

# Integrated Reporting, Connectivity, and Social Media

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## ABSTRACT

**Leading companies worldwide are increasingly concerned about stakeholders' needs. They include sustainability initiatives regarding the environment and the community in their business strategy and adopt a new way of communication with stakeholders, that is, the Integrated Report (IR). This document should include in just one document the information traditionally provided in the annual report, the sustainability report, and the corporate governance report. This article presents the IR phenomenon and pays special attention to the key concept of "connectivity," according to the International Integrated Reporting Council (IIRC). However, Internet and digital technologies have provided new channels of communication and interaction through social media. Within the framework of the Legitimacy Theory, Reputation Risk Management, and Stakeholder Theory, this article argues that the new possibilities brought by social media can be most valuable for IR purposes as they are useful to increase transparency and stakeholder engagement. Having looked into 78 integrated reports for the year 2012 of the companies included in the IIRC pilot programme, our study posits that the level of IR connectivity (or its absence) can be due to the combination of three types of factors (information quality, corporate characteristics, and communication factors), using fuzzy-set qualitative comparative analysis. Our findings confirm the equifinality tenet and the causal asymmetry principle. Very interestingly, in the sufficiency analysis, some factors always appear present (big size, long reports, and many channels of social media used) in the model for IR connectivity whereas in the model for non-IR connectivity size and report length are always absent though the listing status is always present. This pioneering study is unique and valuable as it opens up a new line of research on IR and social media use, two of the latest trends in company reporting. © 2016 Wiley Periodicals, Inc.**

Leading companies worldwide are becoming increasingly concerned about stakeholders' needs. They include sustainability initiatives regarding the environment and the community in their business strategy and inform their stakeholders. Sometimes, companies make a holistic change in the business organization to integrate those practices with corporate governance and financial reporting and subsequently adopt a new way of communication with stakeholders, that is, the Integrated Report (IR; see Rivera, Zorio-Grima, & Garcia-Benau, 2016; Sierra-García, Zorio-Grima, & García-Benau, 2015). This new trend of corporate reporting includes in just one document—that is, the IR— information on sustainability, the financial situation of the company, and corporate governance. This is a voluntary strategy aimed at enabling stakeholders to effectively evaluate the organization's ability to create present and future value, except for companies listed in the Johannesburg Stock Exchange, which are required to publish an IR since 2010 (Eccles &

Krzus, 2014; Institute of Directors in Southern [IOD], 2009).

This article presents the recent IR phenomenon and pays special attention to a new area of research, which is the key concept of "connectivity" according to the International Integrated Reporting Council (IIRC). This organization was founded in 2010 to set the framework for IR and to support IR practices around the world. Indeed, the Internet and digital technologies have provided new channels of communication and interaction through social media, which are explicitly mentioned by the IIRC within the context of "connectivity." This document is used in this study to create an "IR-connectivity" index for all the IR in our sample, on the basis of the seven items included in the IIRC connectivity background paper (IIRC, 2013d). As posited next, there are several combinations of three types of factors (information quality, corporate characteristics, and communication strategy) that can help explain the IR-connectivity profile of the companies publishing an IR. In fact, IR

may in fact have an impact on the co-creation dynamic in corporate legitimation (Killian & O'Regan, 2016; Singaraju, Nguyen, Niininen, & Sullivan-Mort, 2016).

This study is unique and valuable as it opens up a new line of research on IR and social media use, two of the latest trends in company reporting that can be complementary to each other. In fact, the traditional print media for the annual statements of the company or other kind of corporate reports seem now rather obsolete. In addition, the cost advantages of social media, its visual power (photos, graphics, videos), immediacy, and sharing possibilities make social media a very effective tool to inform and interact with stakeholders. Social media can be useful to share financial information such as earnings announcements, CEO commentary, press releases, industry news and media coverage, as well as corporate governance details or sustainability initiatives or even the publication of the report that provides a holistic picture of the organization—that is, the IR.

The objective of this article is to provide a qualitative analysis of the factors explaining IR connectivity or non-IR connectivity using an innovative methodological approach as fuzzy-set Qualitative Comparative Analysis (fsQCA). Our findings show that using a high number of social media is an explaining factor for IR connectivity together with a combination of present or absent factors. Nonetheless, presence or absence of many social media channels can lead to non-IR connectivity depending on the combination of other factors. However, no matter the combination with other factors, evidence is found that the length report and big size are always present for the presence of the outcome condition (IR connectivity) and vice-versa—that is, the length report and big size are absent for the absence of the outcome condition.

