Up until the consolidation on the IFRS Foundation: the companies that have been advancing Integrated Reporting

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Biographies

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Abstract

This study seeks to develop an in-depth understanding of where companies reporting under the Integrated Reporting (IR) Framework are located, what their main characteristics are, whether a change in firm value has occurred after IR adoption, and whether firm value varies depending on IR quality. Knowing who has been involved in the thinking and processes underpinning IR may further encourage companies to proceed, under the direction of the IFRS Foundation, with future practices associated with non-financial reporting. The results of this study show that IR reporters are distributed across 43 countries and 5 different regions – the majority from South Africa, followed by Japan and the UK. After adoption, IR reporters are found to be significantly larger, less profitable, and command greater market value. Those with higher-quality IR reporting are significantly larger and more profitable than their counterparts. Yet, no significant differences in firm value were found between IR quality groups.

Keywords: Integrated reporting; IIRC; IR Examples Database; financial reporting; non-financial reporting

Introduction

Integrated reporting (IR) has been the subject of an expanding corpus of study. Nevertheless, considerable scope for extended study in this area still exists (de Villiers et al., 2022; Hossain et al., 2022; Nwachukwu, 2022; Lopes and Penela, 2021). By combining the financial and non-financial information in a single report (Hoque, 2017), IR provides a holistic view of the way organizations create and sustain value in a concise and interrelated manner (Bhasin, 2017; Kannenberg and Schreck, 2019; Slack and Tsalavoutas, 2018).

In September 2020, after a decade of active practice, the Integrated International Reporting Council (IIRC), the principal advocate of IR, together with the Carbon Disclosure Project (CDP), the Climate Disclosure Standards Board (CDSB), the Global Reporting Initiative (GRI), and the Sustainability Accounting Standards Board (SASB) released a statement offering a shared vision of what is needed to progress towards comprehensive corporate reporting. They announced their intent to work together to make that vision a reality (CDP et al., 2020). Furthermore, in November 2020, the IIRC and SASB announced their intention to merge into a unified organization, the Value Reporting Foundation (VRF), which was officially formed in June 2021 (IIRC and SASB, 2020). Only five months later, on 3 November 2021, the International Financial Reporting Standards Foundation (IFRS Foundation) launched the International Sustainability Standards Board (ISSB), with the intention of consolidating the newly established VRF with the CDSB (IFRS Foundation, 2021). These mergers of several non-financial reporting bodies were aimed at promoting a global solution for non-financial reporting and led to the IR initiative under the guidance of the IFRS Foundation via the ISSB board.

Researchers have been debating whether it makes sense to continue researching IR in light of these changes. Despite the ISSB continuing to promote IR, it is unclear how its comprehensive strategy directed at several stakeholders currently fits into the corporate reporting agenda (de Villiers and Dimes, 2022; Pigatto et al., 2022). Yet, the European Financial Reporting Advisory Group (EFRAG) has acknowledged the value of IR in its published reports on sustainability-related disclosures aimed at the European Commission, arguing that an integrated strategy requires all elements of corporate reporting to be linked (IFRS Foundation, 2022). According to Charles Tilley, IIRC CEO, both the IFRS Foundation and EFRAG seem to recognize the work of IIRC and the importance of IR in developing a comprehensive reporting system (IFRS Foundation, 2022). Finally, a recent study by De Villiers and Dimes (2022) suggests that, even though the future of IR may be uncertain, it is not incompatible with recent advancements in non-financial reporting and, therefore, it may continue to prosper.

In this new way forward, it is crucial to assess the existing situation facing IR. This study is aimed at assessing IR by gaining insightful knowledge on the companies that report under the IR Framework (designated “IR reporters”, from now on) because they were the companies that boosted and advanced IR over the last decade. Knowing who has been engaged in IR procedures may encourage other businesses to press ahead with future non-financial reporting practices under the new guidance of the IFRS Foundation.

Thus, this study is undertaken to provide information on IR reporters, covering approximately one decade from when IR was created by the IIRC until it came under the guidance of the IFRS Foundation via the ISSB board. The major objectives of this study are: (1) to determine where the IR reporters are located; (2) to identify their key traits in terms of industry dispersion, size, profitability, and leverage; (3) to verify whether a change in firm value occurred after IR adoption; and (4) to verify whether firm value varies depending on IR quality.

Consequently, the current paper seeks to make the following contributions to the existing literature. First, the present study provides evidence of the large geographic dispersion of IR reporters (across 43 countries and 5 different regions). Although it is known that several countries and stock exchanges across the world have followed in the footsteps of South Africa and issued recommendations on the merits of IR and supported its practices – as in the case of Japan, Malaysia, Singapore, China, India, Australia, Brazil, and the US (Barth et al., 2017; Burke and Clark, 2016; Girella et al., 2019) – this vast geographic dispersion has not yet been reflected in previous studies.

Second, this research was able to make clear distinctions on the firm characteristics of IR reporters based on IR adoption and IR quality. For instance, after adopting IR, companies present lower levels of leverage and higher market value. Moreover, after filling a higher-quality IR report, companies are significantly larger and more profitable than their counterparts. Even though prior literature on the determinants of IR and IR quality have explored similar avenues (e.g., Lopes and Coelho, 2018; Sierra-García et al., 2015; Vaz et al., 2016), this study suggests that detailed analysis carries clear implications for companies thinking of applying non-financial reporting practices in the future.

Lastly, this research – whose results advance crucial discussion points – creates a debating space on the impact of higher IR quality. The findings did not uncover statistically significant differences in firm value between the IR Reference and the IR Regular reporters' quality groups. It is known that the IR Reference reporters, on average, can have either a smaller or a greater firm value than ordinary reporters depending on the measure applied – Tobin's Q or market valuation. Following prior studies that have found a positive association between IR quality and firm value as determined by Tobin's Q (e.g., Lee and Yeo, 2016; Barth et al., 2017), this study contends that, even if IR quality has a positive impact on firm value, it may be insufficient to create statistically significant differences between IR quality groups.

This paper continues as follows. Section 2 presents a review of the literature and develops the research questions. Section 3 explains the methodology used. Section 4 details the results and discusses the characteristics of publicly listed companies engaged in the IR stream in the same decade. Section 5 delineates the main contributions of the study and draws its principal conclusions. Section 6 ends with a consideration of the study's limitations and suggests avenues for further research.

2. Literature review and research questions

2.1 The drivers of IR adoption

A strand of the literature concerned with identifying the drivers of IR adoption found determinants at: (i) country level, including the legal system, cultural values, and economic conditions (Busco et al., 2019; Frías-Aceituno et al., 2013a; García-Sánchez et al., 2013; Girella et al., 2019; Vaz et al., 2016); (ii) industry level – namely, industry concentration and affiliation (Busco et al., 2019; Fasan and Mio, 2017; Frías-Aceituno et al., 2014; García-Sánchez et al., 2013; Gianfelici et al., 2018; Lai et al., 2016; Sierra-García et al., 2015); and (iii) firm level – *inter alia,* size, profitability, growth opportunities, and certain characteristics of the board of directors (Frías-Aceituno et al., 2014; García-Sánchez et al., 2013; Girella, et al., 2021; Hichri, 2021).

