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In the current economic context, Corporate Social Responsibility is an increasingly relevant topic that has swept away the traditional views about firms' competitiveness, survival and profitability. The rise of sustainability driven pressures and opportunities makes particularly interesting the interplay among management, sustainability and social impacts for scholars, public authorities, policy makers and practitioners. In line with these considerations, this book aims to investigate the opportunities, the criticalities and the future perspectives in the CSR studies for increasing firm performance and growth.

The contributions in this volume sketch a picture of the current state of CSR research including the evolution of sustainable regulation and its impact on firms' operations, organizational models and disclosure. The included papers emphasize the role of sustainability as a "new strategic variable" for contributing to strengthen the competitive positioning of firms and to increase their value creation process. The integration of socio-environmental variables into the overall strategic processes can drive firm to increase opportunities for developing new resources and capabilities and to improve competitive advantage.

By examining issues ranging from theory in CSR to practical application of practices and tools, the book contributes to the field of corporate social responsibility, accounting and strategic management studies and suggest implications for practitioners to support an evolution of sustainable business practices considering simultaneously the accountability to a wide range of firm's internal and external actors.

Stefano Garzella is a Full Professor of Strategic Management at the University Parthenope. He is also Visiting Professor at the University of Pisa. He received his PhD in Business Administration from the University of Pisa in 1998. He is a member of SIDREA (Italian Association of Professors in Accounting and Management), AIDEA (Italian Academy of Management). He has published research articles in several peer-reviewed national and international Journals. His research focuses on strategic management, M&As and valuation approaches.

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CORPORATE SOCIAL RESPONSIBILITY

Theoretical analysis and Practical implications

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Stefano Garzella

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12. IR COMPLETENESS AND THE ROLE OF THE INSTITUTIONAL FACTORS: WORLDWIDE EVIDENCE

by *Silvia Panfilo*[*], *Chiara Mio*[*]

Introduction

Around the world, some leading companies have started developing integrated reporting (IR), which expresses the interconnections between a firm's strategy, governance, performance and prospects, as well as the contexts within which it operates (Frias-Acetuino *et al*., 2013). The International Integrated Reporting Council (IIRC) released in 2013 a framework about the integration of financial and non-financial information within a unique corporate report. The adoption of such an IR is mandatory just in South Africa for listed companies since 2011, while it is voluntary adopted in all the other countries around the world.

According to the IR framework (2013) an IR includes eight Content Elements even if companies, adopting an IR in compliance to the framework, are let free to disclose which and how much about each of them. The Content Elements are "fundamentally linked to each other and […] not mutually exclusive" (IIRC, 2013, p. 24) and refer to: 1. Organizational overview and external environment, i.e. what the organization does and what are the circumstances under which it operates; 2. Governance, i.e. how the organization's governance structure supports its ability to create value in the short, medium and long term; 3. Business model, i.e. description of the organization's business model; 4. Risks and opportunities, i.e. the specific risks and opportunities that affect the organization's ability to create value over the short, medium and long term, and how the organization deals with them; 5. Strategy and resource allocation, i.e. where the organization wants to go and how it intends to get there; 6. Performance, i.e. to what extent the organization has achieved its strategic

[*] Department of Management. Ca' Foscari University of Venice, Italy. E-mail: silvia.panfilo @unive.it; mio@unive.it.

objectives for the period and what are its outcomes in terms of effects on the capitals; 7. Outlook, i.e. the challenges and uncertainties the organization is likely to encounter in pursuing its strategy, and the potential implications for its business model and future performance; 8. Basis of presentation, i.e. how the organization determines what matters to include in the integrated report.

Prior literature has already investigated the role of institutional factors – here intended in the forms of legal, political, and economic systems – on financial disclosure (for all La Porta *et al*., 1997; 1998). Most recent studies investigated institutional factors' role dealing about non-financial information (e.g. Jensen and Berg, 2012; De Villier and Marquez, 2016; Coluccia *et al*., 2018). However little research investigated the integration of both financial and non-financial information within IR (Frias-Acetuino *et al*., 2013; Zhou *et al*., 2017). Further these few studies analyzed integrated report before the IR framework development. Thus the current study aims at extending such stream of literature by investigating the influence of institutional factors on IR completeness, here defined as the level of information about the Content Elements provided by a company in its IR.

The paper is structured as follow: the second paragraph describes the institutional theory and prior literature at the base of the hypotheses development, the third paragraph deals with the research design, the fourth and fifth describe the findings of the analyses and the sixth discusses them and provides conclusions.