After this brief introduction, the remainder of the article is organized as follows. The second section presents the theoretical framework and the literature review. The third section describes the sample and the methodology employed. The fourth section is devoted to the discussion of results. Last but not least, the article concludes acknowledging some limitations and putting forward new ideas for future research.

## **THEORETICAL FRAMEWORK AND LITERATURE REVIEW**

Within the framework of the Legitimacy Theory, Multi-stakeholder Co-creation Approach, and the Reputation Risk Management and Stakeholder Theory, this article argues that the new possibilities brought by social media can be useful to increase transparency and stakeholder engagement and that they could be used for IR purposes.

Legitimacy theory is based on the notion of a social contract between the company and society and on the assumption that the company will carry out disclo-

sure strategies to show compliance with society's expectations (Deegan, Rankin, & Tobin, 2002). It could also be argued that IR could be seen as both an outcome of and part of the process of Reputation Risk Management. In this sense, Stakeholder Theory establishes that these disclosures are aimed at certain stakeholders providing resources to the organization (in line with Bebbington, Larrinaga, & Moneva, 2008). IR can be used therefore to respond to and adapt to that social contract and even influence global change. Illustrative IR can be found in the IR examples database at the IIRC Web page. Also, IR informs on reputation and Risk Management and is aimed to multiple stakeholders, especially capital providers (for instance, Garrido-Miralles et al., 2016 find that sustainability reports can be helpful for financial analysts' activity). Social media provide effective platforms to disseminate a wide variety of IR contents or announcements and even can be used to give feedback to the company. Therefore, multistakeholder co-creation theory also provides a suitable framework for this study (Killian & O'Regan, 2016; Singaraju et al., 2016). Companies could see the use of social media channels as a way to institutionalize their IR announcements and bring stakeholders' knowledge into their strategy.

The IIRC pilot programme includes more than a hundred organizations belonging to its business network (IIRC, 2013c). These companies are developing and sharing "best practices" in drawing integrated reports according to the IIRC's framework (de Villiers, Rinaldi, & Unerman, 2014). The pilot programme started in 2011 to ensure that the IIRC advances are grounded in the real environment of organizations and focused on the needs of capital providers (IIRC, 2013b). The guiding principles for IR are stakeholder responsiveness, materiality and conciseness, reliability and completeness and consistency and comparability, strategic focus and future orientation, and connectivity of information (IIRC, 2011, 2013a). Connectivity includes at least the following three aspects: (i) to bridge time horizons connecting past performance and future prospects, (ii) effective connections between quantitative and qualitative information, and (iii) to connect users with the company responding to stakeholders' needs, interests, or expectations (IIRC, 2013d). To this end, technology and Internet devices allow organizations to provide online information in many different ways regarding financial and nonfinancial issues, facilitating deeper detail and clear relationships amongst them through drill-down capabilities or other multidirectional tools, such as social media.

Not only companies but also regulators have also moved to boost Internet to enhance market transparency—for instance, the US Securities and Exchange Commission (SEC) created the EDGAR database with online free access to many corporate filings. In addition, discussions about listed companies and the capital markets started to appear in blogs providing new modes of communication associated with capital market effects (Debreceeny, 2015). In

fact, Prokofieva (2015) finds a negative association between abnormal bid-ask spread and Twitter messages, which is obviously stronger for firms with lower levels of analyst coverage and/or lesser visibility in traditional media.

However, research on social media and corporate reporting is still scarce, maybe because disclosures of this type are not very common—only 7% of Facebook messages and 3.5% of Twitter messages, according to Zhou, Lei, Wang, Fan, and Wang (2015). Uyar and Boyar (2015) conclude that social media usage for corporate reporting is not at satisfactory level. Even in South Africa where IR is compulsory, the general public is still heavily dependent on print media and international news sources and does not rely that much on social media yet (Rensburg & Botha, 2014). Marley and Snow (2015) find limited empirical evidence as to what kind of financial information is of interest to social media users yet they identify a clear interest for job positions in the case of noninvestors. Perdana, Robb, and Rohde (2015) analyze the use of LinkedIn as a platform for community learning, information dissemination, and the institutionalization of knowledge by the community of users interested in eXtensible Business Reporting Language (XBRL).

However, auditing and accountancy firms are becoming aware of the possibilities that social media bring to their business. Indeed, the so-called Big-4 firms (which are the four largest auditing multinationals, i.e., KPMG, PWC, EY, and Deloitte) seem to be using Facebook and Twitter mostly for knowledge-sharing purposes whereas second-tier audit firms tend to use Facebook for socialization and onboarding and Twitter for branding and marketing (Eschenbrenner, Fui-Hoon Nah, & Telaprolu, 2015).