At the country level, Frías-Aceituno et al. (2013a) found that companies operating in civil law countries, which are characterized by a high degree of governmental intervention and stakeholder orientation, are more likely to adopt IR. Examining the impact of the cultural system based on Hofstede's cultural dimensions, García-Sánchez et al. (2013) showed that companies based in countries with similar cultural systems adopt similar patterns of behaviour regarding IR and that companies located in societies with stronger collectivist and feminist values are more likely to publish an Integrated Report in order to facilitate decision making by different stakeholders and improve the overall quality of life in the long term. Girella et al. (2019) supported these findings, adding that the same principle applied to firms in countries with a higher corruption perception index and a safer rating. In a similar vein, Vaz et al. (2016) established that companies in more collectivist societies and in countries that present a "comply or explain" IR regulation are more likely to present an Integrated Report.

At the industry level, Frías-Aceituno et al. (2014) contend that industry concentration harms the development of IR. They found that companies in monopolistic situations are less likely to publish Integrated Reports containing information relevant to decision making in order to maintain the abnormal profits obtained. Regarding industry affiliation, it has been suggested that certain industries, such as social and environmentally sensitive ones, are subject to greater public scrutiny and are likely to suffer from sustained stakeholder and regulatory pressure (Cho et al., 2012), including greater demand for ESG information (Kannenberg and Schreck, 2019). Accordingly, Busco et al. (2019) provided evidence that firms operating in sensitive industries and firms with higher environmental performance are more likely to produce IR. Furthermore, Sierra-García et al. (2015) revealed that industry affiliation has some influence on the adoption of IR because firms in industries where the GRI has issued a sector supplement are more likely to present information in an integrated manner.

At the firm level, several studies have found that profitability (Frías-Aceituno et al., 2014; Girella et al., 2019) and firm size (Busco et al., 2019; Frías-Aceituno et al., 2014; Girella et al., 2019; Sierra-García et al., 2015) influence IR adoption. They argue that, on the one hand, larger firms are more visible

in the market and society in general, and are more sensitive to their public image and feel under greater external pressure to disclose holistic information (Frías-Aceituno et al., 2014). On the other hand, more profitable firms have greater resources available, which they can devote to the production and disclosure of information (Frías-Aceituno et al., 2013a). Other scholars found no significant relationship between the firm's profitability (Frías-Aceituno et al., 2013b; Lai et al., 2016) or size (Lai et al., 2016; Vaz et al., 2016) and the adoption of IR. Frías-Aceituno et al. (2013b) and Girella et al. (2019) drew attention to growth opportunities, as measured by the market-to-book ratio, that influence the adoption of IR, However, García-Sánchez et al. (2013) were not able to uncover this influence in their investigation.

Finally, the literature suggests that the agency cost is higher for more leveraged firms. Thus, leveraged organizations and organizations in need of external funding are more likely to voluntarily disclose more information in order to reduce agency costs. Moreover, researchers have argued that, as the level of debt increases, creditors demand more information to decrease information asymmetry (Dilling and Caykoylu, 2019; García-Sánchez and Noguera-Gámez, 2017). The empirical research's findings on the connection between corporate leverage and IR adoption are not conclusive. According to the agency cost argument, some authors have discovered a correlation between a company's debt or leverage level and information disclosure through IR (Busco et al., 2019; Garca-Sánchez and Noguera-Gámez, 2017; Pavlopoulos et al., 2017). However, other authors have found no correlation between this variable and the choice to adopt 'IR' (Girella et al., 2019).

With this in mind, the first two research questions arise:

RQ1: Where are the IR reporters located?
RQ2: What are their main firm-level characteristics in terms of industry dispersion, size, profitability, and leverage?

2.2 The potential benefits of IR on firm value

To provide empirical evidence of the claimed benefits, research has begun to explore the concrete effects that arise from a commitment to IR. Studies conducted by ACCA (2019) and the IIRC and Black Sun Plc. (2014, 2015) on participants from the "IR Business Network" revealed that IR acts as a driver for <IT>. In other words, by shifting the focus to items most material to the company, IR allows greater insights into the business model and value creation, resulting in enhanced management and decision making. Furthermore, preparers noted an improvement in internal processes and employee engagement, with connections being forged between different departments, leading to a broadening of perspectives and cooperation and a reduction in silo thinking. Moreover, as an understanding of strategy improves internally, external reporting becomes more efficient at answering stakeholder inquiries and providing a long-term outlook, resulting in a heightened reputation and enhanced stakeholder relations. Research conducted under different settings, such as the South African (Roberts, 2017) and Italian (Paolucci and

Cerioni, 2017; Vitolla and Raimo, 2018) context yielded similar results and, hence, provided some evidence of previously claimed benefits.

Since one of the purposes of IR, as stated by the IIRC, is to "*improve the quality of information available to providers of financial capital to enable more efficient and productive allocation of capital*" (IIRC, 2013: 3), researchers have been investigated the usefulness of the information provided in IR, with a particular focus on its potential effect on capital markets (Barth et al., 2017; Bernardi and Stark, 2018; Cortesi and Vena, 2019; Flores et al., 2019; García-Sánchez and Noguera-Gámez, 2017a; Lee and Yeo, 2016; Serafeim, 2015; Zhou et al., 2017).

Prior research suggests that investors are increasingly interested in non-financial information (Hughen et al., 2014) and use it to forecast future financial performance (Dhaliwal et al., 2012; Gal and Akisik, 2020). In addition, companies that provide such information through sustainability reports benefit from a lower cost of capital (Dhaliwal et al., 2011). There are demands for improved data, greater connectivity, and consistently applied frameworks (Gal and Akisik, 2020); Through the principles of connectivity and materiality, IR can help organisations to provide relevant information in meaningful ways by showing the interrelations between financial and non-financial matters (ACCA, 2019; Flores et al., 2019).

Knauer and Serafeim (2014) and Serafeim (2015) determined that firms engaged in IR attract a greater number of long-term investors and deter transient investors. It reduces information asymmetry (Cortesi and Vena, 2019; Lee and Yeo, 2016) and information processing costs – especially in firms operating in complex environments and with greater external financing needs (Lee and Yeo, 2016). Moreover, it enhances analyst earning forecast accuracy (Bernardi and Stark, 2018; Flores et al., 2019; Zhou et al., 2017), suggesting that information contained in IR helps analysts to formulate their earnings predictions (Loprevite et al., 2018). Furthermore, the reporting environment resulting from the adoption of IR and IRQ improves earnings quality (Cortesi and Vena, 2019; Loprevite et al., 2018; Obeng et al., 2020), leads to a reduction in the cost of debt (Raimo et al., 2021), and generates an increase in firm value (Barth et al., 2017; Cortesi and Vena, 2019; Lee and Yeo, 2016; Pavlopoulos et al., 2019).

Vitolla et al. (2020b: 521) suggest that "*a greater number of long-term investors and a lower level of information asymmetry can lead to a reduction in the cost of equity capital*". Indeed, the main results from the literature on the capital market effects of IR attest to their argument by showing that IR adoption – and higher quality IR – leads to a reduction in the cost of capital (García-Sánchez and Noguera-Gámez, 2017a; IIRC, 2015), particularly the cost of equity capital (Vitolla et al., 2020b; Zhou et al., 2017). These results apply especially to firms with a low analyst following (Zhou et al., 2017) – also to companies that increase their basic funding or experience more problems related to information asymmetry (García-Sánchez and Noguera-Gámez, 2017a). However, several studies have questioned the usefulness of IR for capital markets. Findings from interviews suggest that analysts are not drawn to the concept of IR. It is not considered relevant to the practice of analysts in assessing firms because it does not provide information in the degree of detail that analysts require nor in the preferred format (Abhayawansa et al.,

2019). Similarly, interviews conducted by fund managers, equity analysts, and other financial users revealed their general lack of familiarity with IR (Slack and Tsalavoutas, 2018).