1. Theoretical framework and hypotheses development

IR is defined as "a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term" (IIRC, 2013). Thus providing an integrated disclosure about financial and non-financial information. Many studies of the last decade identify there is an increasing demand for holistic information by stakeholders (Frías-Aceituno *et al*., 2013) although these pressures vary depending on the stakeholder-oriented environment in which the company operates (Prado-Lorenzo and García-Sánchez, 2010).

Institutional theory considers companies as economic units that operate in contexts containing institutions that affect their behavior and impose expectations on them (Roe, 1991, 1994; Campbell, 2007). This in turn means that companies operating in countries with institutional similarities tend to to behave in a homogeneous way (La Porta *et al*., 1998). The theory behind such an idea has been developed by DiMaggio and Powell (1983) through the concept of isomorphism. Isomorphism can be distinguished into three types depending on its trigger: mimetic when companies resemble others considered as model companies; normative when companies act according to what is professionally correct; coercive when the isomorphism is imposed by the compliance with rules by external forces.

Voluntary disclosure of an integrated report is a decision taken by insiders, but firm-level decisions are not sufficient to explain why firms from different countries disclose different levels of integrated information (Dong and Stettler, 2011). In other words, the only mimetic isomorphism is expected to not be sufficient to explain similarities of IR disclosure within a country.

Jensen and Berger (2012) for instance analyze similarities and differences between companies with traditional sustainability reporting and those that publish integrated reports. Based on institutional theory they show that IR companies are different from traditional sustainability reporting companies with regard to several country-level determinants. In particular, investor and employment protection laws, the intensity of market coordination and ownership concentration, the level of economic, environmental and social development, the degree of national corporate responsibility and the value system of the country of origin proved to be relevant. Further, according to De Villier and Marques (2016), firms are more likely to disclose non-financial information in countries with better investor protection, higher levels of democracy, more press freedom and higher quality regulations. They also find market participants consider non-financial disclosures more informative in countries where investors are in a better position to voice their concerns and where there is better regulation and more effective government implementation of regulations.

A more recent study by Coluccia *et al*. (2018) investigate the relationship between corporate social responsibility disclosure and institutional/environmental factors among a sample of European listed companies. They find that institutional factors affect the level of such non-financial disclosure.

Little research instead investigated the influence of institutional factors on the integration of both financial and non-financial information within IR. For all, Frias-Acetuino *et al*. (2013) examined the influence the legal system on the development of integrated reports. They found that companies located in civil law countries, and where indices of law and order are high, are more likely to create and publish a broad range of integrated information. However, the results refer to the period 2008-2010 that is before the IR framework development.

Thus, relying on prior literature about non-financial disclosure and institutional factors the current research extends their investigation about the influence of institutional factors – here considered in terms of legal, political and economic systems – on the completeness of IR information. Following the research question: Is IR's disclosure completeness affected by institutional factors?

1.1. Legal system

Campbell (2006) argues that the companies most likely to act responsibly and to report their behavior are those operating in institutional contexts where there is coercive and normative pressure. Such institutional contexts are considered those where a significant, well-developed legal system exists to protect stakeholders (Frias-Aceituno *et al*., 2013). To achieve an effective protection of stakeholders' interests, the first parameter of the legal system is mandatory adoption (Deffains and Guigou, 2002). Thus it is expected that countries with mandatory regulations about IR adoption, producing a stronger coercive pressure on companies, may influence these latter to publish more complete IR. That is, reports including a greater amount of information about their content elements.

Hyp1: Compulsoriness of IR adoption positively affects IR completeness.

Second, considering institutional contexts with coercive and normative pressure are those contexts not exclusively oriented towards shareholders' interests, following the pillar research by La Porta *et al*. (1997), many studies distinguish the legal system according to common versus code law origin. In particular, companies in common legal system countries are more shareholder-oriented, while companies in code law legal system countries are broadly stakeholder-orientated. Such a different orientation leads many studies to identify companies in common law countries having stronger tradition and development of ownership rights and, consequently, of shareholder protection, giving rise to a greater prevalence of published financial information (Ali and Hwang, 2000; Ball *et al*., 2000; Hung, 2001; Leuz *et al*., 2003; Holthausen, 2009), in comparison to other types of information such as sustainability and integrated reports. Further Frias-Acetuino *et al*. (2013) found that companies located in civil law countries are more likely to create and publish a broad range of integrated reports. However, all these studies relate to the investigation of IR information before the development in 2013 of an IR framework. This latter, despite integrating financial and non-financial information, is specifically shareholder-oriented given “the primary purpose of an integrated report is to explain to providers of financial capital how an organization creates value over time” while “benefit all stakeholders interested in an organizational’ ability to create value over time” (IIRC, 2013 p.5). For such a reason the current study, in contrast with prior literature, hypothesizes that companies located in common law countries – more shareholder-oriented – are those publishing more complete IR.