In fact, in the area of marketing, research on social media effects is an emerging topic. Ashley and Tuten (2015) analyze social media activity by 28 companies to create a typology regarding the number of channels used (seven social media is considered high) and the engagement obtained—that is, mavens (many channels, high engagement), butterflies (many channels, low engagement), selectives (fewer channels, high engagement), and wallflowers (fewer channels, low engagement). Pagani, Hofacker, and Goldsmith (2011) distinguish two personality characteristics (consumer innovativeness and expressiveness among Italian consumers) to enhance the impact of social networks and recommend different social media strategies addressed to these two types of consumers. Meenaghan, McLoughlin, and McCormack (2013) look into sponsorship and social media highlighting the importance of multistakeholder objectives, whereas Yang and Wang (2015) focus on videosharing predictors. Wei, Xu, and Zhao (2015) warn about the problem of information overload on social media having looked into 112 official micro blogs of China Fortune 500 firms in 2014.

However, in the area of corporate reporting, this is the first study looking into social media channels and IR connectivity.

## SAMPLE AND METHODOLOGY

In our empirical study, we look into the integrated reports, for the year 2012, of the companies included in the IIRC pilot programme (101 companies in the IIRC pilot programme as at October 29, 2013). We carefully identify the level of connectivity of these reports according to the IIRC background paper on this concept. According to IIRC (2013d), seven possibilities to increase IR connectivity can be identified as follows:

1. Digital reporting platforms: Web-based applications or social media, to allow the user to automatically import, filter or search specific data among others functionalities.
2. IR customization: presentation of information in a friendly way to meet readers' preferences, allowing the user to customize language, display information in user-defined templates, or download specific sections.
3. Feedback loops: navigation devices allowing for feedback between users and the company such as e-mail addresses, phone numbers, surveys, links, and QR (Quick Response) codes that enable both to request information and receive feedback from stakeholders.
4. Cross-referencing: use of electronic links, summary sections, and cross-referencing tools; these tools are useful to review additional information in another section within the report and avoid repetition.
5. Drill-down capability: electronic links and cross-referencing tools to external links; these tools are useful to deepen the search for additional information if needed by the reader.
6. Visual techniques: icons and visual strategies to direct readers to other report content.
7. Glossary: a section with the definition of technical expressions used in the report that may be difficult to understand by users.

We create an index for connectivity giving one point for each of the seven possibilities above that are used in each IR in the sample. Therefore, this index can reach a maximum score of seven points.

We posit that this level of IR connectivity (or its absence) can be due to the combination of several antecedent conditions, using fsQCA 2.5 (Ragin & Davey, 2014). We classify these conditions within three types of factors.

The first type of factors includes the antecedent conditions that proxy for information quality with three crisp variables. The first one refers to financial reporting quality (see for instance DeAngelo, 1981 and Francis, 2004) and takes the value of 1 if the financial statements have been audited by a Big-4 (*audit*). The second one refers to Corporate Social Responsibility (CSR) reporting quality and takes the value of 1 if the sustainability information has been

**Table 1. Descriptive Statistics and Correlations.**

Variable	Descriptive statistics				Correlation matrix							
	Mean	SD	Min	Max	fscon	fslev	fsroa	fsemp	fspag	fssocmed	Audit	assu
fsconnect	0.46	0.31	0.02	0.99								
fsleverage	0.54	0.31	0.03	1	0.07							
fsroa	0.45	0.31	0.02	1	-0.09	-0.49 <sup>a</sup>						
fsemployees	0.44	0.34	0.05	1	0.05	-0.04	-0.08					
fspages	0.46	0.31	0.02	1	0.38 <sup>a</sup>	0.10	-0.10	0.20				
fssocmed	0.49	0.31	0.05	1	-0.05	-0.03	0.14	0.04	-0.16			
	Freq	%										
Auditor	69	88.50			0.09	-0.02	-0.14	0.39 <sup>a</sup>	0.30 <sup>a</sup>	0.11		
Assurance	33	45.31			0.35 <sup>a</sup>	-0.17	0.07	-0.01	0.16	0.01	0.15	
Listing	57	73.08			0.02	-0.05	-0.5	0.48 <sup>a</sup>	0.39 <sup>a</sup>	0.06	0.51 <sup>a</sup>	-0.01

<sup>a</sup>Significant correlation at the 5% level.

externally assured (*assurance*), as this process enhances its credibility (see Ackers & Eccles, 2015; García-Benau, Sierra-García, & Zorio-Grima, 2013; Sierra-García, García-Benau, & Zorio, 2014; Sierra-García et al., 2015; Zorio, García-Benau, & Sierra, 2013). The third one refers to the *listing* status of the company as capital markets supervisors have a supervisory role on the financial reports of listed companies (Villanueva-García, Zorio-Grima, & García-Benau, 2015).