Finally, in relation to RQ3, the literature argues that IR can reduce: (i) information acquisition costs by providing new value-relevant information that can help assess the firm's long-term prospects; and (ii) information processing costs by disclosing relevant information in a precise, concise, and integrated manner. This is achieved by showing the interrelations between financial and non-financial matters and between different reports and segments, following the principles of connectivity and materiality (e.g., ACCA, 2019; Flores et al., 2019; IIRC, 2013; KPMG, 2012; Lee and Yeo, 2016; Zhou et al., 2017). Accordingly, IR can provide analysts with useful information – in particular, a greater understanding of the business model – and help alleviate the information overload problem resulting from the plethora of mandatory and voluntary firm communications. In this way, IR reduces information asymmetries and improves analysts' forecast accuracy by allowing investors to properly assess the risks and returns of their investment decisions and facilitating the prompt incorporation of all pertinent information into the user's decision-making process and asset prices (e.g., Bernardi and Stark, 2018; Cortesi and Vena, 2019; Flores et al., 2019; Lee and Yeo, 2016; Loprevite et al., 2018; Zhou et al., 2017).

As a consequence of the decreased uncertainty in the information environment, reporting companies can benefit from a reduced cost of equity capital. Investors are willing to accept a lower rate of return in exchange for reduced information risk (García-Sánchez and Noguera-Gámez, 2017a; IIRC, 2015; Vitolla et al., 2020b; Zhou et al., 2017), and increased firm valuation (Barth et al., 2017; Cortesi and Vena, 2019; Lee and Yeo, 2016; Pavlopoulos et al., 2019), by enabling better decisions. In contrast, IR could also be irrelevant to investors and, therefore, have no effect on firm value (Abhayawansa et al., 2019; Slack and Tsalavoutas, 2018). Indeed, it could negatively affect firm value if it forces adopters to incur costs, such as the cost of reporting or revealing sensitive information (e.g., Landau et al., 2020). However, research suggests that, while IR can increase the cost of reporting, it is considered a worthwhile investment because it can introduce new or better quality data to facilitate improved decision making, leading to cost reductions in the long term (Burke and Clark, 2016; IIRC and Black Sun Plc., 2014, 2015; Mio et al., 2016). In sum, it is expected that IR benefits: (i) preparers through its transformational function of <IT>; and (ii) users,through the information function of IR by reducing information asymmetries and improving the internal and external information environment of companies that prepare segment reports. In turn, the disclosed information is expected to be more useful and less costly for analysts. Consequently, analyst forecasts are improved and the firm's cost of capital is reduced, resulting in higher firm valuation. Accordingly, we seek to uncover whether firm value is changed after the adoption of IR.

With this in mind, we posit the third research question:

RQ3: Did a change in firm value occur after IR adoption?

2.3 Firm value and integrated reporting quality

While IR practice is becoming increasingly popular, the quality of integrated reporting remains quite low, with reports containing repetitive information and leaving out certain ESG items (Dilling and Caykoylu, 2019; KPMG, 2019; Pistoni et al., 2018). In light of these findings, researchers have turned their attention to the drivers of IR quality (IRQ) to understand what makes companies produce better-quality reports. As with IR adoption factors, research on IRQ also identified determinants at country, industry, and firm level.

At the country level, the legal system (Vitolla et al., 2020a) and the national culture (Raimo et al., 2019; Vitolla et al., 2019b) play a part in determining IRQ. Firms operating in civil law countries (Vitolla et al., 2020a) or countries with a cultural system with less power distance and more restraint, uncertainty avoidance, femininity, and collectivism (Raimo et al., 2019; Vitolla et al., 2019b) produce better quality reports. Additionally, Bavagnoli et al. (2018) and Songini et al. (2020) found that companies located in Europe and countries with mandatory IR render higher-quality IR. Firms whose activity affects the environment produce more detailed reports. Therefore, industry affiliation is also a determinant of IRQ (Buitendag et al., 2017).

At the firm level, even though Dilling and Caykoylu (2019) found conflicting results for profitability as did Malola and Maroun (2019) and Songini et al. (2020) for size, both and profitability and size are positively associated with IRQ (Buitendag et al., 2017; Dilling and Caykoylu, 2019; Iredele, 2019; Vitolla et al., 2020a). Regarding the attributes of the board of directors, larger (Lopes and Braz, 2020; Iredele, 2019; Vitolla et al., 2020a), more diverse (Lopes and Braz, 2020; Dilling and Caykoylu, 2019; Iredele, 2019; Vitolla et al., 2020a), independent (Lopes and Braz, 2020; Buitendag et al., 2017; Pavlopoulos et al., 2017; Vitolla et al., 2020a), and active (Vitolla et al., 2020a) boards have been appointed as drivers of disclosure quality. Malola and Maroun (2019) further concluded that firms with a CSR or sustainability committee and firms that have their disclosures externally assured produce better quality reports. The results of Maroun (2019) and Erin and Adegboye (2021) concerning external assurance were corroborated, and Maroun (2019) added that the influence is stronger when assurance services are provided by one of the Big 4. On a separate note, Vitolla et al. (2019a) demonstrated that pressure from stakeholders, including customers, environmental protection organizations, employees, shareholders, and governments, determines IRQ.

Given that the main function of an IR is to "*explain to providers of financial capital how an organization creates value over time"* (IIRC, 2013: 4), prior literature has criticised the business case logic of IR, claiming it has suffered from regulatory capture by the IIRC's governing council. It is argued that this council is dominated by the accountancy profession and multinational enterprises and, therefore, does not adequately represent the interests of social and environmental stakeholders (Chaidali and Jones, 2017). As a consequence, it has disregarded sustainability and moved to a pure investor focus (Conradie and de Jongh, 2017; La Torre et al., 2020), perpetuating the short-termism of capital markets (Flower, 2015; Thomson, 2015). Moreover, by placing no obligation on firms to report matters that are

immaterial to their ability to create value for themselves (IIRC, 2013) – such as the damage inflicted on society and the environment (Flower, 2015) – IR detracts from sustainability reporting achievements (Brown and Dillard, 2014) by passing off unsustainable practices as sustainable (Thomson, 2015)

In light of these criticisms, Adams (2015) countered that the main purpose of IR is not to address sustainability but rather to act as a vehicle for profound change in corporate reporting and thinking, "*leading to the further integration of sustainability actions and impacts into corporate strategic planning and decision making*" (Adams, 2015: 23). The argument is that integrating ESG issues into the core business model causes internalization of ethical norms and induces a profound change towards more environmentally and socially responsible business practices (Adams, 2015; Maniora, 2017). Correspondingly, Coulson et al. (2015: 290) add that the IR agenda represents a "*shift from a 'financial capital market system' to an 'inclusive capital market system' through recognition of multiple capitals and integrated reporting and thinking*". Proponents of IR argue that the integration of financial and sustainability information into one report influences investors to consider the financial effects of non-financial issues, helping them look beyond short-term results and consider long-term value (Kannenberg and Schreck, 2019; KPMG, 2012; Mio et al., 2020; Reimsbach et al., 2018), as past requests to move in that direction have advocated (e.g., CFA Institute, 2006). Nevertheless, Slack and Tsalavoutas (2018) argue that, while IR has some appeal, its consideration in investment thinking will remain aspirational until a significant shift towards longer-term thinking is accomplished (Cheng et al., 2014; IIRC and Black Sun Plc., 2014).