Hyp2: Common law legal system positively affects IR completeness.

1.2. Political system

Among the various institutional factors studied by literature, political variables are the other most important factors that affect corporate disclosure (Ioannou and Serafeim, 2012; Williams, 1999). The World Bank Governance Indicators stated that Voice and Accountability represents the extent to which country citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. In this sense, voice and accountability are the reflection of the degree of democracy and freedoms (Coluccia *et al*., 2018). Prior literature shows companies operating in a country with a higher level of democracy tend to disclose more information: financial (Goodrich, 1986) and non-financial one (De Villiers and Marques, 2016; Coluccia *et al*., 2018). Following, companies operating in a higher democratic country are expected to publish more in terms of both financial and non-financial disclosure. In other word, higher level of democracy is likely to affect more complete IR.

Hyp3: Higher level of democracy affects positively IR completeness.

A second factor of the political system which is found to affect non-financial disclosure is the social dimension of legal protection (Jensen and Berg, 2012). In countries where social needs are highly considered, strong employment protection is prevalent (Jackson and Apostolakou, 2010). In line with Jensen and Berg (2012) the current study assumes in these countries reporting of social activities is more important, favoring greater disclosure in IR. Considering employment protection is dictated by the ability of government to formulate and implement sound policies and regulations (Coluccia *et al*., 2018) and in line with Ball *et al*. (2000), it is expected that companies located in countries having a higher Regulation Quality publish more complete IR.

Hyp4: Higher quality of regulation affects positively IR completeness.

1.3. Economic system

Finally, the economic system has been considered as control variable. Many studies already identified various factors of the economic context affect non-financial disclosure such as size, governance quality, industry, leverage (Brammer and Pavelin, 2006; Clarkson *et al*., 2008; Fortanier et al., 2011; Haniffa and Cooke, 2005). Thus, the current study considered two among these factors as a control to our main focus on coercive and normative isomorphism.

First, the level of market competition and development (Doh and Guay, 2006): when competition is weak (e.g., monopoly or low industry differentiation) companies will have fewer incentives to engage in socially irresponsible activities. In other words, companies operating in countries where competition is lower, i.e. highly differentiate, are more likely to disclose financial and non-financial information. Thus, they are expected to publish more complete IR.

Hyp5: Higher industry differentiation affects positively IR completeness.

Second, ownership dispersion – here intended in terms of number of shareholders – is a measure of both firm size and governance quality. In line with Coluccia *et al*. (2018) according to which the dominating owner usually gets the desired information directly from the company not depending on published information, it is expected where companies have a greater number of shareholders they are likely to publish more complete IR.

Hyp6: Higher ownership dispersion affects positively IR completeness.

2. Research design

2.1. Sample

The research focuses on the investigation of those companies adopting an IR according to the framework developed by IIRC (2013). For this reason, the authors collect the list of companies and respective report directly by the example database provided by the IIRC official website.

The current number of companies (On the date 26.04.2019), complaint to the framework and mentioned in the IIRC website, is equal to 213 for the year 2017. To avoid potential double counting, from the initial selection, the authors excluded those companies: belonging to the same group and which present the same report for both the head of the group and at least one subsidiary; which changed their social status (e.g. because of fusion). This step leads to the exclusion of 44 companies. Therefore, the final sample is composed by 169 companies' whose reports have been downloaded (IR have been collected directly from the IRRC example database where available, from the companies' website otherwise).

Further, political factors data were collected from The Worldwide Governance indicators database (Worldbank, 2019). While, economic data were collected from Orbis database.

Overall, the sample shows companies adopting an IR belong to 31 countries allover the world. As expected the most represented country is South Africa (27.22% of the sample), the only one where the adoption is mandatory. It follows UK (20.12%) and Japan (13.69%). The countries less represented in terms of IR adoption are Austria, Bangladesh, Botswana, Canada, Denmark, India, Jersey, Luxembourg, Singapore, Taiwan. They all have just one company in 2017 releasing an IR presents in the example database of the IIRC (0.59% of the sample). See Table 1.