The second type of factors is related to corporate characteristics (Sierra-García, Zorio-Grima, & García-Benau, 2013), such as *leverage*, performance measured through the return on assets (*roa*)—see for instance Du and Jiang (2015), who evidence that firm use of social media is associated with *roa*—and size (Bonsón & Bednárová (2015) on Youtube use) measured through the number of *employees*.

Finally, communication factors are proxied by the extension of the report (number of *pages*) or use of social media channels—that is, number of social media platforms (*socmed*), identified in the Web pages of the companies as at October 2015. We find that Twitter is the most used (80% of the companies), followed by Facebook (72%), Youtube (58%), LinkedIn (55%), Google+(30%), Rss (22%), Instagram (18%) and Flickr (10%) or Pinterest (9%), and Slideshare (9%). Many other platforms and channels have been identified with just one company in the sample using them (Whatsapp, Storify, Dailymotion, Picasa, Yammer, Tuenti, Visual.ly, Kununu, and Xing). This evidence on the preference of the companies for Twitter, Facebook, Youtube, and LinkedIn is in line with Debreceny (2015).

After eliminating the companies with missing data for all the antecedent conditions, our sample includes 78 IR. The continuous variables are calibrated into fuzzy-sets using three thresholds: full membership, the cross-over point (i.e., the ambiguity point) and, full nonmembership referring to the 95 percentile, 50 percentile, and 5 percentile (Woodside, 2013) and coded with 1, 0.5, and 0, respectively. Hence, the calibration points are 6, 4, and 1 for *fs\_connectivity*; 0.97, 0.67, and 0.19 for *fs\_leverage*; 0.35, 0.06, and 0.00 for *fs\_roa*; 184365, 24006, and 328 for *fs\_employees*;

**Table 2. Necessary Analysis Results.**

	Necessary analysis	
	Consistency	Coverage
Information quality		
Auditor	0.903479	0.466667
Assurance	0.538440	0.581515
Listing	0.738777	0.461930
Corporate characteristics		
fs_leverage	0.719697	0.604668
fs_roa	0.571829	0.584624
fs_employees	0.579405	0.608247
Communication factors		
fs_pages	0.705948	0.696953
fs_socmed	0.653479	0.607935

447, 182, and 52 for *fs\_pages*; and 7, 4, and 0 for *fs\_socmed*.

## DISCUSSION OF RESULTS

Table 1 presents the descriptive statistics for the fuzzy variables and the frequency of crisp variables, as well as the correlation matrix. Note that 88.50% of the companies in the sample have been audited by a Big-4, 73.08% are listed companies, and 45.31 % submit their sustainability report to external assurance.

Table 2 shows the necessity analysis for IR connectivity. The antecedent conditions have a consistency value ranging from 0.54 (assurance) to 0.90 (auditor). There are no trivial antecedent conditions because the coverage values range from 0.46 (listing) to 0.70 (*fs\_pages*).

Regarding the sufficiency analysis, we adopt a novel theoretical approach on causal core and periphery factors (Fiss, 2011) for IR connectivity. Core conditions are those included both in the parsimonious and intermediate solution, whereas peripheral conditions appear in just in one of them.

Several combinations of antecedent conditions lead to the presence (and the absence of the outcome) with different core and peripheral conditions from all three

**Table 3. Sufficiency Analysis Results.**

IR connectivity										
Solutions	1	2	3	4	5	6	7			
Information quality										
Auditor					y		n			
Assurance	Y			Y	n	n	n			
Listing				Y		Y	n			
Corporate characteristics										
fs_leverage	N		y		Y	Y	Y			
fs_roa		N			y	Y	n			
fs_employees		y	Y	y						
Communication factors										
fs_pages		Y	Y		Y	Y	Y			
fs_socmed				Y						
Solution raw coverage	0.37	0.42	0.41	0.17	0.16	0.15	0.02			
Solution consistency	0.77	0.82	0.85	0.80	0.77	0.76	1			
Overall solution coverage	0.75									
Overall solution consistency	0.76									
Non-IR connectivity										
Solutions	1	2	3	4	5	6	7	8	9	10
Information quality										
Auditor	N		y	y	y	y	y	n	y	y
Assurance			N	n	n	n	N	y		
Listing			Y	y	y	y				y
Corporate characteristics										
fs_leverage		N	n				N		y	Y
fs_roa	Y	Y		n				Y	n	N
fs_employees	n	n					n	N	n	
Communication factors										
fs_pages	n	n			n		n		n	N
fs_socmed						n		n	y	Y
Solution raw coverage	0.09	0.32	0.30	0.32	0.33	0.30	0.18	0.03	0.26	0.26
Solution consistency	0.88	0.85	0.90	0.72	0.90	0.79	0.96	0.81	0.91	0.88
Overall solution coverage	0.78									
Overall solution consistency	0.75									