To justify RQ4, we must report that preceding studies using the level of the report's alignment with the International Integrated Reporting Framework (IIRF) as a proxy for IRQ found that firms providing higher-quality disclosures benefit from an improved information environment, resulting in improved analyst forecast accuracy, reduced cost of equity capital, and higher firm value (Barth et al., 2017; Lee and Yeo, 2016; Pavlopoulos et al., 2019; Vitolla et al., 2020b; Zhou et al., 2017). Higher-quality IR is more concise and connected, including only material matters and showing a greater articulation between strategy and risk (Roberts, 2017). Additionally, Barth et al. (2017) suggest these reports can be used as an indicator of the quality of internal management because companies that invest in high-quality IR are strongly aware of the concept of <IT> and its benefits. Consequently, they may also have improved internal decision-making processes that benefit future cash flows (Barth et al., 2017; SAICA, 2015).
Based on the following considerations:
(i) Dilling and Caykoylu's (2019) finding that companies listed in Integrated Reporting Examples Database (IRED) are more likely to publish higher-quality IR;
(ii) prior research suggests using a measure of IRQ from an external source, such as a scoring system, to award IR prizes (de Villiers et al., 2017);
(iii) IR reference reports are compliant with the IIRF that have been recognized as a leading practice by a reputable awards process (or through benchmarking),

we seek to analyse whether IR reference reporters benefit from improved firm valuation. Thus, we examine whether differences exist in the firm value of the two groups of IR reporters – reference and regular.

With this in mind, we posit the fourth and last research question:

RQ4: Does firm value vary depending on IR quality?

3. Methodology

3.1 Data collection and sample

The sample in this study comprises the publicly listed companies that have been engaging in IR over the last decade and that are included in the Integrated Reporting Examples Database (IRED). We start by collecting the list of all the unique organizations that were included in the IRED at the end of 2019, totalling 535 organizations. Additionally, the Thomson Reuters Datastream Database was used to retrieve the necessary financial firm-level characteristics for the overall time window, starting in 2010. Consequently, some organizations were eliminated as per the following criteria – unlisted entities, entities whose websites were unavailable, entities whose reports were unavailable, and entities whose reports were in a language other than Portuguese, English, Spanish, French, or Italian. Thus, the total sample of IR reporters in this study consists of 366 different organizations, covering the 10 years starting in 2010, with a total of 3,660 observations.

To address the research questions, the sample was separated into pre- and post-IR adoption periods. To achieve this, we began by searching the firm website for information on the length of time they adhered to IR to enable comparisons before and after the adoption of IR. This is a standard method in accounting research to evaluate the effects of new practices (e.g., Paul and Largay III, 2005). Next, to determine the precise date, we turned to the news that was released and/or to the companies' annual reports that were available in the investors' relations profile (or similar source).

Finally, the RQ4 requires an analysis of IR quality. According to the IRED, there are not only regular IR reports but also recognized reports and/or leading practice reports. For this study, the recognized reports and leading practice reports were grouped together (reports of higher IR quality) and, henceforth, denominated as "IR reference reporters". The remaining reports will be denominated "IR regular reporters" (reports of low IR quality). This method is

more objective because it does not need the researcher to make a judgment on the quality of the report.

This decision is backed by Hammond and Miles (2004) and de Villiers et al. (2017), who identify award programs, which are intended to spotlight and reward exemplary practices, as a method to evaluate the quality of CSR and IR. In addition, it has been utilized in IR research in the past (e.g., Lopes and Braz, 2020; Lopes and Coelho, 2018; Vitolla et al., 2019b).

Table 1 details the composition of the sample, including its deconstruction based on IR quality. As can be seen, there are 366 different organizations and 3,660 firm-year observations. The first group, the companies with IR reference reporters, consists of 79 organizations and 790 observations, and it comprises 22% of the total. The second group, which consists of the remaining 287 organizations and 2,870 observations referred to as IR regular reporters, makes up 78% of the total.

[Table 1]

Graph 1 provides a good picture of the distribution of the number of reports published per year. The tendency observed suggests a rise in the quantity of both published IR reference reports and reports overall. The reports for each year were released in 2019 and 2020, respectively. It takes time for the appropriate organizations to distribute the various awards and recognitions and for the IIRC to classify the reports and update the IRED. This may account for the relatively low numbers in 2018 and 2019. A further explanation for the (reduced) quantity of IR reference reports in those years is that the IRED's website only offered examples beginning in 2013 and excluding 2018.

[Graph 1]

3.2 Variables

We use several variables to capture firm-level attributes – namely geographic dispersion and economic and financial characteristics. The basis for geographic dispersion is the country in which the reporting entity is based and the region (by continent). These variables were

retrieved for the total sample of IR reporters from the IRED and used as geographic dispersion variables. Previously, other authors have used geographic characteristics in their study of IR determinants (Frías-Aceituno et al., 2013a; García-Sánchez et al., 2013; Girella et al., 2019; Vaz et al., 2016).

The economic and financial characteristics variables were considered not only because of their use in the study of IR determinants but also because of their generalized inclusion as control variables in the analysis of the impact of IR adoption and IR quality on firm value and/or market performance. Previous authors have used industry (Busco et al., 2019; Frías-Aceituno et al., 2014; Gianfelici et al., 2018; Lai et al., 2016; Sierra-García et al., 2015; Vaz et al., 2016), firm size (Busco et al., 2019; Frías-Aceituno et al., 2014; García-Sánchez et al., 2013; Girella et al., 2019; Sierra-García et al., 2015) and profitability (Frías-Aceituno et al., 2014; García-Sánchez et al., 2013; Girella et al., 2019) as determinants of IR adoption in their studies. Similarly, this study chose the following variables: **Industry**, providing information on the leading sector(s) in IR and calculated based on the two-digit Standard Industrial Classification (SIC)); **Size**, providing information on the dimension and economic importance of IR reporters, measured by the natural logarithm of total assets and the market capitalization at the end of the fiscal year; **Profitability,** representing corporate profitability and captured by the operating income (OI), return on assets (ROA), and return on equity (ROE) ratios; **Leverage,** representing the company's leverage and computed as the ratio between end-of-year total debt and end-of-year total equity; and **Firm value**, measured by Tobin's Q[1] and the market value as per previous studies and recommendations (Barth et al., 2017; de Villiers et al., 2017; Gal and Akisik, 2020).

These data will be subjected to descriptive analysis and inferential statistics tests to determine whether there is a statistically significant difference between the means before and after the adoption of IR and in the two IR quality subgroups.

3 Results and Discussion

3.1 Where are the companies engaged in IR located?

To answer RQ1, Exhibit 1 presents a world map that includes the distribution of the companies that are engaged in IR by country and region, presenting the number of IR Reference reporters (#ref.) and the number of IR Regular reporters (#reg.). The sum of both represents the total

[1] This study uses a simplified version of Tobin's Q, measured as the market value of equity plus book value of total liabilities divided by total assets.

number of reporters. We identified 43 countries and 5 different regions. The most representative regions are Asia and Africa, followed by Europe, the Americas, and finally Australasia. South Africa is the leading country, which is unsurprising given the mandatory IR regime in the country since 2010 (Chaidali and Jones, 2017; Roberts, 2017). The second country presenting the greatest number of reports (89) is Japan, where IR has been gaining traction in recent years (Deloitte, 2015), followed by the UK, which can be explained by the proximity of the IIRC to England (Bhasin, 2017). Sri Lanka is in fourth position. Moreover, South Africa is the country with the highest count of reference reporters followed by the region of Europe, which accords with the findings of Bavagnoli et al. (2018) and Songini et al. (2020), suggesting that companies located in Europe and countries with mandatory IR produce higher-quality IR.