Tab. 1 – Sample by country

Country	Obs.	Percent	Country	Obs.	Percent
Australia	7	4.14	**Mexico**	2	1.18
Austria	1	0.59	**Namibia**	2	1.18
Bangladesh	1	0.59	**Netherlands**	8	4.73
Botswana	1	0.59	**New Zealand**	2	1.18
Brazil	2	1.18	**Russia**	6	3.55
Canada	1	0.59	**Singapore**	1	0.59
Denmark	1	0.59	**South Africa**	46	**27.22**
France	2	1.18	**South Korea**	2	1.18
Germany	4	2.37	**Spain**	2	1.18
Greece	2	1.18	**Sri Lanka**	5	2.96
India	1	0.59	**Sweden**	2	1.18
Italy	8	4.73	**Switzerland**	2	1.18
Japan	13	**7.69**	**Taiwan**	1	0.59
Jersey	1	0.59	**Turkey**	2	1.18
Luxembourg	1	0.59	**UK**	34	**20.12**
			USA	4	2.37
Total Obs.	**169**				
Total Percent	**100.00**				

Further, the sample presents industry differentiation. The industries with the highest market share are represented by financial service industry (22.49% of the sample), industrials (14.79%), and basic materials (13.61%). See Table 2 for details.

Tab. 2 – Sample by industry

Industry	Obs.	Percent
Basic materials	23	**13.61**
Consumer goods	14	8.28
Consumer services	16	9.47
Financial services	38	**22.49**
Healthcare	9	5.33
Industrials	25	**14.79**
Oil and gas	6	3.55
Professional services	8	4.73
Public sector	1	0.59
Real estate	5	2.96
Technology	6	3.02
Telecommunications	7	4.14
Utilities	11	6.51
Total	**169**	**100**

2.2. Methodology

A quantitative content analysis has been manually applied to each IR collected. Content analysis involves classifying text units into categories once identified the unit of analysis (e.g. word, sentence, theme). Following coding, the form of analysis and interpretation that is undertaken can vary along a continuum from purely qualitative and verbally descriptive methods to primarily quantitative methods that permit statistical analysis (Beattie *et al*., 2004). The use of quantitative methods requires that the units of coding be scored in some way (Boyatzis, 1998). Procedure must be reliable, that is different people code the text in the same way. Thus, the authors first identified the sentence as the unit of analysis. Second, they update the model developed by Zhou *et al*. (2017) to code the text. In line with their study, the authors identified the Content Elements and their sub-elements. However, Zhou *et al*. (2017) just distinguished between the absence of information about each sub-content element versus its presence. For this reason, the current paper aiming at verifying more in depth the completeness of IR, coded each sentence of the IR verifying per each sub-content element identified by the IR framework if the text provides information on it or not. More in detail the authors verified if there is no information, if the single sub-content element is just mention in the sentence or if the sentence provides a deep description of it. According to the coding procedure if there is no information regarding a sub-content element a value of 0 is attributed to the sentence, if there is just a mention to it a value of 0.5 is attributed, finally if the sentence provide greater information about the sub-content element a value of 1 is attributed. Then a score is attributed to each Content Element suggested by the IR framework. It is computed as the sum of the values attributed at its sub-content elements. This means, Content Element score may range between 3 and 7 according to how many sub-content elements they are composed by. Content Elements variables are named: Org_overview, Governance, Risks_Opp, Strategy, BM, Performance, Outlook, Other (for details, see the Appendix). Finally, IR completeness variable, named IR_Score, computed as the overall sum of each Content Elements and may range between 0 and 31. For reliability and validity reason, a pilot coding process have been applied to ten IR. Once coded the first reports, the authors discussed the results and agree on the coding process to adopt for all the documents. Texts have been separately coded by the two authors. Once all IR have been coded, the authors compared the results and discuss the few differences to arrive at a uniform dataset.

The dataset has then been integrated including information on the legal system in which each company operates. First, a dummy variable - named Mandatory - equals to 1 if the company belongs to South Africa context - where IR adoption is mandatory – 0 otherwise. Second, the variable Commonlaw is a dummy equal to 1 if the company is established in a common law country, 0 otherwise (according to prior literature countries are distinguished by legal system as in Table 3).

Tab. 3 – Common versus Civil law countries

Common law	Australia, Canada; Jersey; India; Ireland; New Zealand; Singapore; South Africa; Sri Lanka; UK; USA.
Civil law	Austria; Bangladesh; Belgium; Brazil; Botswana; Denmark; France; Germany; Greece; Japan; Indonesia; Italy; Luxembourg; Mexico; Namibia; Netherland; Portugal; Russia; South Korea; Spain; Sweden; Switzerland; Taiwan; Turkey.

In terms of political system, different factors affecting the financial and non-financial disclosure have been collected by Worldwide Governance Indicators database (Worldbank, 2019). Voice_Acc variable represents the degree of democracy of a country. Regul_quality represents the quality of a country regulation. Both political system's variables assume a value ranging between 0 and 100. Finally, as control variables the authors check for economic system's characteristics such as industry (i.e. categorical random variable which distinguish companies according to the industry they belong) and ownership dispersion (i.e. number of shareholders).