Y (y) indicates presence of a core (peripheral) condition, whereas N means absence of a core condition. Blank spaces indicate “don’t care” (Fiss, 2011).

types of factors. The overall solution coverage of the models is 0.75 (0.78) and the overall solution consistency is 0.76 (0.75)—which are in line with extant research (Ospina-Delgado & Zorio-Grima, 2016; Schneider, Schulze-Bentrop, & Paunescu, 2010; Woodside, 2013).

The equifinality tenet (Ordanini, Parasuraman, & Rubera, 2014; Woodside, 2015) holds as we find several solutions in each model. In other words, we find seven combinations of factors leading to the presence of the outcome condition and 10 combinations leading to the absence of the outcome condition. Note that the solutions for non-IR connectivity do not mirror the opposites for IR connectivity, in accordance with the causal asymmetry principle (Fiss, 2011; Woodside, 2015). As can be seen in Table 3, all factors appear at least in one solution. It is remarkable that some factors are always identified as present in the model for IR connectivity—size in terms of employees, long reports with many pages, and many channels of social media used. On the contrary, as regards the model for non-IR connectivity, only the size in terms of employees (which is consistent with Bonsón & Bednárová, 2015) and the number of

pages are identified as been absent in several solutions, whereas the listing status of the company is always identified as present in several combinations. It makes sense that higher connectivity is needed for longer reports (and probably more complex) or bigger companies (with probably more stakeholders) and vice versa—that is, lower connectivity is needed if the report is short or the company is not big. As regards the listing status, the fact that it appears always present in the model for non-IR connectivity might indicate that higher surveillance by capital market supervisors and subsequent higher levels of disclosure and enforcement make IR connectivity less useful. As regards social media channels used, our model for non-IR connectivity shows that depending on the combinations of antecedent conditions, this factor can be present (if low number of pages, low return on assets, and high leverage) or absent. However, in the model for IR connectivity, it only appears in one solution present. This can be explained because social media are mostly used for marketing purposes although it is also just beginning to be used to disseminate corporate reporting information (Debreceeny, 2015; Uyar & Boyar, 2015).

## LIMITATIONS AND CONCLUDING REMARKS

Our findings have research and managerial implications. In fact, this study makes an important contribution to literature in the sense that the companies analyzed are among the first ones preparing an IR; so the results obtained are valuable to increase visibility of the use of social media in this field among managers interested in this new trend of corporate reporting, as well as among researchers in this field. Also, our findings suggest the potential interest for the IIRC to include more explicit references to these channels in future guidance regarding connectivity, as they can be a complement for IR impact in the future. According to the qualitative comparative analysis undertaken, all factors (information quality, corporate characteristics, and communication strategy) appear at least in one solution. Some factors are always present in the model for IR connectivity—size in terms of employees, long reports with many pages, and many channels of social media used. Nonetheless, as regards the model for non-IR connectivity, only the number of employees and the number of pages are identified as being absent in several solutions, whereas the listing status of the company is always present in some combinations.

One limitation of the current study is that social media use by companies expands exponentially day by day, so data collection is limited to the number of channels used as reported on the companies' Web pages at the date of data gathering. Future research could use freeze frames of time to undertake content analysis related to the IR information shared through the social media and see its impacts on corporate reputation or stakeholder engagement.

Another limitation of our study refers to a rather limited sample size (78 companies), which is easily explained because it is drawn from a very limited population (101 companies in the IIRC pilot programme as at October 29, 2013, some of which did not provide all information input needed for our methodological design). However, the methodological approach of fsQCA is suitable for this type of sample size (Woodside, 2015). Also, the literature review on social media and corporate reporting indicates that most of the scarce studies published so far tend to have rather small sample sizes.

Last but not least, social media provide an excellent channel to keep stakeholders informed as regards IR and engaged with the company. Through content analysis, future research will be able to evaluate its benefits and maybe identify the crossover point for information overload (Wei et al., 2015). In addition, new lines of research can focus on the differentiated use for the IR that companies make of each social media platform, because of their specific profile regarding psychological engagement. IR represents a move of companies in response to stakeholders' concerns that should influence toward global change for a sustainable economy and society. Social media can help expand and accelerate that move

if research provides new insights on this rather new phenomenon.

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