[Exhibit 1]

3.2 What are their main firm-level characteristics, in terms of industry dispersion, size, profitability, and leverage?

In response to RQ2, the rest of this subsection presents the results for industry dispersion, size, profitability, and leverage.

Industry dispersion

Manufacturing is the most represented industry in the companies engaged in IR, followed by banking, insurance, and real estate. Together, they account for more than half the sample, according to the analysis of the reporters' industry sectors using the SIC code, as shown in Table 2. These are also the leading sectors in IR Reference reporters. They are followed by utilities, mining and construction, services, and the wholesale and retail trade sectors. Finally, the least represented sector is public administration. These results are in line with ACCA (2019) and Lai et al. (2016) who revealed that firms operating in the financial, industrial, and utilities sectors are more likely to adopt IR than firms operating in other sectors. Additionally, the prior literature suggests that certain industries, such as social and environmentally sensitive ones (e.g., the mining industry) are more exposed to public scrutiny than others, and they are expected to suffer from sustained stakeholder and regulatory pressure, including a greater demand for ESG information (Kannenberg and Schreck, 2019). Accordingly, Busco et al. (2019) furnished evidence that firms operating in sensitive industries are more likely to produce IR. While the results of Frías- Gianfelici et al. (2018) and Vaz et al. (2016) showed no statistical

influence of industry on the decision to prepare IR, there was agreement that industry membership could impact the content of the IR. Gianfelici et al. (2018) provided evidence that industry membership affects stakeholder salience and, consequently, the content of the IR. Along similar lines, Fasan and Mio (2017) suggest that industry affiliation plays a central role in shaping materiality disclosure among the "IR Business Network participants".

[Table 2]

Size

To assess the reporters' dimension, the information regarding each reporter's total assets and market capitalization was analysed. The natural logarithm of total assets was later calculated to control for side effects. To analyse whether IR adoption had any effect on the reporters' size, we performed a paired samples test on the reporters' size before and after the adoption of IR. Table 3, Panel A, depicts the output. Results suggest that reporters differ significantly (p= 0.000) in size before and after the adoption of IR. On average, reporters become larger in the post-IR adoption period, on both measures. The findings of prior studies have demonstrated that firm size exerts an influence on IR adoption (Busco et al., 2019; Girella et al., 2019; Sierra-García et al., 2015), arguing that larger firms are more visible in the market and society in general, exhibiting greater sensitivity to their public image and to external pressure demanding the disclosure of holistic information (Frías-Aceituno et al., 2014). In addition, their larger dimension grants them the necessary resources to compile and report the relevant information. Yet, other scholars have found no significant relationship between the firm's size (Lai et al., 2016; Vaz et al., 2016) and the adoption of IR. With regard to the current study, the results suggest that a firm's size is one of the firm's characteristics that differs between the pre- and post-IR adoption periods – that is to say, on average, organizations become larger after the adoption of IR.

[Table 3]

The independent sample tests (Table 3, Panel B) reveal that the reporters differ significantly in size for the variable total assets (p= 0.004) but not for the variable market capitalization (p= 0.506). On average, the logarithm of total assets and the market capitalization are higher for IR reference reporters. However, the tests for the equality of means for the variables suggest that the difference is only statistically significant for total assets. These results suggest that "SIZE"

Commented [AA1]: Why capitalize?

is sensitive to the metrics used to compute the variable. Therefore, future research should: (i) be mindful of the fact that the results may be biased depending on the metric used to compute the variable; and (ii) try to mitigate this bias by either including multiple variables for size or running robustness checks.

Keeping in mind that results can be biased due to differences in sample construction and the metrics used to compute the variable in question (Vaz et al., 2016), the result for the "total assets" metric is congruent with prior research, which found that larger organizations are more likely to produce high-quality IR (Lopes and Coelho, 2018; Buitendag et al., 2017; Dilling and Caykoylu, 2019; Iredele, 2019; Vitolla et al., 2020a). Likewise, the result for the "market capitalization" metric accords with Malola and Maroun (2019) and Songini et al. (2020), who found that firm size does not necessarily influence IR quality.

Additionally, the natural logarithm of total assets (Graph 2, Panel A) and the market capitalization in thousands of EUR (Graph 2, Panel B) were computed for both IR quality groups for each year and the average of the pooled sample period. Analysing the pooled sample results, IR Reference reporters are larger than the IR regular reporters in both measures. These results are congruent with Dilling and Caykoylu (2019) who found that larger organizations are more likely to produce high-quality IR.

[Graph 2]

Profitability

The companies' ROE, ROA, and operating income (OI), commonly known as EBIT, were used to analyse profitability. We perform paired sample tests to analyse whether IR adoption had any effect on the reporters' profitability. Table 4, Panel A, depicts the output. Results for metrics ROE and ROA suggest that, on average, organizations are more profitable before the adoption of IR. On the contrary, results for the same variable measured by the OI suggest that organizations are more profitable after the adoption of IR. However, results for the tests of equality of means suggest that the differences are only statistically significant at a 10% level for ROE (p= 0.055) and ROA (p= 0.068) but not statistically significant for OI (p= 0.720). Thus, the companies do not significantly differ in profitability before and after the adoption of IR if using OI but do differ if using ROE or ROA. It is important to note that the values for ROE could be misleading. since ROE is the ratio of the company's net income over its equity,

if a company posts both negative income and negative equity, it could result in a deceptively high (i.e., positive) ROE.

[Table 4]

While several studies have found profitability to influence IR adoption (Frías-Aceituno et al., 2014; Girella et al., 2019), arguing that more profitable firms have more resources available to devote to the production and disclosure of information (Frías-Aceituno et al., 2013a), others have found no significant relationship between the firm's profitability (Frías-Aceituno et al., 2013b; Lai et al., 2016) and IR adoption. While the conclusions of this study are ambiguous, the results for ROE and ROA align with the former because they indicate that profitability differs significantly after the adoption of IR. The results for OI align with the latter because reporters' profitability does not differ significantly after the adoption of IR.

As with the procedure adopted for size, ROE, ROA and OI (in thousands of EUR) were calculated for the two IR quality groups for each year and the average of the pooled sample period (Graph 3). Using ROE (Panel A) as a proxy for profitability, the performance of reference reporters is lower than the performance of regular reporters in the pooled sample. On the contrary, when profitability is measured using ROA (Panel B) and OI (Panel C), the reference reporters outperform the regular reporters in the pooled sample.

[Graph 3]

The independent samples t-test for the equality of the means between the two IR quality groups was performed for the three proxies of profitability (Table 4, Panel B). The results were contradictory. They only allow for the rejection of the null hypothesis of the equality of the means on profitability measured as OI at a 5% confidence level (p= 0.021) – that is, when using the metric OI, reference reporters are more profitable than regular reporters, and the difference on means is statically significant. However, there are no statistically significant differences between the reporters if using the metrics ROE (p= 0.938) and ROA (p= 0.588). Prior studies have also found ambiguous results. On the one hand, researchers found that more profitable firms disclose better quality information and produce higher-quality reports (Buitendag et al., 2017; Iredele, 2019; Lopes and Coelho, 2018). On the other hand, Dilling and Caykoylu (2019) found a significant negative impact of profitability on disclosure quality. The results of this study are conflicting. If profitability is measured by OI, then IR Reference reporters are, on

average, more profitable than IR Regular reporters, supporting the view of the former group of authors. Nonetheless, if profitability is measured by ROE or ROA, the results show no statistically significant differences between the two groups. In the first case, the indicator only covers information from the income statement. The latter uses an indicator of profitability obtained from the use of resources (assets) or finance (equity).