Once content analysis has been done, descriptive statistics and correlation analysis have been developed on the overall IR_score and its Content Elements components. To test the hypotheses, ordinal probit regression models have been run on the dependent variable IR_Score to investigate whether and which institutional factor may affect the IR completeness of disclosure:

$$\text{IR\_Score} = \beta_0 + \beta_1\text{Mandatory} + \beta_2\text{Commonlaw} + \beta_3\text{Voice\_Acc} + \beta_4\text{Regul\_quality} + \beta_5\text{industry} + \beta_6\text{own\_dispersion} \quad [1]$$

Finally, as additional analysis, the authors run eight ordinal probit regressions adopting as dependent variable each Content Element variable composing IR Score to verify specificity with respect to the main model 1:

$$\left.\begin{array}{l}\text{Org\_overview}\\ \text{Governance}\\ \text{Risks\_Opp}\\ \text{Strategy}\\ \text{BM}\\ \text{Performance}\\ \text{Outlook}\\ \text{Other}\end{array}\right\} = \beta_0 + \beta_1\text{Mandatory} + \beta_2\text{Commonlaw} + \beta_3\text{Voice\_Acc} + \beta_4\text{Regul\_quality} + \beta_5\text{industry} + \beta_6\text{own\_dispersion} \quad [2]$$

3. Findings

3.1. Descriptive statistics

First descriptive statistics on IR completeness variable have been analyzed. IR completeness is investigated both in terms of the overall score – IR_Score – and of each Content element composing it. While companies provide a minimum disclosure of 15 and a maximum of 28 out of 31 elements, the overall IR_Score mean of the sample is 22.18 out 31. This means companies provide a quite extensive disclosure on the content elements within IR. Looking in detail at the mean of each content element, Table 4 exhibits the most disclosed content elements are those related to the Organizational Overview (3.725 out of 5 sub-content elements) and to the

Governance (3.64 out of 4). Further it has to be highlighted how all companies of the sample provide the maximum level of information with reference to Risk and Opportunities content element. This suggests companies adopting an IR are prone to mention and describe information on risks and opportunities potentially affecting their creation of value.

Tab. 4 – Descriptive statistics on IR completeness overall score (IR_Score) and its content elements

IR completeness variables	Obs	Mean	Std. Dev	Min	Max
IR_Score	169	22.175	2.736	15	28.5
Org_overview	169	3.728	0.861	2	5
Governance	169	3.6450	0.495	2	4
Risks_Opp	169	2	0	2	2
Strategy	169	3.215	0.692	1.5	4
BM	169	2.172	0.532	0.5	3
Performance	169	3.071	1.071	0.5	6
Outlook	169	2.314	0.672	0.5	3
Other	169	2.030	0.574	1	3

A further descriptive statistic investigation aims at verifying the mean IR_score according to the IR compulsoriness context. In particular, Table 5a shows the mean IR_Score by legal system – common law versus code law – in which the company operates.

Tab. 5a – Mean IR_Score by legal system and IR compulsoriness context

		Legal system		
		Code law	***Common law***	***Total***
IR Compulsoriness	**Voluntary** **(n obs)**	21.23 (67)	22.38 (56)	123
	Mandatory **(n obs)**	- (0)	23.29 (46)	46
	Total obs	67	102	169

Table 5b shows the mean IR_Score by industry – financial versus non-financial – of the company. The former table shows the mean IR_Score is higher in the mandatory context than in code law countries which present all a voluntary IR adoption. The latter table shows financial services companies present a higher mean IR_Score than non-financial companies independently by the IR compulsoriness. The highest score is obtained by financial companies in the mandatory IR context.

Tab. 5b – Mean IR_Score by industry and IR compulsoriness context

		Industry		
		Financial	*Non-financial*	*Total*
IR Compulsoriness	**Voluntary (n obs)**	22.33 (29)	22.12 (94)	123
	Mandatory (n obs)	22.65 (9)	22.17 (37)	46
	Total obs	38	131	169

Second, a pairwise correlation analysis has been run on IR completeness variables – IR_Score and all its Content elements – and the institutional factors variables identified. A positive significant correlation (p-value at 0.01) is found between the overall IR completeness and all of its content elements[1]. A positive significant correlation is also identified between IR_Score and legal system independent variables: Mandatory and Commonlaw. Further many significant correlations can be identified between IR Content elements and independent institutional factors variables. This suggests potential associations also in the regression analyses.

3.2. Regression models

To answer at the research question, the authors investigate the relation between the level of IR completeness and the institutional factors determinants hypothesized to affect it. In particular, the authors test Model 1 including each independent variable one at the the time (Table 7). The overall reading of Table 7 shows legal system variables related to the compulsoriness of the IR adoption and the fact a company operates in a common law country positively affect the IR completeness till political system variables are not added to the model. In particular, once political system variables – i.e. Voice Accountability and Regulatory quality – are added to the model just common law variable persists significant related to the dependent variable.

