preceeding literature, which is another element distinguishing this research. The regressions have demonstrated: an opposite effect for MTB with respect to Girella, et al. (2019) and Frias-Aceituno, et al. (2013b); the same positive impact for ROA in relation to Girella, et al. (2019), and Frias-Aceituno et al. (2014); the influence of civil law system, as found in Frias-Aceituno, et al. (2013a). The reduced number of determinants, with reference to Girella, et al. (2019) , may also be due to the stricter selection of IR adopters, based on their explicit recognition of the <IR> Framework. In my opinion, this original selection criterion for integrated reporters should be crucial in future studies on the topic, as the reference to it is required by the guidelines. In addition, companies should be aware that a recall to the <IR> Framework allows the users of the report to immediately connect it to values and guiding principles associated to the IIRC and its initiative.

As one of the first attempt to combine firm and country-related determinants, this research presents some concerns. The major limitations of this empirical analysis are the reduced size of the complete sample and the selection criteria of the matched organizations. The latter and other weaknesses were argued in a dedicated paragraph. However, their recognition is a fundamental part in the analysis, since they provide the basis for future developments of this study. Firstly, a larger sample of organizations may be involved in the analysis, mitigating the issues experienced in the investigation. Secondly, the set of variables may be expanded, including different theoretical explanations and the time component, as suggested also by Girella, et al. (2019). Moreover, independent variables may be modified, in order to assume different selection criteria. In conclusion, the analysis may be repeated with different matching samples to verify if the criteria have a crucial impact on the outcome.

This study is the first step towards a more thorough investigation, which may address the faced concerns and implement the aforementioned recommendations.

APPENDIX A – LIST OF IR ADOPTERS

1.	Akzo Nobel	26.	Mitsubishi Heavy Industries Group
2.	Arcelormittal	27.	Mitsubishi Materials Corporation
3.	Asahi Group Holdings Ltd.	28.	Nabtesco Corp.
4.	Astellas Pharma Inc.	29.	Nec Corporation
5.	Atos	30.	Nippon Steel Co
6.	Basf	31.	Nissin Foods Holdings Co. Ltd.
7.	Capgemini	32.	Nitto Denko Corporation
8.	Chugai Pharmaceutical Co. Ltd.	33.	Nomura Research Institute Ltd.
9.	Clariant	34.	Novo Nordisk
10.	Coca-Cola Hellenic Bottling Company	35.	Olympus Corp.
11.	Daiichi Sankyo Co. Ltd.	36.	Omron
12.	Dainippon Sumitomo Pharma Co. Ltd.	37.	Pirelli & C. SPA
13.	Ebara Corp.	38.	Prosegur
14.	Eisai Co. Ltd.	39.	Randstad Holding
15.	Epson	40.	Ricoh Company Ltd.
16.	Evraz Plc	41.	Royal Dsm
17.	Fujitsu Limited	42.	SAP
18.	Givaudan	43.	Schneider Electric SE
19.	Hitachi Ltd	44.	Scsk Corp.
20.	Hyundai Steel	45.	SGS SA
21.	Ihi Corp.	46.	Sojitz Corporation
22.	Konica Minolta	47.	Solvay
23.	Koninklijke Philips NV	48.	Tata Steel
24.	Kyowa Hakko Kirin Co. Ltd.	49.	Titan Cement Company SA
25.	Mitsubishi Chemical Holdings Corp.	50.	Wipro

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