Once again and identical to the variable "SIZE", this study shows that "PROFITABILITY" is also sensitive to the metrics used to compute the variable. Therefore, researchers should be mindful of this fact when including this variable in their research models. Authors have argued that information on profitability can be used as: (i) a differentiating factor to distinguish a firm from its less successful counterparts; (ii) an indicator of investment quality to raise capital at lower costs; and (iii) a means for managers to convince shareholders of their superior managerial abilities to increase their level of remuneration and to ensure the stability of their position (Buitendag et al., 2017; Dilling and Caykoylu, 2019). Conversely, higher returns could tempt competitors to enter the market. In that case, researchers have raised the possibility of a negative relationship between profitability and information disclosure, since it is necessary to consider the effect of the proprietary costs of information disclosure that tend to increase with increasing profitability (Frías-Aceituno et al., 2014). Therefore, investigators examining the influence of profitability should consider the proprietary costs of information disclosure in their analysis. This study reveals ambiguous results. Therefore, it could be interesting for future research to analyse whether proprietary cost concerns played a part in the differing results.

Leverage

Leverage is analysed through the leverage ratio, which is approximated by the ratio between total debt to total equity. To analyse whether IR adoption had any effect on the companies' leverage level, we performed a paired samples test, and Table 5, Panel A, depicts the output. Descriptive statistics suggest that, on average, companies are less leveraged in the post-IR adoption period. However, the results for the paired samples test do not allow rejection of the null of the equality of means at an acceptable level of confidence (p= 0.117). Additional (not reported) tests revealed that results for leverage are sensitive to how the variable is computed, which could potentially bias future research that includes leverage as a control variable. Using a different metric (not reported), while still not statistically significant, results suggest that, on average, reporters are less leveraged in the pre-IR adoption period.

[Table 5]

Authors have argued that more leveraged firms incur larger monitoring costs and, thus, are expected to disclose more to decrease these costs. Moreover, the agency cost is higher for more leveraged firms. Therefore, leveraged organizations and organizations in need of external funding are more likely to voluntarily disclose more information to diminish agency costs. Furthermore, as the level of debt increases, creditors will ask for more information to decrease information asymmetry (Dilling and Caykoylu, 2019; García-Sánchez and Noguera-Gámez, 2017).

Results from the empirical research are not conclusive regarding the relationship between firm leverage and IR adoption. Following the agency cost argument, some authors have found a positive relationship between a company's debt or leverage level and information disclosure through IR (Busco et al., 2019; García-Sánchez and Noguera-Gámez, 2017; Pavlopoulos et al., 2017). On the contrary, others found no impact of this variable in the decision to adopt IR (Girella et al., 2019).

The results of this study are congruent with the latter, as they show no statistical difference in the reporters' leverage in the pre- and post-IR adoption periods.

Analysing the leverage ratio level of the two different groups of reporters, it is possible to observe, in Graph 4, that: (i) the total debt level is inferior to the total equity level, for all the years; and (ii) the amount of debt used to finance the organization's assets is, on average, lower for reference reporters than for regular reporters – that is to say. the reference reporters have a lower debt level than regular reporters.

[Graph 4]

Although the independent samples test for the equality of means (Table 5, Panel B) does not allow for rejection of the null, the results indicate that there are no statistically significant differences between the groups (p= 0.619). These results are in line with Iredele (2019) and Lopes and Coelho (2018) who found no significant relationship between IRQ and leverage. However, they clash with the conflicting results of Pavlopoulos and Magnis (2019) who found statistically significant evidence that entities with higher leverage are prone to producing IR of greater recognition and those of Dilling and Caykoylu (2019) who found that firms with lower leverage were more likely to produce high-quality IR. Considering the ambiguous results regarding the influence of leverage in IRQ, it could be interesting for future research to investigate the influence of agency costs on IR disclosure quality.

3.3 Did a change in firm value occur after IR adoption?

To answer RQ3 and to assess whether there were any changes in the organizations' firm value after IR adoption, we ran a paired samples test on the two proxies of firm value: Tobin's Q and market value. Table 6, Panel A, shows the output. Results present contradictory evidence. When using Tobin's Q, results suggest that reporters have a higher firm valuation before the adoption of IR. However, those differences are not statistically significant (p= 0.208). In contrast, when using market valuation, results suggest that the firm value of reporters significantly differs at a 1% significance level (p= 0.000) between the two groups (before and after the adoption of IR), being higher after the adoption of IR.

[Table 6]

These preliminary results suggest that, when the firm is valued using Tobin's Q, the results are in line with Abhayawansa et al. (2019) and Slack and Tsalavoutas (2018) who found that the adoption of IR does not affect firm value and, therefore, IR could be considered irrelevant to investors. In contradistinction, when the market value is used as a proxy for firm value, firms are more highly valued after the adoption of IR, suggesting that, on average, the benefits of IR exceed its costs. This result is congruent with prior research that found the adoption of IR tends to result in higher firm valuation (Barth et al., 2017; Cortesi and Vena, 2019; Pavlopoulos et al., 2019).

The performed tests reveal that results for firm value are sensitive to how it is computed, which could potentially bias future research when this variable is included. While authors have used Tobin's Q as a proxy for firm value (e.g., Barth et al., 2017; Gal and Akisik, 2020) according to recommendations in that direction (de Villiers et al., 2017), it should be used with caution given that scholars have drawn attention to the limitations of Tobin's Q in assessing firm value (Bartlett and Partnoy, 2020; Bendle and Butt, 2018).

3.4 Does firm value vary depending on IR quality?

Tobin's Q and the market valuation were calculated for the two unrelated IR quality groups as a way of addressing RQ4, which asks whether there are any discrepancies between the firm values of the IR Reference and Regular reporters. The independent samples test (Table 6, Panel

B) shows that the reporters do not significantly differ in firm value in any of the metrics (p= 0.550 and p= 0.779). According to Tobin's Q, IR Reference reporters have, on average, lower firm value than regular reporters. However, analysis of the market value suggests that IR Reference reporters are, on average, more highly valued than IR Regular reporters. Prior research found that better-quality IR disclosures lead to higher market valuation. For example, Lee and Yeo (2016) and Barth et al. (2017) found a positive relation between IRQ and firm value, measured by Tobin's Q. The results of this study diverge from prior literature as they suggest IR quality does not lead to statistically significant differences in firm value – that is, that IR Reference and IR Regular reporters do not significantly differ in firm value.

4. Conclusion and main contributions

This research, which covers the period from the establishment of the IR Framework by the IIRC until the IR initiative was directed by the IFRS Foundation via the ISSB board, was conducted to present information on the companies that reported under the IR Framework during this period. A total of 366 organizations comprised the sample of IR reports that were taken from the IRED. Two IR quality groups were created from this sample: 287 IR Regular reporters and 79 IR Reference reporters. As a result, this study was able to make distinctions based on: (i) IR adoption, comparing the pre- and post-IR adoption periods; and (ii) IR quality, comparing the characteristics of reporters that presented IR Reference reporters and those who did not (IR Regular reporters). The following statements encapsulate our contribution to this body of knowledge.