[1] Risks and Opportunities (Risks_Opp) content element has been deleted from the correlation and regression analyses because it always assumes the maximum value. Following institutional factors do not affect it in any context.

Tab. 6 – Pairwise correlation on IR completeness, its content elements and institutional factors

	IR_Score	*Org_overview*	*Gover.*	*Strategy*	*BM*	*Perfor.*	*Outlook*	*Other*	*Mand.*	*Common law*	*Voice_Acc*	*Regul_ quality*	*own_dispersion*	*industry*	*country*
IR_Score	1.000														
Org_overview	**0.5871***	1.000													
Governance	**0.3404***	**0.2048***	1.000												
Strategy	**0.6924***	**0.3618***	0.1904	1.000											
BM	**0.4078***	0.1124	0.0575	0.1211	1.000										
Performance	**0.7119***	0.1099	0.0703	**0.3931***	**0.2816***	1.000									
Outlook	**0.4370***	0.0764	-0.0614	**0.1992***	-0.0057	**0.2811***	1.000								
Other	**0.5406***	**0.2875***	0.1105	**0.3099***	0.1344	**0.2387***	0.0915	1.000							
Mandatory	**0.2508***	**0.3411***	0.1032	**0.2712***	0.0653	0.1150	-0.0878	0.0961	1.000						
Common law	**0.2802***	**0.2081***	0.1277	**0.2275***	-0.0229	**0.2635***	0.0544	0.1053	**0.4956***	1.000					
Voice_Acc	0.0395	-0.1404	0.0047	-0.1053	-0.0366	0.1300	**0.2852***	-0.0208	**-0.2550***	0.1106	1.000				
Regul_quality	-0.0884	**-0.2801***	-0.0456	**-0.2118***	-0.0576	0.1006	**0.2193***	-0.0978	**-0.4687***	0.0227	**0.8881***	1.000			
own_dispersion	-0.0401	-0.0820	-0.0756	-0.0612	-0.0791	0.0962	0.1664	**-0.2182***	-0.1264	0.0348	**0.2528***	**0.2463***	1.000		
industry	0.0373	0.0334	0.0678	-0.0724	-0.0194	0.0681	-0.0388	0.0931	-0.0983	0.0494	0.1348	0.1701	-0.0011	1.000	
country	**0.2203***	0.1029	0.1317	0.1909	-0.0274	**0.2026***	0.1140	0.0658	0.1489	**0.4821***	0.0334	0.0859	0.1291	0.1093	1.000

Statistical level of significance at 0.01.

The full model (last column Table 7) exhibits a highly significant positive relation between common law countries, voice accountability and IR completeness. Further a highly negative significant relation between regulation quality and IR completeness emerge from the full model. No one of the economic system control variables – i.e. industry and ownership dispersion – present significant relation with the dependent one. Overall results support Hypothesis 2 and 3. While they partially support Hypothesis 4, identifying a significant but negative relation with IR_Score. Overall these results suggest companies established in common law countries with a high degree of democracy and freedoms but with a lower level of regulation quality are more prone to disclose more complete information within their IR.

Tab. 7 – Model 1: Regression models on institutional factors affecting IR completeness

	IR_Score	IR_Score	IR_Score	IR_Score	IR_Score	IR_Score
Mandatory	0.5874212 ***	0.3564508 *	0.401509 *	0.0609812	0.0701269	-0.0371827
Commonlaw		0.4429795 **	0.4125032 **	0.5103953 **	0.499978 **	0.5450044**
Voice_Acc			0.0024998	0 .0232333 **	0.0234512 **	0 .0211103**
Regul_quality				-0.0262176 **	-0.00268902 **	-0.0256561**
Industry					0.0179077	0.0229245
Own_ dispersion						-0.0013911
N.obs	169	169	169	169	169	154
Prob > Chi2	0.0009	0.0002	0.0007	0.0001	0.0003	0.0028
Adj R2	0.0109	0.0167	0.0170	0.0228	0.0234	0.0219

Statistical level of significance: * <0.1, **<0.05, ***<0.001

4. Additional analysis

To further dig into the investigation of the relation between IR completeness and institutional factors, the authors also split the dependent variable into its content element components[2]. Model 2 (in Table 8) highlights the results of the probit regressions having for dependent variable each IR content element variable at the time.

Significant associations have been found between the content element related to the Organizational overview (Org_overview) and political system independent variables, presenting a positive association with Voice_Acc, and a negative one with Regul_quality. This means, companies operating in a country with a higher degree of democracy and freedoms but a lower level

[2] See prior note.

of regulation quality are those more prone to provide greater information on their Organizational Overview. The content element Strategy in line with the results of Model 1 is found to be significant associated to Commonlaw variable (positive association), Voice_Acc (positive association), and Regul_quality (highly negative association). That is, companies releasing an IR in common law countries with a higher degree of democracy and a lower level of regulation quality are more prone to provide greater information about their strategy.

Performance content variable is instead positive associated just to Commonlaw variable. That is, companies operating in a common law countries and adopting an IR are more prone to give greater information about their performance. Outlook content element is positively associated just to the variable Voice_Acc; in other words, companies established in a country with a higher degree of democracy and freedoms tend to provide greater information related to their future outlook. Further, the residual content element Other is found to be positive significant associated to Voice_Acc, negative related to Regul_quality and ownership dispersion. That is additional information tend to be provided by companies established in a country with higher degree of democracy, lower level of regulation quality and by companies with a lower level of ownership dispersion which tend to be labeled as those with a lower quality of governance. Finally, both Governance and Business Model content elements are found to be neither associated to legal system variables or political system variables.

5. Discussion and conclusions

Overall findings of the current research show many factors related to institutional context affect IR completeness. Specifically, legal and political systems are found to be related to it. Whereas, economic system does not influence the level of IR completeness.

First, legal system, where considered in terms of common law countries, is found to be positively related to more complete IR. Whereas, compulsoriness of IR adoption is not a factor affecting IR contents' disclosure. Thus extending the contributes provided by Zhou *et al*. (2017) which focus just on the mandatory context.

Political system in line with Iannou and Serafeim (2012) is found to be the variable most associated to the level of disclosure.

Tab. 8 – Model 2: Regression models on institutional factors affecting each content element constituting IR completeness

	IR_Score	*Org_ overview*	*Governance*	*Strategy*	*BM*	*Performance*	*Outlook*	*Other*
Mandatory	-0.0371827	0.2911647	-0.0738518	0.2277036	0.0923476	0.0669806	-0.3206085	-0.3552522
Commonlaw	0.5450044**	0.2249519	0.3461077	0.3798198 *	-0.0823902	0.497845 **	0.1707137	0.3680136
Voice_Acc	0.0211103**	0.0180865 *	0.0111688	0.0191407 *	-0.003826	-0.0015547	0.0254863 **	0.0214503*
Regul_quality	-0.0256561**	-0.03317 **	-0.0145789	-0.0240508 **	0.0004659	0.0063368	-0.0135163	-0.027214 **
industry	0.0229245	0.0387051	0.0373041	-0.0148711	-0.0084296	0.0142563	-0.0210843	0.0287328
own_disper-sion	-0.0013911	-0.0006453	-0.0010704	-0.0010255	-0.0019775	0.0019464	0.0032099	-0.0062803 **
N.obs	154	154	154	154	154	154	154	154
Prob > Chi2	0.0028	0.0000	0.3189	0.0024	0.8899	0.0600	0.0237	0.0159
Adj R2	0.0219	0.0573	0.0201	0.0413	0.0062	0.0184	0.0332	0.0461

Statistical level of significance: * <0.1, **<0.05, ***<0.001

In particular, the political factor related to a country's degree of democracy has a positive relation with IR completeness, while contrary to expectation the level of regulation has a negative one. This latter means in countries with a lower regulation quality, companies tend to provide more complete information within IR. Such a relation may be interpreted as the fact that companies tend to provide for a lower level of regulation quality directly answering to investors and stakeholders' information needs with greater IR disclosure.

These results lead to two main contributions. First they integrate literature on financial and non-financial disclosure extending prior results of both the research streams. In particular, in line with Frias-Acetuino *et al*. (2013) the study identifies legal system as one of the most important institutional factors affecting IR development while extending the analysis to IR completeness. However, the current study contrary to their results shows common law countries positively affect IR completeness. Further in line with Coluccia *et al*. (2018) the research finds a positive relation between integrated disclosure content with political system, specifically with the degree of a country democracy. On the contrary, the results show that the integration of financial and non-financial information is negatively affected by the quality of regulation.

Second, they suggest when financial and non-financial disclosure are integrated into a unique report, and follow a specific framework, is not more the economic isomorphism to affect the completeness of disclosure but the coercive and normative ones depending on legal and political systems, respectively.