First, the present study characterizes IR reporters in terms of number, geography, size, and profitability. Although it is known that several countries and stock exchanges have started to issue recommendations in support of IR and its practice (Girella et al., 2019), the present study substantiates the large geographic dispersion of IR reporters (across 43 countries and 5 different regions) that had not been made clear in previous studies. Second, based on IR adoption and IR quality, our study has been able to distinguish clearly between the firm characteristics of IR reporters. For instance, firms that embrace IR exhibit lower levels of leverage and greater market values, and organizations that fill out better-quality IR reports are noticeably bigger and more successful than their competitors. Although similar topics have been covered in earlier literature on the factors that influence IR and IR quality (e.g., Lopes and Coelho, 2018; Vaz et al., 2016), this research delineates the implications for businesses considering implementing similar reporting practices.

Lastly, this study explores the issue of the effects of improved IR quality. The results showed no statistically significant differences in firm value across the reporters' quality groups. This study suggests that, even if IR quality has a positive impact on firm value, it may not be sufficient to produce statistically significant differences between IR quality groups. This study complements prior research that discovered a positive relationship between IR quality and business value, as determined by Tobin's Q. (e.g., Lee and Yeo, 2016; and Barth et al., 2017).

To conclude, this study is opportune as it offers valuable information at a time of increasing progress towards non-financial reporting. Although the future of IR is uncertain, according to De Villiers and Dimes (2022), it is not incompatible with recent advances in non-financial reporting and may continue to prosper. By gaining insightful knowledge on IR reporters – companies that boosted and advanced IR over the last decade – other businesses may be encouraged to go forward with future non-financial reporting practices under the new guidance from the IFRS Foundation.

Limitations and further research

As with prior studies, this research is not free from limitations. First, concerning methodological choices, it is important to note that some IR reports were eliminated on the basis of language. However, the RQ1 sought to focus on countries and regions in which companies engaged in IR are present. Therefore, the limitation of this approach is that it may ignore certain countries entirely. Further research, including a more encompassing sample, could be conducted to validate the results of the present study. On that issue, it is important to note that results are also sensitive to the metrics used to compute the variables, which could potentially create bias in the research.

Second, with regards to the sample, 35% was composed of manufacturing companies. However, the findings may be industry-biased since it is unclear whether the greater number of manufacturing businesses is a sign that more manufacturing companies are using IR or whether it reflects the overall growth of the sector. In fact, there is no information on the overall number of businesses in each industry. Further research per industry could be conducted to verify differences in the percentage of IR adoption in each sector and to obtain a clearer picture of the leading sectors in this domain.

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Table 1 – Composition of the sample, including its breakdown by IR quality group

	Number of companies	Number of firm-year observations
Extraction from IR Examples Database	535	
Drop unlisted companies, unavailable websites, unavailable reports, language concerns	(169)	
# of reporters to be used in the study	366	3,660
Decomposition by type of reporter according to IR quality:		
IR Reference reporters	79	790
IR Regular reporters	287	2,870

Table 2 – Industry dispersion per IR quality group

Industry	IR Reference reporters		IR Regular reporters		Total	
	#	%	#	%	#	%
Mining and Construction (SIC 1)	12	15	33	11	45	12
Manufacturing (SIC 2 and 3)	25	32	104	36	129	35
Utilities (SIC 4)	8	10	40	14	48	13
Wholesale and Retail Trade (SIC 5)	6	8	22	8	28	8
Finance, Insurance and Real Estate (SIC 6)	19	24	63	22	82	22
Services (SIC 7 and 8)	8	10	24	8	32	9
Public Administration (SIC 9)	1	1	1	0	2	1
Total	**79**	**100**	**287**	**100**	**366**	**100**

Table 3 – Independent samples tests for the variable Size

Panel A: before vs. after IR adoption

Pre IR	Post IR	Mean difference	t-test	p-value	Decision
Size measured as the natural logarithm of "total assets":					
15.21	15.45	-0.23	-8.013	0.000	Reject the null
Size measured as "market capitalization":					
8,134,352.89	9,868,107.6	-1.733.754.71	-4.248	0.000	Reject the null

Panel B: IR Reference reporters vs IR Regular reporters

Regular	Reference	Mean difference	t-test	p-value	Decision
Size measured as the natural logarithm of "total assets":					
15.15	15.79	-0.63	-2.906	0.004	Reject the null
Size measured as "market capitalization":					
8,806,751.7	9,861,417.08	-1,054,665.4	-0.665	0.506	Retain the null

Table 4 – Independent samples tests for the variable Profitability

Panel A: before vs. after IR adoption

Pre IR	Post IR	Mean difference	t-test	p-value	Decision
Profitability measured as ROE					
20.14	15.59	4.55	1.924	0.055	Reject the null
Profitability measured as ROA					
6.01	5.44	0.57	1.830	0.068	Reject the null
Profitability measured as OI					
962,832.43	985,584.89	-22,752.46	-0.359	0.720	Retain the null

Panel B: IR Reference reporters vs IR Regular reporters

Regular	Reference	Mean difference	t-test	p-value	Decision
Profitability measured as ROE					
16.03	14.39	1.63	0.077	0.938	Retain the null
Profitability measured as ROA					
5.87	6.26	-0.39	-0.541	0.588	Retain the null
Profitability measured as OI					
837,368.92	1,219,940.66	-382,571.73	-2.303	0.021	Reject the null

Table 5 – Independent samples tests for the variable Leverage

Panel A: before vs. after IR adoption

Pre IR	Post IR	Mean difference	t-test	p-value	Decision
203.49	122.03	81.46	1.573	0.117	Retain the null

Panel B: IR Reference reporters vs. IR Regular reporters

Regular	Reference	Mean difference	t-test	p-value	Decision
125.10	89.84	35.26	0.497	0.619	Retain the null

Table 6 – Independent samples tests for the variable Firm Value

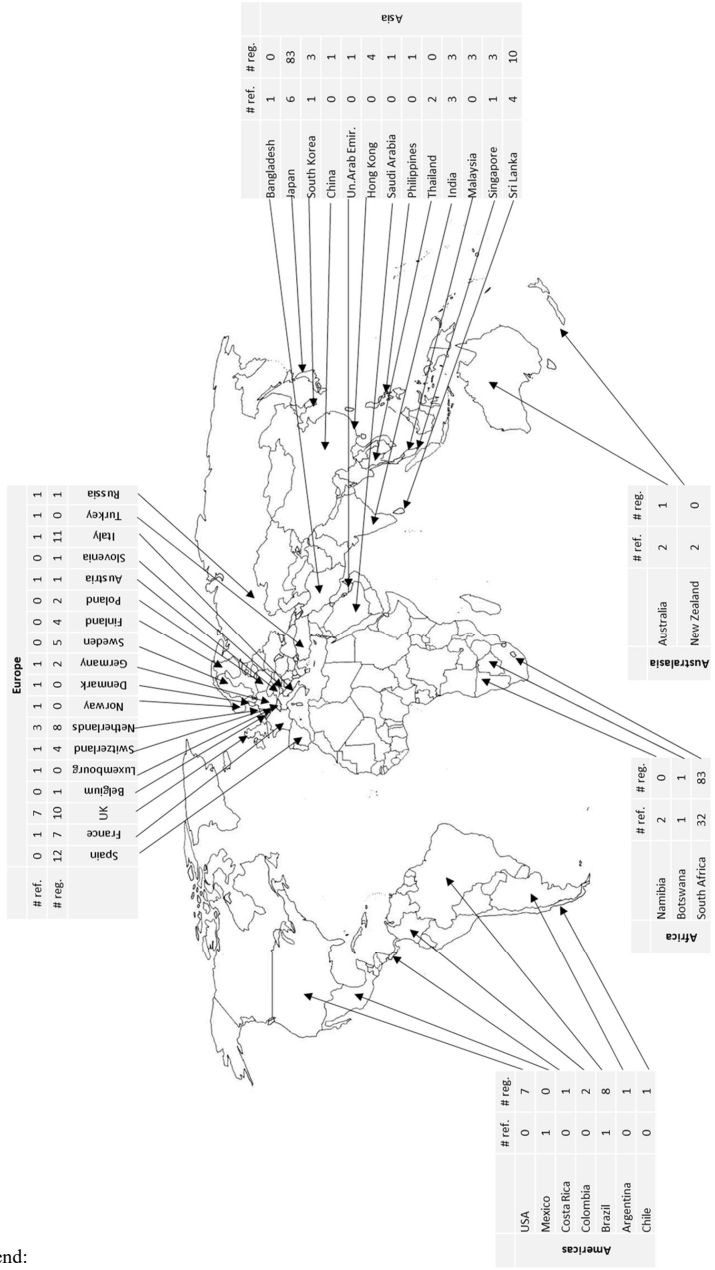
Panel A: before vs. after IR adoption

Pre IR	Post IR	Mean difference	t-test	p-value	Decision
Firm value measured as TOBIN's Q					
1.52	1.36	0.16	1.262	0.208	Retain the null
Firm value measured as market value					
7,654.37	9,739.15	-2,084.78	-5.306	0.000	Reject the null

Panel B: IR Reference reporters v.s IR Regular reporters

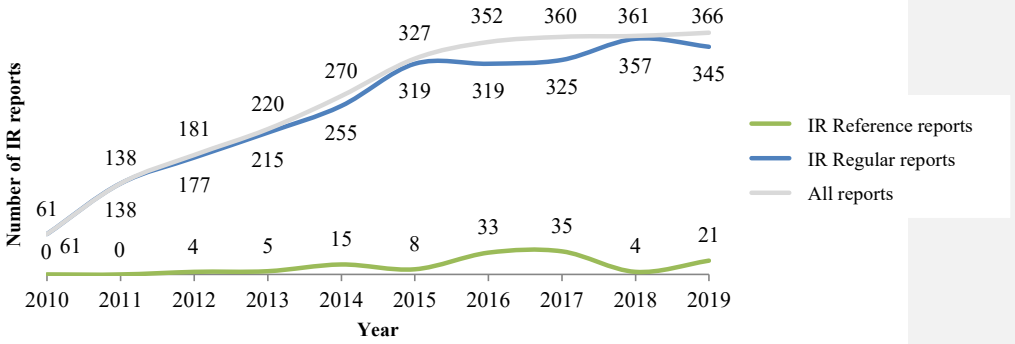
Regular	Reference	Mean difference	t-test	p-value	Decision
Firm value measured as TOBIN's Q					
1.46	1.38	0.08	0.597	0.550	Retain the null
Firm value measured as market value					
8,690.46	9,119.09	-428.63	-0.280	0.779	Retain the null

Exhibit 1 – Geographic dispersion of companies engaged in IR per IR quality group

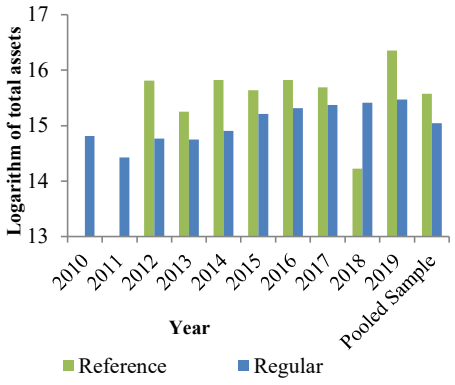


Legend:
#ref.: number of IR Reference reporters
#reg.: number of IR Regular reporters

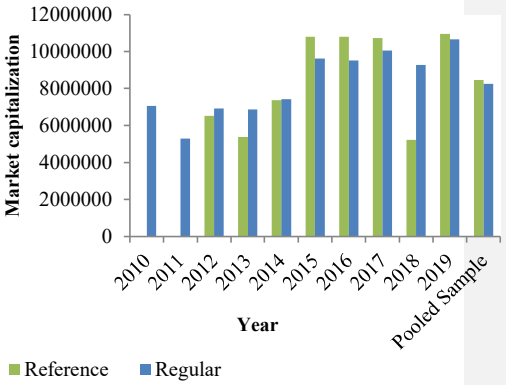
Graph 1 – Number of IR reports published per year, and per IR quality group



Graph 2: Evolution of Size over time per IR quality group

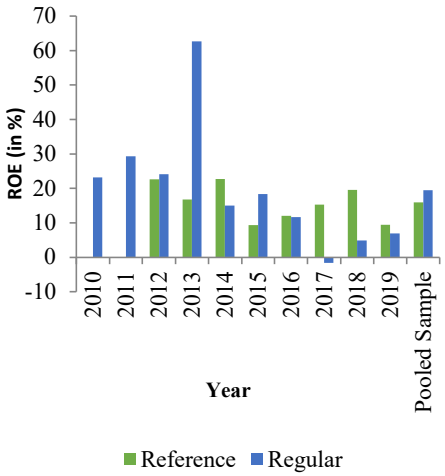


Panel A – Size of IR Reference and IR Regular reporters, measured as logarithm of total assets

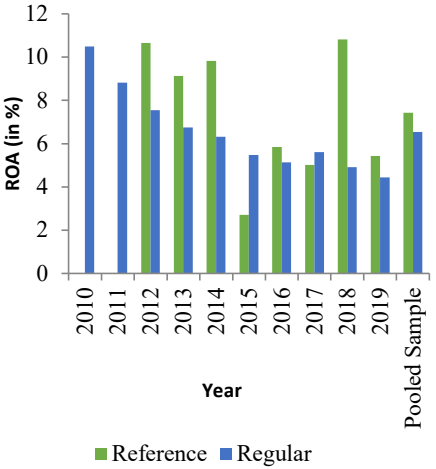


Panel B – Size of IR Reference and IR Regular reporters, measured as market capitalization in thousand euros

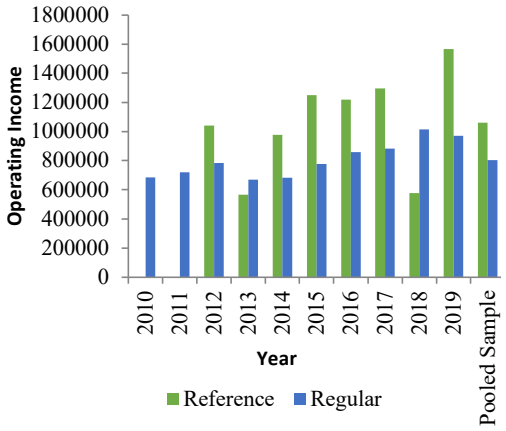
Graph 3: Evolution of Profitability over time per IR quality group



Panel A - Profitability of IR Reference and IR Regular reporters, measured as ROE



Panel B - Profitability of IR Reference and IR Regular reporters, measured as ROA



Panel C – Profitability of IR Reference and IR Regular reporters, measured as OI (in thousand euros)

Graph 4 – Evolution of leverage over time per IR quality group