Further, distinguishing for content element disclosure it emerges not all of them depend on institutional factors. For instance, Governance or

Business Model are found to be not associated at all. Organizational overview content element is found to be associated just with political system factors: degree of democracy (positively) and higher regulation quality (negatively). While just the results of regressions based on content element related to Strategy are in line with the overall model. That is, significantly associated to the common law factor of the legal system, and to the degree of democracy and level of regulation quality which are factors of the political system. The content element related to Performance interestingly is only related to the legal system and in particular it is positively related to the common law factor. Thus supporting prior literature on legal system quality and financial disclosure (for all La Porta *et al*. 1997). The content element related to Future Outlook is instead associated just to higher level of democracy which gives companies more freedom and willingness of expression about future outcomes. Finally, additional information on conciseness, materiality and board sign-off once again is found to be significant related to political system (common law countries and with lower regulation quality), and to economic system in terms of lower ownership dispersion. This latter suggests companies with a greater ownership concentration are more prone to disclose additional information to legitimize themselves. This may lead to future research investigation according to a corporate governance point of view.

Risk and Opportunities content element has not been analyzed because all companies provide the higher degree of disclosure completeness about it. This leads to two considerations: the fact that all companies provide information on both risks and opportunities at the same level may lead to unuseful information for primary IR users; this in turn makes emerge one of the methodology limitation which is based on verifying the presence and depth of information about each content element without investigating in detail the content of it.

The paper suffers of other limitations too. First it relies on one single year analysis, this because the year 2017 is the one presenting the highest number of IR according to the IIRC website allowing to run regression analyses. Further, as mentioned above, the methodology aims at extending the Zhou *et al*. (2017) model focusing on the identification of the absence, presence and deep of content element description while not investigating the quality of information content they describe. Future research may fill this gap.

Despite of that the authors believe the results overall support the idea that a mimetic isomorphism is not the only one affecting corporate disclosure but normative and coercive isomorphism have a stronger effect when speaking of information integrating financial and non-financial aspects. This in turn may contribute to practice both favoring decision-taking by the different stakeholders (Frias-Acetuino *et al*., 2013) and be relevant for shareholders. Investors who are interested in specific information of firms that are disclosed in IR may consider the institutional conditions that increase the likelihood of this form of sustainability reporting. This in turn providing insights for future investigation in addressing the question of which elements of IR are most effective at attracting long-term investors (Serafeim, 2014) depending on the institutional context in which the company operates.

Finally results showing compulsoriness does not statistically affect the completeness of information within IR, may affect policy-maker decision in not requesting mandatory IR to increase the integration of financial and non-financial disclosure.

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Appendix

CONTENT ELEMENT (variable name)	RANGE VALUE	SUB-CONTENT ELEMENT	SUB-CONTENT ELEMENT VALUE
Organizational overview and operating context (Org_overview)	0 – 5 It is the sum of the following sub-content elements:	Reporting boundary	"Reporting boundaries" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Mission and value	"Mission and value" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Business overview	"Business overview" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Operation context	"Operation context" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Summary statistics	"Summary statistics" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
Governance (Governance)	0 -4 It is the sum of the following sub-content elements:	Governance structure	"Governance structure" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Governance and strategy	"Governance and strategy" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Remuneration and performance	"Remuneration and performance" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.

		Governance and others	"Governance and others" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
Opportunities and risks (Risks_Opp)	0-2 It is the sum of the following sub-content elements:	Risks	"Risks" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Opportunities	"Opportunities" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
Strategy and resource allocation plans (Strategy)	0 – 4 It is the sum of the following sub-content elements:	Strategic objectives	"Strategic objectives" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Links between strategy and other elements	"Links between strategy and other elements" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Competitive advantage	"Competitive advantage" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Stakeholder consultations	"Stakeholder consultations" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
Business model (BM)	0 – 3: It is the sum of the following sub-content elements:	Business model description	"Business model description" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Links between business model and others	"Links between business model and others" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Stakeholder dependencies	"Stakeholder dependencies" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
Performance and outcomes (Performance)	0 – 7 It is the sum of the following sub-content elements:	KPIs against strategy	"KPIs against strategy" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Explanation of KPIs	"Explanation of KPIs" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Stakeholder relationship	"Stakeholder relationship" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Past, current, and future performance	"Past, current, and future performance" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Financial implications of other capitals	"Financial implications of other capitals" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.

		Supply chain performance	"Supply chain performance" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		The quality of quantitative indicators	"The quality of quantitative indicators" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
Future outlook (Outlook)	0 – 3 It is the sum of the following sub-content elements:	Anticipated changes	"Anticipated changes" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Potential implications	"Potential implications" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Estimates	"Estimate"" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
Other elements (Other)	0- 3: It is the sum of the following sub-content elements:	Conciseness and links	"Conciseness and links" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		Materiality determination process	"Materiality determination process" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.
		The board sign-off	"The board sign-off" value is equal to: 0 when it not mentioned in the report; 0.5 when it is just mentioned in the report without any description or discussion about it; 1 when it is mentioned and discussed in the report.